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Disziplingeschichte

History of Geography

The Institutionalisation of Geography and its Academic Leaders in the Multiethnic Context of the Habsburg Empire (1849–1918)

Bálint Hilbert, Budapest*

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Summary

The history of the institutionalisation of geography as a discipline within the Habsburg Empire is a well-researched topic in the literature. However, this body of literature remains highly fragmented, as the development of geography within the Empire's multiethnic context has almost exclusively been examined through nationalistic lenses. As a result, the institutions and leading figures of Austrian, Hungarian, Czech, Polish(-Ukrainian), and Croatian geography are discussed in separate pieces of literature, written predominantly by scholars from the respective nations and often in different languages. This phenomenon is not surprising, given that geography initially played a crucial role in shaping national identities. Even today, scholars' perspectives remain influenced by this legacy.

Nonetheless, there is an alternative and still largely unexplored approach: a non-nationalistic perspective grounded in the constitutional and administrative realities of the time. From this standpoint, it is reasonable to argue that, within the framework of a single state, subject to the same (or at least partially shared) legal and educational policies, the development of geographical institutions should be studied as part of a unified process. While it is well established that leading figures, their theories, and methodologies of German geography had a significant impact on the development of geography across the Austro-Hungarian Monarchy, there is still no comprehensive comparative analysis of the various national traditions or the interactions between them.

This paper aims to adopt this non-nationalistic, state-centred perspective to examine the institutionalisation of geography across the unified space of the Habsburg Empire. It focuses on the work of leading academics at the heads of fourteen geography departments from the establishment of the first institutions up to the collapse of the Monarchy in 1918. However, this study is not merely a synthesis of existing literature on Austrian, Hungarian, Czech, Polish(-Ukrainian), and Croatian geography in this period. Rather, it offers a comparative biographical analysis of all department heads within the Empire, with particular attention to the methodological and thematic development of both physical and human geography, in relation to the broader theoretical trends in German geography.

Keywords: Austro-Hungarian Monarchy, Habsburg Empire, scientific institutions, geographies of science, history of geography, Austrian geography, Hungarian geography, Czech geography, Polish geography, Croatian geography

Zusammenfassung

Die Institutionalisierung der Geographie und ihre akademischen Führungspersönlichkeiten im multiethnischen Kontext des Habsburgerreiches (1849–1918)

Die Geschichte der Institutionalisierung der Geographie als wissenschaftliche Disziplin innerhalb des Habsburgerreiches ist ein gut erforschtes Thema der Fachliteratur. Dennoch

bleibt dieser Forschungsbereich stark fragmentiert, da die Entwicklung der Geographie im multiethnischen Kontext der Monarchie nahezu ausschließlich aus nationalistischen Blickwinkeln betrachtet wurde. Infolgedessen wurden die Institutionen und führenden Persönlichkeiten der österreichischen, ungarischen, tschechischen, polnisch (-ukrainischen) und kroatischen Geographie in separaten Studien behandelt, die überwiegend von Wissenschaftlern der jeweiligen Nationen und häufig in unterschiedlichen Sprachen verfasst wurden. Dieses Phänomen ist kaum überraschend, da die Geographie ursprünglich eine zentrale Rolle bei der Konstruktion nationaler Identitäten spielte. Auch heutige geographische Forschungsperspektiven sind vielfach noch von diesem Erbe geprägt.

Dennoch existiert eine alternative, bislang weitgehend unerforschte Herangehensweise: eine nicht-nationalistische Perspektive, die auf den damaligen verfassungsrechtlichen und administrativen Gegebenheiten beruht. Aus dieser Sichtweise erscheint es naheliegend, die Entwicklung geographischer Institutionen – innerhalb eines einheitlichen Staatswesens und unter weitgehend gemeinsamen gesetzlich-regulativen sowie bildungspolitischen Rahmenbedingungen – als Teil eines zusammenhängenden Prozesses zu analysieren. Obwohl gut dokumentiert ist, dass führende Akteure, ihre Theorien und methodischen Ansätze – insbesondere aus dem Bereich der deutschsprachigen Geographie – maßgeblichen Einfluss auf die geographische Entwicklung in der gesamten Doppelmonarchie hatten, fehlt bislang eine umfassende vergleichende Analyse der nationalen Entwicklungen sowie möglicher Interaktionen zwischen diesen.

Der vorliegende Beitrag verfolgt das Ziel, diese staatszentrierte, nicht-nationalistische Perspektive einzunehmen, um die Institutionalisierung der Geographie im einheitlichen Raum der Habsburgermonarchie zu untersuchen. Im Mittelpunkt stehen die Arbeiten der führenden Professoren an den insgesamt vierzehn geographischen Universitätsinstituten von der Gründung der ersten Einrichtungen bis zum Zusammenbruch der Monarchie im Jahr 1918. Die Studie versteht sich jedoch nicht bloß als Synthese der bestehenden Literatur zur österreichischen, ungarischen, tschechischen, polnisch(-ukrainischen) und kroatischen Geographie dieser Epoche, sondern als vergleichende biographische Analyse aller Institutsleiter im Reich. Besonderes Augenmerk gilt dabei der methodischen und thematischen Entwicklung der physischen und anthropogeographischen Teildisziplinen im Licht der theoretischen Strömungen der deutschsprachigen Geographie.

Schlagwörter: Österreichisch-Ungarische Monarchie, Habsburgermonarchie, wissenschaftliche Institutionen, Geographie als Wissenschaftsdisziplin, Geschichte der Geographie, Österreichische Geographie, Ungarische Geographie, Tschechische Geographie, Polnische Geographie, Kroatische Geographie

1 Introduction

The institutionalisation of geography began in the age of nation-states when the discipline held a distinct position among the sciences due to its dual role: strengthening national identity and supporting empire-building, particularly in the context of colonisation (Gyuris and Győri 2023). The Habsburg Empire occupied a delicate position concerning both

the institutional and intellectual development of geography. The Empire's multiethnic composition, combined with an unequal distribution of political authority, particularly the right to oversee education, posed considerable challenges. With the Austro-Hungarian Compromise of 1867, jurisdiction over scientific and educational matters was divided between the Austrian and Hungarian parliaments (LICHTENBERGER 2001). In addition, the Croatian-Hungarian Compromise of 1868 and the de facto autonomy of Galicia allowed Croatian and Polish science to follow relatively independent paths. Czech geography was likewise able to establish institutional foundations during the Dual Monarchy era.

Given this fractured institutional landscape and the divergent nationalist motivations, it is hardly surprising that today's historiography of geography regarding the Habsburg Monarchy remains sharply divided along national lines. Separate bodies of literature exist on the histories of Austrian, Hungarian, Czech, Croatian, Polish, and Ukrainian geography, each typically focusing on its institutions and prominent figures and often written in the respective national languages. While this fragmentation is understandable, it also reveals a compelling paradox: based on the legal foundation of the customs union created between Austria and Hungary, the Austro-Hungarian Monarchy constituted a single state, with a unified external border and no internal customs barriers. Labour, capital, goods, enterprises, and indeed academic knowledge and personnel could circulate freely within the empire's territory (HILBERT 2023).

Furthermore, although the legislative responsibility for science and education was divided among the Austrian, Hungarian (and Croatian and Galician) parliaments, the overall legal and institutional framework for the sciences still depended fundamentally on the will of a single emperor, including the establishment of university departments, such as those dedicated to geography. From this perspective, it becomes evident that the institutionalisation of national geographies occurred within a shared legal and administrative framework and that intellectual developments in one part of the empire likely could influence others. This justifies a research approach that foregrounds constitutional and institutional commonalities, rather than narrowly nationalistic narratives. The fact that such a perspective has not yet been comprehensively applied to the history of geography concerning the Austro-Hungarian Monarchy underscores both its necessity and its potential to yield novel contributions to the topic.

This paper seeks to explore the institutionalisation of geography as a scientific discipline throughout the Habsburg Empire, from the establishment of the first university geography department in 1849 to the collapse of the Monarchy in 1918. In addition to examining the foundation of university departments and geographical societies, the study undertakes a biographical analysis of the key academics who held chairs or leadership roles in geography departments. This paper not only intends to synthesise the relevant national historiographies but also wishes to offer a comparative analysis, especially concerning the selected biographical features of the leading figures in the field. The scholarly contributions of these figures are closely connected to broader international trends in geography, especially the influence of German geography, whose prevailing theoretical and methodological frameworks significantly shaped the development of geographical research across the Habsburg Empire. Accordingly, the next chapter offers a concise overview of the role, key theories, and methodological foundations of 19th-century geography.

2 The International Context and Key Figures Influencing 19th-Century Central European Geography

The development of the institutional system of geographical science in an international context can be traced back to the era of the great geographical discoveries. Geography later gained additional momentum during the colonising activities of the European empires, which spurred its formal establishment as an academic discipline and, in most cases, allowed it to surpass the institutional development of neighbouring fields such as geology, meteorology, and sociology. Initially, geography functioned as a melting pot of scholars from various branches of science and lacked a clearly defined research focus (Mattes 2020).

The founding of geographical societies and, subsequently, the establishment of geography departments at universities marked key milestones in the strengthening of the discipline. Geography became a central instrument of imperialism and colonial expansion among the European powers, which elevated the discipline's status within the scientific hierarchy. Beyond map-making, the geographical description of colonies, and the logistical organisation of colonial life, geography also served the political objective of reinforcing national identity (Livingstone 2001). The existence and development of this role are particularly intriguing in the context of the Austro-Hungarian Monarchy, which lacked overseas colonies. Moreover, the dualist political structure and multinational composition of the Monarchy rendered the formation of a unified national identity highly problematic. Nevertheless, geographers within the Habsburg Empire remained keen observers – and occasionally participants – of international colonisation efforts (Gyuris et al. 2024).

The international context is equally essential when examining the theoretical foundations of geographical science. However, such an examination must be approached cautiously, as the literature is often shaped by a presentist narrative style that is difficult to fully avoid (Livingstone 1992). Analysing Austrian and Hungarian geography from an international perspective is justified by the intense cross-border transmission of geographical theories in the 19th and early 20th centuries (Probáld 2018). Especially, Austrian and German geography had become particularly intertwined during this era. The historiography of 19th-century geographical science often focuses on the emergence of so-called "dualistic geography" which refers to the growing distinction between physical and human geography as the two main branches of the discipline. The nature and methods of geographical research varied depending on which branch a scholar pursued. In the second half of the 19th century and into the early 20th century, the ideas of three German geographers – Carl Ritter, Ferdinand von Richthofen, and Friedrich Ratzel – had a decisive impact on the development of geographical science both in Europe and within the Dual Monarchy.

The geographical science originally developed by Alexander von Humboldt (1769–1859), which aimed at comprehensively describing the Earth by integrating the natural sciences, transformed the first half of the 19th century (Bobek 1972). In the early decades of the century, Carl Ritter (1779–1859), who had studied "Staatswissenschaften" (state sciences) and became the first professor of geography at the University of Berlin, rede-

fined the essence of geography. Unlike Humboldt, Ritter approached geography from a human-centred perspective, focusing not on the entire Earth, but on its surface and smaller spatial units. The principal objective of Ritterian geography was to describe the interaction between nature and human society, placing greater emphasis on the historical and statistical analysis of populations (Henniges 2017) while deriving its physical-geographic insights primarily from map reading (Mendöl 1999). This so-called "comparative geography" which had not yet adopted analytical methods, may best be described as a descriptive (encyclopedic) science (Fodor 2006).

Ritter was succeeded as the head of the geographical department in Berlin in 1883 by Ferdinand von Richthofen (1833–1905). That same year, he published a work asserting that geography draws more from the natural sciences than from history, and its central task is to study the Earth's surface and its associated phenomena (Fodor 2006). Richthofen thus defined geography strictly as the study of the Earth's surface, an approach that laid the foundations for the emergence of geomorphology (Mendöl 1999). Trained primarily as geologists, Richthofen and his followers initially excluded the human element from their research, which only later gained secondary importance as geomorphology began to separate from geology. In contrast to Ritter's "armchair scholars", Richthofen advocated for general geography based on field-collected data and analytical interpretation, distancing himself from purely descriptive approaches. His concept of geography remained dominant in European scholarship until the First World War, during which time the physical-geographic approach, particularly geomorphology, could fully crystallise.

The development of human geography, the branch of the discipline concerned with society, followed a much more complex path around the turn of the 19th and 20th centuries than did physical geography. Although Ritter had already outlined a possible research methodology for human geography, his ideas soon became outdated, particularly after Richthofen's physical geography gained prominence. Nonetheless, Ritter's legacy was carried forward by his students, who laid the theoretical basis for two early schools of human geography: one rooted in economic geography, and the other was emerging from Richthofen's physical geography. While the approach based on economics had some influence, it was the latter stream that proved more impactful in shaping geographical science before World War I.

Friedrich Ratzel (1844–1904) provided the theoretical foundation for the latter direction in his 1882 work "Anthropogeographie", where he defined the discipline's task as studying human phenomena as dependent on surface characteristics. In Ratzel's view, this made human geography a branch of physical geography; the field would not achieve full independence until after the First World War. Ratzel's other major work, "Politische Geographie", published in 1897, laid the groundwork for yet another new branch of the discipline (Mendöl 1999).

The theories of these three German geographers – Ritter, Richthofen, and Ratzel – demonstrate the 19th-century development of dualistic geography. Both physical and human geography were in the process of defining themselves independently and concerning each other. Over the 19th century, geographical research, whether concerning nature or human society, gradually became more analytical, moving away from its earlier encyclopedic nature (Fodor 2006).

Building on these theoretical and historical foundations, this study examines how the institutional and intellectual trajectories of geography unfolded within the multiethnic and complex administrative framework of the Austro-Hungarian Monarchy. The preceding overview has shown that the 19th century witnessed both the analytical differentiation and the institutional consolidation of geography across Europe, shaped significantly by German scientific influence.

Against this background, the present research asks how these broader disciplinary trends were reflected in the Habsburg context: to what extent did the imperial framework facilitate or constrain the institutionalisation of geography, and in what ways did the leading figures of Austrian, Hungarian, Czech, Croatian, and Polish geography engage with the dominant theoretical paradigms of their time – especially concerning the dualistic division between physical and human geography and the methodological shift from descriptive to more analytical approaches? The following chapters address these questions through a systematic examination of the institutional development of geography and a biographical analysis of the leading figures who shaped the discipline within the Dual Monarchy.

3 The Institutionalisation of Geography within the Habsburg Empire (1849–1918)

The institutionalisation process of geography within the Austro-Hungarian Monarchy is mostly related to the shifts in political power across time and space. Prior to the Austro-Hungarian Compromise of 1867, during the period of absolutist rule under the Habsburg dynasty, German Austrians occupied a privileged position within the Empire and were the first to engage in systematic geographical description and data collection (Lichtenberger 2001). While the Habsburg Empire did not participate in overseas colonisation, it expanded significantly in Central Europe through the expulsion of the Ottomans from Hungary. The Viennese court initiated the training of numerous experts to survey and plan the development of these newly annexed provinces. The Engineering Academy ("Kaiserliche Ingenieurakademie"), founded in Vienna [Wien] in 1717, and the imperial military survey ordered by Empress Maria Theresia played key roles in establishing Austrian cartography (Fasching 2017).

Alongside cartographic efforts, statistical surveys also commenced, resulting in several comprehensive works encompassing the entire Empire during the absolutist period. By the beginning of the Dualist Era, many natural sciences closely connected to geography had already become institutionalised (e.g., the Geological Institute, the Geomagnetic and Meteorological Institute, and the Meteorological Society). The knowledge amassed during the absolutist period provided the foundation for much of the later work by Austrian geographers. In contrast, Hungarian scholars also made notable contributions to geographical knowledge and data collection, such as János Hunfalvy (1820–1888) and Elek Fényes (1807–1876), yet their efforts were hindered by financial limitations and a disadvantaged position within the Empire. Still, the Hungarian Academy of Sciences was established earlier (in 1825) than its Austrian counterpart (in 1847) (Lichtenberger

2001). From an international comparative perspective, the institutionalisation of geography in the Habsburg Empire began relatively early, though within an overly centralised state structure that created significant inequalities between the empire's various regions. Between 1849 and 1867, the Hungarian part of the empire was under military administration, effectively blocking the development of higher education, while the Austrian part was governed in a strongly absolutist manner which gradually loosened toward 1867, bringing several modernising reforms to the educational system of "Cisleithania" (i. e. the Crownlands of Austria) (SURMAN 2019).

Surprisingly, the first official university geography department in the Empire was not established in the Empire's capital, but at the Jagiellonian University of Cracow [Kraków] in 1849, also the first such department in Polish-inhabited areas (TRACZ 2011). Called "general geography," this unit functioned within the Department of Natural History and was headed by Wincenty POL (1807–1872). However, the department operated for only a short period, until September 30, 1852, when the university's autonomy was suspended during the Neoabsolutist era. The department was not reinstated during the years of the Dual Monarchy. Thus, the first permanent geography department was founded at the University of Vienna in 1851 (FASSMANN 2004). At that time, comparable departments existed only in Berlin, Göttingen, and Paris. For nearly two decades, university-level instruction in geography was available exclusively in Vienna.

After the Austro-Hungarian Compromise of 1867, legislative responsibility for managing education and science was divided between the Austrian and Hungarian parliaments, giving strong political influence respectively to the German Austrians and the Hungarians. The establishment of geographical departments across the empire could be understood within the broader political and institutional framework of university and chair foundations and the appointment of professors. In both parts of the empire, the establishment of a university required an act of parliament and the emperor's signature, while the creation of a university chair or the appointment of a professor followed a multi-step process: a proposal by the university was submitted to the Ministry of Education and the Ministry of Finance, and finalised by an imperial decree (MAKKAI 1942; SURMAN 2019).

In Austria, the report of the provincial government was also part of the procedure – particularly decisive in the crownlands of Bohemia and Galicia, where ethnic and linguistic tensions over instruction between Czechs and Germans, and between Poles and Ukrainians, were acute (SURMAN 2019). After Galicia obtained de facto autonomy in 1869 in return for supporting the German Austrian faction in the Austrian parliament – effectively leading to the Polonisation of the crownland (KUZMANY 2016) – Polish political elites controlled higher education policy and were able to suppress Ukrainian academic initiatives. Similarly, although Croatia-Slavonia received de jure autonomy in 1868, including authority over education, its legislative process was still heavily influenced by the Hungarian government, since provincial bills required approval by the Hungarian parliament before obtaining the emperor's assent (ČEPULO 2010). Thus, paradoxically, Galicia's de facto autonomy proved more stable and granted Polish elites broader powers than the de jure autonomy enjoyed by the Croatians (HILBERT 2024).

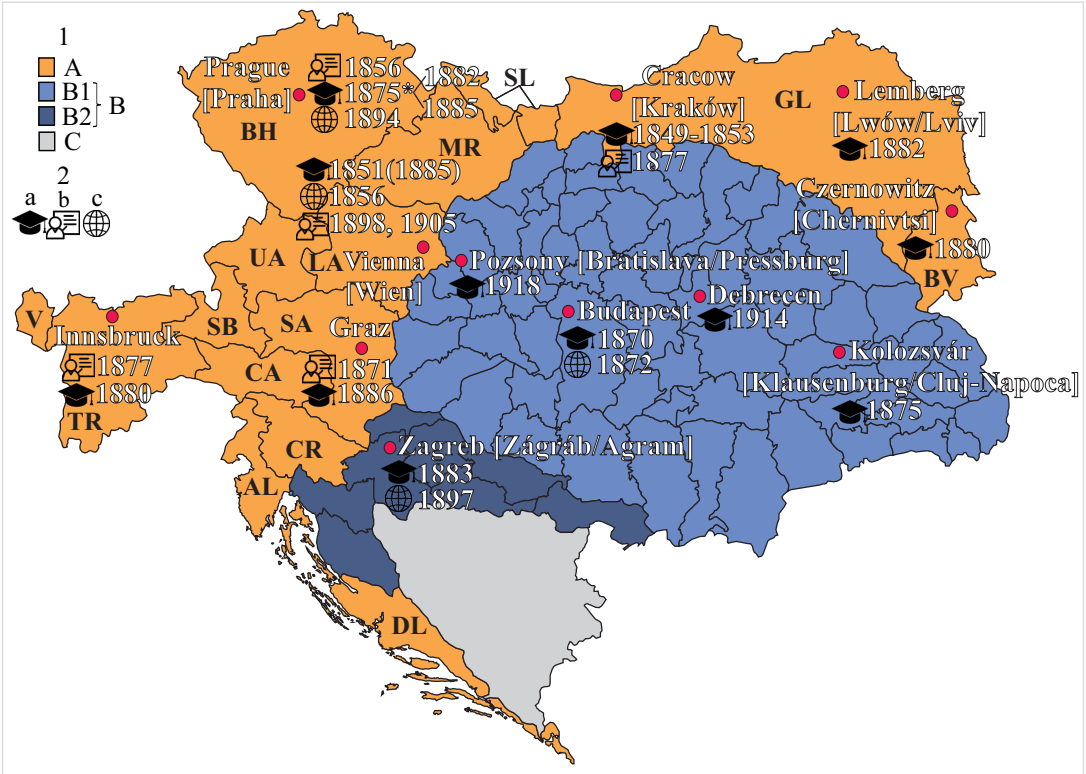
The legislative dominance of the German Austrians and Hungarians, combined with the autonomous status of Galicia and Croatia, was clearly reflected both in the establishment of universities after 1867, beyond the reinstatement of historical institutions, primarily located in the most populous urban centres of the empire and founded before the nineteenth century, and in the downgrading of others throughout the period. In Hungary (excluding Croatia-Slavonia), three universities were founded after 1867 – at Kolozsvár [Klausenburg/Cluj-Napoca], Debrecen, and Pozsony [Pressburg/Bratislava] – all located in cities that held important places in Hungarian culture and history, had predominantly Hungarian populations (with a significant German population in Pozsony), and were already notable centres of education. In Croatia-Slavonia, the establishment of the University of Zagreb involved several actors. The founding of the institution was initiated by a proposal from Bishop Josip Juraj Strossmayer in 1861, when Croatia-Slavonia was a de facto administrative part of Austria. This proposal was strengthened by a decree signed by Emperor Franz Joseph in 1869, and the Act of Foundation was passed in 1874 by the Croatian Parliament (with the approval of the Hungarian Parliament). Finally, the Emperor signed the act, officially establishing the university (UNIZG 2025).

In Austria, the establishment of new universities pursued different objectives, yet also reflected the broader aims of the (German) Austrian government. The University of Prague [Praha] was divided in 1882 into separate Czech and German institutions, addressing ethnic tensions in Bohemia and providing distinct academic spaces for Czech and German scholars. However, the decision not to reinstate the University of Olmütz [Olomouc] in Moravia after 1867, which had been closed in 1856 by decree of Emperor Franz Joseph, significantly limited the development opportunities of Czech science and education. The foundation of the University of Czernowitz, by contrast, served multiple purposes: it aimed to promote German academic influence in the eastern part of the empire and functioned as an instrument of foreign policy by attracting Romanian and Ukrainian students to German-language education, particularly in competition with the University of Iași in Romania (Surman 2019).

The political motives of both German Austrians and Hungarians were also clearly reflected in debates over the establishment of a university in the capital of Bosnia and Herzegovina, a territory governed by the empire's Joint Minister of Finance since 1878. By establishing a university in Sarajevo, the common government sought not only to pursue foreign-policy objectives by countering the cultural influence of the University of Belgrade in the region, but also domestic ones by balancing the dominance of the University of Zagreb among the South Slavs. Besides the opposition of Croatians and local residents, this policy was further complicated by protests from Slovenes, whose demands for a university dated back much earlier. In the end, the Austro-Hungarian administration abandoned the idea of establishing a university in Sarajevo (Kasumović 2020). Apart from the Poles, Czechs, and Croatians, no other smaller nationalities succeeded in advocating for the establishment of a national university, reflecting their limited political power to represent their own interests.

The significance of geography during this period is underscored by the fact that between 1849 and 1918, institutional instruction in the discipline was established at all universi-

ties of the Habsburg Empire (Figure 1). After 1867, the first geography department was founded in Pest-Buda in 1870, becoming the first in "Transleithania" (the Lands of the Hungarian Crown) and the second permanent department in the entire empire, after the



Legend: 1 – Parts of the Habsburg Empire and its administrative units; A – Cisleithania (Crownlands of Austria), B – Transleithania (Countries of the Hungarian Crown); B1 – Counties of Hungary, B2 – Counties of Croatia-Slavonia, C – Bosnia and Herzegovina;
2 – Institutions of geography; a – University geography department, b – Extraordinary or associate professor, c – Geographical society.

Abbrevations (Crownlands of Austria): AL – Austrian Littoral, BH – Bohemia, BV – Bukovina, CA – Carinthia, CR – Carniola, DL – Dalmatia, GL – Galicia, LA – Lower Austria, MR – Moravia, SA – Styria, SB – Salzburg, SL – Silesia, TR – Tirol, UA – Upper Austria, V – Vorarlberg

Note: * The geographical departments at the University of Prague were formally established following the university's division in 1882: at the German University in 1882 and at the Czech University in 1885.

Source: Own design based on LICHTENBERGER 2001; FASSMANN 2004; CUNI.a 2025; Hrvatsko Geografsko Društvo 2003; MFT 2025; CUNI.d 1989; ÖGG 2025; PMF 2014; PTE 2021; SEDLMEYER 1970; UNIDEB 2025; UNIVIE 2025.

Figure 1: Institutionalisation of geography within the Habsburg Empire between 1849 and 1918: Geographical Societies and Geographical University Departments

one in Vienna. Although geography had already been taught in the Hungarian capital (in German) since 1857 at the Polytechnic Institute by Austrian professor Adolf Schmidl (1802–1863) (Mattes 2020).

Thereafter, the number of geography departments in the Empire grew rapidly. In Cisleithania, following the division of the Vienna department in 1885 and the split of Charles-Ferdinand University in Prague into a Czech (Czech University in Prague) and a German (German University in Prague) institution in 1882, a total of eight geography departments operated during the Dualist Era, all founded before the end of the 19th century. As noted earlier, geography was not institutionalised at the Jagiellonian University in the form of a formal department; it was instead taught through an extraordinary professorship. A similar situation existed at the "Exportakademie" in Vienna, where geography was taught without a dedicated department, a pattern also found at several other universities (Prague, Innsbruck, Graz) prior to the formal establishment of departments.

In Transleithania, geography departments were fewer in number and established later. Nonetheless, the founding of the first Croatian geography department at the University of Zagreb [Zágráb/Agram] in 1883 was a significant milestone, marking the creation of the first geography department in Southeastern Europe (PMF 2014). Additional departments in Debrecen and Pozsony were founded during the final years of the Monarchy. A counterpart to Vienna's Exportakademie also existed in Budapest – the "Eastern Commercial Academy" (Keleti Kereskedelmi Akadémia, KKA) – where Professor Rezső Milleker taught a course titled "Economic Geography of Asia Minor and the Near East" in the 1913/14 academic year. However, Milleker soon assumed a chair at the University of Debrecen, and the course was discontinued. The KKA continued to offer geography-related courses, although these were classified under economics and commerce (Szögi and Zsidi 2007).

In terms of geographical societies, the Austro-Hungarian Monarchy was also a global leader. The "Imperial and Royal Geographical Society" (Kaiserlich-Königliche Geographische Gesellschaft), founded in 1856, was renamed the Austrian Geographical Society (Österreichische Geographische Gesellschaft) after 1959 (ÖGG 2025). The "Hungarian Geographical Society" was established in 1872, a decade and a half after the founding of its Austrian counterpart (MFT 2025). The Viennese institution was the eighth geographical society founded worldwide (Sitte and Sitte 2006), while the Budapest-based society was the sixteenth (Fodor 2006).

The creation of these Austrian and Hungarian societies enabled closer cooperation between the two national geographical communities: one notable example being the Austro-Hungarian North Pole Expedition of 1872–1874 (Papp-Váry 2006). By 1918, two additional societies had emerged within the Monarchy: the Czech Geographical Society (Česká společnost zeměvědná) in 1894 (EUGEO 2010), and the Croatian Geographical Society (Hrvatsko geografsko društvo) in 1897 (Hrvatsko Geografsko Društvo 2003). The Austrian, Hungarian, and Czech geographical societies each launched journals soon after their founding: "Mitteilungen der Österreichischen Geographischen Gesellschaft" (Annals of the Austrian Geographical Society), "Földrajzi Közlemények" (Geographical Review), and "Sborník České společnosti zeměvědné" (Proceedings of the Czech Geographical Society), which is today published under the title "Geografie".

4 Research Interests, Methods and Academic Contributions of University Geography Department Heads (1849–1918)

Undoubtedly, the most important centres for conducting research and shaping the general direction of geographical thought were the university departments. In some cases, a single influential academic was able to establish a distinct school of thought, thereby significantly shaping both geographical research and education. Accordingly, this section focuses exclusively on the activities and scholarly contributions of the heads of geography departments at universities within the Austro-Hungarian Empire. In institutions where no dedicated geography department existed, the study examines the work of extraordinary professors (Figure 2).

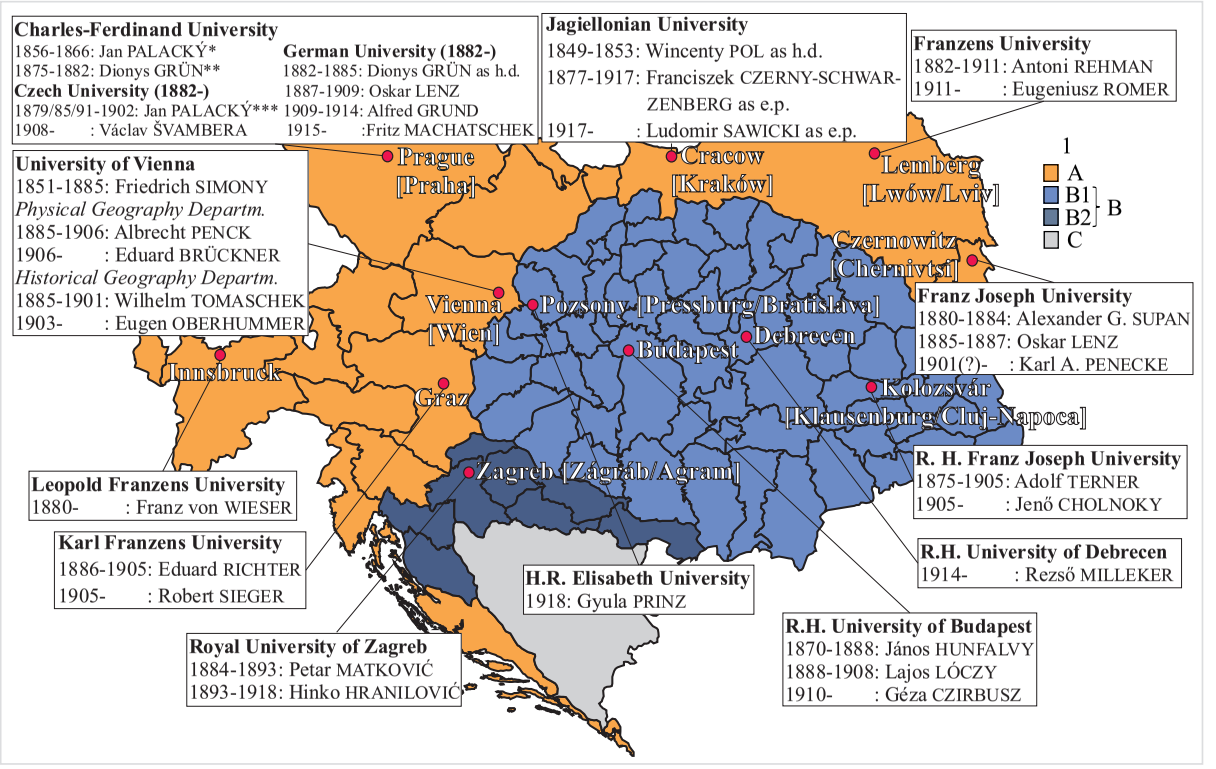
The organisational structure of this section is primarily based on aspects that enable effective comparison within the history of geography. The first subsection of this chapter introduces the "founding fathers" of national geographies within the Empire. In the subsequent subsections, (German) Austrian and Hungarian professors are grouped, while professors of other nationalities are placed in a separate section. This differentiation is justified by the fact that, in the cases of Austrian and Hungarian geography, a higher degree of institutionalisation – linked to greater access to political power – allowed for a more effective separation of physical and human geographical branches. In addition, institutions of Austrian and Hungarian geography are further divided between those located in the capitals (Vienna and Budapest) and those based in provincial universities.

It is important to note that this study limits its scope to developments up to 1918. Consequently, the careers of academics whose most significant contributions occurred after that year fall outside the purview of this research. As stated earlier, the main goal of this section is to provide a concise biographical analysis of selected academics. This serves a crucial purpose: to offer a comprehensive overview, within a single study, of the academic development of geography in the Habsburg Empire. Importantly, it seeks to move beyond the narrow constraints of national historiographies (Austrian, Hungarian, Czech, Polish, Ukrainian, Croatian, etc.), which tend to dominate the existing literature on the history of geography in the region.

In order to more deeply analyse the intellectual formation of geographical thought and methodology, the study explores the development of geography through three key lenses, largely reflecting broader international – particularly German – trends in the discipline:

1. The interconnectedness of academic networks both within and beyond the borders of the Austro-Hungarian Monarchy,
2. The evolution of geographical thought: the influence of Ritter, Richthofen, and Ratzel in the work of the selected academics;
3. The dualistic nature of geography: the parallel development of physical and human geography.

Based on these three key aspects, each biography focuses mostly on the geographer's university education, research focus and/or geographical areas of interest, teaching and research methods, and academic contributions to the further institutionalisation of geography.



Legend: 1 – Parts of the Habsburg Empire and its administrative units; A – Cisleithania (Crownlands of Austria), B – Transleithania (Countries of the Hungarian Crown); B1 – Counties of Hungary, B2 – Counties of Croatia-Slavonia, C – Bosnia and Herzegovina;

Abbreviations: e.p. = extraordinary professor; h.d. = head of department; R.H. = Royal Hungarian; H.R. = Hungarian Royal

Notes: * as associate professor; ** in 1875 as e.p., in 1876 as h.d.; *** between 1879 and 1885 as associate professor, between 1885 and 1891 as extraordinary professor, and after 1891 as head of department

Source: Own design

Figure 2: Heads of geographic departments and extraordinary professorships at the universities of the Habsburg Empire (1849–1918)

4.1 The First Heads of University Geography Departments: The Founders of National Geographies

As mentioned in the second section, the first university geography department in the Habsburg Empire was founded at the Jagiellonian University of Cracow, just two years before a similar institution was established at the University of Vienna. Although the Cracow department was short-lived, this study presents the biography of its first head professor as a starting point. Thereafter, the biographies in this section follow a chronological order based on the establishment dates of their respective university geography departments (Table 1 and Figure 3).[1)]



Sources: 1. Polish Scientific Publishers (PWN), online encyclopedia: Wincenty POL; 2. Horolezecká abeceda, official website: Friedirch SIMONY; 3. Hungarian Electronic Library (MEK), National Széchényi Library: János HUNFALVY; 4. Wikimedia Commons: Jan PALACKÝ (1885); 5. Serbian Academy of Sciences and Arts (SANU), official website: Petar MATKOVIĆ.

Figure 3: Portrait photographs of the first heads of university geography departments, as indicated in Table 1 (the numbers correspond to the numbers in column 2 of Table 1)

[1)] To ensure good print quality, the original portrait photos in Figures 3, 4, 5 and 6 have been digitally enhanced.

University Affiliation*	Name, Date and Place of Birth and Death	Higher Education	Years in Academic Position	Main Academic Focus /Subdiscipl./	Noteworthy Publication(s) before 1918 (transl. into English)
C	**Wincenty POL [1]** Born: 1807, Lublin Died: 1872, Cracow	University of Lemberg	1849–1853 as h.d.	Physical and human geography /Regional geography/	Mainly poems with geographical themes, such as "Songs of Our Land" (1843) and "Pictures of Life and Travel" (1846)
V	**Friedrich Simony [2]** Born: 1813, Hrochowteinitz [Hrochův Týnec] Died: 1896, Sankt Gallen	University of Vienna	1851–1885 as h.d.	Physical and human geography /Geomorphology/	"The Dachstein Region: A Geographical Portrait of the Austrian Northern Alps" (1889–95)
B	**János Hunfalvy [3]** Born: 1820, Nagyszalók [Veľký Slavkov/ Großschlagen-dorf] Died: 1888, Budapest	Universities of Berlin and Tübingen	1870–1888 as h.d.	Human geography /Ethnography/	"Geography of the Hungarian Empire, with Special Regard to Ethnographic Conditions" (1886)
P	**Jan Křtitel Kašpar Palacký [4]** Born: 1830, Prague Died: 1908, Královské Vinohrady	Universities of Prague, Dresden, and Paris	1856–1866 and 1879–1885 as a.p. 1885–1891 as e.p. 1891–1902 as h.d.	Physical geography /Regional geography and biogeography/	"Geography General Scientific Comparative I." (1857–60); "Phytogeographical Studies" (1866, 1883, 1884)
Z	**Petar Matković [5]** Born: 1830, Senj [Zengg] Died: 1898, Vienna	Universities of Vienna, Prague, Göttingen, and Berlin	1884–1893 as h.d.	Human geography /Historical geography, Cartography, Statistics/	"Croatia and Slavonia According to Their Physical and Social Relations" (1873); „Geographic-Statistical Scheme of the Austro-Hungarian Monarchy" (1874)

* Abbreviations: B – University of Budapest; C – Jagellonian University (Cracow); P – University of Prague; V – University of Vienna; Z – University of Zagreb; a.p. – associate professor; e.p. – extraordinary professor; h.d. – head of department

Note: Square-bracketed numbers in the second column of the table refer to the corresponding portrait photographs in Figure 3.

Source: Own elaboration.

Table 1: Key information on the first heads of university geography departments

Wincenty POL (1807–1872) was born in the city of Lublin (then part of the Habsburg Empire until 1809), studied at the University of Lemberg [Lwów/Lviv], and became the first university professor of geography in both the Habsburg Empire and the Polish national territory. In addition to his academic work, POL was a well-known poet and is regarded in contemporary Polish literary studies as the successor to Adam MICKIEWICZ in the tradition of national prophetic poetry (ZARECHNYUK 2023). By the time of his appointment as head of the geography department at the Jagiellonian University, POL had already amassed extensive empirical knowledge of the physical and human geography of Eastern Europe, the Carpathians, and the Habsburg Monarchy through field excursions. He also incorporated field excursions into his teaching at the university, a novel approach at the time. His methods were primarily inspired by Alexander von HUMBOLDT (ZARECHNYUK 2023), though elements of RITTER's Comparative Geography are also evident in his research and pedagogy (TRACZ 2011). He taught mainly regional geography, along with courses in physical and commercial geography. His excursions combined physical and human geographical insights in an interdisciplinary fashion. After the Jagiellonian University lost its autonomy, POL continued his geographical and archaeological work in Cracow and Lemberg, contributing significantly to the institutionalisation of geography in the crownland of Galicia (TRACZ 2011).

Friedrich SIMONY (1813–1896), a scholar born in Bohemia with Hungarian ancestry on his father's side, studied natural sciences at the University of Vienna and was a polymath of exceptional breadth. Initially trained as a pharmacist and an avid mountaineer in his leisure time, he became a professor of geography in 1851, at the age of 38, and the founding head of its first geography department (LEHR 1996). By today's standards, SIMONY would be considered a geographer, geologist, and alpinist, with expertise in geomorphology, glaciology, climatology, hydrology, limnology, and astronomy (ÖBL.d 2004). During his 34-year tenure as department head, Austrian geographical research became deeply integrated with the natural sciences. Nevertheless, he also made significant contributions to human geography, publishing numerous works in cultural geography, linguistics, and history, often exploring the relationship between natural conditions and cultural development (PENCK 1898).

SIMONY's lifelong research centred on the Dachstein Mountains, where he conducted extensive fieldwork from 1840 to 1890, producing maps, sketches, watercolours, and photographs. He played a crucial role in institutionalising Austrian geographical science, initiating not only the establishment of the geography department in Vienna but also the founding of the Imperial and Royal Geographical Society ("Kaiserlich–Königliche Geographische Gesellschaft") (IfGR/Uni/UB 2013). His methods closely aligned with those of RITTER; he described and compared his observations in a self-taught manner and structured his university lectures around narratives of his research journeys, effectively "narrating" his maps (PENCK 1898). Although often referred to as "the founding father of Austrian geography," Simony did not establish a lasting school of thought; his students pursued diverse academic careers (LICHTENBERGER 2001).

János HUNFALVY (1820–1888) who was born in the Northern Hungarian village of Nagyszalók (Veľký Slavkov/Großschlagendorf) to a Saxon family (originally Johann

Hunsdorfer), is regarded as the first true representative of Hungarian geographical science. Like Simony, he did not begin his academic career in geography but studied philosophy, law, theology, and history. As a young man, Hunfalvy attended several renowned Western European universities, including the University of Berlin, where he studied under Carl Ritter (Hevesi 2001). His geographical career began in earnest after the Hungarian War of Independence (1848–1849). His first major geographical work, „A Magyar Birodalom természeti viszonyainak leírása" (Description of the Natural Conditions of the Hungarian Empire), published in 1863, integrated the observations of Austrian scholars on Hungary (Fodor 2006). In 1870, he was appointed head of Hungary's first university geography department, and in 1872, he became the inaugural president of the Hungarian Geographical Society.

Hunfalvy's influence on Hungarian geography during the Dualist era was profound. His approach was largely descriptive, rooted in historical analysis, and less oriented toward the natural sciences (Fodor 2006). His major works – such as „Egyetemes Földrajz" (Universal Geography) and „A magyar birodalom földrajza, különös tekintettel a néprajzi viszonyokra" (Geography of the Hungarian Empire, with Special Regard to Ethnographic Conditions) – brought him international recognition. He frequently traveled abroad and maintained ties with foreign geographical institutions. Strongly influenced by Ritter, Hunfalvy championed the human branch of geography. His students, adherents of the "Hunfalvy school," played influential roles in shaping Hungarian geography throughout the Dualist period (Fodor 2006).

Jan Křtitel Kašpar Palacký (1830–1908) was born in Prague, the only son of the renowned Czech historian and politician František Palacký (1798–1876). He studied law at Charles-Ferdinand University in Prague, where in 1856 he became the first associate professor of geography (Jeleček et al. 2006). His father played an instrumental role in establishing Czech historiography at the university, a development that also paved the way for the institutionalisation of geography (Semotanová and Chromý 2012). Palacký taught at Charles-Ferdinand University until 1866, after which he entered politics, first in the Moravian Diet and later, in 1870, in the Austrian Reichsrat (CUNI.b 2006). During the interim, Dionys von Grün (1819–1896) was invited to lead geographical teaching. Later, Grün became the head of geography in the German section of the university in 1882.

Palacký returned to academia in 1878, founding the Geographical Cabinet, which was later renamed the Geography Institute. He was awarded a full professorship in 1891 and lectured mainly on regional geography and biogeography (Jeleček et al. 2006). His body of work included encyclopedic studies rich in statistics, such as „Zeměpis všeobecný vědecký srovnávací I." (Geography General Scientific Comparative I.) (1857–1860), „Pflanzengeographische Studien" (Phytogeographical Studies) (1866, 1883, 1884), and „Zeměpisné rozšíření želv" (Geographical Distribution of Turtles) (1897), which reflected the influence of Carl Ritter (CUNI.b 2006). Despite setbacks in his academic promotion – partly due to political ambitions and tensions with younger scholars like Tomáš Garrigue Masaryk (1850–1937) – Palacký left a lasting academic legacy.

Petar Matković (1830–1898) became the first head of the geography department at the Royal University of Zagreb in 1883, already possessing an impressive body of work. Born in the Adriatic port of Senj [Zengg], he studied in Vienna, Prague, Göttingen, and Berlin, where he attended the lectures of Carl Ritter (PMF 2014). Matković was instrumental in founding both the Croatian Geographical Society and the Croatian Statistical Office (Crljenko 2013).

His scholarly contributions were especially strong in historical geography, historical cartography, topography, and statistics. His writings were characterised by an encyclopedic, statistical-topographic, and descriptive style, closer to that of Alexander von Humboldt than Ritter (Crljenko 2013). Later geographers sometimes criticised him for a perceived overreliance on historiography and statistics. Matković also published historical travelogues and biographies. He had a significant influence on his students, most notably Arturo Gavazzi (1861–1944), who went on to establish the first Slovenian geography department at the University of Ljubljana in 1919 (PMF 2014).

4.2 Differentiation of Research Methods in Physical Geography and the Emergence of Human Geography: Heads of Geography Departments at the Universities of Vienna and Budapest

Due to the separation of the geography department at the University of Vienna in 1885, this subsection will chronologically pair two biographies of professors from the University of Budapest with two sets of biographies from Vienna, representing both the physical and historical geography departments (Table 2).

Albrecht Penck (1858–1945), a native of Saxony, played a pivotal role in shaping both Austrian and German geographical sciences. After commencing geological studies in Leipzig in 1875, he earned his doctorate in Munich [München] in 1882. Shortly thereafter, he was appointed professor in Vienna (Spektrum 2025). A leading scholar in geomorphology, geology, and meteorology, Penck rose swiftly in prominence and, at just 27 years old, was invited to head the newly established Chair of Physical Geography at the University of Vienna in 1885. His research in morphological geography, combined with the internationally renowned geological work of Eduard Suess and the meteorological research of Julius von Hann, helped establish Vienna as a major centre of geoscientific scholarship in Europe at the turn of the century.

During his tenure (1885–1905), Penck significantly advanced Austrian physical geography. His most notable contribution – shaped by Richthofen's theories – was the emancipation of geomorphology from geology, effectively founding it as an autonomous discipline (Lichtenberger 2001). He introduced systematic academic training, including cartographic exercises and regular field excursions, emphasising the importance of "learning to see". Penck's approach combined observation, critical thinking, and hypothesis formation, fostering "Denkstil" (thinking style) among his students (Henniges 2014). His legacy extended across historical geology, glaciology, marine studies, and cartography. In 1906, after two decades in Vienna, he succeeded Richthofen as Chair of Geography at

the University of Berlin, where he reached the peak of his career, also serving as rector and as president of the German Geographical Society (Austria-Forum 2017).

Wilhelm Tomaschek (1841–1901), a Czech-Austrian geographer born in Moravia, studied at the University of Vienna and began his academic career at the University of Graz. In 1885, following the division of the unified geography chair in Vienna, he was appointed to lead the newly established Chair of Historical Geography. Tomaschek's research focused mainly on classical sources and historical geography, underpinned by a strong background in linguistic studies. Methodologically, he remained aligned with the earlier generation of descriptive geographers. Considerably less is known about Tomaschek's academic impact compared to that of Penck, a reflection, perhaps, of the fact that while Penck succeeded in institutionalising geomorphology as a distinct discipline, neither Tomaschek nor his successor achieved a comparable separation of human geography from its historical roots (Lichtenberger 2001).

Lajos Lóczy (1849–1920), similarly to Penck, was one of the leading geographers of the Austro-Hungarian Monarchy and a central figure in the development of Hungarian physical geography. He studied in Zurich [Zürich] under some of Switzerland's foremost geologists and participated in several research expeditions in the Alps. Between 1877 and 1880, he joined a scientific expedition to East Asia (Papp 1922). In 1889, he was appointed head of the Department of Geography at the University of Budapest and became president of the Hungarian Geographical Society the following year. Influenced by Richthofen's scientific philosophy, Lóczy aimed to modernise Hungarian physical geography and shift his own research emphasis from geology to geography (Fodor 2006). Nevertheless, he was unable to strike a balance between subfields: physical geography became dominant, while human geography remained marginal (Cholnoky 1930). In addition to modernising physical geography in the tradition of Richthofen, Lóczy redirected geographical inquiry toward national concerns, a focus previously neglected by Hunfalvy and his descriptive school. His work gained international acclaim, particularly his research on Lake Balaton, for which he established a dedicated research committee. While his emphasis on physical geography sidelined human geography in Hungary, Lóczy raised the scientific standard of Hungarian geography to Western European levels and fostered strong international collaborations. His global reputation was further cemented when, in 1906, he was offered the Chair of Geography in Berlin, vacant after Richthofen's death, but declined the post (Székely 1999). The position was subsequently given to Penck. However, the disciplinary innovations initiated by Lóczy did not continue after his departure from the Budapest department.

Eduard Brückner (1862–1927), born in Jena to Baltic German parents, studied geography, geology, paleontology, meteorology, physics, and history at the universities of Dorpat [Tartu], Dresden, and Munich. In Munich, he became a student of Penck and later collaborated with him on glaciological projects. After completing his studies, Brückner was appointed professor at the University of Bern, eventually becoming rector (Stehr and Storch, 2008). Following a brief tenure in Halle, he was invited in 1906 to assume the

Chair of Physical Geography at the University of Vienna, where he served until his death in 1927. BRÜCKNER made pioneering contributions to glaciology, climatology, marine and lake studies, Ice Age research, and geomorphology (PENCK 1928). He was among the first to examine the societal impacts of climate change. In Vienna, he focused particularly on Alpine glacier research and its connections to climate fluctuations and glacial cycles. His international work earned him the presidency of the International Glacier Commission. Before World War I, he had begun investigating Antarctic glaciation. Like PENCK, BRÜCKNER also engaged in Adriatic research and made significant strides in cartography. He remained head of Vienna's physical geography department until his death.

Eugen OBERHUMMER (1859–1944), born in Munich, studied geography and geology at the University of Munich, earning his doctorate in history and geography in 1882. He later became a lecturer at the same institution. Following TOMASCHEK's death in 1901, the Chair of Historical Geography in Vienna fell vacant. OBERHUMMER was appointed in 1903 and held the post until his retirement in 1931. He was repeatedly elected president of the Austrian Geographical Society and, like PENCK and BRÜCKNER, was deeply involved in international geographical organisations, undertaking research expeditions across several countries (ZIMMERMANN and DÖRFLINGER 1983). OBERHUMMER was the last chairholder in Vienna to approach human geography primarily through a historical lens (LICHTENBERGER 2001). Although he did not entirely distinguish the geographical approach from the historiographical one, he made early efforts to define historical geography in his 1891 publication (ZIMMERMANN and DÖRFLINGER 1983). He also initiated academic research into the history of cartography at the University of Vienna (KRETSCHMER 1999). Beyond historical studies, OBERHUMMER published on religious, urban, and political geography (WGW/1 2022). Unlike TOMASCHEK, OBERHUMMER gradually moved away from a strictly historical approach, a transition evident in the evolution of his publications (ZIMMERMANN and DÖRFLINGER 1983).

Géza CZIRBUSZ (1853–1920) completed his university studies in Budapest, where he studied geography, history, and German philology. Before his professorial appointment, he spent 34 years teaching in secondary schools in twelve Hungarian towns, conducting fieldwork and documenting observations across Hungary (FODOR 2006). A representative of the human-geographical tradition and a student of HUNFALVY, CZIRBUSZ had limited training in physical geography. After LÓCZY's resignation in 1908, a two-year leadership vacuum ensued due to personal conflicts between CZIRBUSZ and Jenő CHOLNOKY, LÓCZY's most prominent student. In 1910, CZIRBUSZ was appointed chair, signaling a major disciplinary shift: human geography became the primary focus of research at the University of Budapest, replacing LÓCZY's earlier emphasis on physical geography. However, Hungarian geography's progress was hampered by ongoing rivalries between advocates of the two traditions, often at the expense of scholarly productivity. CZIRBUSZ was influenced by Friedrich RATZEL's Anthropogeographie, though he opposed several of RATZEL's key theories (HAJDÚ 2002). Simultaneously, the natural-science-oriented legacy of LÓCZY remained influential within the department. CZIRBUSZ's theoretical outlook was shaped by a mix of RITTERian ideas, transmitted via HUNFALVY, and the more modern but contested concepts of

Ratzel. Ultimately, he failed to synthesise these into a coherent human geography school. His primary contribution lay not in methodological innovation, but in the institutional establishment of human geography within Hungarian academic discourse (Fodor 2006).

University Affiliation*	Name, Date and Place of Birth and Death	Higher Education	Years in Academic Position	Main Academic Focus /Subdiscipl./	Noteworthy Publication before 1918 (transl. into English)
V	**Albrecht Penck [1]** Born: 1858, Reudnitz Died: 1945, Prague	Universities of Leipzig and Munich	1885–1896 as h.d.	Physical geography /Geomorphology/	„The Alps in the Ice Age" (1889–1891), co-authored by Eduard Brückner
	Wilhelm Tomaschek [2] Born: 1841, Olomouc [Olmütz] Died: 1901, Vienna	University of Vienna	1885–1901 as h.d.	Human geography /Historical geography/	"The Ancient Thracians: An Ethnological Study" (1893–1894)
	Eduard Brückner [3] Born: 1862, Jena Died: 1927, Vienna	Universities of Tartu, Munich and Dresden	1906–1927 as h.d.	Physical geography /Geomorphology, Climatology/	„The Alps in the Ice Age" (1889–1891), co-authored by Albrecht Penck
	Eugen Oberhummer [4] Born: 1859, Munich Died: 1944, Vienna	University of Munich	1903–1930 as h.d.	Human geography /Historical geography, Political geography/	"The Development of Alpine Maps in the 19th Century" (1902–1905)
B	**Lajos Lóczy [5]** Born: 1849, Pozsony Died: 1920, Balatonfüred	University of Zurich	1888–1908 as h.d.	Physical geography /Geomorphology/	"Results of the Scientific Study of Lake Balaton" (1898–1918)
	Géza Czirbusz [6] Born: 1853, Kassa [Kaschau, Košice] Died: 1920, Budapest	University of Budapest	1910–1920 as h.d.	Human geography /Ethnography/	„Anthropogeography" (1915–1919)

* Abbreviations: B – University of Budapest; V – University of Vienna; h.d. – head of department

Note: Square-bracketed numbers in the second column of the table refer to the corresponding portrait photographs in Figure 4.

Source: Own elaboration.

Table 2: Key information on the heads of geography departments at the Universities of Vienna and Budapest



Source: 1. Wikimedia Commons: Albrecht PENCK; 2. Wikimedia Commons: Wilhelm TOMASCHEK; 3. GeschichteWiki Wien (Vienna City Archives): Eduard BRÜCKNER; 4. University of Vienna, Department of History, image collection: Eugen OBERHUMMER; 5. Wikimedia Commons: Lajos LÓCZY; 6. Hungarian Scientific Works Database (MTDA), online image archive: Géza CZIRBUSZ

Figure 4: Portrait photographs of the heads of geography departments at the Universities of Vienna and Budapest, as indicated in Table 2 (the numbers correspond to the numbers in column 2 of Table 2).

4.3 The Subsequent Heads of University Departments in Czech, Croatian, and Polish(-Ukrainian) Geography after their Institutional Foundations

The institutionalisation of Polish geography within the de facto autonomous territory of Galicia was able to develop relatively freely, particularly at the Jagiellonian University of Cracow and the Franzens University of Lemberg. Although the legacy of Wincenty POL significantly influenced the discipline at Jagiellonian University, there was no suitably qualified geographer available to reactivate the geography department after his tenure.

University Affiliation*	Name, Date and Place of Birth and Death	Higher Education	Years in Academic Position	Main Academic Focus /Subdiscipl./	Noteworthy Publication(s) before 1918 (transl. into English)
C	**Franciszek Czerny-Schwarzenberg [1]** Born: 1877, Cracow Died: 1917, Cracow	Universities of Vienna and Leipzig	1877–1917 as e.p.	Physical and human geography/Geomorphology, Ethnography/	"The Variability of Climate and Its Causes" (1881)
	Ludomir Sawicki [2] Born: 1884, Vienna Died: 1928, Cracow	Universities of Lemberg, Vienna, Berlin and Lausanne	1917–1928 as e.p.	Physical and human geography/Geomorphology, Karst studies, Ethnography/	"From the Physiography of the Western Carpathians" (1907)
L	**Antoni Rehman [3]** Born: 1840, Cracow Died: 1917, Lemberg	Universities of Cracow, Lemberg, Vienna, and Bonn	1882–1911 as h.d.	Physical and human geography/ Regional geography/	„The Tatras from a physical and geographical perspective" (1895)
	Eugeniusz Romer [4] Born: 1871, Lemberg Died: 1954, Cracow	Universities of Cracow, Lemberg, Vienna, and Berlin	1911–1931 as h.d.	Physical geography and Cartography /Geomorphology/	"Geographical and Statistical Atlas of Poland" (1916)
Z	**Hinko Hranilović [5]** Born: 1860, Zagreb Died: 1922, Zagreb	Universities of Vienna, Berlin, Graz, and Oxford	1893–1918 as h.d.	Physical and human geography/Regional geography, Geomorphology, Ethnography/	„Geographical and Ethnographic Description of the Kingdoms of Croatia, Slavonia and Dalmatia" (1905)
CP	**Václav Švambera [6]** Born: 1866, Peruc [Perutz] Died: 1939, Prague	Universities of Prague and Berlin	1908–1936 as h.d.	Physical geography / Hydrology/	„Congo" (1901–1905) "The Lakes of the Šumava Mountains" (1913–1914)

* Abbreviations: C – Jagellonian University (Cracow); CP – Czech University in Prague; L – University of Lemberg; Z – University of Zagreb; e.p. – extraordinary professor; h.d. – head of department

Note: Square-bracketed numbers in the second column of the table refer to the corresponding portrait photographs in Figure 5.

Source: Own elaboration.

Table 3: Key information on the subsequent heads of university departments in Czech, Croatian, and Polish(–Ukrainian) geography after their institutional foundations



Source: 1. KRAWCZYK A. (1999), p. 333: Franciszek CZERNY-SCHWARZENBERG; 2. Polish Scientific Publishers (PWN), online encyclopedia: Ludomir SAWICKI; 3. Wikimedia Commons: Antoni REHMAN; 4. Wikimedia Commons: Eugeniusz ROMER; 5. Uskok–Sošice official website: Hinko HRANILOVIĆ; 6. Wikimedia Commons: Václav Švambera.

Figure 5: Portrait photographs of then subsequent heads of university departments in Czech, Croatian, and Polish(–Ukrainian) geography after their institutional foundations, as indicated in Table 3.

In 1874, the Polish "National School Council" requested the reinstatement of the geography department to ensure proper training for teachers. To that end, the council designated **Franciszek CZERNY-SCHWARZENBERG** (1847–1917) as the department's future head, contingent upon his earning a scientific degree in geography through studies at the universities of Vienna and Leipzig (KRAWCZYK 1999; TRACZ 2011). In 1877, CZERNY-SCHWARZENBERG was appointed associate professor of geography at the Jagiellonian University. The department was not reactivated; instead, an extraordinary professorship was established. Although CZERNY-SCHWARZENBERG did not continue most of Wincenty POL's educational initiatives, he organised field excursions for his students. His research interests were broad, ranging from physical geography and ethnography to the history and regional as-

pects of geography (Krawczyk 1999; Tracz 2011). During his professorship, Cracow became a significant centre of Polish geographical education, and he also supported the foundation of the Polish Geographical Society, which was established shortly after his death, in 1918, in Warsaw (Krawczyk 1999).

Czerny-Schwarzenberg was succeeded by **Ludomir Sawicki** (1884–1928), who had studied in Vienna, Berlin, Lemberg, and Lausanne. In Berlin, he took lectures under Ferdinand von Richthofen. First, his research focused on geomorphology, primarily karst studies. Later, he achieved noteworthy results in anthropogeography, even during Czerny-Schwarzenberg's tenure; his role as head of the geographical department at the Jagiellonian University came to full prominence only after the collapse of the Habsburg Monarchy (ÖBL.b 1990).

Geography education also had a longstanding tradition at the University of Lemberg, founded in 1661. However, a formal institutional foundation for geography was only established in 1882, when Emperor Franz Joseph authorised the creation of a geography department (Bilanyuk and Ivanov 2023). Although a qualified Ukrainian geographer, Anatol' Vakhnianyn (Анатоль Вахнянин), 1841–1908, was available to assume the professorship, the Galician government preferred to appoint a Polish scholar instead (Surman 2019). **Antoni Rehman** (also known as Anton Rehmann, 1840–1917) became the department's first head. Born in Cracow, Rehman initially studied botany and philosophy there, later continuing with geography, geology, and astronomy in Bonn under Richthofen and in Vienna under Simony (Bilanyuk and Ivanov 2023). His academic career culminated at the University of Lemberg, where he was elected dean and later rector. Rehman established a scholarly tradition through his students, including Hryhorii Velychko (1863–1932) and Stephan Rudnytzky (1877–1937), both of whom played influential roles in the development of Ukrainian geography (Bilanyuk and Ivanov 2023). Like many of his contemporaries, Rehman had wide-ranging research interests encompassing both physical and human geography.

In 1911, Rehman was succeeded as head of the department by one of his students, **Eugeniusz Romer** (1871–1954). Romer studied geography at the universities of Lemberg and Cracow and later received a scholarship to study in Vienna, where he attended lectures on morphology and hydrography. In Berlin, he further specialised in aerology, meteorology, climatology, and geomorphology. He became the founder of modern Polish cartography. During the First World War, Romer compiled the Geographical-Statistical Atlas of Poland, a key resource used to support Poland's territorial claims at the Paris Peace Conference in 1919 (Bajer 2012). Similar to Sawicki, Romer's career reached its peak only after the period of the Dual Monarchy, evidently because of the short time remaining before 1918.

After Petar Matković retired from the geography department at the University of Zagreb in 1893, his student **Hinko Hranilović von Cvetašin** (1860–1922) took over the leadership. Born in Zagreb, Hranilović studied in Vienna, Graz, Berlin, and Oxford. Before he was elected head of the university department, he taught at secondary schools in Zagreb, Fiume [Rijeka] and Zemun [Zimony/Semlin] (ÖBL.a 1959). His research focused on geographical theory and regional geography, but he also published on geomorphological

topics (MAGAŠ 2015). Alongside botanist Antun HEINZ (1861–1919), he co-founded the Croatian Geographical Society (MAGAŠ 2015). One of his most significant works was the "Geographical and Ethnographic Description of the Kingdoms of Croatia, Slavonia and Dalmatia" (1905) (HEVESI et al. 2024).

The development of Czech geography was long shaped by the work of Jan Kašpar PALACKÝ, whose influence continued until his death in 1908. One of his students, **Václav ŠVAMBERA** (1866–1939), eventually assumed leadership of the geography department at the Czech section of the Charles-Ferdinand University. Although heavily influenced by PALACKÝ, ŠVAMBERA also studied in Berlin, where he attended RICHTHOFEN's lectures and was intellectually shaped by RATZEL's works (HŮRSKÝ 1989). He served as PALACKÝ's assistant and collaborated with him on multiple research projects during his professorship (JELEČEK et al. 2006). ŠVAMBERA's principal field of research was hydrology. His 1905 monograph "Kongo" earned him international recognition, while his studies of the Šumava lakes also gained distinction (CUNI.c 2011). After taking over the department, he focused increasingly on institutional management at the expense of scientific work. Nevertheless, his academic career reached its peak only after the fall of the Austro-Hungarian Monarchy, during the interwar period (JELEČEK et al. 2006).

4.4 Heads of University Departments of (German) Austrian and Hungarian Geography outside of Vienna and Budapest

Geography education in the German-speaking regions of the Austrian countryside first began at the **University of Graz** in 1871 with the appointment of **Eduard Robert ROESLER** (1836–1874) as professor. ROESLER, a historian-geographer from Moravia, studied at the University of Vienna and had previously taught Austrian history at the University of Lemberg (FASSMANN 2011). Given his academic background, he approached geographical research through a historical lens; his lectures typically combined historical and geographical information in varying proportions (MORAWETZ and PASCHINGER 1987).

After ROESLER's death, the geography professorship remained vacant until 1878. In the interim, geography lectures were delivered by the historian Adam WOLF (1822–1883) and the historian-geographer Wilhelm SCHMIDT (1843–1924) (MORAWETZ and PASCHINGER 1987). In 1878, **Wilhelm TOMASCHEK** succeeded ROESLER. Like his predecessor, he was born in Moravia and studied at the University of Vienna. TOMASCHEK established a "geographical cabinet" (FASSMANN 2004) and offered courses covering both physical and human geography. He remained at Graz for only a short period before departing for the University of Vienna in 1885.

After that, **Eduard RICHTER** (1847–1905) was appointed head of the newly formed geography department in 1886 (Table 4). Born in Lower Austria, Richter studied history and geography at the University of Vienna (MORAWETZ and PASCHINGER 1987). Unlike his predecessors, RICHTER received formal training in geography and was notably influenced by Friedrich SIMONY. He specialised in physical geography, especially glaciology and geomorphology, and reoriented the department's focus accordingly (FASSMANN 2004), while

also making significant contributions to historical and regional geography (Morawetz and Paschinger 1987).

The final head of the department during the Dualist period was **Robert Sieger** (1864–1926), who was born and educated in Vienna. A student of Friedrich Simony, he also developed a close academic relationship with Simony's successor, Albrecht Penck. Additionally, he studied in Berlin under Ferdinand von Richthofen. Sieger focused the department's research on human geography and contributed notably to the „Historischer Atlas der Alpenländer" (Historical Atlas of the Alpine Countries) (Morawetz and Paschinger 1987).

At the **University of Innsbruck, Franz von Wieser** (1848–1923) was the first to teach geography, beginning in 1877. He became head of the newly established geography department in 1880 and held the position until 1923. Wieser, born in Kufstein, studied history at the University of Innsbruck. As department head, he focused on the history of cartography – especially of the Age of Discovery – and on the history of geographical exploration (Fassmann 2004). He collaborated closely with Eugen Oberhummer at the University of Vienna, co-editing several atlases that reproduced medieval maps (Oberhummer 1925). Wieser was also active in prehistoric research in Tyrol and engaged in monument preservation, participating in the restoration of several castles (Kyrle 1925; Crettaz-Stürzel 2011).

At **the German section of the Charles-Ferdinand University in Prague, Wilhelm Dionys von Grün** (1819–1896) – the first extraordinary professor of the Department of Geography before the split of the university – continued to serve as the inaugural head after 1882. Born in Přerov [Prerau] in Moravia, Grün pursued his studies at the universities of Prague and Berlin, where he attended geography lectures by Carl Ritter (Hantzsch 1904). Between 1872 and 1875, Grün served as geography tutor to the young Crown Prince Rudolf – a role that earned him the title "Ritter" (Knight) from Emperor Franz Joseph (Hantzsch 1904). At the University of Prague, Grün's lectures encompassed both physical and human geography, ranging from mathematical geography and hydrology to political and regional geography (Sedlmeyer 1970).

Following Grün's retirement in 1887, **Heinrich Oskar Lenz** (1848–1925) succeeded him as head of the department. Born in Leipzig, Lenz studied mineralogy and geology at the University of Leipzig (Bittmann 2012). In 1872, he joined the Imperial Geological Institute (Kaiserlich-Königliche Geologische Reichsanstalt), where he was responsible for geological mapping of the eastern and southern regions of the Austro-Hungarian Empire (NFP 1925). From 1874 onward, Lenz was a research traveler, undertaking three major expeditions to different parts of Africa (Gabon, Sahara, and Congo) (Vávra 1970). Over time, his research interests shifted from geology to human geography, particularly in relation to the colonial regions he explored, establishing his reputation as one of Austria-Hungary's leading "colonial experts" (Dedryvère et al. 2017). At the University of Prague, he first founded the Geographical Institute, later served as dean (1892) and rector (1902) (WGW/2 2024). His principal lectures were General Geography and Physical Geography (Sedlmeyer 1965). Lenz also published numerous commentaries on colonial and political issues in newspapers (Dedryvère et al. 2017).

In 1910, after LENZ's retirement, **Alfred GRUND** (1875–1914) succeeded him as head of the department. Born in Smíchov [Smichow], GRUND studied geography, history, geology, and meteorology at the University of Vienna, where he obtained his doctorate under the supervision of Albrecht PENCK (LEHMANN 1966). GRUND's primary research interests lay in karst studies and hydrology, but he also contributed to historical geography, notably through his „Historischer Atlas der österreichischen Alpenländer" (Historical Atlas of the Austrian Alpine Countries, 1910) (ÖBL.c 1957). After 1910, he participated actively in the Austrian Adriatic Commission (Permanente österreichische Adria-Kommission), including several joint Austrian-Italian oceanographic expeditions investigating the hydrographic, biological, and meteorological characteristics of the Adriatic Sea (NFP 1914). Following Albrecht PENCK's suggestion, GRUND also conducted hydrological and geomorphological studies in the Dinaric Alps, which exerted a lasting influence on karst research (LEHMANN 1966). During the First World War, GRUND served in the Austro-Hungarian Army and was killed on the Serbian front at the age of 39.

In 1915, **Fritz MACHATSCHEK** (1876–1957) became the final head of the department before the dissolution of the Habsburg Empire. Born in Vyškov [Wischau], Moravia, MACHATSCHEK studied geography and geology at the University of Vienna, where he, like his predecessor, also completed his doctorate under Albrecht PENCK (LINDGREN 1987). He subsequently studied under Eduard SUESS and Albert HEIM in Switzerland and Ferdinand von RICHTHOFEN in Berlin (LINDGREN 1987). Although his tenure at the University of Prague was brief before the end of the war, MACHATSCHEK had already established his academic reputation through works such as „Das westliche Tienschan. Ergebnisse einer geographischen Studienreise" (The Western Tien Shan: Results of a Geographical Study Tour, 1912), and „Gletscherkunde" (Glaciology, 1917) (POSCH 2024). The principal body of his scientific work was published during the interwar period, earning him wide recognition and, after his death, the naming of a mountain in Antarctica by a British committee in honor of his contributions to glaciology (POSCH 2024).

The **Franz Joseph University in Czernowitz** was a unique institution within the multiethnic crownland of Bukovina. Although German was the official language of instruction, the university held significance for all ethnic groups: *"German, as the medium of instruction, was hailed as an oasis of civilization and a German outpost in Slavic 'Half-Asia,' a Ruthenian refuge from the Polonization of the University of L'viv, and the only university for the Romanian minority in Bukovina"* (SURMAN 2019, p. 106).

The geography department was founded in 1880, with **Alexander Georg SUPAN** (1847–1920) appointed as its first head. Born in Tyrol to Slovenian parents, SUPAN studied at the universities of Graz, Vienna, Halle, and Leipzig (BILOUS 2021). In 1877, while teaching in Laibach [Ljubljana], he relocated to Czernowitz [Chernivtsi/Cernăuți] and obtained his habilitation in geography. Between 1877 and 1884, his work focused mainly on physical geography, particularly climatology, and he also contributed to cartography (CIGALE and OGRIN 2016). One of his most notable publications was "Grundzüge der physischen Erdkunde" (Fundamentals of Physical Geography), produced during his professorship (BILOUS 2021). In 1884, SUPAN left to become editor of "Petermanns Mitteilungen" in Gotha.

At the time, **Oskar Lenz** was assigned to Galicia by the Imperial Geological Institute, where he also assumed the editorial position of a geographical journal. This period marked a decisive turning point in his career, as he gradually shifted his focus from geological to geographical research. To consolidate this transition, he accepted the chair of geography at the University of Czernowitz in 1885. However, soon thereafter, Lenz received an invitation from the Geographical Society in Vienna to lead an expedition to the Congo, which significantly limited his ability to contribute to the academic activities of the geography department in Czernowitz, and he resigned in 1887 (Sedlmeyer 1965).

There is no clear information in the literature about who, if anyone, held the position of head of the department in the following decades. The only reference comes from a 1922 study that assessed geographical institutions and their activities across Europe. According to this source, **Karl Alfons Penecke** (1858–1944), an entomologist, geologist, and paleontologist from Graz, who served as head of the Chair of Geology at the University, was also listed as representing geography (Joerg 1922, p. 481). It can therefore only be inferred that Penecke may have also served as head of the Department of Geography, possibly beginning in 1901, when he was appointed professor at the University of Czernowitz. However, the literature suggests that Penecke did not contribute significantly to the development of geography, as his research primarily focused on his original fields (Meixner 1958).

In Hungary, the institutionalisation of Hungarian geography progressed with the founding of the geography department at the **Royal Hungarian Franz Joseph University in Kolozsvár** in 1875. On the recommendation of János Hunfalvy, **Adolf Terner** (1835–1917) was appointed department head. Born in Buda, Terner studied in Budapest, Leipzig, and Brünn [Brno]. His lectures focused on comparative geography, encompassing both branches of the discipline, and were influenced by Ritter's methodology, although his scholarly output was minimal, limited to book reviews and commentary on the Austro-Hungarian polar expedition (Fodor 2006). He also served as dean and later as rector during his tenure at the University of Kolozsvár (Cseke and Hauer 1999).

Upon his retirement in 1905, **Jenő Cholnoky** (1870–1950) succeeded him. Born in Veszprém, Cholnoky studied in Budapest and became an assistant professor at the University of Budapest under Lajos Lóczy in 1894. Collaborating with Lóczy, Cholnoky adopted Richthofen's methodological approach and focused primarily on physical geography, including geomorphology, climatology, and hydrology (Fodor 2006). His tenure at Kolozsvár served as a counterweight to the University of Budapest, where Géza Czirbusz represented human geography under the influence of Ratzel's theories.

Besides Kolozsvár, two other universities in Hungary had geography departments: Debrecen and Pozsony. When the Department of Geography was established at the **Royal Hungarian University of Debrecen** in 1914, a rivalry ensued between the followers of Czirbusz and Cholnoky over its leadership. Ultimately, **Rezső Milleker** (1887–1945), a former assistant to Czirbusz, was appointed. Milleker studied in Budapest, Berlin, Göttingen, and Paris. At the time of his appointment, he had not yet produced significant scholarly work; his first major publication, on political geography, appeared in 1917.

University Affiliation*	Name, Date and Place of Birth and Death	Higher Education	Years in Academic Position	Main Academic Focus /Subdiscipline/	Noteworthy Publication before 1918 (transl. into English)
G	**Eduard RICHTER [1]** Born: 1847, Mannersdorf am Leithagebirge Died: 1905, Graz	University of Vienna	1886–1905 as h.d.	Physical geography / Glaciology, Geomorphology/	"Observations on the Glaciers of the Eastern Alps" (1883–1888)
	Robert SIEGER [2] Born: 1864, Vienna Died: 1926, Graz	Universities of Vienna and Berlin	1905–1926 as h.d.	Human geography	"The Geographical Foundations of the Austro-Hungarian Monarchy and Its Foreign Policy" (1915)
I	**Franz von WIESER [3]** Born: 1848, Kufstein Died: 1923, Innsbruck	University of Innsbruck	1880–1923 as h.d.	Human geography and Cartography /History of cartography/	"The Lost Globe of Johannes Schöner from 1523" (1888)
GP	**Wilhelm Dionys von GRÜN** Born: 1819, Přerov [Prerau] Died: 1896, Prague	Universities of Prague and Berlin	1875–1882 as e.p.* 1882–1885 as h.d.	Physical and human geography /Mathematical, political, regional geography/	„Geography. Regional and Ethnological Studies" (1870)
	Heinrich Oskar LENZ [4] Born: 1848, Leipzig Died: 1925, Sooß	University of Leipzig	1885–1887 as h.d.** 1887–1909 as h.d.	Physical and human geography /Ethnography, Political geography/	„Journey through Morocco, the Sahara and Sudan" (1884)
	Alfred GRUND Born: 1875, Smíchov [Smichow] Died: 1914, Smederevo (Serbia) [Smederewo/ Szendrő]	University of Vienna	1909–1914 as h.d.	Physical and human geography /Karst studies, hydrology and historical geography/	„The Geographical Cycle in the Karst" (1914)
	Fritz MACHATSCHEK [5] Born: 1876, Vyškov [Wischau] Died: 1957, Munich	Universities of Vienna, Berlin, and Zurich	1915–1924 as h.d.	Physical geography /Glaciology/	„Glaciology" (1917)

University Affiliation*	Name, Date and Place of Birth and Death	Higher Education	Years in Academic Position	Main Academic Focus /Subdiscipline/	Noteworthy Publication before 1918 (transl. into English)
CZ	**Alexander Georg Supan [6]** Born: 1847, Innichen Died: 1920, Breslau [Wrocław]	Universities of Graz, Vienna, Halle, and Leipzig	1880–1884 as h.d.	Physical geography /Climatology/	„Fundamentals of Physical Geography" (1884)
K	**Adolf Terner** Born: 1835, Buda Died: 1917, Lajtszentmiklós [Neudörfl an der Leitha]	Universities of Budapest, Leipzig, and Brünn [Brno]	1875–1905 as h.d.	Physical and human geography /Comparative geography/	„Payer and Weyprecht's Preliminary Expedition, The Austro-Hungarian Expedition" (1873)
	Jenő Cholnoky [7] Born: 1870, Veszprém Died: 1950, Budapest	University of Budapest	1905–1940 as h.d.	Physical geography /Geomorphology, Climatology, and Hydrology/	„The Hydrography of Lake Balaton" (1918)
D	**Rezső Milleker [8]** Born: 1887, Versec [Werschetz /Vršac] Died: 1945, Budapest	Universities of Budapest, Berlin, Göttingen, and Paris	1914–1945 as h.d.	Human geography /Political geography/	„The Fundamentals of Political Geography" (1917)
P	**Gyula Prinz [9]** Born: 1882, Rábamolnári Died: 1973, Budapest	Universities of Budapest and Breslau	1: March–Oct. 1918 as h.d. 2: 1921–1923 3: 1923–1940 ***	Physical geography /Geomorphology/	"The Geography of Hungary" (1914)

* Abbreviations in Column 1: CZ – University of Czernowitz; D – University of Debrecen; G – University of Graz; I – University of Innsbruck; GP – German University in Prague; K – University of Kolozsvár; P – University of Pozsony; e.p. – extraordinary professor; h.d. – head of department.

Notes: Square-bracketed numbers in the second column of the table refer to the corresponding portrait photographs in Figure 6.

* Before the split of the Charles-Ferdinand University of Prague; ** At the University of Czernowitz; *** 1: Before the dissolution of the Empire; 2: After the dissolution of the Empire, the University of Poszony was moved first to Budapest (2), then to Pécs [Fünfkirchen] (3)

Source: Own elaboration.

Table 4: Key information on heads of university departments of (German) Austrian and Hungarian geography outside of Vienna and Budapest



Source: 1. Wikimedia Commons: Eduard RICHTER; 2. Digiporta.net, online image archive: SIEGER; 3. Wikimedia Commons / University of Innsbruck: Franz R. von WIESER; 4. Austria-Forum: Oskar LENZ; 5. ETH-Bibliothek Zürich: Fritz MACHATSCHEK (1876–1957); 6. Alchetron, online image archive: Alexander Georg SUPAN; 7. Wikimedia Commons: Jenö CHOLNOKY; 8. University of Debrecen (UD), OJS image collection: Rezső MILLEKER; 9. Wikimedia Commons: Gyula PRINZ.

Figure 6: Portrait photographs of heads of university departments of (German) Austrian and Hungarian geography outside of Vienna and Budapest, as indicated in Table 4.

The final geography department established in the Austro-Hungarian Monarchy was at the **University of Pozsony** in March 1918. Its short-lived operation was led by **Gyula Prinz** (1882–1973). Prinz began his career as a geologist-geographer, studying under Lóczy and Cholnoky and later at the University of Breslau [Wrocław]. He would go on to become a prominent figure in Hungarian political, economic, settlement, and cultural geography after the collapse of the Empire (Fodor 2006).

5 Analysis of the Research Results and Final Conclusions

This study has demonstrated that the institutionalisation and intellectual development of geography followed a markedly unique trajectory within the Austro-Hungarian Monarchy, shaped primarily by political factors and the unequal distribution of power among its nationalities. There was a clear distinction in the evolution of geography between the dominant nationalities within the Dualist state structure (German Austrians and Hungarians) and those subordinated to them. In light of the three analytical attributes defined at the beginning of Chapter 4, we can observe significant divergences in the patterns of geographical development across these nationalities and their respective universities.

Before the Austro-Hungarian Compromise of 1867, Hungary was under military administration, which placed geographers from Cisleithania in a more favorable position to pursue scientific research. These advantages facilitated the early institutionalisation of geography in Austria, marked by the establishment of the first permanent university geography department in Vienna in 1851 and the founding of the Empire's first geographical society in 1856. Furthermore, the accumulated geographical knowledge and the education of professionals during this period also accelerated the later process of institutionalising and modernising German Austrian geography. More broadly, Cisleithania maintained a significantly more favourable environment for academic development.

The first university geography department in the Habsburg Empire was founded at the University of Cracow in 1849, with geography also introduced early at the University of Prague. Nevertheless, the progress of Czech and Polish geography was soon curtailed by the neo-absolutist policies of the Viennese government. As a result, the Geography Department and the Geographical Society in Vienna remained the only such institutions for nearly two decades. Only the Compromise of 1867 enabled Transleithania to begin developing its own scientific infrastructure in earnest.

Following 1867, geography was most rapidly and thoroughly institutionalised in regions predominantly inhabited by German Austrians and Hungarians. Austrian geography, especially in Vienna, was marked by a notable continuity among department heads, whose work often built upon the research of their predecessors. This era saw the steady, parallel advancement of both physical and human geography, particularly at the Universities of Graz and Innsbruck. In contrast, the development of Hungarian geography in Budapest was far more erratic. In Kolozsvár, Adolf Terner did not emerge as either a prolific or innovative scholar. In Budapest, department leadership frequently oscillated between an emphasis on physical and human geography, often accompanied by intense academic disputes.

From the outset, the founders of Austrian and Hungarian geography set these two national traditions on divergent trajectories. János HUNFALVY deeply embedded the framework of RITTER in Hungarian academic circles, which delayed the acceptance of newer geographical theories advanced by RICHTHOFEN and RATZEL. In contrast, Friedrich SIMONY did not establish a lasting intellectual school, and his successor, Albrecht PENCK, trained in Germany, was not ideologically bound to SIMONY's legacy. PENCK thus could adopt RICHTHOFEN's theories with minimal difficulties. Both PENCK and Lajos LÓCZY based their work on RICHTHOFEN's framework and successfully elevated Austro-Hungarian physical geography to international prominence. However, their institutional contexts differed significantly: LÓCZY oversaw a unified geography department in Budapest, while PENCK led only the Physical Geography Department in Vienna. Human geography in Austria was institutionally supported by TOMASCHEK's department, as well as by Franz von WIESER in Innsbruck, Robert SIEGER in Graz and Oskar LENZ in Prague, while in Hungary, human geography became increasingly marginalised.

Eduard BRÜCKNER, Alfred GRUND and Fritz MACHATSCHEK, as PENCK's students, continued the research agenda of the Viennese physical geography department and each of them achieved international recognition. A similar legacy was established in human geography under the leadership of Eugen OBERHUMMER. In Budapest, human geography briefly resurged under Géza CZIRBUSZ, but soon clashed with the physical geography paradigm promoted by Jenő CHOLNOKY in Kolozsvár. These conflicts dominated Hungarian geographical discourse for nearly a decade, hindering substantial scholarly progress. Human geography began to strengthen in Hungary in the final years of the Monarchy through the work of Rezső MILLEKER in Debrecen and Gyula PRINZ in Pozsony. However, neither of them significantly influenced the broader trajectory of Hungarian geography before 1918. In this context of disciplinary instability, OBERHUMMER's career stands out as a formative milestone, while CZIRBUSZ's role appears more as a temporary deviation from the path that would later culminate in a new conceptualisation of human geography. This redefinition was ultimately carried forward by Hugo HASSINGER (1877–1952) and Pál TELEKI (1879–1941), both of whom published foundational works in 1917: HASSINGER's *"Atlas der Wiener Kunstgeschichte"* [Atlas of Viennese Art History] and TELEKI's *"A földrajzi gondolat történeti alakulása"* [The historical development of geographical thought] are now regarded as seminal texts in the development of Austrian and Hungarian human geography (LICHTENBERGER 2001; FODOR 2006).

Beyond the Austrian and Hungarian traditions, Czech, Polish, and Croatian geography followed similar institutionalisation patterns, albeit with important distinctions. Cisleithania held a more advantageous political position before 1867, and its federal system allowed crownlands some autonomy in managing their educational institutions. This led to the relatively early establishment of Polish geography in Cracow and the partial institutionalisation of geography in Prague. However, the subordinate status of these nationalities constrained progress. In Cracow and Lemberg, despite Galicia's autonomy, the lack of a strong (Polish) scientific authority and a shortage of trained academics hampered development. Simultaneously, the Galician government, led by Polish elites, actively hindered the development of Ukrainian academics and geographers through the professorial appoint-

ment process. For the Czechs, the absence of a strong regional government supporting science posed similar challenges, both in the case of the Czech University of Prague and the failed reestablishment of the University of Olmütz. On the Hungarian side of the empire, Croatia gained de jure autonomy in 1868, including authority over education and science. Nevertheless, the institutionalisation of Croatian geography began somewhat later than that of Czech or Polish geography. It was not until the 1880s that geography professorships were established at the relevant universities.

In each case, a prominent scholar laid the foundation of the department and shaped its research focus for decades. However, Polish geography diverged slightly: Wincenty Pol belonged to an earlier generation, and his work concluded before Matković in Zagreb and Palacký in Prague assumed leadership. Unlike Matković and Palacký, whose successors belonged to their close circle of students (Hinko Hranilović and Václav Švambera, respectively), Pol's successor, Franciszek Czerny-Schwarzenberg, did not build on his legacy but instead reoriented the department's research focus, moving away from Ritterian methods toward Ratzel's theories. A similar dynamic played out in Lemberg, where geography had no prior academic tradition. Antoni Rehman, having studied under Richthofen, was able to introduce modern theories into his teaching and research. Among this first generation of department heads, only Hranilović had sufficient time to establish a substantial body of work, including synthetic studies on Croatia-Slavonia. By contrast, Švambera in Prague, Sawicki in Cracow, and Romer in Lemberg lacked the time to fully develop their research before 1918. Their academic influence peaked in the interwar period, although both Švambera and Romer published notable works before the end of the Monarchy.

Partly because the Czech, Polish, and Croatian regional governments had, albeit to varying degrees, less political power to manage educational and academic affairs and to represent their interests before the national parliaments and the emperor than the German-Austrian and Hungarian governments, geography in these regions was unable to achieve a clear institutional and intellectual separation between physical and human geography. Most influential academics engaged in a broad spectrum of research topics, typically in the Ritterian tradition. The second generation of scholars was more open to the theories of Richthofen and Ratzel, but had insufficient time to fully incorporate these approaches into their work before the collapse of the Empire. Meanwhile, the University of Czernowitz followed the most atypical trajectory among all the examined universities. Located in the multiethnic, less developed, and most remote Austrian crownland, Bukovina, a crownland with three major ethnic groups, its geography department was artificially created, lacking any local academic foundation. Alexander Georg Supan was appointed from Slovenian Carniola, served for only four years, whereas Oskar Lenz, originally from Leipzig, never formally assumed his position, as he was engaged in an expedition in Africa at the time of his appointment. Finally, Karl Alfons Penecke, a geologist by training, made no significant contribution to the development of the discipline at the university, and geography remained confined to instructional teaching.

In conclusion, the primary factors explaining the divergent development of Austrian, Hungarian, Czech, Polish, and Croatian geography were political power and the result-

ing institutional frameworks. Additionally, strong intellectual and institutional ties linked Austrian geography to the broader German tradition. Despite national differences, geographers across the Monarchy generally followed similar intellectual trajectories. The ideas of RITTER, RICHTHOFEN, and RATZEL were influential throughout the Empire, though their reception and interpretation varied.

This study has shown that the institutional development of geography and the adoption of German scientific paradigms broadly corresponded to three factors: (1) political favourability before 1867, (2) political power after 1867, and (3) socio-economic development. Austrian geography was in the most advanced position, followed (in a relative order of advancement) by Hungarian, Polish, Croatian, and Czech geography. Although Ukrainian and Slovenian geography were not yet institutionalised before 1918, their later founders were already active scholars with notable scientific output within the institutional framework of the discipline throughout the Habsburg era.

Finally, this study has demonstrated that the national traditions of geography, often treated separately in historiography, share much in common. They were deeply influenced not only by German geographical thought but also by each other, as many geographers received training in universities located in other parts of the Empire. The University of Vienna exerted a widespread influence across Cisleithania and Transleithania, while the University of Budapest emerged as a key centre for Hungarian geographers. Another interesting example of geographical interconnectedness within the Empire is that Croatian geographers were more influenced by Austrian than by Hungarian geography, while the University of Czernowitz employed professors who were German speakers and born and educated on the opposite end of the empire or in Germany. As a final remark, it must be emphasised that the state-centred approach adopted in this study is not only grounded in constitutional realities but also demonstrates its potential for future research in the history of geography and related fields.

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Urbane Räume

Urban Areas

Wohnen in der Kleinstadt, Arbeiten in der Grossstadt: Einfluss grossstädtischer Zuwanderung auf die Entwicklungsperspektiven niederösterreichischer Klein- und Mittelstädte im weiteren Wiener Umland

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mit 15 Abbildungen im Text

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Zusammenfassung

Die im vorliegenden Artikel zusammenfassend dargestellte Forschungsarbeit befasst sich mit dem Einfluss großstädtischer Zuwanderungsbewegungen auf die Entwicklungsper-

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spektiven von kleineren und mittleren Städten im eher ländlich geprägten weiteren Wiener Umland. Hierzu wurden vier niederösterreichische Klein- und Mittelstädte im weiteren Wiener Umland mittels statistischer Sekundärdatenanalyse ausgewählt und die soziodemographischen Merkmale der aus Wien zugewanderten Bevölkerung, die ausschlaggebenden Faktoren und Rahmenbedingungen für die Wohnortwahl in einer Klein- und Mittelstadt im weiteren Wiener Umland, die strategische Positionierung sowohl der kleineren und mittleren Städte als auch der niederösterreichischen Landesplanung gegenüber dem Zuzug aus Wien und die im Kontext der großstädtischen Zuwanderung resultierenden Potenziale und Herausforderungen untersucht.

Die insbesondere durch teilstandardisierte Umfragen unter Zugezogenen aus Wien und qualitative leitfadengestützte Interviews mit Expertinnen und Experten gewonnenen Erkenntnisse zeigen, dass sowohl die soziodemographischen Merkmale als auch die Motive und Beweggründe der Entscheidung zur Wohnsitzverlegung in eine im weiteren Umland befindliche kleinere und mittlere Stadt jenen der Suburbanisierung entsprechen, wobei die klein- und mittelstädtischen Ausstattungen, Einrichtungen und Funktionen wesentliche Faktoren für den großstädtischen Zuzug darstellen.

Das Konzept „Wohnen in der Kleinstadt, Arbeiten in der Großstadt" scheint eine attraktive Alternative zum Wohnstandort in der Großstadt Wien zu sein, jedoch positionieren sich die Klein- und Mittelstädte gegenüber der steigenden Zuwanderung aus Wien meist zurückhaltend bis ablehnend. Die strategischen Positionierungen der Landes- und Gemeinde-/Stadtebene gegenüber der Zuwanderung aus Wien stehen sich hierbei diametral gegenüber und die Klein- und Mittelstädte sind gefordert, Strategien und Ansätze zur Bewältigung der aus der steigenden Zuwanderung aus Wien resultierenden Herausforderungen, insbesondere in den Themenfeldern Verkehr und Mobilität, soziale Infrastruktur und soziale Integration, zu entwickeln. Hierzu könnte eine Vernetzung der Klein- und Mittelstädte rund um Wien einen wesentlichen Beitrag leisten.

Schlagwörter: Klein- und Mittelstädte, Kleinstadt, Großstadt, Zuwanderung, Wohnen, Migration, Entwicklungsperspektiven, Stadtplanung, Regionalplanung, Stadtumland, Wiener Umland, Wien, Niederösterreich

Summary

Living in a Small Town, Working in the Metropolis: The Impact of Urban Migration on the Development Prospects of Selected Small and Medium-Sized Towns in Lower Austria in the Wider Surrounding Area of Vienna

The research summarised in this article examines the influence of metropolitan immigration on the development prospects of small and medium-sized towns in the more rural areas surrounding Vienna. For this purpose, four small and medium-sized towns in Lower Austria in the wider Viennese surrounding countryside were selected by means of statistical secondary data analysis and the socio-demographic characteristics of the population migrating from Vienna. The decisive factors and general conditions for the choice of a place of residence

in a small and medium-sized town in the wider Viennese surrounding countryside were analysed as well as the strategic positioning of both the small and medium-sized towns and the regional planning of the province of Lower Austria towards immigration from Vienna and the potentials and challenges resulting in the context of metropolitan immigration.

The findings, obtained in particular through partially standardised surveys among people moving from Vienna and qualitative, guideline-based interviews with experts, show that the socio-demographic characteristics as well as the motives and motivations for the decision to relocate to a smaller and medium-sized town in the wider surrounding countryside correspond to those of suburbanisation, whereby the small and medium-sized town amenities, facilities and functions are significant factors for the metropolitan immigration.

The concept of "living in a small town, working in the metropolis" appears to be an attractive alternative to living in the metropolis; however, small and medium-sized towns mostly position themselves cautiously to reject the increasing immigration from Vienna. The strategic positions of the small and medium-sized towns and the Lower Austrian regional planning towards immigration from Vienna are diametrically opposite, and the small and medium-sized towns are challenged to develop strategies and approaches to manage the challenges resulting from the increasing immigration from Vienna, especially in the fields of transportation and mobility, social infrastructure and social integration. Cooperation and networking among the small and medium-sized towns around Vienna could make a significant contribution.

Keywords: Small and medium-sized towns, small town, metropolis, in-migration, living, migration, development prospects, urban planning, regional planning, urban hinterland, Vienna, Lower Austria

1 Einleitung

Im Kontext des aktuellen Forschungsstandes zu Klein- und Mittelstädten in der Stadt- und Raumforschung zeigt sich, dass kleinere und mittlere Städte im deutschsprachigen Raum vor allem mit der Versorgungs-, Stabilisierungs- und Entwicklungsfunktion in ländlichen Raum assoziiert werden und kaum wissenschaftliche Auseinandersetzungen oder Untersuchungen zu Klein- und Mittelstädten in agglomerationsnahen, zentralen Lagen vorliegen (vgl. Gatzweiler et al. 2012, S. 20, 65; Schorn und Priebs 2021, S. 258, 260). Die wenigen Publikationen zu zentralen Lagen, die vor allem vom deutschen Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) für die Bundesrepublik Deutschland vorliegen, kommen hierbei zum Ergebnis, dass im großstädtischen Umland meist die Wohnfunktion und in ländlichen, peripheren Räumen vor allem die Versorgungs- und Arbeitsmarktfunktion von Klein- und Mittelstädten dominiert (vgl. BBSR 2019c, S. 30–32; Gatzweiler et al. 2012, S. 6). In Österreich stellt die Klein- und Mittelstadtforschung ein bisher kaum beachtetes Themenfeld in der Stadt- und Raumforschung dar, da es neben der geringen Anzahl an wissenschaftlichen Publikationen zu österreichischen Klein- und Mittelstädten auch keine bundesweite, amtliche Klassifizierung gibt und auch die Begrifflichkeit selbst, sowohl in der Wissenschaft als auch in der Praxis, kaum Anwendung findet

(vgl. ÖROK 2016, S. 52–54, Statistik Austria 2021a, S. 5). Dies verwundert insofern, als Österreich, ausgenommen die einzige Millionenstadt Wien und die fünf Großstädte mit mehr als 100.000 Einwohner/inne/n, ein Land der Klein- und Mittelstädte ist.

Die Großstadt Wien und das umliegende Bundesland Niederösterreich sind durch ein auf Wien ausgerichtetes Verkehrsnetz und sozioökonomische Prozesse eng verbunden. Die seitens der Statistik Austria zur Verfügung stehenden Migrations- und Pendlerdaten zeigen, dass Wien und Niederösterreich die österreichweit stärksten Wanderungs- und Pendlerverflechtungen vorweisen, welche vor allem durch die Abwanderungsbewegungen aus Wien in das niederösterreichische Umland und die auspendelnden Erwerbstätigen aus dem niederösterreichischen Umland nach Wien gekennzeichnet sind (eigene Auswertung, Quelle: Statistik Austria o.J.).

Die vorliegenden Studien zu Abwanderungsbewegungen von Wien in das Wiener Umland kommen zu dem Ergebnis, dass es sich, je geringer die Entfernung zur Großstadt Wien ist, umso eher um junge, gut ausgebildete Paare mit Kindern handelt, die weiterhin für ihre Berufstätigkeit nach Wien pendeln, wobei der Entscheidung zum Wohnortwechsel meist ein Bündel an Motiven zugrunde liegt. Die Wohnortwahl wird jedoch auch von lokalen Strukturmerkmalen wie etwa der öffentlichen Verkehrsanbindung und den infrastrukturellen Ausstattungen im Versorgungs-, Gesundheits- und Bildungsbereich beeinflusst. (vgl. PGO 2019, S. 44–48; Speringer et al. 2020, S. 20–41; Stadt Wien – MA 18 2004, S. 80, 105–106).

Vor dem Hintergrund der fehlenden wissenschaftlichen Auseinandersetzung mit kleineren und mittleren Städten in zentralen Lagen, der engen sozioökonomischen Verflechtungen zwischen der Großstadt Wien und dem umgebenden niederösterreichischen Umland und dem Einfluss von lokalen Strukturmerkmalen auf die Wanderungsentscheidung konzentriert sich der vorliegenden Artikel auf die Wanderungsbewegungen von der Großstadt Wien in die niederösterreichischen Klein- und Mittelstädte im eher ländlich geprägten weiteren Wiener Umland und der Rolle und Bedeutung dieser Migrationsvorgänge für die Entwicklungsperspektiven dieser Städte.

In diesem Zusammenhang stellen, basierend auf den allgemeinen theoretischen Grundlagen im stadtregionalen Kontext und der aktuellen Ausgangslage der Großstadt Wien und des niederösterreichischen Umlandes, die zuwandernde großstädtische Bevölkerungsgruppe, die ausschlaggebenden Faktoren und Rahmenbedingungen, die strategische Positionierung der Klein- und Mittelstädte und der niederösterreichischen Landesplanung sowie die Potenziale und Herausforderungen im Kontext der Zuwanderungen relevante Aspekte für die zukünftige klein- und mittelstädtische Entwicklung dar.

2 Theoretische Grundlagen zu Stadt und Umland

Städte stellen seit jeher den politischen, ökonomischen, kulturellen und verkehrlichen Mittelpunkt eines Gebietes dar, da sie mehr Güter und Dienste bzw. Ausstattungen, Einrichtungen und Funktionen anbieten als von der eigenen Bevölkerung benötigt werden. Durch diesen über die administrativen Stadtgrenzen hinausreichenden Bedeutungsüberschuss sind Städte mit ihrem näheren und weiteren Umland durch funktionale Verflechtungen und gegenseitige

Abhängigkeiten eng miteinander verbunden: das Umland benötigt die städtischen Funktionen (z. B. Arbeits- und Bildungsort, Versorgungs-, Verwaltung- und Kulturzentrum), die Stadt die Nachfrage aus dem Umland (z. B. Arbeits- und Bildungspendler, Konsumenten), aber auch die im Umland vorhandenen Flächen, Infrastrukturen, Angebote und Funktionen (z. B. Erholungsflächen, Güterzentren, Ver- und Entsorgungsanlagen, Flugplätze, etc.) (vgl. Fassmann 2009, S. 45–46; Priebs 2018, S. 2550–2551; Priebs 2019, S. 14).

Die heutigen zahlreichen und komplexen Verflechtungs- und Abhängigkeitsbeziehungen zwischen Stadt und Umland verdeutlichen, dass Stadt und Umland nicht mehr als diametrale Raumeinheiten aufgefasst werden können und Städte als Teil ihrer Region in einem vernetzten System, bestehend aus unterschiedlichen stadtregionalen Netzpartnern bzw. Netzknoten, zu betrachten sind. Innerhalb der Stadtregion stellt die traditionelle Kernstadt die „*Visitenkarte der Stadtregion*“ (Priebs 2019, S. 11) dar, da sie aufgrund ihrer hohen Konzentration an Ausstattungen, Einrichtungen und Angeboten die Funktion des zentralen Knotenpunktes übernimmt. Die weiteren Netzpartner sind die größeren und kleineren Städte und Gemeinden der Stadtregion, welche im Zuge von voranschreitenden Sub- und Desurbanisierungsprozessen Unternehmen, Beschäftigte und Einwohner aus den Kernstädten abziehen und sich durch Funktionsvielfalt und -mischung, Eigenständigkeit und Leistungsfähigkeit zunehmend emanzipieren (vgl. Priebs 2005, S. 1099; Priebs 2018, S. 2551; Wolf 2005, S. 1050).

Die allgemeinen theoretischen Grundlagen der im Fokus stehenden demographischen und funktionalen Beziehung zwischen Kernstadt und den im weiteren Umland befindlichen Klein- und Mittelstädten erstrecken sich von modellhaften Beschreibungen zur Abgrenzung, Entwicklung und Verteilung von Städten sowie stadtregionalen Raum- und Siedlungsstrukturkonzepten über die Rolle und Bedeutung von Klein- und Mittelstädten im Umland von Großstädten bis hin zu Wanderungsbewegungen von der Stadt in das Umland.

Stadtmodelle und Stadtsysteme

Stadtmodelle bzw. Stadtstrukturmodelle stellen im Allgemeinen vereinfachte räumliche Abbilder der sozioökonomischen und/oder funktionalen Gliederung von Städten dar (vgl. Fassmann 2009, S. 129). Phasenmodelle basieren auf den demographischen und/oder ökonomischen Strukturveränderungen von Städten, berücksichtigen die räumliche Ebene meist nur durch die Aufteilung in Kernstadt und Umland und postulieren einen geordneten, regelhaften Entwicklungsverlauf von Städten (vgl. Friedrichs 2018, S. 2428). Neben den theoretischen, modellhaften Überlegungen zur Struktur und Entwicklung von Städten befassen sich Theorien zu Stadtsystemen mit den funktionalen Verbindungen, der hierarchischen Gliederung und der Verteilung und Entwicklung von Städten in einer räumlichen Einheit (vgl. Maier und Tödtling 2006, S. 139; Parnreiter 2018, S. 2459). In diesem Zusammenhang stellen vor allem das Stadtregionsmodell von Olaf Boustedt (1970), das Phasenmodell der Stadtentwicklung von Leo van den Berg et al. (1982) und die Theorie bzw. das System der zentralen Orte von Walter Christaller (1933) bis heute bedeutende theoretische Grundlagen für Wissenschaft und Praxis im Stadt-Umland-Kontext bzw. auf stadtregionaler Ebene dar.

In den genannten theoretischen Stadtmodellen bzw. Theorien zu Stadtsystemen, welchen unterschiedliche räumliche Ebenen, Zugänge, Schwerpunkte und Zielsetzungen zugrunde liegen, werden Städte als von administrativen Grenzen losgelöste Bestandteile eines räumlichen Gefüges betrachtet. Einen bedeutenden Meilenstein beim Wechsel von der innerstädtischen zur stadtregionalen Perspektive stellt hierbei das Stadtregionsmodell von Olaf BOUSTEDT aus den 1950er Jahren dar, welches basierend auf funktionalen und strukturellen Verflechtungen die Stadt und ihr Umland in einer sozioökonomischen Raumeinheit mit unterschiedlichen von der Kernstadt ausgehenden, konzentrischen Raumzonen zusammenfasst. Dieses Modell berücksichtigt neben der zentralen Großstadt keine weiteren städtischen Zentren innerhalb der Stadtregion und postuliert eine zentripetale Stadt-Umland-Beziehung, welche vor allem durch Entwicklungen in der jüngsten Vergangenheit zunehmend durch netzwerkartige, tangentiale Verflechtungen zwischen Kernstadt, Umland und kleineren städtischen Zentren aufgebrochen und ergänzt wird. Obwohl das von BOUSTEDT entwickelte stadtregionale Modell keine polyzentrischen Raumstrukturen oder veränderten siedlungsstrukturellen Realitäten aufnehmen kann, stellt es bis heute eine bedeutende theoretische Grundlage für die auf strukturellen und funktionalen Kriterien basierende Abgrenzung und Gliederung von Agglomerationsräumen sowie die empirisch-analytische Beobachtung von stadtregionalen Prozessen dar.

Die Betrachtung von Städten in ihrem räumlichen Kontext wird auch im theoretischen Phasenmodell der Stadtentwicklung von Leo VAN DEN BERG et al. aus den 1980er Jahren durch die Zusammenfassung von Kernstadt und Umland als funktionale Stadtregion aufgegriffen und in ein Modell mit mehreren Städten unterschiedlicher Hierarchisierung überführt. Die auf der demographischen Veränderung bzw. den Bevölkerungsbewegungen zwischen Kernstadt, Umland und weiter entfernten Mittelstädten basierenden Stadtentwicklungsphasen der Urbanisierung, Suburbanisierung, Desurbanisierung und Reurbanisierung konzentrieren sich hierbei vor allem auf die Bevölkerungsentwicklung der zentralen Großstadt, bieten jedoch auch allgemeine Erklärungsansätze für die im Zuge des Desurbanisierungsprozesses stattfindende Bevölkerungsverlagerung von der Kernstadt in die im weiteren Umland befindlichen kleineren Städte. Die wesentlichsten Faktoren sind hierbei die durch die vorangegangene Suburbanisierung erfolgte Abwertung der ursprünglichen Standortvorteile des engeren Umlandes (Anstieg der Grundstücks- und Immobilienpreise, Erhöhung der Nutzungsdichte, Verringerung der Frei- und Grünräume, Verschlechterung der Erreichbarkeit) und die attraktiven kleinstädtischen Strukturen (leistbares Wohnen, zentrale Versorgung, Naturnähe/Zugang zu Frei- und Grünräumen, gute verkehrsinfrastrukturelle Anbindung zur Großstadt). Entsprechend dem Stadtentwicklungsmodell stellt die Desurbanisierung der Großstadt eine Urbanisierung der kleineren Städte dar, wobei die verschiedenen Phasen der großstädtischen Entwicklung, wie vor allem die heute in Agglomerationsräumen zu beobachtenden Konzentrations- und Dekonzentrationsprozesse verdeutlichen, nicht zwangsläufig nacheinander, sondern meist zeitgleich stattfinden.

Auch in der von Walter CHRISTALLER in den 1930er Jahren entwickelten Theorie der zentralen Orte werden Städte als Mittelpunkt einer räumlichen Einheit betrachtet, wobei die Bedeutung der Stadt als „zentraler Ort" für die umliegenden Gebiete anhand der dort angebotenen Güter und Dienstleistungen bestimmt wird. Durch die Übertragung von öko-

nomischen Überlegungen zu Angebot und Nachfrage auf Städte und städtische Siedlungen entsteht ein theoretisch flächendeckendes Netz aus zentralen Orten unterschiedlicher Hierarchiestufe, welche aufgrund ihres Angebotes an Gütern und Dienstleistungen einen Bedeutungsüberschuss besitzen und somit neben der Versorgungsfunktion für die eigene Bevölkerung auch unterschiedliche Reichweiten bei der Versorgung der umliegenden Gebiete vorweisen. Im Gegensatz zum Stadtregionsmodell und Phasenmodell der Stadtentwicklung, in deren Fokus die zentrale Großstadt und ihre strukturelle und funktionale Gliederung bzw. demographische Veränderung steht und daher kleinere Städte nicht oder nur am Rande Erwähnung finden, betrachtet die Theorie der zentralen Orte unterschiedliche Stadtgrößen hinsichtlich ihrer Bedeutung und Funktion innerhalb eines Städtenetzes. Obwohl die Theorie der zentralen Orte einen rein auf marktwirtschaftlichen Prämissen beruhenden Erklärungsansatz zur Verteilung und Größe von Städten darstellt und keine naturräumlichen oder siedlungsstrukturellen Gegebenheiten berücksichtigt, konnte sich der auf dem Versorgungs- und Marktprinzip beruhende zentralörtliche Ansatz und dessen Terminologie durchsetzen, da die Theorie der zentralen Orte in das Zentrale-Orte-Konzept, ein nach wie vor bedeutendes raumordnerisches Konzept zur Lenkung der Siedlungs-, Verkehrs- und Freiraumentwicklung, eingegangen ist.

Stadtregionale Raum- und Siedlungsstrukturen

Die heutigen polyzentrischen Raum- und Siedlungsstrukturen innerhalb von Stadtregionen sind durch teilweise mit der Kernstadt in Konkurrenz tretende Wohn-, Arbeits-, Versorgungs- und Erholungsstandorte im Umland und die daraus resultierende Erweiterung der zentripetalen Beziehung um tangentiale Verflechtungen gekennzeichnet, welche in den Raumwissenschaften auch unter den beiden Begriffen „Postsuburbia“ und „Zwischenstadt“ thematisiert und darauf aufbauend Stadtregionen als „funktionale Stadtarchipele“ beschrieben werden (vgl. Beier und Matern 2007, S. 1; Kunzmann 2001, S. 214; Siedentop 2018, S. 2524). Ergänzend dazu stellen nach wie vor „klassische“ Planungskonzepte, allen voran punktaxiale Konzepte (Zentrale Orte und Achsen), das Konzept des Grüngürtels sowie die „Dezentrale Konzentration“, bis heute bedeutende Konzepte zur Lenkung der stadtregionalen Siedlungs-, Verkehrs- und Freiraumentwicklung dar, welche sowohl für das engere als auch das weitere Umland von Bedeutung sind und Klein- und Mittelstädte als wesentliche Komponenten beinhalten.

Dem Zentrale-Orte-Konzept liegt der raumordnerische Ansatz der Konzentration der räumlichen Entwicklung auf bestimmte, festgelegte Standorte unterschiedlicher Hierarchiestufe zugrunde, wodurch einerseits gleichwertige Lebensverhältnisse für die Bevölkerung geschaffen und andererseits disperse Siedlungs- und Infrastrukturen vermieden werden sollen. Hierbei erfolgt meist eine Gliederung der zentralen Orte in Grundzentren für den täglichen, periodischen Bedarf (z. B. Lebensmittel, Grund- und Mittelschulen, öffentliche Verkehrsanbindung zu Mittelzentren), Mittelzentren für den gehobenen Bedarf (z. B. vielfältige Einkaufmöglichkeiten, allgemein- und berufsbildende Schulen, öffentliche Verkehrsanbindung zu Oberzentren) und Oberzentren für den spezialisierten, höheren Bedarf (z. B. Einkaufszentren, Universitäten und Fachhochschulen, internationale Ver-

kehrsanbindung), wobei das jeweils höhere Zentrum auch die Funktion des untergeordneten Zentrums umfasst. Im stadtregionalen Kontext bedeutet dies, dass trotz Strahlkraft der Großstadt als Zentrum der Stadtregion kleinere und mittlere Städte im Stadtumland neben ihrer zentralörtlichen Versorgungsfunktion auch Knotenpunkte der öffentlichen Verkehrsanbindung darstellen und somit auch im Sinne einer nachhaltigen Raumentwicklung eine wichtige Rolle einnehmen.

Zur verkehrsinfrastrukturellen Anbindung der kleineren und mittleren Städte innerhalb der Stadtregion, aber auch zur gezielten Steuerung der Siedlungsentwicklung im großstädtischen Umland stellen kleinräumige Siedlungsachsen bzw. Achsen- oder Sternkonzepte ein bewährtes und geeignetes Konzept dar. In Kombination mit zentralen Orten sind Achsen die zweite wesentliche Komponente von punktaxialen Konzepten, da durch die Bündelung von leistungsfähiger Linieninfrastruktur im Stadtumland einerseits die kleineren und mittleren Städte in ihrer Funktion als zentrale Orte gestärkt werden und andererseits durch die lineare Ausrichtung der stadtregionalen Siedlungsentwicklung in verdichteten Siedlungszonen entlang der Achsen und der Achsenendpunkte die Be- und Zersiedlung der in den Achsenzwischenräumen befindlichen Frei- und Grünräume vermieden wird. Die strahlenförmig auf die Kernstadt ausgerichteten Siedlungs- und Verkehrsstrukturen und die damit verbundenen Freiraumkeile zwischen den Achsen stellen somit ein Gegenmodell zum ringförmigen Städtewachstum dar. Die bekanntesten und bis heute zur Anwendung kommenden stadtregionalen Achsen- bzw. Strahlenkonzepte sind der aus den 1920er Jahren stammende „Federplan“ der Stadt Hamburg und der Ende der 1940er Jahre publizierte „Fingerplan“ der Stadt Kopenhagen.

Ein anderes in wachsenden Stadtregionen bedeutsames Konzept, in dessen Fokus die Festlegung und Ausweisung von Frei- und Grünräumen zur Gliederung und Gestaltung der stadtregionalen Raum- und Siedlungsstruktur steht, stellt das Planungskonzept des Grüngürtels dar. Durch die Schaffung eines die Stadt durchgängig umgebenden Ringes aus Grün- und Freiflächen sollen das flächige Städtewachstum und die Zersiedelung im Umland vermieden, das stadtregionale Ökosystem gestärkt, stadtnahe Erholungsgebiete sichergestellt und landwirtschaftliche Nutzflächen erhalten werden. Die bekanntesten Beispiele für ringförmige Grünzäsuren sind der seit über hundert Jahren in der Wiener Stadtplanung forcierte „Wald- und Wiesengürtel“ sowie der im Großraum London in der zweiten Hälfte des letzten Jahrhunderts konsequent umgesetzte großflächige „Green Belt“. Die beiden stadtregionalen Grüngürtel unterscheiden sich neben ihrer unterschiedlichen Größenordnung auch dadurch, dass das Frei- und Grünraumsystem rund um die Großstadt Wien im Gegensatz zum Londoner „Green Belt“ durch die vor allem im Nordosten bestehenden Lücken keinen vollflächig geschlossenen Ring bildet, der jedoch in den nächsten Jahren geschlossen werden soll. Darüber hinaus wurden im Großraum London außerhalb des Grüngürtels auch sogenannte „New Towns“ als durchgrünte, die Kernstadt entlastende Wohnstandorte (Gartenstädte) für die aus London wegziehende Großstadtbevölkerung gegründet.

Auch im raumordnerischen Planungskonzept der Dezentralen Konzentration, welches sich aus der großräumigen Dezentralisierung der Raumentwicklung und der kleinräumigen Konzentration der Siedlungsstruktur zusammensetzt, stellt die Entlastung von durch hohen Siedlungsdruck gekennzeichneten Großstädten einen zentralen Aspekt dar. Hierbei soll die Entlastung der Kernstädte durch die gezielte Entwicklung von funktionsgemischten Stand-

orten bzw. zentralen Orten mit eigenem Profil und guter öffentlicher Verkehrsanbindung im engeren und weiteren Umland von Großstädten erreicht werden. Die Dezentrale Konzentration greift somit das Zentrale-Orte-Konzept auf und weist im stadtregionalen Kontext den kleineren und mittleren Städten im großstädtischen Umland neben ihren zentralörtlichen Funktionen zusätzlich eine gezielte Entlastungsfunktion für die prosperierende Kernstadt zu. Obwohl der raumstrukturelle Ansatz der Dezentralen Konzentration bis zum Gartenstadtkonzept am Anfang des 19. Jahrhunderts zurückreicht, etablierte sich der Begriff erst am Ende des 20. Jahrhunderts. Maßgeblichen Einfluss darauf hatte der Einsatz der Dezentralen Konzentration als landesplanerisches Leitbild der Hauptstadtregion Berlin-Brandenburg in den 1990er Jahren. Auch wenn die Dezentrale Konzentration in Berlin-Brandenburg heute nicht mehr als explizit ausgewiesenes landesplanerisches Leitbild fungiert, blieb der Grundsatz der polyzentrischen Raumentwicklung erhalten. Das polyzentrische Siedlungsstrukturkonzept der Dezentralen Konzentration steht somit in einem engen Zusammenhang mit der normativen Vorstellung von Polyzentralität bzw. polyzentrischen Raumstrukturen, welche zunehmend auch in Stadtregionen zur Zielvorstellung erklärt werden.

Die Entstehung von polyzentrischen, von der Kernstadt losgelösten, eigenständigen Raum- und Siedlungsstrukturen und das dadurch entstehende funktional differenzierte Netzwerk aus unterschiedlichen stadtregionalen Netzpartnern und veränderten funktionalen Verflechtungen innerhalb von Stadtregionen werden in den Raumwissenschaften auch unter den beiden Begrifflichkeiten „Postsuburbia“ und „Zwischenstadt“ zusammengefasst und diskutiert. Hierbei bezeichnet der aus den USA stammende Begriff „Postsuburbia“ die Emanzipation und Entkoppelung der im Umland von Großstädten befindlichen, durch die Suburbanisierung entstandenen Siedlungen von der kernstädtischen Entwicklung bzw. die Entstehung von eigenständigen „Edge Cities“ im Umland von Großstädten. Diese Entwicklung kann im Umland von europäischen Städten jedoch nicht beobachtet werden, da die europäischen Städte meist gut ausgebaute, leistungsstarke öffentliche Verkehrsnetze besitzen, kaum bis keine ausgeprägten sozialen Spannungen zwischen bestimmten Bevölkerungsgruppen vorweisen und über eine hohe kernstädtische Standortattraktivität für Unternehmen, Erwerbstätige und Bevölkerung verfügen. Einen weiteren wesentlichen Unterschied stellt die historische Einbettung von Großstädten in gewachsene, kleinteilige Siedlungssysteme, bestehend aus Dörfern, kleineren und mittleren Städten, in europäischen Stadtregionen dar.

Auch der von Thomas Sieverts (1998) geprägte Begriff der „Zwischenstadt“ greift die in der jüngsten Vergangenheit im Umland von europäischen Großstädten durch die Suburbanisierungsprozesse entstandenen Raum- und Siedlungsstrukturen auf. Die als „Zwischenstadt“ bezeichneten, ungeordnet und verworren wirkenden Gebiete im Stadtumland bestehen aus aneinandergereihten unterschiedlichen Bebauungen und Nutzungen, besitzen sowohl ländliche als auch städtische Merkmale, verfügen über kein eindeutiges Zentrum, sondern eine Vielzahl an unterschiedlichen spezialisierten Standorten, und versorgen sich mehr oder weniger selbst, wodurch sie sich zunehmend von der Kernstadt entkoppeln. Wesentlich ist, dass die „Zwischenstadt“ kein neues stadtregionales Leitbild oder Plädoyer für die Zersiedelung im Stadtumland darstellt, sondern dem Begriff auch die eindrückliche Aufforderung an die Stadtplanung innewohnt, sich nicht nur mit der historischen, kompakten Stadt bzw. dem Erhalt der kernstädtischen Zentren, sondern auch

mit den neu entstandenen stadtregionalen Realitäten zu beschäftigen und die Gestaltungschancen dieses eigenständigen Raumes im Umland von Großstädten wahrzunehmen.

Klaus R. Kunzmann (2001) schließt sich dieser Aufforderung zur vorurteilsfreien, stadtplanerischen Auseinandersetzung an und überführt die netzwerkartigen Strukturen und Funktionen der „Zwischenstadt" in einen „funktionalen Stadtarchipel der europäischen Stadtregionen", bestehend aus unterschiedlich spezialisierten Knoten mit eigenem Profil und engen wechselseitigen Verflechtungen. Hierbei umfasst der „Stadtarchipel" die nach wie vor im Zentrum der Stadtregion liegende Kernstadt, deren zentrale Funktionen jedoch auf bestimmte, fragmentierte Bereiche eingegrenzt sind (z. B. Finanz-, Dienstleistungs- und Tourismuszentrum, hochwertiger Wohnstandort, etc.), und die sich um die Kernstadt gruppierenden, im Stadtumland liegenden spezialisierten Standorte (z. B. Flugverkehr, Bildung/Forschung, Handel/Güterverkehr, Freizeit/Sport/Erholung, Wohnen, etc.). Auch der „funktionale Stadtarchipel" stellt kein anzustrebendes, normatives stadtregionales Leitbild dar, sondern wie die „Zwischenstadt" eine Beschreibung der im Umland von Großstädten bereits vorhandenen polyzentrischen Raum- und Siedlungsstrukturen, welche aus einer Vielzahl an für die Bevölkerung und Betriebe attraktiven Standorten und Siedlungszentren bestehen.

Klein- und Mittelstädte im Umland von Großstädten

Klein- und Mittelstädte stellen sowohl prägende Elemente der für Österreich und Deutschland typischen Siedlungsstruktur als auch wesentliche Komponenten in „klassischen" landesweiten und regionalen Planungskonzepten (z. B. Zentrale Orte, Achsen, Dezentrale Konzentration) dar. Im raumwissenschaftlichen und -ordnungspolitischen Diskurs werden kleinere und mittlere Städte vor allem dünn besiedelten, ländlichen Räumen zugeordnet, da sie als „Wachstumsmotoren" (Giffinger und Kramar 2012), „Ankerpunkte" (Danielzyk 2017) oder „Leistungsträger der Regionalentwicklung" (Priebs 2017b) eine zentrale Rolle für die Versorgung, Stabilisierung und Entwicklung von strukturschwachen bzw. von Schrumpfung betroffenen peripheren Gebieten wahrnehmen. Neben agglomerationsfernen, weniger verdichteten Räumen verdeutlichen jedoch auch Stadt-Umland-Modellierungen (z. B. Phasenmodell der Stadtentwicklung) und die Diskurse zu stadtregionalen Raum- und Siedlungsstrukturen (z. B. „Postsuburbia", „Zwischenstadt", „Stadtarchipel", Polyzentralität) die Relevanz von kleineren und mittleren Städten in dichter besiedelten zentralen Räumen bzw. im stadtregionalen Gefüge. Im Umland der Großstädte übernehmen sie hierbei meist eine Entlastungsfunktion für die wachsenden Kernstädte (vgl. Adam 2005, S. 495–496; Gatzweiler et al. 2012, S. 20, 65; Priebs 2017a, S. 31; Schorn und Priebs 2021, S. 258, 260).

In den letzten beiden Jahrzehnten rückten Klein- und Mittelstädte zunehmend in den Fokus der vorwiegend auf Großstädte ausgerichteten sozial- und planungswissenschaftlichen Raum- und Stadtforschung. Kleinere und mittlere Städte werden insbesondere als integrierter Bestandteil von ländlichen Raum- und Siedlungsstrukturen im Kontext von Schrumpfung- und Peripherisierungsprozessen betrachtet (z. B.: Kleinstädte: Hannemann 2004; Bürk 2013; Kühn 2015; BBSR 2019a; BBSR 2019b; – Mittelstädte: Kühn und

Weck 2012; Bernt und Liebmann 2013; Kühn und Milstrey 2015; Ries 2019) oder in der generalisierenden Kategorie „Klein- und Mittelstädte“ in Forschungspublikationen (z. B. Baumgart et al. 2004; BBSR 2016; Bojarra-Becker et al. 2017; Danielzyk und Priebs 2020) und Fachzeitschriften (z. B. WIG 2017; Priebs 2016; IfR 2018; VHW 2020) zusammengefasst, wobei in jüngster Vergangenheit, insbesondere in Deutschland, ein gestiegenes und differenzierteres Forschungsinteresse an Klein- und Mittelstädten beobachtet werden kann (vgl. Adam und Blätgen 2019, S. 3–4; Porsche et al. 2019, S. 14–15; Porsche et al. 2021, S. 315–316; Schorn und Priebs 2021, S. 259; Steinführer et al. 2021, S. 18–19).

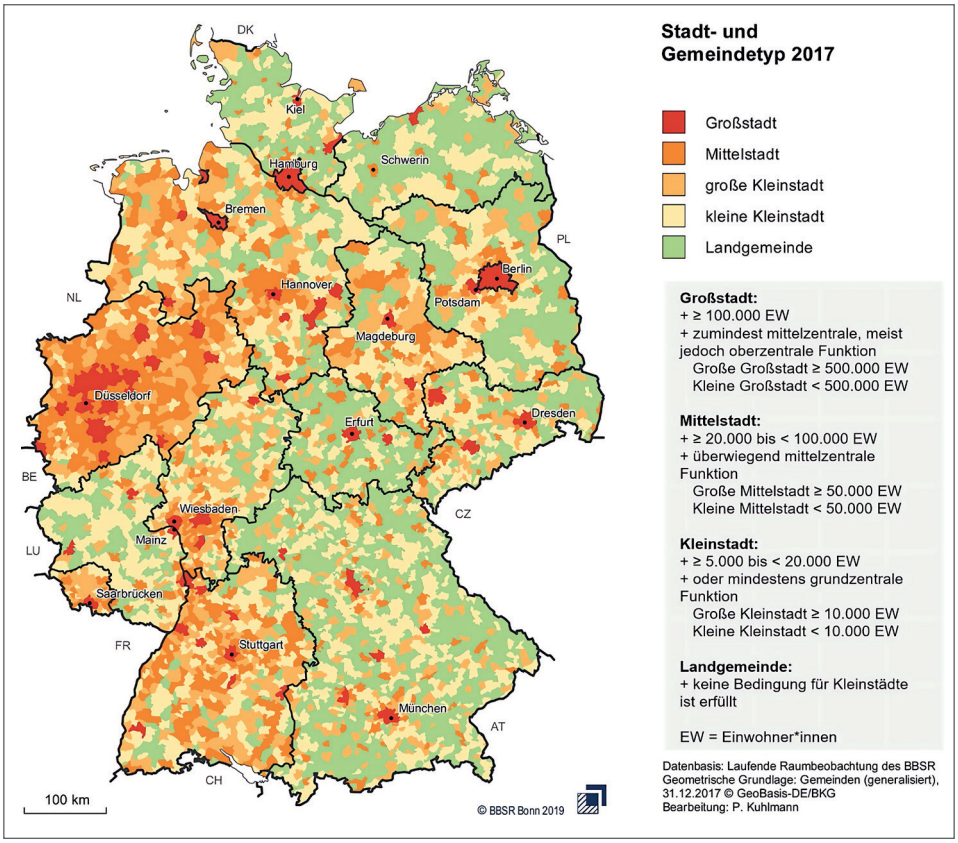
Im Gegensatz zu Deutschland gibt es in Österreich nur sehr wenige jüngere wissenschaftliche Untersuchungen, Studien oder Veröffentlichungen zu österreichischen Klein- und/oder Mittelstädten. Die wenigen vorliegenden wissenschaftlichen Publikationen umfassen beispielsweise eine Dissertation zur zukünftige Stadtentwicklung der Mittelstadt Villach an der Alpen-Adria-Universität Klagenfurt (Rauter 2011), eine Abhandlung über die Bedeutung und Rolle der Kleinstädte im Waldviertel (Giffinger und Kramar 2012), eine Studie zur Innenstadtbelebung von Klein- und Mittelstädten in der Steiermark (ÖSTB 2015) und eine Untersuchung über die Umlandkooperationen von österreichischen Klein- und Mittelstädten (Schorn und Priebs 2021).

Auch der Begriff „Klein- und Mittelstadt“ bzw. „Klein- und Mittelzentrum“ wird in Österreich sehr begrenzt, vor allem im Kontext der Stadtregionen seitens der Österreichischen Raumordnungskonferenz und der Statistik Austria, verwendet (vgl. ÖROK 2016, S. 52–54; Statistik Austria 2021a, S. 5). Sowohl die fehlende wissenschaftliche Auseinandersetzung als auch die überschaubare Verwendung der Begriffe selbst sind Indikatoren dafür, dass in Österreich, dessen Siedlungsstruktur neben der einzigen Millionenstadt Wien und fünf Großstädten mit mehr als 100.000 Einwohner/inne/n von Klein- und Mittelstädten geprägt ist, kleinere und mittlere Städte weder in der Wissenschaft als Untersuchungsgegenstand noch in der Praxis als eigener Raumtypus oder Identifiktionsmerkmal hinreichend etabliert sind.

Der Begriff „Stadt“ kennzeichnet jedoch ein in der Wissenschaft weder fachspezifisch, interdisziplinär noch weltweit eindeutig definierbares mehrdimensionales Phänomen, da Städte aus unterschiedlichen Perspektiven betrachtet werden können und je nach Kulturraum und Entwicklungsstand unterschiedliche Kriterien zur Anwendung kommen. Die gängigsten Betrachtungsweisen von „Stadt“ umfassen den statistisch-administrativen, den historisch-juristischen, den soziologischen und den geographischen Stadtbegriff, wobei Städte auch hinsichtlich ihrer Volkswirtschaft, Kunstgeschichte, Architektur etc. interpretiert und bestimmt werden können. In der Raum- und Stadtplanung ist vor allem die statistisch-administrative Abgrenzung (Einwohnerschwellenwerte) meist in Kombination mit geographischen Kriterien (z. B. Geschlossenheit bzw. Kompaktheit des Siedlungskörpers, Bebauungsdichte, funktionale und sozialräumliche innere Gliederung, zentralörtliche Funktionen, Wanderungs- und Pendlerbewegungen, Bevölkerungsentwicklung und -struktur, Wohn- und Arbeitsplatzdichte, Bündelung von Verkehrswegen, Verkehrsdichte) weit verbreitet (vgl. Fassmann 2009, S. 42–51; Heineberg 2017, S. 25–28; Rauter 2011, S. 25–28).

Ein Beispiel für die Kombination aus statistisch-administrativen und geographischen Bestimmungskriterien bzw. administrativem und funktionalem Ansatz stellt die durch das

Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) entwickelte Typisierung der deutschen Städte und Gemeinden dar (BBSR o.J.a; BBSR o.J.b; GATZWEILER et al. 2012) (Abb. 1). Ergänzend dazu gibt es in Deutschland die ebenfalls vom deutschen Bundesinstitut für Bau-, Stadt- und Raumforschung bundesweit abgegrenzten Lagetypen (BBSR o.J.c; GATZWEILER et al. 2012) sowie die darauf aufbauende Kleinstadttypisierung (BBSR 2019c).



Quelle: BBSR (o.J.): Laufende Stadtbeobachtung – Raumabgrenzungen. Stadt- und Gemeindetypen in Deutschland. Berlin: BBSR, online verfügbar (Link siehe Literaturverzeichnis)

Abb. 1: Stadt- und Gemeindetypen in Deutschland – Bundesinstitut für Bau-, Stadt- und Raumforschung (verändert)

In Österreich gibt es keine mit den deutschen Stadt- und Gemeindetypen vergleichbare, auf Bevölkerungsstand und zentralörtlichen Funktionen basierende landesweite Abgrenzung von Klein- und Mittelstädten. Die Gründe hierfür können darauf zurückgeführt werden, dass einerseits nicht in allen österreichischen Bundesländern seitens der zuständigen Landesplanung zentrale Orte ausgewiesen wurden und andererseits jene Konzepte, die vorliegen, nicht miteinander vergleichbar sind, da ihre Konzeptionierungen (z. B. Anzahl

der Hierarchiestufen) deutlich voneinander abweichen (vgl. KDZ und TU Wien 2016, S. 12, 15). Seitens der Bundesanstalt Statistik Austria gibt es für Österreich neben den einwohnerbezogenen Gemeindegrößenklassen (Statistik Austria 2021b) (Abb. 2) auch die bundesweit auf strukturellen und funktionalen Merkmalen beruhende, in städtische und ländliche Gebiete gliedernde Raumtypisierung und darauf aufbauend, die in Kern- und Außenzonen differenzierenden Stadtregionsabgrenzungen der „Urban-Rural-Typologie" (Statistik Austria 2021a) (siehe Abb. 3).

Zahl der Gemeinden 2021 nach Gemeindegrößenklassen

(Bevölkerungszahl 1.1.2021)

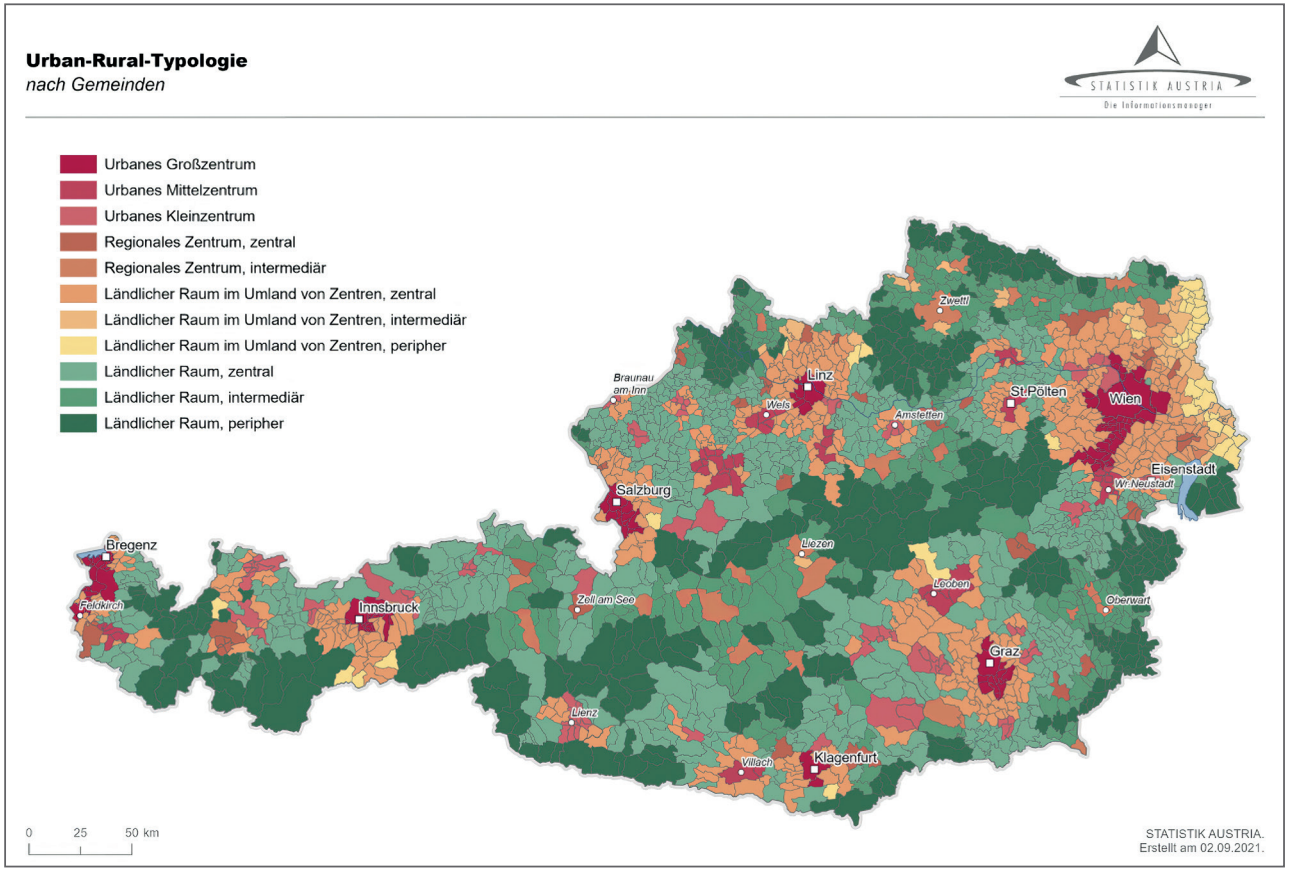
BBSR STADTTYPEN:			KLEINSTADT			MITTELSTADT			GROßSTADT	
Gemeindegrößen-klassen	Burgen-land	Kärn-ten	Nieder-öster-reich	Ober-öster-reich	Salz-burg	Steier-mark	Tirol	Vorarl-berg	Wien	Österreich
-500	17	-	22	11	8	3	34	15	-	110
501- 1.000	38	15	81	67	13	16	60	17	-	307
1.001- 1.500	46	24	126	76	14	48	52	10	-	396
1.501- 2.000	24	29	100	73	11	47	34	8	-	326
2.001- 2.500	17	13	63	55	6	40	23	10	-	227
2.501- 3.000	11	11	38	37	10	26	16	5	-	154
3.001- 5.000	12	21	74	67	35	58	36	14	-	317
5.001- 10.000	5	12	43	39	14	35	16	7	-	171
10.001- 20.000	1	4	18	8	6	10	7	6	-	60
20.001- 30.000	-	1	6	2	1	2	-	2	-	14
30.001- 50.000	-	-	1	1	-	-	-	1	-	3
50.001-100.000	-	1	1	1	-	-	-	1	-	4
100.001-500.000	-	1	-	1	1	1	1	-	-	5
über 500.000	-	-	-	-	-	-	-	-	1	1
Summe	**171**	**132**	**573**	**438**	**119**	**286**	**279**	**96**	**1**	**2.095**

Datenquelle: Statistik Austria 2021b, S. 27 (Gemeindeverzeichnis, Stand 1.1.2021), ergänzt.

Abb. 2: Gliederung der österreichischen Gemeinden nach Gemeindegrößenklassen 2021 inklusive Zuordnung der Größenklassen zu den Stadttypen des Bundesinstitutes für Bau-, Stadt- und Raumforschung (BBSR)

Die für Deutschland vorliegende Abgrenzung von kleineren und mittleren Städten des Bundesinstitutes für Bau-, Stadt- und Raumforschung (BBSR) kombiniert hierbei die in allen deutschen Bundesländern im Zuge der Anwendung des Zentrale-Orte-Konzepts ausgewiesenen zentralörtlichen Funktionen mit festgelegten Schwellenwerten der kommunalen Wohnbevölkerung. Die dadurch bestimmten Gemeinde- und Stadttypen, bestehend aus Großstadt, Mittelstadt, Kleinstadt und Landgemeinde, stellen in der deutschsprachigen Fachliteratur eine häufig rezipierte Grundlage dar.

Im Vergleich dazu ist die für Österreich vorliegende, auf Einwohnerzahlen beruhende Klassifizierung der Statistik Austria nach Gemeindegrößenklassen (Abb. 2) deutlich feinmaschiger konzipiert, weist jedoch keine Zuordnung bzw. Benennung von ländlichen oder städtischen Typen auf. Bei der ebenfalls von der Statistik Austria bundesweit auf einem komplexen statistischen Verfahren aus unterschiedlichen Analyseschritten und morpho-



Quelle: Statistik Austria (2021a): Urban-Rural-Typologie. Stand 2021.

Abb. 3: Klassifizierung der österreichischen Gemeinden nach der Urban-Rural-Typologie der Bundesanstalt Statistik Österreich

logischen, administrativen und/oder funktionalen Ansätzen basierenden Urban-Rural-Typologie (vgl. Statistik Austria 2021a) (Abb. 3) erfolgt die finale Klassifizierung von Groß-, Mittel- und Kleinzentren, welche wiederum die urbanen Kernzonen der Stadtregionen darstellen, auch anhand festgelegter Einwohnerschwellenwerte, die jedoch im Vergleich zu den deutschen Stadttypen einen höheren klein- und mittelstädtischen Bevölkerungsstand berücksichtigen, wohingegen für regionale Zentren die Erreichbarkeit von urbanen Kernzonen herangezogen wird.

Die Verflechtungsräume bzw. Außenzonen der Stadtregionen setzen sich aus den im Umland der Zentren liegenden Gemeinden zusammen, deren stadtregionale Zuordnung entsprechend dem theoretischen Stadtregionsmodell anhand des stärksten Pendlerstroms erfolgt. Die Urban-Rural-Typologie weist kleinere und mittlere Städte vor allem als urbane Mittel- und Kleinzentren bzw. Kernzonen von Mittel- und Kleinstadtregionen mit hoher Bevölkerungsdichte oder regionale Zentren mit erhöhter Bevölkerungsdichte und elementaren Infrastruktureinrichtungen aus, wobei im Umland von Großstädten auch Zuordnungen zum urbanen Großzentrum bzw. zur Kernzone der Großstadtregionen (z. B. Wiener Großraum: engeres Wiener Umland und südliche Achse bis Wiener Neustadt) erfolgen.

Die von kleineren und mittleren Städten wahrgenommenen zentralörtlichen Funktionen stehen wiederum in einem engen Zusammenhang mit ihrer jeweiligen räumlichen Lage und regionalen Einbettung, weshalb auch die Lagedifferenzierung von Klein- und Mittelstädten in zentrale und periphere bzw. agglomerationsnahe und -ferne Räume ein wichtiges Unterscheidungsmerkmal darstellt. Für das deutsche Bundesgebiet liegt hierzu eine seitens des Bundesinstituts für Bau-, Stadt- und Raumforschung (BBSR) anhand der erreichbaren Tagesbevölkerung entwickelte Differenzierung zwischen zentralen und peripheren Lagetypen vor. Die darauf aufbauende Studie zur Kleinstadttypisierung kommt zu dem Ergebnis, dass in Klein- und Mittelstädten in zentralen, großstadtnahen Lagen vor allem die Wohnfunktion vorherrscht, wohingegen kleinere und mittlere Städte insbesondere in peripheren, großstadtfernen Lagen meist wichtige Versorgungs- und Arbeitsmarkzentrum darstellen. Eine vergleichbare Unterscheidung gibt es in Österreich nicht, jedoch stellt die auf der Urban-Rural-Typologie aufbauende Stadtregionsabgrenzung der Statistik Austria eine mögliche Grundlage für die Lagedifferenzierung in zentrale, innerhalb der Stadtregion und periphere, außerhalb der Stadtregion liegende Klein- und Mittelstädte dar.

Stadt-Umland-Wanderungen

Die räumlichen Bevölkerungsbewegungen (Zuwanderungen, Abwanderungen) stellen neben der natürlichen Bevölkerungsveränderung (Geburten, Sterbefälle) die zweite wesentliche Einflussgröße der Bevölkerungsentwicklung eines Raumes dar (vgl. Gans und Pott 2016, S. 735). Für die Erklärung von Wanderungsbewegungen gibt es aufgrund ihrer Komplexität hinsichtlich Formen, Ursachen, Zusammenhängen und Auswirkungen keine allgemeingültige Theorie, sondern unterschiedliche Erklärungsansätze, Wanderungsmodelle und Klassifizierungsversuche. Die Vielfalt und hohe gesellschaftliche Bedeutung spiegeln sich auch darin wider, dass sich unterschiedliche wissenschaftliche Disziplinen (z. B. Geographie, Soziologie, Ökonomie, Politikwissenschaften, Psychologie, etc.) mit

migrationsbezogenen Aspekten und Fragestellungen beschäftigen (vgl. Hillmann 2016, S. 17–19; Kalter 2000, S. 438; Wehrhahn und Sandner Le Gall 2021, S. 106–107).

Die im Fokus dieser Arbeit stehenden Stadt-Umland-Wanderungen, welche durch die Verlagerung des Wohnsitzes von der Kernstadt in das weitere Umland bei gleichbleibenden arbeitsplatzbezogenen Verflechtungen mit der Kernstadt gekennzeichnet sind, können unter Berücksichtigung politisch-administrativer (Binnen- und Außenwanderung) als auch aktionsräumlichen Kriterien (Modell zur aktionsräumlichen Differenzierung von Binnenwanderung, Roseman 1971) den intraregionalen Wanderungen zugeordnet werden. Da für die Wohnsitzverlagerung von der Kernstadt in das Umland strukturelle, individuelle und selektive Aspekte und Motive eine Rolle spielen können, stellen vor allem die individualistische Interpretation des Push- und Pull-Modells (Lee 1966; Lee 1972), verhaltensorientierte Modelle (Wolpert 1965; Bähr 2010) sowie das Familien- bzw. Lebenszykluskonzept (Glick 1947; Gans 2011; Rossi 1980) relevante Erklärungsansätze für Stadt-Umland-Wanderungen dar.

Push- und Pull-Modelle führen Wanderungsentscheidungen auf „abstoßende" (Push-) Faktoren im Herkunftsgebiet und „anziehende" (Pull-) Faktoren im Zielgebiet zurück, wobei entsprechend der individualistischen Interpretation von Everett S. Lee aus den 1960er Jahren sowohl die objektiven Push- und Pull-Faktoren als auch die zwischen dem Herkunfts- und Zielort liegenden Hindernisse von der jeweiligen subjektiven Situation und deren individueller Bewertung abhängig sind, welche wiederum von persönlichen Faktoren wie beispielsweise Alter, Lebensphase, sozioökonomischen Ressourcen, emotionale Bindungen beeinflusst werden. Im Kontext von Stadt-Umland-Wanderungen können beispielsweise Distanz und Umzugskosten als dazwischenliegende Hindernisse, und Wohnungsangebot, Grundstücks- und Immobilienpreise, Wohnumfeld und soziale und infrastrukturelle Ausstattung der Kernstadt und der Gemeinden bzw. kleineren und mittleren Städte im Umland als relevante Push- oder Pull-Faktoren betrachtet werden.

Auch verhaltensorientierte Modelle berücksichtigen die subjektive Bewertung von objektiven Faktoren, jedoch werden Wanderungsbewegungen im Gegensatz zu Push- und Pull-Modellen als Ergebnis eines individuellen Entscheidungsprozesses betrachtet, dessen Ausgangspunkt die Unzufriedenheit mit den Standortfaktoren des aktuellen Aktionsraumes (z. B. Wohnung/Wohnumfeld, Arbeit, Bildung, Freizeit) darstellt. Entspricht die Wohnsituation nicht mehr den individuellen Wohnansprüchen bzw. wird eine gewisse Toleranzgrenze überschritten, wird zuallererst ein neuer Wohnstandort innerhalb der ansässigen Region mit Beibehaltung bzw. partieller Änderung des Aktionsraumes gesucht, und erst danach, wenn kein passender Wohnstandort zur Beseitigung der Unzufriedenheit innerhalb der bisherigen Region gefunden werden kann, auf andere Regionen mit vollständiger Neuausrichtung des Aktionsraumes verlagert. Demzufolge können Stadt-Umland-Wanderungen als individuelle Anpassungsreaktionen aufgefasst werden, welche abhängig von der subjektiven Situation und Lebensphase von unterschiedlichen Anforderungen und Bedürfnissen beeinflusst werden, wobei die Wohnansprüche und gewünschten Standortfaktoren innerhalb der Stadtregion erfüllt werden können.

Die sich verändernden Wohnanforderungen und -bedürfnisse stehen hierbei in einem engen Zusammenhang mit möglichen Ereignissen im Lebensverlauf, da etwa der Beginn einer Ausbildung, der Eintritt in das Berufsleben oder ein Arbeitsplatzwechsel, eine

Partnerschaft oder Heirat, die Geburt von Kindern, aber auch Trennung, Scheidung und Verlust des Partners einen Auslöser für Wanderungsbewegungen darstellen können. Das Lebenszyklusmodell, welches eine Weiterentwicklung des auf dem Idealbild der traditionellen Familie mit mehreren Kindern basierenden Familienzyklusmodells von Paul C. Glick aus den 1940er Jahren darstellt, bildet die seit den 1970er Jahren in den westlichen Industrieländern zu beobachtende Heterogenisierung und Pluralisierung der Familien-, Haushalts- und Lebensformen durch das Aufbrechen der geradlinigen Abfolge der Lebensphasen, die Berücksichtigung von unterschiedlichen Formen des Zusammenlebens und die Einbeziehung von Alleinerziehenden und Alleinlebenden ab, wobei Kinder nach wie vor einen wesentlichen Faktor bei der Veränderung der Haushalte darstellen.

Die daraus ableitbaren Faktoren für die Abwanderung aus der Kernstadt in das randstädtische oder suburbane Umland umfassen bei Haushalten bzw. Familien mit Kindern vor allem den erhöhten Platzbedarf (z. B. für jedes Kind ein eigenes Zimmer), die gestiegenen Anforderungen an das Wohnumfeld (z. B. Lebensumfeld und Schulausbildung) und den Anspruch nach einem dem sozioökonomischen Status entsprechenden Wohnort. Durch die Veränderung der Familien- und Haushaltstruktur sowie der Lebensformen werden Stadt-Umland-Wanderungen jedoch auch von Alleinlebenden, jungen Paaren, kinderlosen Haushalten und Kleinfamilien getragen.

3 Ausgangslage der Stadt Wien und des niederösterreichischen Umlands

Die Stadt bzw. das Bundesland Wien stellt das politische, ökonomische, kulturelle und verkehrliche Zentrum sowie die einzige Millionenstadt Österreichs dar, deren „Strahlkraft“ sich weit über die administrativen Grenzziehungen erstreckt und vor allem mit dem umgebenden Flächenbundesland Niederösterreich durch sozioökonomische Verflechtungen, welche in der stadtregionalen Betrachtung und verschiedenen Abgrenzungen des Großraumes Wien zum Ausdruck kommen und in weiterer Folge eine wesentliche Grundlage für eine länderübergreifenden koordinierte räumliche Entwicklung darstellen, eng verbunden ist.

Die Metropole Wien und das umgebende niederösterreichische Umland haben, basierend auf den theoretischen Stadtentwicklungsphasen, in der Vergangenheit unterschiedliche Transformationen durchlebt: von der industriellen Urbanisierung vor dem Ersten Weltkrieg, über eine Schrumpfungsphase in der Zwischenkriegszeit und eine erneute Urbanisierung nach dem Zweiten Weltkrieg, gefolgt von Suburbanisierung bis hin zur Desurbanisierung/Periurbanisierung. Heute finden unterschiedlich stark ausgeprägte, parallel stattfinde Dynamiken statt, wobei hier nach wie vor den Wanderungsströmen zwischen Wien und vor allem den niederösterreichischen Gemeinden eine besondere Rolle zukommt (vgl. Eder et al. 2018, S. 329–330; Fassmann et al. 2010, S. 23–25; PGO 2019, S. 33–35).

Hierbei werden Wanderungsentscheidungen nicht nur von „harten“ (Erreichbarkeit, Kosten, Wohnfläche) und „weichen“ Standortfaktoren (Besitz/Eigentum, soziale Qualitäten, Identifikationsmöglichkeiten, Freiräume, Naturnähe), sondern auch von den lokalen Strukturmerkmalen der um Umland liegenden Gemeinden und kleineren/mittleren Städte

beeinflusst, wobei unter Berufstätigen die Abwanderung in das Umland meist zu einer Erhöhung der Mobilität, vor allem des motorisierten Individualverkehrs, führt, da die Kernstadt meist der Arbeitsplatzstandort bleibt (vgl. Bauer-Wolf et al. 2003, S. 30–32; Helbich und Görgl 2010, S. 110; PGO 2019, S. 49; Stadt Wien – MA 18 2004, S. 106).

In diesem Zusammenhang stellen vor allem die bestehenden stadtregionalen Abgrenzungen und vorliegenden Entwicklungskonzepte im Großraum Wien, die Klein- und Mittelstädte rund um Wien sowie die Abwanderungsbewegungen von der Kernstadt Wien in das Umland wesentliche Aspekte bei der Beschreibung und Erfassung der Ausgangslage der Stadt Wien, des umgebenden niederösterreichischen Umlandes und der im Umland befindlichen kleineren und mittleren Städte dar.

Stadtregionale Abgrenzungen

Die in Österreich zur Anwendung kommenden stadtregionalen Abgrenzungen der strukturell und funktional eng miteinander verflochtenen Kernstädte und Einzugsgebiete zu einer sozioökonomischen Raumeinheit basieren im Wesentlichen auf dem theoretischen Modell der Stadtregion von Olaf Boustedt.

Für die Definition der Stadtregion Wien, der größten Stadtregion und einzigen Metropolregion in Österreich, gibt es aktuell zwei unterschiedliche Abgrenzungen: die „Stadtregion Wien“ des KDZ – Zentrums für Verwaltungsforschung und des Österreichischen Städtebundes (ÖStB) sowie die „Stadtregion+“ der Planungsgemeinschaft Ost (PGO). Das Stadtregionsmodell von Olaf Boustedt sieht neben der großräumigen stadtregionalen Perspektive auch die kleinräumige Zusammenfassung der Kernstadt und der urban geprägten, im engeren Umland befindlichen Gemeinden als räumliches, stadtregionales Zentrum vor. Dieser theoretische Ansatz wird in der Stadtregion Wien durch das „Stadt-Umland-Management“ (SUM), einer regionalen Kooperation zwischen der Stadt Wien und dem Bundesland Niederösterreich zur Förderung der gemeinsamen, bundesländerübergreifenden Entwicklung, aufgegriffen.

Die vom KDZ – Zentrum für Verwaltungsforschung und vom österreichischen Städtebund (ÖStB) im Jahr 2019 erstmals ausgewiesenen und seither laufend aktualisierten Stadtregionen Österreichs beruhen auf den stadtregionalen Abgrenzungen der Urban-Rural-Typologie der Statistik Austria und untergliedern sich in der Regel jeweils in eine dicht besiedelte Kernzone mit hoher Beschäftigungsdichte und eine durch hohe kernstadtorientierte Pendlerverflechtungen gekennzeichnete Außenzone (vgl. KDZ o.J.a; KDZ o.J.b).

Die „Stadtregion+“ wurde im Zuge des von der Planungsgemeinschaft Ost (PGO), einem Zusammenschluss der Bundesländer Wien, Niederösterreich und Burgenland, ab 2009 initiierten, aus mehreren Modulen bestehenden Forschungsprojekts „Strategien zur räumlichen Entwicklung der Ostregion (SRO)“ abgegrenzt und dementsprechend anfangs als „SRO-Region“ bezeichnet. Die großräumige Abgrenzung der „PGO Stadtregion+“ beruht sowohl auf bevölkerungs- und wanderungsbezogenen Kriterien (Bilanzen, regionale Bevölkerungsprognosen) sowie auf den funktionalen Verflechtungen (Pendler, Erreichbarkeiten) zwischen der Kernstadt Wien und den im Umland liegenden Gemeinden sowie auch auf der Berücksichtigung der administrativen Gemeinde- und Landesgrenzen

(politischer, planerischer Aspekt) (vgl. PGO o.J.a; PGO 2011, S. 8, 65; Eder et al. 2018, S. 331; Fassmann et al. 2010, S. 12–13).

Das „Stadt-Umland-Management Wien/Niederösterreich" (SUM) wurde von den beiden Bundesländern Wien und Niederösterreich zur Stärkung und Förderung der gemeinsamen, regionalen Entwicklung und Zusammenarbeit zwischen den Wiener Stadtrandbezirken und den im engeren Umland liegenden niederösterreichischen Gemeinden im Jahr 2006 gegründet. Das SUM agiert als Schnittstelle zwischen der Stadt Wien und den niederösterreichischen Umlandgemeinden mit der zentralen Aufgabe der Koordination der bundesländerübergreifenden Raumentwicklung in den drei Themenfeldern Siedlung/Standort, Mobilität/Verkehr und Grünraum/Land- und Forstwirtschaft (vgl. Stadt Wien o.J.; SUM o.J.a; SUM o.J.b).

Die für den Großraum Wien vorliegenden stadtregionalen Abgrenzungen verdeutlichen den Umstand, dass die räumliche Bestimmung von Stadtregionen von den jeweils herangezogenen statistischen Daten abhängig ist und es somit für den gleichen Betrachtungsraum unterschiedliche Abgrenzungen geben kann, die sich nicht nur auf die äußeren Grenzen beziehen, sondern auch die innere Differenzierung (z. B. Kern- und Außenzone) betreffen. Auch wenn der Abgrenzung von Stadtregionen keine standardisierte, idente Vorgehensweise zugrunde liegt, veranschaulichen die im Großraum Wien vorliegenden stadtregionalen Abgrenzungen der „KDZ/ÖStB Stadtregion Wien" und der „PGO Stadtregion+" die engen bevölkerungs-, wanderungs- und pendlerbezogenen Verflechtungen zwischen der Großstadt Wien und dem umgebenden niederösterreichischen Umland und die daraus resultierende Notwendigkeit einer gemeinsamen räumlichen Entwicklungspolitik der beiden Bundesländer Wien und Niederösterreich.

Mit dem vor allem im engeren Umland aktiven Stadt-Umland-Management Wien/Niederösterreich (SUM) und der auf übergeordneter Ebene tätigen Planungsgemeinschaft Ost (PGO) verfügt der Großraum Wien über zwei etablierte und langjährig tätige Institutionen zur kooperativen stadtregionalen Raumentwicklung, auch wenn diese raumordnungsrechtlich nicht verankert sind und aus informellen Zusammenschlüssen von Gemeinden bzw. Bundesländern bestehen.

Entwicklungskonzepte im Großraum Wien

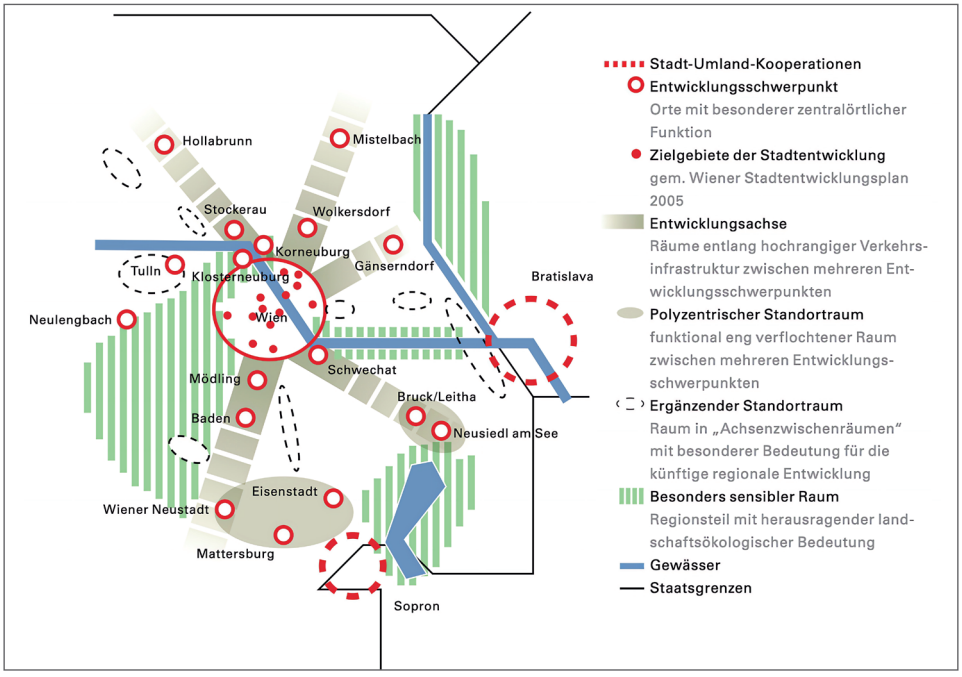
Zwischen der Großstadt Wien und dem Land Niederösterreich gibt es trotz enger struktureller und funktionaler Verflechtungen keine gemeinsame formelle Landes- oder Regionalplanung, da aufgrund der Zuweisung der allgemeinen Raumordnungskompetenz in die Gesetzgebung und Vollziehung der Länder die jeweilige Landes- bzw. Stadtgrenze die Systemgrenze darstellt.

Auf der Ebene der Planungsgemeinschaft Ost wurden jedoch im Zuge der stadtregionalen Abgrenzung im Jahr 2011 gemeinsame informelle Grundprinzipien der räumlichen Entwicklung als stadtregionales Leitbild der PGO Stadtregion+ vereinbart, welches bis heute das einzige stadtregionale Leitbild für den Großraum Wien sowie die Grundlage für die Landesentwicklungskonzepte der drei in der Planungsgemeinschaft kooperierten Bundesländer Wien, Niederösterreich und Burgenland darstellt (Wiener Stadtentwicklungs-

plan 2025, Räumliches Entwicklungsleitbild Niederösterreich 2035 und Burgenländisches Landesentwicklungsprogramm LEP 2011) (vgl. NÖ Landesregierung 2023; PGO 2011, S. 48, 56; PGO o.J.b, PGO o.J.c; Stadt Wien – MA 18 2025).

Die planliche Darstellung des Leitbildes verdeutlicht die Dominanz der Stadt Wien innerhalb der „PGO Stadtregion+“, welche einerseits durch die Größe der Stadt und andererseits durch die radiale Ausrichtung der festgelegten Entwicklungsachsen entlang von hochrangiger Verkehrsinfrastruktur zum Ausdruck kommt. Bei den Entwicklungsschwerpunkten mit besonderen zentralörtlichen Funktionen bzw. regionalen Kontenpunkte der Siedlungs- und Verkehrsentwicklung in den Entwicklungsachsen handelt es sich vor allem um Klein- und Mittelstädte im engeren und weiteren Wiener Umland.

Die Grundprinzipien der räumlichen Entwicklung im Großraum Wien beruhen somit auf den beiden „klassischen“ Planungskonzepten „Zentrale Orte“ und „Entwicklungs- und Siedlungsachse“, wobei auch das Planungskonzept des Grüngürtels anhand der definierten Freiräume von überregionaler besonderer Bedeutung erkennbar ist, wobei sie um zwei eng verflochtene, polyzentrische Siedlungszonen im Osten und Süden, um ergänzende Räume von besonderer Bedeutung in den Zwischenräumen der festgelegten Entwicklungsachsen und um stadtregionale bedeutsame Stadt-Umland- Kooperationen (mit Bratislava in der Slowakei und Sopron in Ungarn) erweitert werden (Abb. 4).



Quelle: PGO 2011, S. 49.

Abb. 4: Grundprinzipien der räumlichen Entwicklung im Großraum Wien: Die PGO Stadtregion+

Auf der übergeordneten, strategischen Ebene stellt somit das auf den vereinbarten Grundprinzipien der räumlichen Entwicklung der PGO Stadtregion+ basierende stadtregionale Leitbild eine bedeutende Grundlage für die gemeinsame stadtregionale Raumentwicklung im Großraum Wien dar. Hierbei kommen im Kontext der klein- und mittelstädtischen Entwicklung vor allem das Zentrale-Orte-Konzept und das Achsenkonzept zur Anwendung, da die Raum- und Siedlungsentwicklung vor allem konzentriert in den Klein- und Mittelstädten entlang der definierten, von Wien ausgehenden Entwicklungs- und Verkehrsachsen vorgesehen ist.

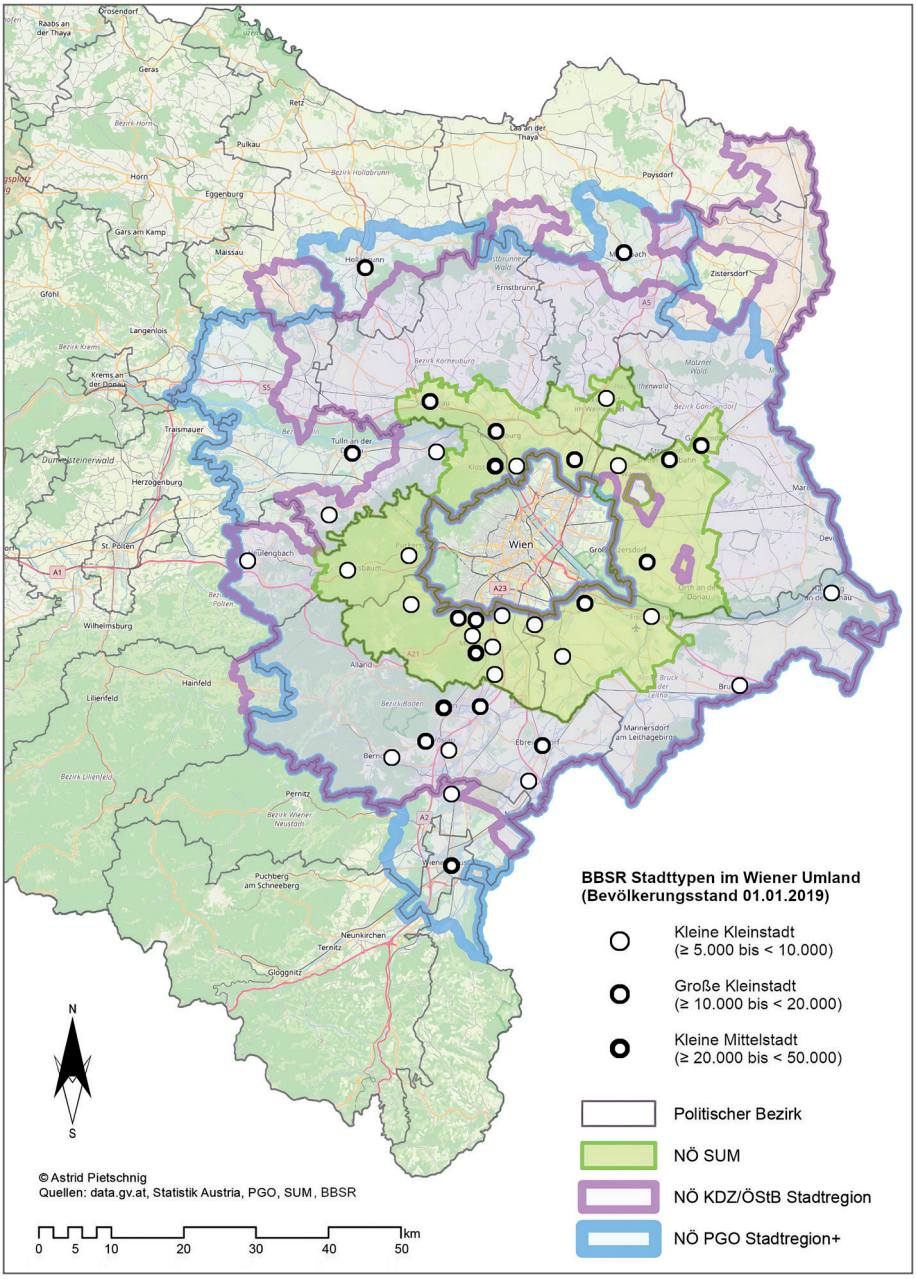
Klein- und Mittelstädte rund um Wien

Das niederösterreichische Umland der Großstadt Wien weist je nach stadtregionaler Abgrenzung und herangezogenem statistischem Ansatz zur Definition und Bestimmung von Klein- und Mittelstädten eine Vielzahl an kleineren und größeren Städten auf und ist durch ein kernstadtorientiertes Verkehrsnetz sowie ausgeprägte wanderungs- und pendlerbezogene Verflechtungen mit der Großstadt Wien gekennzeichnet.

Für die Ermittlung der kleineren und größeren Städte wurden die Einwohnerschwellenwerte der deutschen Stadttypen des Bundesinstitutes für Bau-, Stadt- und Raumforschung (BBSR) (vgl. Abb. 2) und die Bevölkerungsdaten der niederösterreichischen Gemeinden innerhalb der für den Großraum Wien vorliegenden stadtregionalen Abgrenzungen herangezogen. Hierbei zeigt sich, dass vor allem das engere Wiener Umland und die Südachse nach Wiener Neustadt eine hohe Konzentration an kleineren und mittleren Städten aufweisen und sich die Klein- und Mittelstädte im weiteren Wiener Umland, welche meist Bezirkshauptstädte darstellen, vor allem entlang der von Wien ausgehenden hochrangigen Verkehrsachsen befinden (Abb. 5). Die Überlagerung der ermittelten Städte mit der Urban-Rural-Typologie zeigt, dass vor allem die Klein- und Mittelstädte im weiteren Wiener Umland als urbane und regionale Zentren fungieren.

In diesem Zusammenhang zeigen die seitens der Statistik Austria zur Verfügung stehenden Wanderungs- und Pendlerdaten für die vorgestellten stadtregionalen Abgrenzungen, differenziert in *engeres Umland* (SUM Wien/Niederösterreich) und *weiteres Umland* (PGO Stadtregion+ minus SUM Wien/Niederösterreich), dass sich die im Jahr 2018 in das niederösterreichische Umland Zugezogenen aus Wien zu ca. 60 Prozent auf das engere Wiener Umland und ca. 40 Prozent auf das weitere Wiener Umland verteilen. Die aus dem Wiener Umland stammenden niederösterreichischen Erwerbspendler in die Großstadt Wien verteilen sich im gleichen Jahr zu 56 Prozent auf das engere Wiener Umland und zu 44 Prozent auf das weitere Wiener Umland.

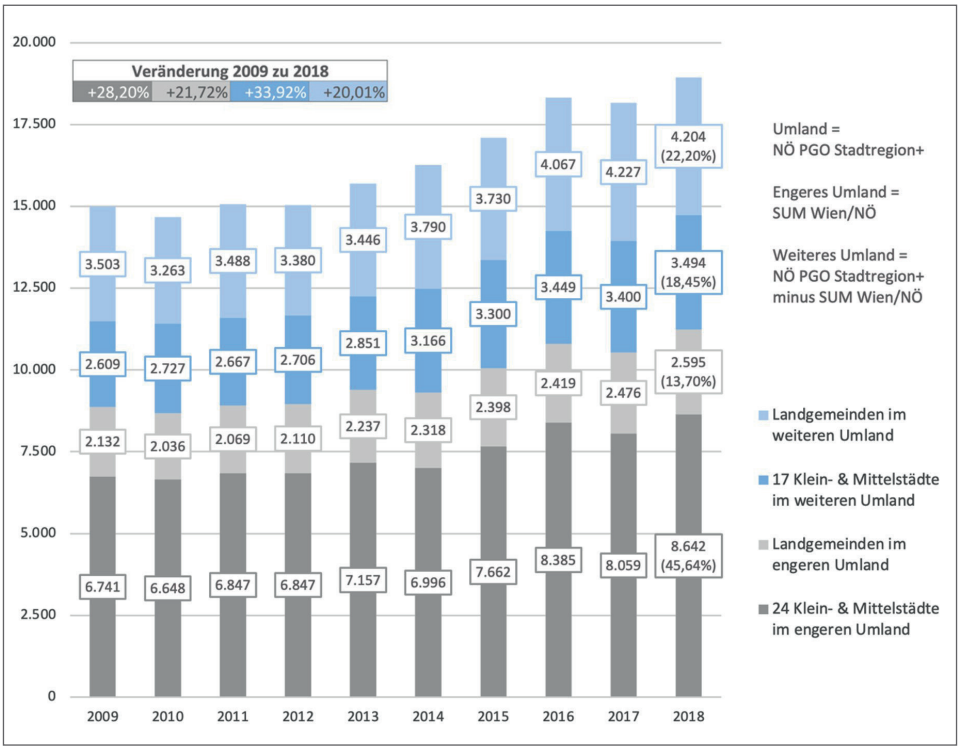
Bei der Differenzierung des Wiener Umlands in Landgemeinden und Klein- und Mittelstädte verteilt sich die Zuwanderung aus Wien zu ca. 64 Prozent auf die 41 Klein- und Mittelstädte (24 Klein- und Mittelstädte im engeren Umland: ca. 46 %, 17 Klein- und Mittelstädte im weiteren Umland: ca. 18 %) und zu ca. 36 Prozent auf die Landgemeinden (Landgemeinden im engeren Umland: ca. 14 %, Landgemeinden im weiteren Umland: ca. 22 %). Hierbei sind die absoluten Zuwanderungszahlen aus Wien im Vergleich von 2009 zu 2018 in den 24 Klein- und Mittelstädten im engeren Umland um ca. +28 Prozent und



Quelle: Eigene Darstellung

Abb. 5: Anzahl und Lage der niederösterreichischen Klein- und Mittelstädte im Großraum Wien

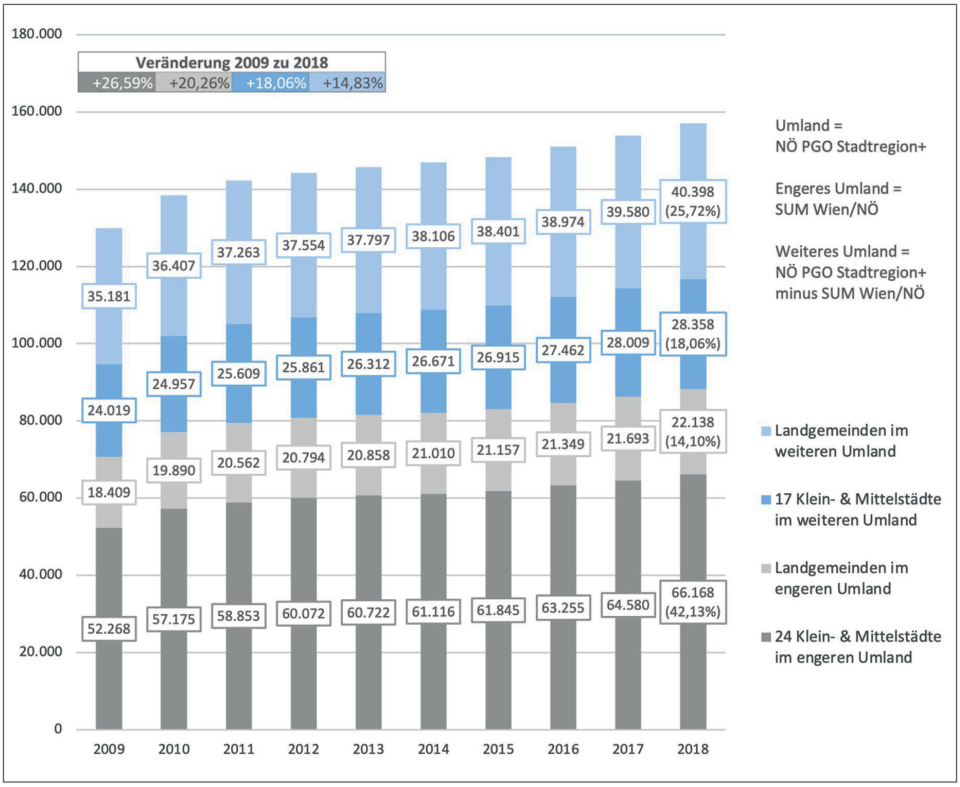
in den 17 Klein- und Mittelstädten im weiteren Umland um ca. +34 Prozent gestiegen. Dem gegenüber veränderten sich die Zuwanderungszahlen der Landgemeinden im engeren Umland um ca. +22 Prozent und im weiteren Umland um ca. +20 Prozent (Abb. 6).



Datenquelle: Statistik Austria, STATcube Datenbank. Eigene Berechnung und Darstellung.

Abb. 6: Zuwanderung aus Wien: Zuwanderinnen und Zuwanderer in die niederösterreichischen Gemeinden und Städte des Wiener Umlands 2009 bis 2018 (Absolutwerte)

Auch die Analyse der niederösterreichischen Erwerbspendler nach Wien zeigt in Bezug auf die Differenzierung des Wiener Umlandes in Landgemeinden und Klein- und Mittelstädte, dass ca. 60 Prozent der Auspendler/innen nach Wien aus den 41 Klein- und Mittelstädten (24 Klein- und Mittelstädte im engeren Umland: ca. 42 %, 17 Klein- und Mittelstädte im weiteren Umland: ca. 18 %) und ca. 40 Prozent aus den Landgemeinden (im engeren Umland: ca. 14 %, im weiteren Umland: ca. 26 %) stammen. Hierbei sind die absoluten Erwerbspendlerzahlen im Vergleich von 2009 zu 2018 in den 24 Klein- und Mittelstädten im engeren Umland um ca. +27 Prozent und in den 17 Klein- und Mittelstädten im weiteren Umland um ca. +18 Prozent gestiegen. Demgegenüber veränderten sich die Erwerbspendlerzahlen der Landgemeinden nach Wien im engeren Umland um ca. +20 Prozent und im weiteren Umland um ca. +15 Prozent.



Datenquelle: Statistik Austria, STATcube Datenbank. Eigene Berechnung und Darstellung.

Abb. 7: Erwerbspendler nach Wien: Auspendler/innen aus den niederösterreichischen Gemeinden und Städten des Wiener Umlands 2009 bis 2018 (Absolutwerte)

Stadt-Umland-Wanderungen in das Wiener Umland

Für den Großraum Wien, dem größten Ballungszentrum Österreichs, liegen diverse quantitative und/oder qualitative Studien zur Bevölkerungsentwicklung und Analyse der Wanderungsbewegungen der letzten beiden Jahrzehnte vor, welche unabhängig der angewendeten räumlichen Abgrenzung aufzeigen, dass der Wiener Agglomerationsraum von starken Bevölkerungszuwächsen und Wanderungsverflechtungen gekennzeichnet ist (z. B. BAUER-WOLF et al. 2003; Stadt Wien – MA 18 2004; ÖIEB 2004; HELBICH et al. 2010; FASSMANN et al. 2010; PGO 2011; GÖRGL et al. 2017; PGO 2019; GÄCHTER 2020; SPERINGER et al. 2020). In diesem Zusammenhang liefern vor allen die quantitative Studie „Wanderungsverflechtungen Wiens“ aus dem Jahr 2020 (SPERINGER et al. 2020) bzw. das dazugehörige Fachpapier „Suburbanisierung in der Wiener Stadtregion“ (Stadt Wien – MA 18 2021), die „Wiener Wohnstudie“ (Stadt Wien – MA 18 2004) und die „Vertiefende Wanderungsanalyse in der Ostregion“ (PGO 2019) wesentliche Erkenntnisse zu den demographischen

und sozioökonomischen Merkmalen der Abwanderungsbewegungen aus der Großstadt Wien im Kontext der zurückgelegten Wanderungsdistanz, der Abwanderungsmotive und der Wohnzufriedenheit nach dem Wegzug aus Wien sowie in Bezug auf den Einfluss von lokalen Ausstattungs- bzw. Strukturmerkmalen auf die Wanderungsentscheidung.

Die genannten, für den Großraum Wien vorliegenden Wanderungsstudien kommen zusammenfassend hinsichtlich der aus Wien abwandernden Bevölkerungsgruppen zu dem Ergebnis, dass es sich hierbei vor allem um gut ausgebildete, junge Paare mit Kindern handelt, welche sich überwiegend im näheren Wiener Umland ansiedeln und weiterhin für ihre Berufstätigkeit nach Wien pendeln. Je höher die Entfernung zur Großstadt Wien, desto eher handelt es sich um ältere, alleinstehende, eine niedrigere Ausbildung vorweisende und nicht nach Wien einpendelte Personen. Hierbei fußt die grundsätzliche Entscheidung für einen Wohnortwechsel vor allem auf der Vergrößerung der Wohnfläche und der Unzufriedenheit mit der Wohnumgebung. Die ausschlaggebenden Beweggründe für die Wohnortverlagerung in das Wiener Umland betreffen vor allem den günstigeren und einfacheren Haus- bzw. Wohnungserwerb, die besseren Lebens- und Umfeldbedingungen für Kinder und den Wunsch nach einem eigenen Haus und/oder Garten, was sich wiederum in der bevorzugten und am häufigsten vorkommenden Wohnform, dem Einfamilienhaus, widerspiegelt.

Neben den individuellen Motiven werden Abwanderungsentscheidungen auch von lokalen Strukturmerkmalen, allen voran Zentralität, Siedlungsstruktur und Erreichbarkeit, aber auch durch die Anbindung an den öffentlichen Verkehr und die kommunalen Ausstattungen im Versorgungs-, Gesundheits- und Bildungsbereich beeinflusst, wodurch vor allem die Klein- und Mittelstädte im weiteren Wiener Umland aufgrund der meist gut ausgebauten verkehrsinfrastrukturellen Anbindung zur Großstadt Wien und ihrer vorhandenen Einrichtungen, Ausstattungen und Funktionen attraktive Wohnstandorte innerhalb der Stadtregion Wien darstellen müssten.

4 Forschungsdesign und Methodik

Um den Einfluss der großstädtischen Zuwanderungsbewegungen auf die Entwicklungsperspektiven von kleineren und mittleren Städten im eher ländlich geprägten weiteren Wiener Umland hinsichtlich der hierfür relevanten Aspekte für die zukünftige klein- und mittelstädtische Entwicklung zu untersuchen, wurde als Forschungsdesign ein Mixed-Methods-Ansatz gewählt: Nach der detaillierten Ausarbeitung der allgemeinen theoretischen Einbettung sowie der Ausganglage der Stadt Wien und des niederösterreichischen Umlandes mittels Literatur- und Dokumentenanalyse sowie statistischer Sekundärdatenanalyse unterteilte sich das empirische Vorgehen in zwei Phasen, einen ersten rein quantitativen sowie anschließend einen zweiten vorwiegend qualitativen Forschungsschritt (Abb. 8).

Im ersten rein quantitativen Forschungsschritt der empirischen Forschung wurde eine statistische Sekundärdatenanalyse für die Fallstudienauswahl von insgesamt vier niederösterreichischen Klein- und Mittelstädten anhand der seitens der Statistik Austria zur Verfügung stehenden Daten und weiteren festgelegten Kriterien zum Bevölkerungsstand, zur Differenzierung in engeres und weiteres Umland und zur Klassifizierung von Stadttypen durchgeführt.

Im zweiten empirischen Forschungsschritt wurden die ausgewählten vier niederösterreichischen Klein- und Mittelstädte mit unterschiedlichen quantitativen und qualitativen Methoden untersucht: Literatur- und Dokumentenanalysen, statistische Sekundärdatenanalysen der Wanderungs- und Erwerbspendlerdaten, Vor-Ort-Begehungen inkl. Fotodokumentation, teilstandardisierte Umfragen unter Zugezogenen aus Wien sowie abschließend qualitative leitfadengestützte Expert/innen/interviews mit den jeweiligen Stadtplanungsämtern (Bürgermeister/innen und/oder Verwaltungsangehörige) und der niederösterreichischen Landesplanung (Fachbereich Überörtliche Raumordnung).

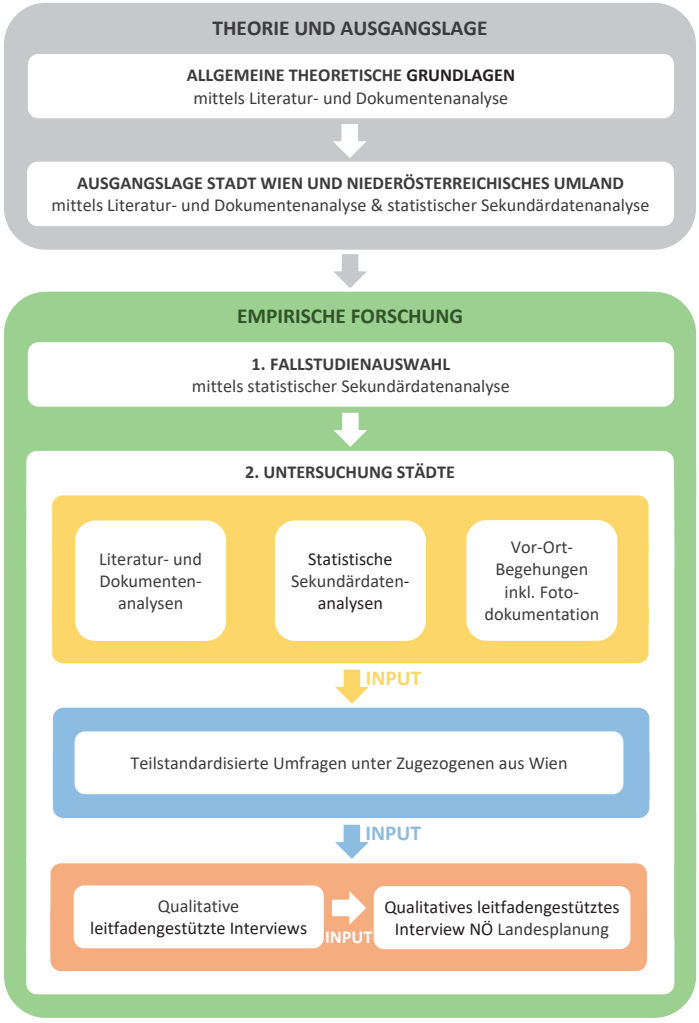


Abb. 8: Forschungsdesign – Reihenfolge, angewendete Methoden und inhaltliche Bezugnahme (eigene Darstellung)

Die Grundlage für die durchgeführten statistischen Sekundärdatenanalysen bildeten die seitens der Statistik Austria zum Zeitpunkt der Analysen (Frühjahr 2021) zur Verfügung stehenden statistischen Daten sowie die im Zuge der Ausarbeitung der theoretischen Einbettung und Ausgangslage von Wien und Niederösterreich erfassten Abgrenzungen zu Klein- und Mittelstädten und Stadtregionen (PGO Stadtregion+, KDZ/ÖStB Stadtregion Wien, SUM Wien/Niederösterreich). Die tabellarische Auflistung in Abbildung 9 veranschaulicht das verwendete Datenmaterial der Statistik Austria bei den drei an unterschiedlichen Stellen im Forschungsprozess durchgeführten statistischen Sekundärdatenanalysen.

STATISTISCHE SEKUNDÄRDATENANALYSEN - VERWENDETES DATENMATERIAL DER STATISTIK AUSTRIA								
FORSCHUNG	HAUPTWOHNSITZVERLEGUNGEN			ERWERBSPENDLER			BEVÖLKERUNG	
Statistische Sekundär-datenanalysen im Forschungs-prozess	Zuwanderung nach NÖ auf Länder-ebene	Zuwanderung von Wien nach NÖ auf Gemeinde-ebene	Zuwanderung auf Gemeinde-ebene gesamt	Aus-pendler*innen von NÖ auf Länderebene	Aus-pendler*innen von NÖ nach Wien auf Gemeinde-ebene	Aus-pendler*innen auf Gemeinde-ebene gesamt	Wohn-bevölkerung auf NÖ Gemeinde-ebene	Erwerbs-bevölkerung auf NÖ Gemeinde-ebene
	2002-2019			2009-2018			2002-2019	2009-2018
NÖ Klein- & Mittelstädte rund um Wien*	X	X		X	X		X	
Fallstudien-auswahl zur Ermittlung von vier NÖ Städten*		X			X		X	X
Empirische Untersuchung der vier ermittelten NÖ Städte		X	X		X	X	X	X

* Aufgrund vergleichender Betrachtung bzw. Datenüberlagerung Eingrenzung Datenmaterial auf 2009-2018

Abb. 9: Überblick und Verwendung des Datenmaterials von Statistik Austria bei den statistischen Sekundärdatenanalysen im Forschungsprozess (eigene Darstellung)

Bei der empirischen Untersuchung der ausgewählten niederösterreichischen Klein- und Mittelstädte richtete sich der Fokus der Literatur- und Dokumentenanalyse neben der Erhebung von allgemeinen Daten zur Verwaltung, Größe und Lage der Städte auf die Sammlung und Aufbereitung von Informationen und Daten zu den vorhandenen städtischen Ausstattungen, Einrichtungen und Funktionen und umfasste folgende Themenbereiche: Verkehr und Mobilität, Ämter, Behörden und öffentliche Einrichtungen, Bildung und Forschung, medizinische Versorgung, Kultur, Tourismus und Freizeit, Grünraum und Naherholung, Einkaufen und Gastronomie sowie Wirtschaft und Arbeitsmarkt.

Die durchgeführten Vor-Ort-Begehungen inkl. Fotodokumentation der ausgewählten vier niederösterreichischen Städte wurden vor allem nach der Fallstudienauswahl im Zuge der teilweise vor Ort stattgefundenen Erstgespräche mit Vertreter/innen der Stadtplanung sowie nach der empirischen Untersuchung der Städte mittels Literatur- und Dokumentenanalyse und statistischer Sekundärdatenanalyse der wanderungs- und pendlerbezogenen Verflechtungen mit der Großstadt Wien zur Erhebung der aktuellen Ist-Situation und um-

fassenden photographischen Dokumentation der städtischen Ausstattungen, Einrichtungen und Funktionen durchgeführt.

Die teilstandardisierten Online-Umfragen (25 Fragestellungen: 22 geschlossene und drei offene Fragen) unter Zugezogenen aus Wien in den vier gewählten niederösterreichischen Städten im weiteren Wiener Umland wurden zur Erhebung der Merkmale und Charakteristika der zuwandernden Bevölkerungsgruppe aus Wien, der ausschlaggebenden Faktoren und Rahmenbedingungen für die Umzugsentscheidung von der Großstadt in die Kleinstadt sowie zur Identifikation von Verbesserungspotenzialen aus der Perspektive der Zugezogenen durchgeführt. Die Befragung richtete sich an alle aus Wien zugezogenen Bürger/innen, welche zum Zeitpunkt der Umfrage in Wien arbeiteten oder nach ihrem Umzug noch für einige Zeit in Wien berufstätig waren. Um die thematische Ähnlichkeit sowie Häufigkeit der erhaltenen Antworten zu den drei offen gestellten Fragen zu ermitteln, wurden aus diesen induktiv Kategorien abgeleitet und die jeweiligen individuellen Einzel- bzw. Mehrfachnennungen den gebildeten Kategorien zugeordnet. Insgesamt haben an der Online-Umfrage 105 Personen (rund zwei Drittel Frauen, ein Drittel Männer) teilgenommen, welche sich in etwa zu gleichen Teilen (rund 25 %) auf die vier selektierten niederösterreichischen Städte verteilen.

Die qualitativen leitfadengestützten Expert/innen/interviews wurden zur Erhebung der Ursachen und Charakteristika des großstädtischen Zuzugs, der strategischen Positionierung gegenüber der Zuwanderung aus Wien sowie der daraus resultierenden Potenziale und Herausforderungen aus der Perspektive der gewählten Klein- und Mittelstädte und der niederösterreichischen Landesplanung durchgeführt. Die Expert/innen/interviews erfolgten anhand von vorbereiteten Interviewleitfäden, welche im Vorfeld an die jeweiligen Interviewpartner/innen übermittelt wurden. Der Interviewleitfaden umfasste insgesamt zehn (idente) Fragestellungen für alle vier Städte und jener für das Interview mit der niederösterreichischen Landesplanung insgesamt sieben leitende Fragestellungen. Die durchgeführten Interviews wurden in weiterer Folge transkribiert sowie zur Durchsicht und Freigabe an die Interviewpartner/innen übermittelt. Zur inhaltlichen Auswertung der durchgeführten Expert/innen/interviews wurde jedes Transkript mittels zusammenfassender Inhaltsanalyse, eine Form und Technik der qualitativen Inhaltsanalyse nach Philipp Mayring, analysiert.

5 Fallstudienauswahl

Für die statistische Sekundärdatenanalyse zur Selektion von vier niederösterreichischen Klein- und Mittelstädten im weiteren Wiener Umland (Abb. 10) wurden die seitens der Statistik Austria zur Verfügung stehenden Daten auf niederösterreichischer Gemeindeebene herangezogen und ein Vergleich von jeweils Fünf-Jahres-Zeiträumen (2009 bis 2013 und 2014 bis 2018) zur Ermittlung der Veränderung der Wanderungs- und Pendlerdaten im Zusammenhang mit der Großstadt Wien durchgeführt.

Um den Stellenwert der niederösterreichischen Gemeinden bei den Auswanderern aus Wien, aber auch die Bedeutung der Zuwanderung von Wien für die einzelnen Gemeinden bei der Auswahl der Klein- und Mittelstädte zu erfassen, wurde neben den absoluten Wan-

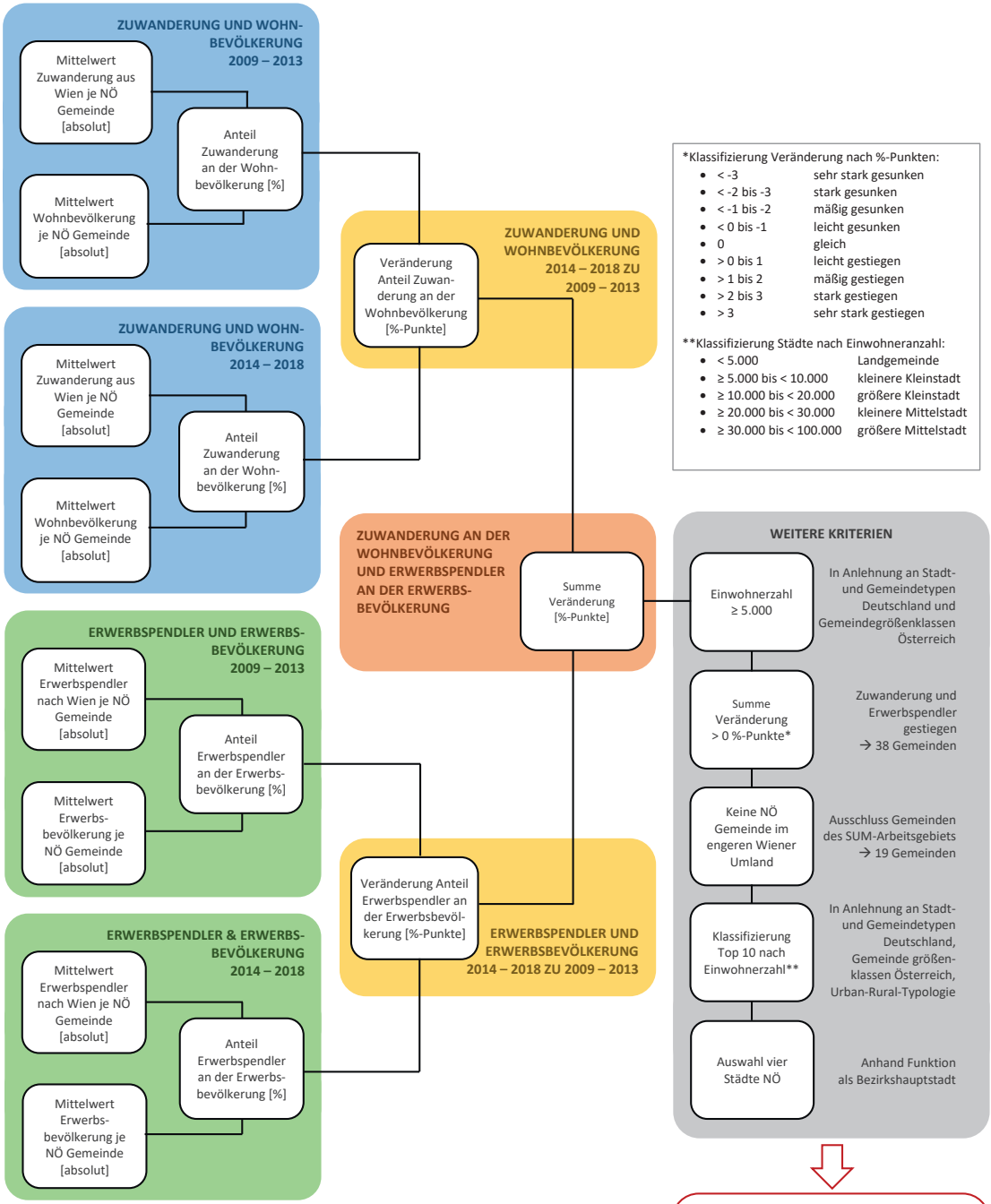


Abb. 10: Analyseschritte der Fallstudienauswahl (eigene Darstellung)

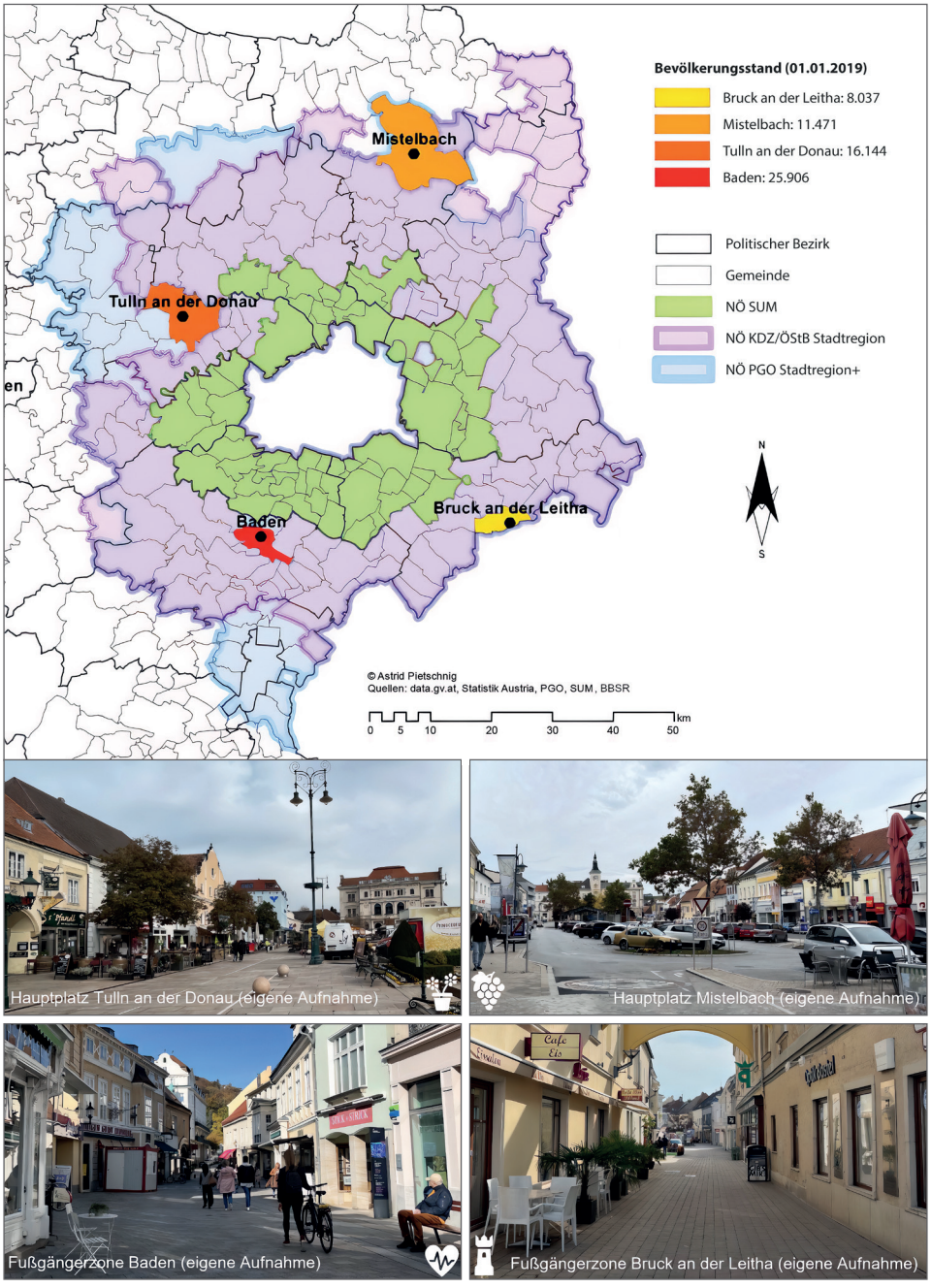


Abb. 11: Geographische Lage und Bevölkerungsstand der ausgewählten vier niederösterreichischen Klein- und Mittelstädte (eigene Darstellung; Fotos: A. PIETSCHNIG)

derungs- und Pendlerzahlen (Hauptwohnsitzverlegungen von Wien nach Niederösterreich und Erwerbspendler von Niederösterreich nach Wien), auch deren jeweiliger Anteil an der Wohn- und Erwerbsbevölkerung berücksichtigt. Aus den gemittelten prozentuellen Anteilen der definierten Zeiträume, getrennt nach Zuwanderung von Wien an der Wohnbevölkerung und Erwerbspendlern nach Wien an der Erwerbsbevölkerung, wurde die jeweilige Veränderung in Prozentpunkten berechnet. Die daraus aufsummierte Veränderungsrate in Prozentpunkten aller 573 niederösterreichischen Gemeinden stellte die Grundlage für die weitere Eingrenzung der Analyseergebnisse dar.

Zur Selektion von kleineren und mittleren Städten im weiteren Wiener Umland mit positiver Entwicklung hinsichtlich der Zuwanderung aus Wien und der Auspendler/innen nach Wien wurde in Anlehnung an die deutschen Stadt- und Gemeindetypen des Bundesinstitutes für Bau-, Stadt- und Raumforschung (BBSR) und die österreichischen Gemeindegrößenklassen der untere Einwohnergrenzwert von 5.000 Einwohner/inne/n, eine summierte Veränderungsrate von größer null Prozentpunkten sowie der Ausschluss der niederösterreichischen Gemeinden im engeren Wiener Umland unter Heranziehung des SUM-Arbeitsgebietes festgelegt.

Darauf aufbauend wurden die Top 10 der ermittelten niederösterreichischen Gemeinden in Anlehnung an die deutschen Stadt- und Gemeindetypen des Bundesinstitutes für Bau-, Stadt- und Raumforschung (BBSR), die österreichischen Gemeindegrößenklassen und die Urban-Rural-Typologie der Statistik Austria sowie unter Berücksichtigung der niederösterreichischen Stadtgrößen (Bevölkerungsstand: größte niederösterreichische Stadt St. Pölten, gefolgt von Wiener Neustadt) anhand deren Einwohnerzahl in vier klein- und mittelstädtische Stadttypen klassifiziert. Unter Berücksichtigung der durchgeführten Klassifizierung anhand der Einwohneranzahl wurde die Funktion als Bezirkshauptstadt als finales Auswahlkriterium herangezogen und die Städte Bruck an der Leitha (kleinere Kleinstadt), Mistelbach und Tulln an der Donau (größere Kleinstädte) sowie Baden (kleinere Mittelstadt) für die weitere detaillierte Untersuchung der gestellten Forschungsfragen final selektiert.

Die ermittelten vier niederösterreichischen Klein- und Mittelstädte im weiteren Wiener Umland decken, ausgehend von Wien, alle vier Himmelsrichtungen ab: Mistelbach mit rund 12.000 Einwohner/inne/n im Norden, Bruck an der Leitha mit rund 8.000 Einwohner/inne/n im Osten, Baden mit rund 26.000 Einwohner/inne/n im Süden sowie Tulln an der Donau mit rund 16.000 Einwohner/inne/n im Westen von Wien (Abb. 11). Alle vier Städte befinden sich innerhalb der räumlichen Abgrenzung der PGO Stadtregion+, nicht jedoch innerhalb der KDZ/ÖStB Stadtregion. Die KDZ/ÖStB Stadtregion umfasst nur die beiden Stadtgemeinden Baden und Bruck an der Leitha und weist die Stadtgemeinde Tulln an der Donau als eigene Stadtregion Tulln, bestehend aus einer einzigen Kernzonengemeinde, aus (vgl. KDZ o.J.c).

Bei allen vier gewählten niederösterreichischen Klein- und Mittelstädten handelt es sich entsprechend der Grundprinzipien der räumlichen Entwicklung der PGO Stadtregion+ um Entwicklungsschwerpunkte bzw. zentrale Orte, wovon drei auch entlang der auf Wien ausgerichteten Verkehrs- bzw. Entwicklungsachsen liegen: Mistelbach entlang der Nordachse nach Tschechien, Bruck an der Leitha entlang der Ostachse in das Burgenland bzw. nach Ungarn und Baden entlang der Südachse nach Wiener Neustadt bzw. in die

Steiermark. Einzig Tulln an der Donau befindet sich nicht entlang einer auf Wien ausgerichteten Verkehrs- und Entwicklungsachse, wird jedoch als bedeutender Raum für die regionale und wirtschaftliche Entwicklung ausgewiesen. (vgl. PGO 2011, S. 49)

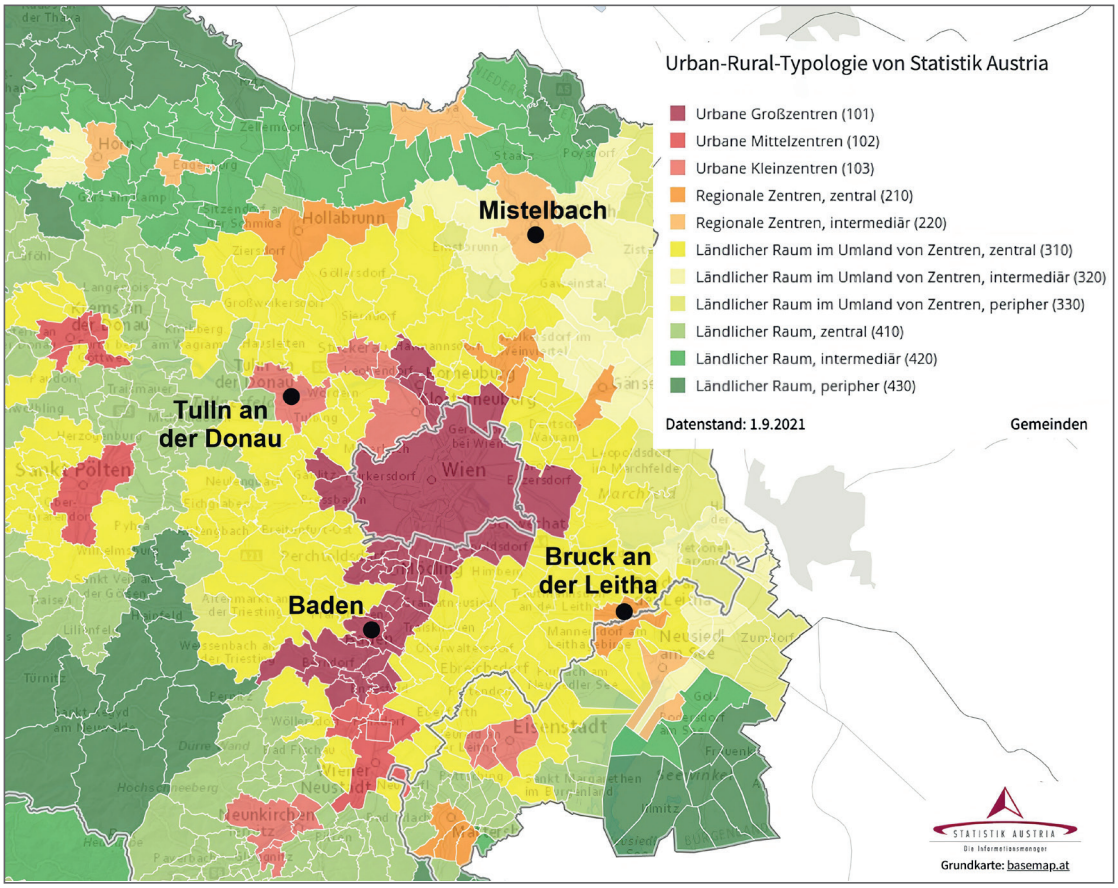


Abb. 12: Urban-Rural-Typologie der ausgewählten niederösterreichischen Klein- und Mittelstädte im Großraum Wien (Quelle: Statistik Austria 2021c, verändert)

Gemäß der Urban-Rural-Typologie der Statistik Austria entsprechen die vier niederösterreichischen Klein- und Mittelstädte zwei städtischen, urbanen sowie zwei ländlichen, regionalen Klassifizierungen, wodurch deren Rolle und Bedeutung für die angrenzenden, eher ländlich geprägten Gemeinden zum Ausdruck kommt (Abb. 12): Baden als Bestandteil des urbanen Großzentrums entlang der Achse nach Wiener Neustadt, Tulln an der Donau als urbanes Kleinzentrum, Bruck an der Leitha als zentrales regionales Zentrum und Mistelbach als intermediäres regionales Zentrum. (vgl. Statistik Austria 2021c)

6 Ergebnisse

Im Folgenden werden die aus der durchgeführten Analyse resultierenden Ergebnisse zuallererst anhand der einleitenden Zusammenfassung der wesentlichsten Erkenntnisse zur Ausgangslage der kleineren und mittleren Städte im Großraum Wien sowie anhand der resümierenden Beschreibung der Ist-Situation der untersuchten vier niederösterreichischen Klein- und Mittelstädte dargelegt. Danach folgt eine zusammenfassende Darstellung der wesentlichsten Erkenntnisse der untersuchten vier niederösterreichischen Klein- und Mittelstädte im weiteren Wiener Umland sowie abschließend die daraus ableitbaren generalisierenden Aussagen hinsichtlich der im Forschungsfokus im Kontext der Rolle und Bedeutung der Zuwanderung aus Wien auf die Entwicklungsperspektiven dieser Städte stehenden Aspekte.

Ausgangslage der Klein- und Mittelstädte im Wiener Umland

Die der wissenschaftlichen Untersuchung vorangegangenen Analysen der Wanderungs- und Pendlerbewegungen zwischen Wien und Niederösterreich zeigen, dass sich die Abwanderungsbewegungen aus der Großstadt Wien neben dem engeren auch zunehmend in das weitere Wiener Umland erstrecken. Die im Großraum Wien parallel stattfindenden Suburbanisierungs- und Desurbanisierungsprozesse konzentrieren sich hierbei vor allem auf die Klein- und Mittelstädte innerhalb der Stadtregion Wien. Die Klein- und Mittelstädte im unmittelbaren Nahbereich der Großstadt Wien weisen zwar den stärksten Zuwanderungsdruck aus Wien vor, jedoch verzeichnen die weiter entfernten Klein- und Mittelstädte den deutlich stärksten Anstieg der großstädtischen Zuwanderung in den letzten zehn Jahren. Parallel dazu steigt auch die Anzahl der aus dem Umland nach Wien einpendelnden Erwerbstätigen, deren überwiegender Teil ebenfalls aus den Klein- und Mittelstädten rund um Wien stammt. Auch hier verzeichnen die weiter entfernten Klein- und Mittelstädte einen erkennbaren Anstieg der nach Wien auspendelten Erwerbstätigen, welcher jedoch etwas geringer als jener aus den Klein- und Mittelstädten des engeren Umlandes ist.

Hierzu sei angemerkt, dass es keine standardisierte Vorgehensweise zur räumlichen Abgrenzung von Stadtregionen (sowohl äußere Grenzen als auch innere Differenzierung) gibt, weshalb die stadtregionale Bestimmung maßgeblich von den jeweils herangezogenen statistischen Kriterien abhängig ist. Da für die Stadtregion Wien zwei unterschiedliche räumliche Abgrenzungen vorliegen, wurde sowohl für die äußere als auch innere räumliche Differenzierung auf die Abgrenzungen zweier im Großraum Wien tätigen Organisationen zurückgegriffen: niederösterreichische Gemeinden der „Stadtregion+“ der Planungsgemeinschaft Ost und engeres Arbeitsgebiet des Stadt-Umland-Managements Wien/Niederösterreich. Auch für die Definition von Klein- und Mittelstädten liegt in Österreich keine Definition vor, weshalb die Einwohnerschwellenwerte der vom deutschen Bundesinstitutes für Bau-, Stadt-, und Raumforschung (BBSR) entwickelten Stadttypen herangezogen wurden. In diesem Zusammenhang zeigt die Überlagerung der ermittelten, innerhalb der Stadtregion Wien befindlichen Klein- und Mittelstädte Niederösterreichs mit der Urban-Rural-Typologie der Statistik Austria, dass insbesondere die von der Großstadt

Wien weiter entfernten kleineren und mittleren Städte als urbane oder regionale Zentren wichtige zentralörtliche Funktionen für ihr eher ländlich geprägtes Umland einnehmen.

Die vier gewählten Klein- und Mittelstädte stellen entsprechend dem stadtregionalen Leitbild der Planungsgemeinschaft Ost Entwicklungsschwerpunkte sowie gemäß der Urban-Rural-Typologie der Statistik Austria urbane und regionale Zentren im weiteren Wiener Umland dar: Bruck an der Leitha mit rund 8.000 Einwohner/innen als zentraler Ort und zentrales regionales Zentrum entlang der von Wien ausgehenden östlichen Entwicklungsachse, Mistelbach mit rund 12.000 Einwohner/innen als zentraler Ort und intermediäres regionales Zentrum entlang der nördlichen Entwicklungsachse, Tulln an der Donau mit rund 16.000 Einwohner/innen als zentraler Ort und urbanes Kleinzentrum innerhalb eines bedeutenden regionalen und wirtschaftlichen Entwicklungsraumes im Westen der Großstadt Wien und Baden mit rund 26.000 Einwohner/innen als zentraler Ort und Teil des urbanen Großzentrums Wien entlang der südlichen Entwicklungsachse.

Die Analyse der Wanderungs- und Pendlerbewegungen der vier gewählten Städte mit der Großstadt Wien zeigt, dass sowohl die Zuwanderungen aus Wien in den beiden letzten Jahrzehnten als auch die Anzahl der erwerbstätigen Auspendler/innen im vergangenen Jahrzehnt in allen vier Städten im Wesentlichen gestiegen sind. Im Kontext der absoluten Zuwanderungszahlen aus Wien weist Baden, trotz tendenziell rückläufiger Zahlen in den letzten Jahren, den bei weitem größten Zuwanderungsdruck, Bruck an der Leitha die stärkste Zunahme im Zeitverlauf, Tulln an der Donau vor allem in den vergangenen Jahren einen Anstieg und Mistelbach ein stabiles Niveau in den letzten Jahren auf. In Relation zu allen Zuwander/innen verzeichnet Bruck an der Leitha den mit deutlichem Abstand höchsten und am stärksten steigenden Anteil, Tulln an der Donau vor allem in den letzten Jahren einen erkennbaren Anstieg und Baden und Mistelbach dem langjährigen Mittelwert entsprechende Anteile der Zuwanderung aus Wien.

Zur Ermittlung eines ungefähren Anhaltspunktes für den aus Wien stammenden Bevölkerungsteil wurden die Zuwanderungen der letzten beiden Jahrzehnte auf die aktuelle Wohnbevölkerung übertragen, mit dem Ergebnis, dass in Tulln an der Donau und Mistelbach in etwa jeder Fünfte und in Baden und Bruck an der Leitha in etwa jeder Vierte aus Wien zugezogen ist. Bei den erwerbstätigen Auspendler/inne/n nach Wien weist Baden den deutlich stärksten Pendlerstrom nach Wien in absoluten Zahlen, Tulln an der Donau und Mistelbach die höchsten Zuwachsraten im Zeitverlauf und Bruck an der Leitha im Städtevergleich die geringste Zunahme vor. In Relation zu allen Auspendler/inne/n verzeichnet Tulln an der Donau konstant den höchsten Anteil, Baden konstant den niedrigsten Anteil, Mistelbach die stärkste Zuwachsrate im Zeitverlauf und Bruck an der Leitha eine geringfügige Abnahme der Auspendler/innen nach Wien in den letzten Jahren. In allen vier Städten pendelt in etwa jeder Vierte der erwerbstätigen Wohnbevölkerung und in etwa jeder Zweite der auspendelnden Erwerbstätigen nach Wien.

Die vier untersuchten Stadtgemeinden unterscheiden sich neben der räumlichen Lage, der Raumtypisierung und dem Bevölkerungsstand auch hinsichtlich ihrer Gemeindegröße, Siedlungsstruktur und Bevölkerungsentwicklung: Die Siedlungsstruktur ist in allen vier Stadtgemeinden von einer zentralen Stadt geprägt, wobei die deutlich größeren Gemeindegebiete der beiden Stadtgemeinden Tulln an der Donau und Mistelbach auch einige weitere

kleinere Ortschaften umfassen. Die Bevölkerungsentwicklung ist in allen vier Städten durch ein Wachstum gekennzeichnet, wobei Tulln an der Donau mit über 20 Prozent in den letzten beiden Jahrzehnten die stärkste Zunahme verzeichnete (Bruck an der Leitha und Mistelbach: ca. 10 %, Baden: ca. 5 %). Bei allen vier untersuchten Bezirkshauptstädten handelt es sich um historische Städte mit kleinteiligen Stadtzentren, welche an das hochrangige Straßennetz angeschlossen sind, über eine gute öffentliche Schienenanbindung nach Wien verfügen und ähnliche städtische Ausstattungen, Einrichtungen und Funktionen vorweisen: Sie sind das Verkehrs-, Verwaltungs-, Bildungs-, Gesundheit-, Versorgungs-, Einkaufs-, Kultur-, Freizeit-, Arbeitsplatz- und Wirtschaftszentrum innerhalb ihrer jeweiligen Region.

Die wesentlichsten Unterschiede bestehen darin, dass im Gegensatz zu Bruck an der Leitha und Mistelbach die beiden Städte Tulln an der Donau und Baden über eine gezielte, durchaus bekannte Schwerpunktsetzung und damit verbundene stärkere Positionierung im Städtetourismus (Baden: Kurstadt/Gesundheitsstadt, Kaiserstadt, Biedermeierstadt; Tulln an der Donau: Gartenstadt, Messestadt, Egon Schiele), eine hochrangige öffentliche Anbindung durch die Lage entlang von bedeutenden Hauptachsen der öffentlichen Schienenverkehrsinfrastruktur (Baden: zusätzlich dazu Badner Bahn direkt nach Wien), eine stärkere Ausprägung als Behördenstandort und eine florierende Innenstadt mit hoher Aufenthaltsqualität verfügen.

Weitere erkennbare Unterschiede sind, dass die Stadt Bruck an der Leitha ein reduziertes Angebot im Bildungsbereich sowie als einzige der vier Städte kein eigenes Krankenhaus vorweist und der Bahnhof Bruck an der Leitha nicht im eigenen Gemeindegebiet liegt. In der Stadt Mistelbach gibt es im Vergleich zu den anderen drei Städten kein direkt an die Innenstadt angrenzendes großflächiges Naherholungsgebiet, keine innerstädtische Fußgängerzone und zwei randstädtische Fachmarktzentren. Die beiden Stadtgemeinden Bruck an der Leitha und Mistelbach verfügen jeweils über einen in unmittelbarer Nähe zur Autobahnanschlussstelle situierten betrieblichen Wirtschaftsstandort (eco-plus-Wirtschaftspark) und sind von landwirtschaftlichen Strukturen und Windkraftanlagen geprägt. Auch weist die Stadt Tulln an der Donau als einzige der vier Städte ein Einkaufszentrum direkt am Hauptplatz, kein Fachmarktzentrum am Stadtrand und eine Konzentration an Forschungseinrichtungen und mehreren tertiären Ausbildungsangeboten auf.

Die aus Wien zugezogene Bevölkerungsgruppe

In allen vier untersuchten Städten konzentriert sich die Zuwanderung aus Wien auf die zentrale Stadt im Gemeindegebiet und es erfolgt nach dem Umzug keine nachgelagerte Aufgabe des Arbeitsplatzes in Wien. Diejenigen, die keinen Arbeitsplatz mehr in Wien vorweisen, haben ihren Arbeitsort entweder bereits wenige Jahre nach dem Umzug oder erst nach vielen Jahren der Erwerbstätigkeit in Wien geändert. Hierbei erfolgt das Erwerbspendeln nach Wien in allen vier Städten vorwiegend mit den öffentlichen Verkehrsmitteln, gefolgt von der Nutzung des eigenen, privaten PKW, wobei im Gegensatz zu den drei anderen Städten in Bruck an der Leitha der eigene PKW einen höheren Stellenwert einnimmt und Tulln an der Donau den mit deutlichem Abstand höchsten Anteil an öffentlicher Verkehrsnutzung vorweist.

Unter den Zugezogenen aus Wien dominiert in allen vier Städten die Elterngeneration bzw. Altersgruppen mit potenzieller Kinderplanung (Alterskohorte zwischen 25 und 39 Jahre alt), welche in der Regel über ein gutes Einkommen verfügen. Der Zuzug aus Wien nach Tulln an der Donau und Baden ist jedoch von eher etwas höheren Einkommensgruppen als jener nach Bruck an der Leitha oder Mistelbach gekennzeichnet. Bei der Zuwanderung aus Wien handelt es sich vor allem um Paare im gemeinsamen Haushalt, wobei nach Tulln an der Donau tendenziell eher mehr Personen zuziehen und Bruck an der Leitha auch ein Zielort für Einzelpersonen ist. Bei der Lebensform, sowohl vor als auch nach dem Umzug, dominieren in allen vier Städten Kleinfamilien und Partnerschaften ohne Kinder. Die Zuwanderung aus Wien ist in allen vier Städten von hohen Bildungsabschlüssen (Matura und Universität/Hochschule) gekennzeichnet, wobei das Bildungsniveau in Bruck an der Leitha tendenziell etwas geringer ist. Beim Großteil der aus Wien zugewanderten Personen handelt es sich um österreichische Staatsbürger österreichischer Herkunft. Die Wohnzufriedenheit wird in allen vier Städten als hoch bis sehr hoch bewertet, wobei die höchsten Zufriedenheitswerte in Tulln an der Donau vorliegen.

Zusammenfassend kann festgestellt werden, dass die Zuwanderung aus Wien in die im weiteren Wiener Umland liegenden Klein- und Mittelstädte von eher jüngeren, einkommensstärkeren, höher gebildeten, in Partnerschaft ohne Kinder lebenden oder kleinfamiliären Bevölkerungsgruppen mit österreichischer Staatsbürgerschaft getragen wird, welche einen Wohnstandort direkt im klein- und mittelstädtischen Zentrum präferieren, den Arbeitsplatz in Wien in der Regel beibehalten, vorwiegend mit den öffentlichen Verkehrsmitteln oder mit dem privaten PKW nach Wien pendeln und sehr zufrieden mit ihrem Wohnort in der Klein- oder Mittelstadt sind.

Im Kontext der bisherigen wissenschaftlichen Erkenntnisse zu den soziodemographischen Merkmalen der Abwanderung aus Wien in Verbindung mit der zurückgelegten Entfernung zeigt sich, dass die charakteristischen Merkmale des Zuzuges aus Wien in das angrenzende Umland hinsichtlich Alter, Einkommen, Haushalts- und Lebensform, Bildung, Staatsangehörigkeit und Pendlerbeziehung im Wesentlichen auch auf die Abwanderungsbewegungen aus Wien in die weiter im Umland befindlichen Klein- und Mittelstädte zutreffen.

Faktoren und Rahmenbedingungen

In allen vier untersuchten niederösterreichischen Städten ist die räumliche Nähe zur Großstadt Wien aufgrund der weiterhin aufrechten Erwerbstätigkeit in Wien ein wesentlicher Faktor bei der Umzugsentscheidung, wobei vor allem unter den Zugezogenen nach Baden die bestehenden sozialen Kontakte in Wien einen weiteren wichtigen Grund darstellen. Der Großteil der abgewanderten Personen aus Wien überlegte bei der Entscheidung zur Wohnsitzverlegung auch, entweder in Wien wohnhaft zu bleiben oder in das nähere Umland zu ziehen. Die ausschlaggebenden Gründe für die schlussendliche Umzugsentscheidung sind in Bruck an der Leitha und Mistelbach die Leistbarkeit von Wohnraum, in Tulln an der Donau die höhere Lebensqualität und in Baden das familiäre/private Umfeld, wobei auch in Tulln an der Donau die Leistbarkeit von Wohnraum und in Mistelbach das familiäre/private Umfeld von Bedeutung sind.

Die maßgeblichen Motive und Beweggründe der Zugezogenen aus Wien für den Wohnortwechsel von der Großstadt Wien in die Klein- oder Mittelstadt sind in allen vier Städten die privat nutzbaren Freiflächen wie etwa Balkon, Terrasse oder Garten und die Naturnähe bzw. der Zugang zu Natur und Grünräumen (vgl. Abb. 13). Ein weiteres zentrales Motiv für den Umzug nach Bruck an der Leitha stellt die Vergrößerung der Wohnfläche und nach Tulln an der Donau und Mistelbach der Eigentumserwerb dar. In

MOTIVE & BEWEGGRÜNDE: GEGENÜBERSTELLUNG DURCHSCHNITTLICHE BEDEUTUNG					
	Bruck an der Leitha	**Mistelbach**	**Tulln an der Donau**	**Baden**	**Gesamtergebnis**
Niedrigere Grundstücks-, Kauf- und Mietpreise	eher wichtig	sehr wichtig	eher wichtig	teils/teils	eher wichtig
Erwerb von Eigentum	eher wichtig	sehr wichtig	sehr wichtig	eher wichtig	eher wichtig
Vergrößerung der Wohnfläche	sehr wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig
Private Freiflächen (z. B. Balkon, Terrasse, Garten)	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig
Einfamilienhaus mit Garten	eher wichtig	sehr wichtig	eher wichtig	eher wichtig	eher wichtig
Gesundes Leben/ geringere Umweltbelastungen	eher wichtig	sehr wichtig	eher wichtig	eher wichtig	eher wichtig
Naturnähe/Zugang zur Natur und Grünräumen	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig
Nutzgarten/ Selbstversorgung	teils/teils	eher wichtig	teils/teils	teils/teils	teils/teils
Besseres Lebensumfeld für Kinder	eher wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig
Höheres Sicherheitsgefühl/geringere Kriminalität	eher wichtig	eher wichtig	teils/teils	eher wichtig	eher wichtig
Möglichkeit der sozialen Einbindung (z. B. Vereine)	teils/teils	teils/teils	teils/teils	eher nicht wichtig	teils/teils
Historisches Stadtzentrum/ städtisches Flair	teils/teils	eher nicht wichtig	teils/teils	teils/teils	teils/teils
Stadt der kurzen Wege/fußläufige Erreichbarkeit	teils/teils	eher wichtig	eher wichtig	eher wichtig	eher wichtig

Abb. 13: Motive und Beweggründe – Gegenüberstellung durchschnittliche Bedeutung (eigene Darstellung)

Mistelbach dominieren zusätzlich dazu noch drei weitere zentrale Beweggründe: die niedrigeren Grundstücks-, Kauf- und Mietpreise, das Einfamilienhaus mit Garten und das gesündere Leben/die geringeren Umweltbelastungen. Ein besseres Lebensumfeld für Kinder wird in allen vier Städten als eher wichtiges Motiv bewertet.

Die vorgestellten sehr wichtigen Motive und Beweggründe decken sich in etwa, jedoch nicht vollständig, mit der Einschätzung der maßgeblichen Aspekte seitens der vier Städte: private Freiflächen wurden nicht genannt und der Absicht zur Familiengründung bzw. Kindern wird im Vergleich zum eher wichtigen Motiv des besseren Lebensumfeldes für Kinder eine deutlich höhere Bedeutung beigemessen.

Die relevanten klein- und mittelstädtischen Ausstattungen, Einrichtungen und Funktionen für die Zuwanderung aus Wien sind in allen vier untersuchten Städten die öffentliche Verkehrsanbindung nach Wien als einziger sehr wichtiger Faktor sowie die medizinische Versorgung, das Sport- und Freizeitangebot, die innerstädtischen Einzelhandels- und Gastronomieeinrichtungen und die lokalen Mobilitätsangebote als eher wichtige Aspekte (Abb. 14). In den beiden Städten Bruck an der Leitha und Mistelbach stellt die Straßenanbindung nach Wien ein weiteres sehr wichtiges städtisches Strukturmerkmal für den Zuzug aus Wien dar. Auffallend ist, dass, ergänzend zum eher wichtigen Motiv des besseren Lebensumfeldes für Kinder, das vorschulische und schulische Betreuungs- und Bildungsangebot im durchschnittlichen Gesamtergebnis aller vier Städte zwar einen eher wichtigen Aspekt darstellt, jedoch das vorschulische Betreuungsangebot in Mistelbach und das schulische Bildungsangebot in Baden nur teilweise für den Zuzug aus Wien von Bedeutung sind. Die vorgestellten städtischen Ausstattungen, Einrichtungen und Funktionen decken sich im Wesentlichen mit der Einschätzung seitens der vier Städte, welche ebenfalls die öffentliche Bahnanbindung als sehr zentralen Faktor bewerten.

Zusammenfassend kann festgestellt werden, dass die hohe Bedeutung der räumlichen Nähe zu Wien vor allem auf die Berufstätigkeit in Wien zurückzuführen ist, bei der Umzugsentscheidung auch ein Verbleib in Wien oder ein Wohnortwechsel in das nähere Umland in Betracht gezogen wird und die entscheidenden Faktoren für die schlussendliche Wohnsitzverlegung in eine Klein- oder Mittelstadt im weiteren Wiener Umland vor allem die Leistbarkeit von Wohnraum und die familiären/privaten Verbindungen, aber auch die höhere Lebensqualität sind. Die bedeutendsten Motive und Beweggründe sind der Wunsch nach privaten nutzbaren Freiflächen und der Zugang zu Natur und Grünräumen als sehr wichtige Faktoren, gefolgt vom Eigentumserwerb, der Vergrößerung der Wohnfläche, den niedrigeren Grundstücks-, Kauf- und Mietpreisen, dem Einfamilienhaus mit Garten und den gesünderen Lebens- und Umweltbedingungen sowie dem besseren Lebensumfeld für Kinder als eher wichtiger Aspekt. Das allerwichtigste klein- und mittelstädtische Kriterium stellt die öffentliche Verkehrsanbindung nach Wien dar, wobei auch der Straßenanbindung nach Wien eine hohe Bedeutung zukommt. Weitere eher wichtige Aspekte sind das medizinische Versorgungsangebot, das Sport- und Freizeitangebot, die innerstädtischen Einzelhandels- und Gastronomieeinrichtungen und die lokalen Mobilitätsangebote.

Im Kontext der bisherigen wissenschaftlichen Erkenntnisse zu den Motiven und Beweggründen der Abwanderung aus Wien in das Umland zeigt sich, dass auch für die Zuwanderung in die Klein- oder Mittelstädte im weiteren Umland im Wesentlichen

AUSSTATTUNGEN, EINRICHTUNGEN & FUNTKIONEN: GEGENÜBERSTELLUNG DURCHSCHNITTLICHE BEDEUTUNG					
	Bruck an der Leitha	**Mistelbach**	**Tulln an der Donau**	**Baden**	**Gesamter-gebnis**
Nähe zu Ämtern und öffentlichen Einrichtungen	eher wichtig	teils/teils	teils/teils	teils/teils	teils/teils
Medizinische Versorgung (z. B. Ärzte, Krankenhaus)	eher wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig
Vorschulisches Betreuungsangebot (z. B. Kindergärten)	eher wichtig	teils/teils	eher wichtig	eher wichtig	eher wichtig
Schulisches Bildungs-angebot (z. B. Pflicht-schule, weiterführende Schulen, Musikschule)	eher wichtig	eher wichtig	eher wichtig	teils/teils	eher wichtig
Sport- und Freizeitangebot	eher wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig
Innerstädtische Einkaufsmöglichkeiten (z. B. Einzelhandel, Gastronomie)	eher wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig
Einkaufsmöglichkeiten am Stadtrand (z. B. Fachmarktzentren)	eher wichtig	eher wichtig	teils/teils	teils/teils	teils/teils
Straßenanbindung nach Wien (Autobahn, Schnellstraße)	sehr wichtig	sehr wichtig	eher wichtig	eher wichtig	eher wichtig
Öffentliche Verkehrsanbindung nach Wien (Bahn, Bus)	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig	sehr wichtig
Lokale Mobilitäts-angebote (z. B. Radverkehrsnetz, Stadtbus)	eher wichtig	eher wichtig	eher wichtig	eher wichtig	eher wichtig

Abb. 14: Ausstattungen, Einrichtungen und Funktionen – Gegenüberstellung der durchschnittlichen Bedeutung in den vier Städten (eigene Darstellung)

die gleichen Faktoren von Bedeutung sind. Im Kontext der klein- und mittelstädtischen Strukturmerkmale kann die hohe Relevanz der öffentlichen Verkehrsanbindung nach Wien bestätigt werden, wobei neben der Gesundheitsversorgung auch den Bereichen Sport/Freizeit, Einkaufen/Gastronomie und lokale Mobilität eine wichtige Rolle zukommt.

Strategische Positionierungen gegenüber der Zuwanderung aus Wien

Die drei Städte Mistelbach, Tulln an der Donau und Baden positionieren sich strategisch zurückhaltend bis ablehnend gegenüber der Zuwanderung aus Wien, da sie hinsichtlich ihrer grundsätzlichen Entwicklungsabsichten eine Einschränkung des Wachstums anstreben. Ein Grund hierfür ist in den beiden Städten Mistelbach und Tulln an der Donau das erforderliche Mitwachsen der sozialen Infrastruktur. Weitere Gründe sind in Mistelbach das ausreichend zur Verfügung stehende gewidmete Bauland und Wohnraumangebot sowie in Tulln an der Donau die soziale Integration des Zuzuges und die hohe Ablehnung der weiteren starken Zuwanderung in der Bevölkerung. Die Stadt Baden begründet ihre ablehnende Haltung mit dem Erhalt der hohen Lebens- und Wohnqualität und den eingeschränkten Baulandreserven. Als einzige der vier Städte nimmt die Stadt Bruck an der Leitha eine befürwortende strategische Haltung ein, da die Stadt seit vielen Jahren das Ziel verfolgt, einen Bevölkerungsstand von über 10.000 Einwohner/inne/n zur Erhöhung der Ertragsanteile aus dem österreichischen Finanzausgleich zu erreichen. In allen vier Städten stellt das örtliche Entwicklungskonzept das zentrale Steuerungsinstrument dar, in welchem die strategischen Zielsetzungen als Grundlage für die konkreten Maßnahmen und Festlegungen im Flächenwidmungs- und Bebauungsplan definiert werden.

Die niederösterreichische Landesplanung verfolgt aus fachlicher und strategischer Sicht die Konzentration der Abwanderungsbewegungen aus Wien entlang der von Verkehrsachsen liegenden Klein- und Mittelstädte, welche aufgrund ihrer vorhandenen Ausstattungen, Einrichtungen und Funktionen die forcierten Entwicklungsschwerpunkte bzw. zentralen Orte der Raum- und Siedlungsentwicklung im Großraum Wien darstellen. Diese Haltung kommt auch im räumlichen Entwicklungsleitbild „Niederösterreich 2035“ zum Ausdruck. Bei dem genannten Dokument handelt es sich um informelle strategische Vorgaben, die im Gegensatz zu rechtsverbindlichen Instrumenten nur dann für die kommunale Entwicklung der Klein- und Mittelstädte von Bedeutung sind, wenn sich die Kommunen/Städte selbst dazu verpflichten.

Im Kontext der vier analysierten niederösterreichischen Städte wurde seitens der niederösterreichischen Landesplanung angemerkt, dass die Stadt Tulln an der Donau von Landesseite zur Schaffung eines Entwicklungsankers im Nordwesten der Großstadt Wien bei der Umsetzung von konkreten Projekten und Vorhaben (z. B. Haus der Digitalisierung, Standort Universität für Bodenkultur, Technologiezentrum) gezielt gefördert wird. Insgesamt gibt es im Großraum Wien neben der niederösterreichischen Landesplanung drei Organisationen, die sich mit strategischen bzw. inhaltlichen Themenstellungen befassen: „NÖ Regional GmbH“ (Regionalentwicklung: fünf Hauptregionsstrategien, Wiener Umland keine eigene Hauptregion), „Planungsgemeinschaft Ost“ (strategische Grundlagen, stadtregionales Leitbild), „Stadt-Umland-Management (SUM) Wien/Niederösterreich“ (inhaltliche, stadtregionale Themenbearbeitung).

Zusammenfassend kann festgestellt werden, dass sich die strategische Positionierung der Klein- und Mittelstädte gegenüber der Zuwanderung aus Wien aus den jeweiligen grundsätzlichen Entwicklungsabsichten ableitet, welche vor allem vom Einschränken des Bevölkerungswachstums und somit von einer zurückhaltenden bis ablehnenden strategischen Haltung gegenüber dem Zuzug aus Wien dominiert wird. Hierbei stellt das örtliche

Entwicklungskonzept das strategische Instrument zur Steuerung der jeweiligen Entwicklungsabsichten dar.

Die Einschränkung des Bevölkerungswachstums steht jedoch eindeutig im Widerspruch zu der strategischen Zielsetzung der niederösterreichischen Landesplanung im Großraum Wien, da die konzentrierte Entwicklung in entlang von Achsen befindlicher Klein- und Mittelstädten forciert wird. Die diametralen Haltungen zwischen der Landes- und Gemeinde-/Stadtebene können auf die Unverbindlichkeit der Entwicklungsleitbilder zurückgeführt werden, da keine Rechtsverbindlichkeit besteht und sich die Städte diesen Konzepten gegenüber nicht verpflichtet fühlen. Eine gewisse Steuerung kann seitens des Landes jedoch durch die gezielte Förderung von konkreten Projekten und Vorhaben in den Klein- und Mittelstädten erzielt werden. Auch wird das niederösterreichische Umland der Großstadt Wien von mehreren Organisationen auf unterschiedlichen Ebenen bearbeitet und stellt gemäß den definierten niederösterreichischen Hauptregionen keine eigene Hauptregion dar.

Potenziale und Herausforderungen

Die identifizierten Potenziale und Herausforderungen im Kontext der Zuwanderung aus Wien sind in den vier untersuchten niederösterreichischen Städten aufgrund der verschiedenen Ausgangslagen und strategischen Positionierungen von unterschiedlicher Bedeutung und resultieren aus teilweise ähnlichen, teilweise unterschiedlichen Kontexten (Abb. 15):

Die beiden Städte Bruck an der Leitha und Mistelbach weisen einen hohen Anteil an Nebenwohnsitzen auf, da Zugezogene aus Wien meistens zum Erhalt einer Parkberechtigung ihren Hauptwohnsitz in Wien belassen. In der Stadt Bruck an der Leitha stellt die Reduktion der Nebenwohnsitze bzw. die Ummeldung zu Hauptwohnsitzen von vor allem jenen Personen, die ihren Lebensmittelpunkt bereits im Bruck an der Leitha haben, eine zentrale Herausforderung im Kontext des angestrebten Bevölkerungswachstums auf 10.000 Einwohner/innen zur Erlangung der nächsthöheren Stufe bei den Ertragsanteilen des österreichischen Finanzausgleiches dar. Im Gegensatz dazu bewertet die Stadt Mistelbach die Reduktion der Nebenwohnsitze entsprechend der zurückhaltenden strategischen Positionierung gegenüber der Zuwanderung bzw. dem beabsichtigten Einschränken des Bevölkerungswachstums nicht als kommunales Handlungsfeld.

Das Handlungsfeld Verkehr und Mobilität umfasst in allen vier Städten die Reduktion des, auch durch die Zuwanderung steigenden, Verkehrsaufkommens durch die Schaffung von alternativen Mobilitätsangeboten. In den beiden Städten Bruck an der Leitha und Tulln an der Donau wird der motorisierte Individualverkehr vor allem durch die innerstädtischen Zu- und Abfahrten zu den Bahnhöfen, welche wichtige öffentliche Verkehrsknotenpunkte in der Region und für die Pendlerbewegungen nach Wien darstellen, verursacht. In der Stadt Mistelbach konzentriert sich der Fokus vor allem auf den innerstädtischen Durchzugsverkehr, welcher durch die Eröffnung der Umfahrung nur teilweise umgelenkt werden konnte. In der Stadt Baden stellt die allgemeine Verkehrsreduktion ein zentrales Themenfeld der Stadtentwicklung dar.

ZUWANDERUNG AUS WIEN: HANDLUNGSFELDER & KONTEXT				
	Bruck an der Leitha	**Mistelbach**	**Tulln an der Donau**	**Baden**
Neben-wohnsitze	Hoher Anteil (Parkpickerl Wien)	Hoher Anteil (Parkpickerl Wien), jedoch kein Handlungsfeld	Kein Handlungsfeld	Kein Handlungsfeld
Verkehr & Mobilität	Verkehrs-aufkommen zum Bahnhof/Projekt Flughafenspange, Fuß- & Radwege	Durchzugsverkehr Hauptplatz, Fuß- & Radwege, Mikronahverkehr	Verkehrs-aufkommen Autobahn-anschlussstelle/ Donaubrücke/Stadt, Fuß- & Radwege	Verkehrs-aufkommen, Mikronahverkehr
Soziale Infrastruktur	Bildungs- und Betreuungs-einrichtungen, Freizeit/ Sportangebot	Bildungs- und Betreuungs-einrichtungen	Betreuungs-einrichtungen	Betreuungs-Einrichtungen, Freizeit/ Sportangebot
Innenstadt-belebung	Leerstand Fußgängerzone	Attraktivierung Hauptplatz, jedoch kein Handlungsfeld	Kein Handlungsfeld: florierende Innenstadt	Kein Handlungsfeld: florierende Innenstadt
Soziale Integration	Keine Strategien, reges Vereinsle-ben, Bewerbung Vereine in Schulen	Keine Strategien, vor allem in den Katastral-gemeinden	„Stadt des Miteinanders“, Sorge Verlust Kleinstadtcharakter im Sozialen/ Gesellschaftlichen	Kein Handlungs-feld: Einkommens-starker Zuzug entspricht gehobenem Wohnstandort
Vernetzung & Erfahrungs-austausch	Informell, meist über Bürgermeister, anlass- bzw. projektbezogenen	Informell, meist über Bürgermeister oder City Management	Informell, meist über Bürgermeister	Informell

Abb. 15: Zuwanderung aus Wien – Kontextualisierte Handlungsfelder (eigene Darstellung)

In allen vier Städten ist es das Ziel, dass sich trotz Bevölkerungswachstums bzw. der Zuwanderung aus Wien der motorisierte Individualverkehr nicht erhöht, weshalb in den Städten Bruck an der Leitha, Mistelbach und Tulln an der Donau die Verbesserung der Fuß- und Radinfrastruktur und in den beiden Städten Mistelbach und Baden der Ausbau des Mikronahverkehrs forciert wird. Auch die bereits aus Wien zugezogenen Personen sprechen sich in der Stadt Mistelbach vor allem für die Verbesserung des Mikronahverkehrs und in der Stadt Tulln für die Reduktion des motorisierten Individualverkehrs und die Verbesserung der Radverkehrsinfrastruktur aus.

In allen vier Städten stellt das Mitwachsen der sozialen Infrastruktur, insbesondere der Bildungs- und Betreuungseinrichtungen, eine zentrale Herausforderung im Kontext der Zuwanderung dar. Darüber hinaus bedingt die Änderung der beiden niederösterreichischen Landesgesetze zur Kinderbetreuung/zu den Kindergärten die Anpassung der kommunalen Betreuungseinrichtungen hinsichtlich der Einstellung von zusätzlichem Betreuungspersonal und der Schaffung von entsprechenden Räumlichkeiten/Gebäuden seitens

der niederösterreichischen Gemeinden und Städte in den nächsten Jahren. Die kommunale Aufrechterhaltung und Erweiterung der sozialen Infrastruktur wird auch durch die aktuelle Baupreis- und Energiekostenentwicklung zusätzlich erschwert. Im Kontext der sozialen Infrastruktur sind aus Sicht der bereits aus Wien zugezogenen Personen in den beiden Städten Baden und Bruck an der Leitha vor allem die Schaffung eines vielfältigeren und kindergerechten Freizeit- und Sportangebotes und zusätzlich dazu in der Stadt Baden die Erweiterung des vorschulischen Betreuungsangebotes wichtige Themenfelder.

Die Innenstadtbelebung ist vor allem in der Stadt Bruck an der Leitha ein zentrales Handlungsfeld der Stadtverwaltung, da entsprechend dem beabsichtigten Bevölkerungswachstum und der befürwortenden strategischen Positionierung gegenüber der Zuwanderung aus Wien die Attraktivierung des Stadtzentrums einen wichtigen Faktor für die Zuwanderung darstellt. Im Gegensatz dazu wird die Innenstadtbelebung in der Stadt Mistelbach nicht im Kontext der Zuwanderung, sondern als wichtige Maßnahme zur Erhöhung der Lebens- und Wohnqualität in der Stadt sowie zur Aufrechterhaltung der Zentrumsfunktion als zentrale Stadt im nordöstlichen Weinviertel betrachtet. In beiden Städten bewerten die bereits aus Wien Zugezogenen vor allem die Innenstadtbelebung als zentrales kommunales Handlungsfeld

Die soziale Integration der Zuwanderung aus Wien wird in den drei Städten Bruck an der Leitha, Mistelbach und Tulln an der Donau als zentrale Herausforderung betrachtet, wohingegen die Stadt Baden aufgrund des hohen soziökonomischen Status der Zugezogenen aus Wien in diesem Zusammenhang keinen Handlungsbedarf sieht. In den beiden Städten Bruck an der Leitha und Mistelbach gibt es keine Strategien zur sozialen Integration des Zuzuges, wobei in Mistelbach vor allem der fehlende Integrationswillen unter Zugezogenen in den Katastralgemeinden wahrgenommen wird, wohingegen die Stadt Tulln an der Donau einen gezielten Schwerpunkt bei der sozialen Integration des Zuzuges setzt, da im Kontext der Zuwanderung die politische Sorge vor dem Verlust des sozialen bzw. gesellschaftlichen Kleinstadtcharakters besteht. Auch aus der Datenerhebung zu den Integrations- und Unterstützungsangeboten unter den bereits aus Wien Zugezogenen in den vier niederösterreichischen Städten ging hervor, dass die Stadt Tulln an der Donau die vielfältigsten und umfangreichsten Maßnahmen zur sozialen Integration des Zuzuges setzt, während in den anderen Städten entweder keine Angebote vorliegen oder die Integration und Unterstützung vor allem durch die Nachbarschaft im Wohnumfeld erfolgt.

Die Vernetzung und der Erfahrungsaustausch zwischen den Klein- und Mittelstädten erfolgt meist auf informeller Ebene über die Bürgermeister/innen oder aus anlass- bzw. projektbezogener Eigeninitiative. Des Weiteren gibt es die zweimal jährlich stattfindende Konferenz des Stadt-Umland-Management Wien/Niederösterreich zwischen der Stadt Wien und den niederösterreichischen Gemeinden sowie den Städtetag des Österreichischen Städtebundes einmal im Jahr. Eine explizite Vernetzung zwischen den kleineren und mittleren Städten rund um Wien zum Erfahrungsaustausch bei ähnlichen Rahmenbedingungen, Problemstellungen und Anliegen oder zur gegenseitigen Wissensweitergabe gibt es nicht, weshalb die Vernetzung der Klein- und Mittelstädte im Umland der Großstadt Wien als das zentrale Potenzial hinsichtlich der erläuterten Herausforderungen im Kontext der Zuwanderung aus Wien identifiziert wurde.

Zusammenfassend kann festgehalten werden, dass die zentralen Herausforderungen im Kontext der Zuwanderung aus Wien die Reduktion des Verkehrsaufkommens durch die Schaffung von alternativen Mobilitätsangeboten (Fuß- und Radverkehrsinfrastruktur, Mikronahverkehr), die Erweiterung der sozialen Infrastruktur (insbesondere Bildungs- und Betreuungseinrichtungen, Sport- und Freizeitangebote) und die soziale Integration durch Integrations- und Unterstützungsangebote sind. Im Falle eines gewünschten Bevölkerungswachstums stellen weitere zentrale Herausforderungen die Reduktion der Nebenwohnsitze sowie die Innenstadtbelebung zur Erhöhung der Attraktivität der Stadt für die Zuwanderung aus Wien dar. Im Kontext der erläuterten Herausforderungen und unterschiedlichen Qualitäten hinsichtlich Ausstattungen, Einrichtungen und Funktionen der Klein- und Mittelstädte rund um Wien ist das zentrale Potenzial die Implikation eines Formates/einer Plattform zur Vernetzung und zum Erfahrungsaustausch, welche durchaus in einer der bestehenden Organisationen (z. B. Planungsgemeinschaft Ost, niederösterreichische Landesplanung, NÖ Regional GmbH, Stadt-Umland-Management, Kleinregionen Niederösterreich, Österreichischer Städtebund) angesiedelt werden könnte.

7 Conclusio

Die Zuwanderung aus der Großstadt Wien in die niederösterreichischen Klein- und Mittelstädte im weiteren Wiener Umland ist insofern von Bedeutung, da sich die Abwanderungsbewegung aus Wien zunehmend in das weitere Umland erstreckt und sich hierbei vor allem auf die Klein- und Mittelstädte konzentriert. Zeitgleich zu diesem Prozess steigen auch die Pendlerbewegungen aus den weiter entfernten kleineren und mittleren Städten in die Großstadt Wien.

Die soziodemographischen Merkmale der zuwandernden großstädtischen Bevölkerungsgruppe entsprechen hierbei im Wesentlichen jenen der Suburbanisierung, da es sich vor allem um jüngere, einkommensstärkere, höher gebildete Paare ohne Kinder oder Kleinfamilien mit österreichischer Staatsbürgerschaft handelt. Auch die der Umzugsentscheidung zugrundeliegenden Beweggründe stimmen grundsätzlich mit den aus der Motivforschung zu großstädtischen Abwanderungsbewegungen bekannten Aspekten überein: private Freiflächen, Naturnähe, Eigentumserwerb, Wohnflächenvergrößerung, günstigere Immobilienpreise, Einfamilienhaus mit Garten, gesündere Lebensbedingungen und besseres Lebensumfeld für Kinder. Die individuelle Entscheidung zur Wohnsitzverlegung resultiert somit vor allem aus veränderten Lebens- und Wohnansprüchen, welche am aktuellen großstädtischen Wohnort nicht erfüllt werden können, wobei im Zuge der Entscheidungsfindung auch ein Verbleib in der Großstadt Wien oder ein Umzug ins nähere Umland in Betracht gezogen wird.

Die schlussendliche Entscheidung zum Wohnortwechsel in eine kleinere oder mittlere Stadt im weiteren Umland beruht, neben der grundsätzlich hohen Bedeutung der berufsbedingten räumlichen Nähe zur Großstadt Wien, vor allem auf drei zentralen Faktoren: Leistbarkeit von Wohnraum, familiäre/private Verbindungen und die als höher bewertete Lebensqualität. In diesem Zusammenhang stellen, neben der öffentlichen Verkehrsanbindung nach Wien als wichtigstem klein- und mittelstädtischem Pull-Faktor, auch die

Ausstattungen, Einrichtungen und Funktionen der Klein- und Mittelstädte in den Bereichen Gesundheit, Sport/Freizeit, Einkaufen/Gastronomie und lokale Mobilität bedeutende Strukturmerkmale für die Zuwanderungsbewegungen aus Wien dar.

Das Konzept „Wohnen in der Kleinstadt, Arbeiten in der Großstadt" scheint für immer mehr aus Wien abwandernde Personen eine attraktive Alternative zum Wohnstandort im näheren Umfeld der Großstadt Wien zu sein, jedoch positionieren sich die Klein- und Mittelstädte im weiteren Wiener Umland gegenüber der Zuwanderung aus Wien meist zurückhaltend bis ablehnend, da der Zuzug aus der Hauptstadt ihren strategischen Zielsetzungen zur Einschränkung des Bevölkerungswachstums diametral gegenübersteht. Die strategische Positionierung der Klein- und Mittelstädte steht wiederum im Widerspruch zu der seitens der niederösterreichischen Landesplanung forcierten raum- und siedlungsstrukturellen Entwicklung in den entlang von Achsen liegenden kleineren und mittleren Städten mit zentralörtlichen Funktionen. Die gegensätzlichen Haltungen zwischen der Landes- und Gemeinde-/Stadtebene sind auf die fehlende Selbstverpflichtung der Städte gegenüber landesweiten Entwicklungskonzepten bzw. Leitbildern bzw. deren fehlende Rechtverbindlichkeit zurückzuführen.

Obwohl die aus der Zuwanderung aus Wien resultierenden Herausforderungen von der jeweiligen Ausgangslage und strategischen Positionierung gegenüber dem Zuzug abhängig sind, stellen die Reduktion des Verkehrsaufkommens durch die Schaffung von alternativen Mobilitätsangeboten (Fuß- und Radverkehrsinfrastruktur, Mikronahverkehr), die Erweiterung der sozialen Infrastruktur (insbesondere Bildungs- und Betreuungseinrichtungen, Sport- und Freizeitangebote) und die soziale Integration durch Integrations- und Unterstützungsangebote die wesentlichsten Herausforderungen dar. Im Kontext der Bedeutung von attraktiven Innenstädten als wichtigem Faktor für die Zuwanderung aus Wien und eines angestrebten Bevölkerungswachstums sind weitere Herausforderungen für Klein- und Mittelstädte die Innenstadtbelebung sowie die Reduktion der Nebenwohnsitze. Hierbei konnte als zentrales Potenzial zur Bewältigung der Herausforderungen, unabhängig von den jeweiligen Entwicklungsabsichten, die Implikation einer Vernetzung- und Austauschplattform zwischen den Klein- und Mittelstädten rund um Wien identifiziert werden.

Die Rolle und Bedeutung der steigenden Zuwanderung aus Wien für die Entwicklungsperspektiven der Klein- und Mittelstädte im weiteren Wiener Umland kann abschließend als hoch eingeschätzt werden, da die Klein- und Mittelstädte gefordert sind, Strategien und Ansätze zur Bewältigung der mit dem Zuzug in Verbindung stehenden Herausforderungen zu entwickeln. Hinzu kommt, dass mit einer restriktiven Stadtentwicklung auch negative Effekte (z. B. Leistbarkeit/Verfügbarkeit von Wohnraum bzw. Grundstücken, Verdrängung einkommensschwacher Gruppen) einhergehen können, und eine gewünschte Zuwanderung aus Wien vor allem durch die Schaffung von attraktiven Strukturen (z. B. attraktive Innenstädte, Radinfrastruktur, Sport-/Freizeitangebot, medizinische Versorgung) erzielt werden kann, welche wiederum ausreichend kommunale Budgetmittel erfordert. In diesem Kontext stellen die Vernetzung und der Erfahrungsaustausch zwischen den Klein- und Mittelstädten rund um Wien eine wertvolle, bis dato noch nicht genutzte Ressource dar.

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Herausforderungen der Wohnungsmarktintegration für ukrainische Vertriebene in den zwei unterschiedlichen urbanen Kontexten von Wien und Lemberg [Lwiw]

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Zusammenfassung

Im vorliegenden Beitrag werden die komplexen Herausforderungen der Wohnungsmarktintegration für ukrainische Vertriebene im Vergleich zwischen den Städten Wien und

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Lemberg [Lwiw] behandelt. Die Evakuierung ukrainischer Geflüchteter nach Beginn der russischen Invasion in der Ukraine war eine äußerst traumatisierende Erfahrung. Eine erhebliche zusätzliche Belastung für Frauen und Kinder, die in das Ausland reisten, war die Tatsache, dass Männer aufgrund des Ausreiseverbots ihre Familien nicht begleiten durften. Für die vom Krieg traumatisierten Ukrainerinnen und Ukrainer wurde die Wohnungssuche an einem unbekannten Ort daher zu einer weiteren großen Herausforderung, der sich jede/r abhängig von vielen persönlichen und stadtspezifischen Faktoren und Wohnungsmarktstrukturen stellen musste.

Die Autor/inn/en analysierten diese Thematik aus verschiedenen Blickwinkeln, mit unterschiedlichen methodischen Zugängen und problemorientierten Ansätzen. Die Wohnverhältnisse üben einen erheblichen Einfluss auf die gesamte Lebenssituation von Geflüchteten aus, da zahlreiche Aspekte der sozialen und strukturellen Integration in einem Konnex zum Wohnen stehen. Die Analysen widmen sich einer Gruppe von seit dem Beginn des russischen Angriffskrieges im Jahr 2022 Geflüchteten, die sich nicht nur in Bezug auf ihre geographische Herkunft auf vielerlei Weise von den Geflüchteten der medial so benannten „Refugee Crisis" des Jahres 2015 unterscheiden.

Schlagwörter: Geflüchtete, Binnenvertriebene, Wohnungsmarkt, Integration, urbane Herausforderungen, Wien, Lemberg, Lwiw, Ukraine

Summary

Challenges of Housing Market Integration for Ukrainian Displaced Persons in the Two Different Urban Contexts of Vienna and Lviv

The article deals with the complex challenges of housing market integration for displaced Ukrainians in a comparison between the cities of Vienna and Lviv. The evacuation of Ukrainian refugees after the start of the Russian invasion of Ukraine was an extremely traumatising experience. A considerable additional burden for women and children travelling abroad was the fact that men were not allowed to accompany their families due to the ban on leaving the country. For Ukrainians traumatised by the war, the search for accommodation in an unfamiliar place therefore became another major challenge that everyone had to face, depending on many personal and city-specific factors and housing market structures.

The authors analysed the problem under investigation from different perspectives, with different methodological and problem-oriented approaches. Housing conditions have a considerable influence on the overall life situation of refugees, as numerous aspects of social and structural integration are linked to housing. The analyses are dedicated to a group of refugees who have fled since the beginning of the Russian war of aggression in 2022 and who differ in many ways from the refugees of the so-called 'refugee crisis' of 2015, not only in terms of their geographical origin.

Keywords: Refugees, internally displaced persons (IDPs), housing market integration, urban challenges, Vienna, Lviv, Ukraine.

1 Einleitung

Der russische Angriffskrieg gegen die Ukraine im Jahr 2022 löste eine Welle sowohl interner als auch externer Bevölkerungsbewegungen aus. Mit Stand April 2025 waren noch 3,7 Millionen Menschen innerhalb des Landes vertrieben, während sich zusätzlich 6,9 Millionen ukrainische Geflüchtete außerhalb der Ukraine in Sicherheit befanden, darunter 6,3 Millionen in europäischen Ländern (UNHCR 2025). Die Registrierung neuer Fälle von Vertreibung setzt sich fort, was auf den anhaltend langwierigen Charakter der Vertreibungskrise hinweist (IOM 2025). Unter diesen Bedingungen stellt die Wohnraumversorgung für Vertriebene eine der dringendsten Herausforderungen sowohl für Geflüchtete als auch für die aufnehmenden europäischen Städte dar.

Der Raum, in dem Migration stattfindet, wird als eine flexible und veränderbare Kategorie definiert (Schade und Ringel 2024, S. 43). Dabei kommt urbanen Räumen die wichtigste Rolle für die strukturelle und soziale Integration von Geflüchteten zu (Balbo 2009). Die Kontexte des alltäglichen Zusammenlebens lassen Integrationskonflikte sichtbar werden (Knierbein et al. 2015). Die kommunalen Entscheidungsträger der Stadtentwicklung stehen vor der Herausforderung, nicht nur die Wohnintegration von Geflüchteten zu bewältigen, sondern auch mit der Vielfalt verschiedener Gruppen im urbanen Kontext umzugehen.

Die Städte Wien und Lwiw sind für Tausende Ukrainer/innen, die infolge des Krieges ihre Heimat verlassen mussten, zu einer zweiten Heimat geworden. Lwiw, die fünftgrößte Stadt der Ukraine mit etwa 800.000 Einwohner/inne/n, entwickelte sich aufgrund seiner geographischen Lage im Westen des Landes, der relativen Entfernung zu aktiven Kampfhandlungen und der unmittelbaren Nähe zu den EU-Grenzen zu einem der wichtigsten Aufnahmezentren für Binnenvertriebene („internally displaced persons", IDPs). Seit Beginn der russischen Invasion hat Lwiw mehr als fünf Millionen Menschen zumindest kurzfristig aufgenommen. Mit Stand April 2025 zählte die Stadtgemeinde Lwiw 96.327 Binnenvertriebene, was ca. 13 Prozent der Gesamtbevölkerung der Stadt entsprach (Analytisches Portal der Lwiw-Region 2025). Zum Vergleich: In Österreich wurde Wien zum wichtigsten Aufnahmeort für geflohene Ukrainer/innen.[1)] Am 31. März 2025 lebten 81.685 ukrainische Geflüchtete in Österreich (UNHCR 2025), von denen sich rund 40 Prozent in Wien niedergelassen hatten (Kohlenberger et al. 2023).

2 Determinanten und Prozesse der Wohnintegration von Geflüchteten

Wohnen ist ein Grundbedürfnis für jeden Menschen. Die Wohnung bietet Schutz und ist auch eine Voraussetzung für gesellschaftliche Teilhabe. Daher ist sicherzustellen, dass das

[1)] Ukrainer/innen können ohne Visum einreisen und sich 90 Tage visumfrei in Österreich oder einem anderen EU-Mitgliedsstaat aufhalten. Planen sie in Österreich zu bleiben, muss eine polizeiliche *Datenerfassung erfolgen*. Ukrainische Geflüchtete genießen gemäß aktuellem Stand ein Aufenthaltsrecht bis 4. März 2027, das durch den „Ausweis für Vertriebene" („Blaue Aufenthaltskarte") dokumentiert wird und Zugang zu Bildung, Gesundheitsversorgung und zum Arbeitsmarkt bietet. Der Wechsel zur längerfristigen „Rot-Weiß-Rot-Karte plus" war ab dem 1. Oktober 2024 möglich, wenn mindestens ein Jahr sozialversicherungspflichtige Beschäftigung nachgewiesen wurde.

Bedürfnis des Wohnens politisch, wirtschaftlich und sozialwissenschaftlich in ausreichendem Maß adressiert wird (Statistik Austria 2025, S. 15). Da die Rahmenbedingungen der anfänglichen Unterbringung und schließlich der Zugang zum lokalen Wohnungsmarkt für die strukturelle Integration von Geflüchteten von zentraler Bedeutung sind, haben diese in den „Refugee Studies" vielfältige Beachtung gefunden. Ager und Strang (2008) postulierten, dass das Wohnen als ein wichtiger Marker der Integration fungiert. Dennoch stand der Aspekt der Wohnintegration in den Analysen zu verschiedenen Integrationsfeldern weniger im Mittelpunkt des wissenschaftlichen Interesses als Themen wie Arbeitsmarktintegration, der Erwerb von Bildung und Sozialkapital oder Fragen des Zugangs zur Staatsbürgerschaft (vgl. Bosswick et al. 2007; Donato und Ferris 2020; Strang und Ager 2010).

Die Interdependenzen zwischen der Wohnintegration und anderen relevanten Integrationsfeldern von Geflüchteten wurden in der Forschung unterschiedlich interpretiert (z. B. Adam et al. 2021; Penninx und Garcés-Mascareñas 2016). Das Wohnen wurde in manchen Untersuchungen zu dessen Relevanz im Kontext der Integration sogar stärker als eine politische Herausforderung oder als „Stressfaktor" für die Aufnahmegesellschaften (Zavisca et al. 2023) charakterisiert.

Die Wohnintegration umfasst einen zielorientierten individualisierten Entscheidungsfindungsprozess hinsichtlich des Wohnstandorts, der Wohnqualität etc., wobei die Bandbreite der Wahlmöglichkeiten aus finanziellen Gründen bei Geflüchteten stark eingeschränkt ist (Häussermann et al. 2008). Mögliche Entscheidungen zwischen Wohnalternativen können sich auf den Wohnort, den Preis oder die Größe der Wohnung, auf die „Lebensstile" oder Sozialschichtzugehörigkeit der Nachbar/inne/n, das Image einer Wohngegend, Umwelt- und Lärmbelastungen, die Erreichbarkeit des Arbeitsplatzes, von Infrastruktureinrichtungen sowie Bildungsinstitutionen beziehen (vgl. Aigner 2019; Friedrichs und Triemer 2008, S. 62). Bernt et al. (2022) haben für fünf deutsche Städte erforscht, wie der Zugang zu Wohnraum für Immigrant/inn/en und Geflüchtete im urbanen Bereich zu einer neuen „Schattenwirtschaft" in der Wohnraumvermittlung geführt hat. Diese Entwicklung prägt aktiv neue Muster der Segregation von Geflüchteten in benachteiligten Stadtteilen.

Maßnahmenbezogene Empfehlungen an Stakeholder und wohnungspolitische Entscheidungsträger für die Wohnungsmarktintegration Geflüchteter sind zahlreich, ebenso Analysen zu speziellen Aspekten der Wohnsituation: z. B. Eurocities (2016); International Federation for Housing and Planning (IFHP) (2015); NGO Network of Integration Focal Points (2009); Scholten et al. (2017); UNHCR (2021; 2025).

Zum Zeitpunkt der Erhebung, die die Basis dieses Beitrags bildet, waren noch wenige Studien mit dem Fokus der Integration Vertriebener aus der Ukraine in lokale Wohnungsmärkte verfügbar. Allgemeine Informationen zu den Herausforderungen dieser Fluchtwelle, die auch die Wohnintegration beinhalteten, vermittelten OECD (2022) sowie UNHCR (2022) und rezent zu zahlreichen weiteren Aspekten UNHCR (2025). Urbanität in Bezug auf die Herkunft und den angestrebten Wohnort nach der Flucht sowie überdurchschnittlich hohe Bildungsniveaus wurden als zentrale Charakteristika ukrainischer Vertriebener herausgearbeitet (z. B. Pötzschke et al. 2022; Tkach 2024; Brücker et al. 2022). Die ländliche Bevölkerung tendiert eher dazu als die urbane, als Binnenvertriebene in der Ukraine zu bleiben.

Kohlenberger et al. (2023) in ihrem Vergleich von Wien und Krakau [Kraków] sowie Brücker et al. (2022) für Deutschland haben vor allem die Bildungsniveaus und Qualifikationsprofile der ukrainischen Geflüchteten in den Mittelpunkt gestellt, der Frage des Wohnens jedoch weniger Augenmerk geschenkt. Für Finnland zeichnete eine vom Innenministerium im Juni und Juli 2022 unter 2.000 Befragten durchgeführte Online-Umfrage (Svynarenko und Koptsyukh 2022) ein differenziertes Bild der Rückkehrabsichten und deren Determinanten, wobei auch die Wohnqualität eine Rolle spielte. Faktoren, die den Wunsch, langfristig in Finnland zu bleiben, beeinflussten, waren Beschäftigung (70 %), die Fortsetzung des Krieges (66 %), das Wohlergehen der Kinder (50 %), zufriedenstellende Wohnintegration (32 %) und der Erwerb von Kenntnissen der Landessprache (28 %). Die Wohnintegration stellte also einen relevanten Faktor für die Entscheidung zur Remigration, zur Auswanderung in ein anderes Land oder zum Verbleib in Finnland dar.

Zavisca et al. (2023) fokussierten in Bezug auf den Aspekt des Wohnens auf die „Internally Displaced Persons" (IDPs). Trotz zahlreicher Ähnlichkeiten zwischen den Herkunftsgruppen gibt es nach De Coninck (2023) verschiedene Gründe, warum sich die europäische Öffentlichkeit den ukrainischen Geflüchteten gegenüber meist verbundener und solidarischer fühlt als beispielsweise konfessionell-kulturell „fremden" Gruppen, zum Beispiel aus Afghanistan. In diesem Zusammenhang sind Bedrohungsgefühle, Xenophobie und ethnisch-religiöse Zugehörigkeit relevant. Eine Studie zur Wohnungsmarktintegration auf Basis eines Vergleichs von fünf europäischen Städten haben Haase et al. (2024) vorgelegt. Dieser Beitrag stützt sich auf frühere Ergebnisse interdisziplinärer Forschung (vgl. Astolfo et al. 2022; Haase et al. 2022) zur Unterbringung von Geflüchteten aus einer transdisziplinären Perspektive, in der Ergebnisse aus Österreich, Deutschland, Lettland, Polen, Schweden und der Ukraine zusammengefasst werden (vgl. auch Schmidt und Haase 2023).

3 Forschungsfragen, Methodik und Datengrundlagen

Der vorliegende Beitrag fokussiert auf wenig erforschte Aspekte der Wohnungsmarktintegration von vertriebenen Ukrainer/inne/n und zielt auf die Beantwortung der folgenden Forschungsfragen ab:

1. Welche Eigenschaften und soziostrukturellen Charakteristika weisen die ukrainischen Geflüchteten in Wien und die Binnenvertriebenen in Lwiw auf?
2. Welche strukturellen Spezifika und Unterschiede kennzeichnen die Wohnungsmärkte der beiden Metropolen?
3. Mit welchen Hauptproblemen hinsichtlich ihrer Wohnintegration sind die vertriebenen Ukrainer/innen in Wien und Lwiw konfrontiert?
4. Welche kompensatorischen Unterstützungsmaßnahmen seitens der lokalen Behörden und zivilgesellschaftlichen Organisationen fördern die Wohnintegration von Geflüchteten in den beiden Metropolen und wie?
5. Auf welche Weise haben sich die Wohnsituationen der ukrainischen Vertriebenen in Wien und Lwiw entwickelt?

Die Autor/inn/en bedienten sich einer Kombination verschiedener Forschungsmethoden. Im Rahmen der Studie wurden von Jänner bis März 2024 in Lwiw und Wien narrative und strukturierte Tiefeninterviews durchgeführt (vgl. Tabelle 1), um die Wohnintegrationsprobleme ukrainischer Geflüchteter und „internally displaced persons" (IDPs) zu identifizieren. Die Respondent/inn/en waren primär Personen, die nach der Invasion Russlands am 24. Februar 2022 gezwungen waren, ihre Herkunftsgebiete zu verlassen, weiters Expert/inn/en für die Wohnintegration von Vertriebenen, zum Beispiel Vertreter/innen der kommunalen Verwaltungen und von NGOs, die im Kontext der Flüchtlingsintegration tätig sind, sowie Immobilienmakler/innen. Vor diesem Hintergrund wurden vier Fragebögen jeweils in Ukrainisch, Deutsch und Englisch entwickelt. Die Fragebögen entsprachen internationalen Standards der Wissenschaftsethik (vgl. Kommission für Wissenschaftsethik der Österreichischen Akademie der Wissenschaften, Stellungnahme, 25.03.2024).

Der Fragebogen für die Geflüchteten bzw. IDPs bestand aus 24 Fragen (9 offene und 15 geschlossene). Die Interviews mit den Geflüchteten bzw. Vertriebenen in beiden Städten konzentrierten sich auf ihre Erfahrungen, Bedürfnisse und Wahrnehmungen hinsichtlich der Wohnungsmarktintegration aus einer kurz- und langfristigen Perspektive. Das Sample wurde zufällig aus einer Stichprobe ukrainischer Geflüchteter in Wien und Lwiw ausgewählt. Die Befragung wurde größtenteils „face to face" durchgeführt, als Alternative wurde das Ausfüllen eines Online-Fragebogens angeboten. Diese Datenerhebungsmethode ermöglichte die Befragung von 50 Personen, wobei nach einer Datenbereinigung die Analysen auf den validen Antworten von 40 Befragten (20 pro Stadt) basierten.

Für die Befragung der Repräsentant/inn/en kommunaler Abteilungen (Fonds Soziales Wien" in Wien und „Zentrum für soziale Unterstützung von Waisen und Kindern ohne elterliche Fürsorge sowie Binnenvertriebenen" in Lwiw) wurden narrative Tiefeninterviews mit 15 spezifischen Fragen geführt. Der Fragebogen für NGOs bestand aus 14 Fragen. Es wurden Interviews mit zwei Vertreter/inne/n der Diakonie (Wien) und je einem/r Vertreter/in von MALVA (Wien) sowie YaMariupol und Tvoia Opora (Lwiw) geführt. Zusätzlich konnte jeweils ein/e Immobilienmakler/in in beiden Städten befragt werden. Dieser Teil der Umfrage umfasste also fünf Expert/inn/en in Wien und vier in Lwiw (vgl. Tabelle 1).

In der begrenzten Zahl von Respondent/inn/en manifestiert sich eine erhebliche Einschränkung hinsichtlich der Generalisierbarkeit der empirischen Ergebnisse. Den Hauptgrund hierfür bildete die kurze Projektlaufzeit mit einer Befragungsphase von nur zwei Monaten. Da es sich bei Wien und Lwiw um zwei Metropolen mit grundlegend unterschiedlichen sozioökonomischen Kontexten, Wohnungspolitiken und Marktdynamiken handelt, erschwerte dies methodisch die direkte Vergleichbarkeit von Wohnintegrationsprozessen. Hinzu kamen die Unterschiede hinsichtlich der kommunalen politischen Strategien und administrativer Abläufe sowie spezifische lokale Faktoren.

Im Rahmen der Recherchen traten auch Probleme bei der Datenakquisition auf. So weigerten sich die meisten Männer (trotz Zusicherung strikter Anonymität) aus Angst vor einer militärischen Mobilisierung, an der Umfrage teilzunehmen. Die qualitativen Daten basieren primär auf Informationen von Geflüchteten aus deren eigener Perspektive, die natürlich individuellen Interpretationen unterliegt. Daher können die Ergebnisse keinen Anspruch auf „klassische" statistische Repräsentativität erheben. Die Daten ergänzen teil-

weise vorhandene Studien (Dörfler et al. 2022; Kohlenberger et al. 2023; Statistik Austria 2023) und offenbaren neue Aspekte der Wohnintegrationsherausforderungen für IDPs in der Ukraine und Geflüchtete in Österreich.

Methode / Projektphasen	Beschreibung	Anzahl
Sekundäranalysen	Vergleichende Analyse der Wohnungsmärkte in Lwiw und Wien; Überblick über die Wohnpolitik in der Ukraine, Österreich und der EU; Erhebung der Aufenthaltsbedingungen ukrainischer Geflüchteter in Europa; Auswertung statistischer Daten und Forschungsberichte.	–
Entwicklung von vier Fragebögen	Erstellung von Fragebögen in Ukrainisch, Deutsch und Englisch für: (1) Geflüchtete / IDPs, (2) kommunale Abteilungen, (3) NGOs, (4) Immobilienmakler/innen; entsprechend den internationalen Standards der Wissenschaftsethik.	–
Narrative und strukturierte Tiefeninterviews mit Geflüchteten / IDPs	Durchführung: Lwiw: 8. Jänner bis 25. März 2024; Wien: 28. Jänner bis 25. März 2024; face to face und online; Ausgangsstichprobe 50 Personen; nach Datenbereinigung 40 valide Fälle (20 pro Stadt). Fragebogen: 24 Fragen (9 offen, 15 geschlossen).	40 Interviews (im Folgenden als *Resp.* gekennzeichnet)
Interviews mit Vertreter/inne/n kommunaler Abteilungen	Narrative Interviews (15 Fragen). Befragte: Leiterin des Fonds Soziales Wien (Wien) und Vertreterin des Zentrums für soziale Unterstützung von Waisen und IDPs (Lwiw).	2 (je eines in Lwiw und Wien)
Interviews mit NGOs	Fragebogen mit 14 Fragen. Befragte: zwei Vertreter/innen der Diakonie, eine von MALVA (Wien); je ein/e Vertreter/in von YaMariupol und Tvoia Opora (Lwiw).	5 (3 Wien, 2 Lwiw)
Interviews mit Immobilienmakler/inne/n	Narrative Interviews mit Immobilienexpert/inn/en in beiden Städten.	2 (je eines in Lwiw und Wien)
Summe der Expert/inn/en-interviews	Kommunale Abteilungen sowie NGOs und Immobilienmakler/innen	9 (4 Lwiw, 5 Wien)
Einschränkungen hinsichtlich der Repräsentativität der Studienresultate	Kurze Feldphase (2 Monate); stark divergierende sozioökonomische Kontexte der Städte; eingeschränkter Datenzugang; geringe Teilnahmebereitschaft von Männern (aus Angst vor Mobilisierung); qualitative Daten ohne statistische Repräsentativität.	–

Quelle: Eigener Entwurf.

Tab. 1: Überblick über die angewandten Methoden und die Anzahl der Interviews

4 Vergleichsanalyse der Wohnungsmärkte von Wien und Lemberg [Lwiw]

Die Wohnungsmärkte von Wien und Lwiw weisen grundlegend unterschiedliche institutionelle Strukturen, divergierende Grade staatlich-kommunaler Interventionen sowie variierende Integrationsmöglichkeiten für vertriebene Personen auf. Wesentliche Kennzeichen des Wiener Wohnungsmarkts sind dessen Segmentierung (Statistik Austria 2020, 2025; Musil et al. 2021), eine im internationalen Vergleich relativ geringe Mobilität, aber auch schwächere ethnische Segregationstendenzen als etwa in französischen Metropolen (Stadt Wien 2023a). Segmentierung bedeutet die Aufteilung des Wohnungsmarktes in Teilsegmente mit unterschiedlichen Zugangsvoraussetzungen und ist ein wichtiger Faktor im Rahmen der Wiener Stadtentwicklung und im Zusammenhang mit der Wohnintegration von Geflüchteten (Bundesarbeitsgemeinschaft Immobilienwirtschaft Deutschland und Empirica AG). Für die Teilsegmente bestehen unterschiedliche Rechtstitel und Finanzierungsformen. Folgende Wohnungsmarktsegmente sind in Wien zu unterscheiden (Kohlbacher und Reeger 2020, S. 107ff.; BUWOG und EHL 2023; Statistik Austria 2020, 2025):

Gemeindewohnungen
Mit rund 220.000 Wohneinheiten verfügt Wien über den größten Stock kommunalen Wohnbaus in Europa (Wiener Wohnen 2019). Insgesamt umfasste der nicht privatwirtschaftlich bereitgestellte Bestand, mit Mieten deutlich unter dem privaten Marktniveau, im Jahr 2019 rund 43 Prozent der Wohnungen (Statistik Austria 2019, S. 85, in Kadi 2019). Eine zentral gesteuerte Vergabepraxis entscheidet über die Zuweisung, wobei soziale Bedürftigkeit eine zentrale Rolle spielt (Wohnservice Wien 2025). EU-Richtlinien garantieren seit dem 1. Jänner 2006 bei Einhaltung bestehender Vergaberichtlinien den Zugang von ausländischen Staatsbürger/inne/n zu Kommunalwohnungen. Zuvor war der Anspruch an die österreichische Staatsbürgerschaft gebunden.

Dieser Wohnungsbestand bildet das effizienteste Instrument gegen Benachteiligung bei der Wohnintegration (Stadt Wien 2023b). Um eine Gemeindewohnung in Wien zu bekommen, benötigt man das „Wiener Wohn-Ticket“, wofür man folgende Voraussetzungen erfüllen muss: Mindestalter 17 Jahre (Vertragsabschluss ab 18), Hauptwohnsitz in Wien seit mindestens zwei Jahren (flexibel bei Adressänderung), österreichische Staatsbürgerschaft oder gleichgestellter Status, sowie ein Einkommen innerhalb der vorgegebenen Grenzen nach dem Wiener Wohnbauförderungs- und Wohnhaussanierungsgesetz (WWFSG). Zusätzlich können soziale Kriterien einen begründeten Wohnbedarf darstellen, der bevorzugt behandelt wird, wie zum Beispiel Überbelag, Alleinerzieher/in oder Altersabhängigkeit (Stadt Wien/Wiener Wohnen 2024).

Geförderte Mietwohnungen (Genossenschaftswohnungen)
Diese Wohnungen wurden und werden von gemeinnützigen Wohnbauträgern errichtet. Zugangsvoraussetzungen sind eine gültige Aufenthaltsbewilligung, die Volljährigkeit sowie die Einhaltung von Einkommensgrenzen. In- und Ausländer/innen sind hinsichtlich des Zugangs zu den rund 140.000 Wohnungen der „Gemeinnützigen“ zwar gleichgestellt, dennoch machen sich finanzielle und Informationsbarrieren deutlich bemerkbar, sodass

der Zugang zum geförderten Wohnbau für Geflüchtete beträchtliche Hürden aufweist (Karasz et al. 2022). Rechtliche Basis ist ebenfalls das WWFSG 1989.

Um eine geförderte Mietwohnung oder Genossenschaftswohnung in Wien zu erhalten, müssen folgende Kriterien erfüllt sein: Der/die Antragsteller/in muss österreichischer oder EU-/EWR-Bürger/in sein (oder eine gültige Aufenthaltsgenehmigung haben). Das Mindestalter beim Bezug liegt bei 18 Jahren und das jährliche Nettoeinkommen darf nicht über 59.320 Euro liegen (Staffelung nach Anzahl der im Haushalt lebenden Personen, z.B. zwei Personen: 88.400 Euro). Zudem ist ein dringendes Wohnbedürfnis und seit Mai 2025 auch ein „Wiener Wohn-Ticket" erforderlich, für das ein zweijähriger durchgehender Hauptwohnsitz in Wien eine Voraussetzung darstellt. Nach dem Einzug müssen alle Personen unverzüglich ihren Hauptwohnsitz an der neuen Adresse anmelden. Die alte Meldeadresse darf auch nicht als Neben- oder Zweitwohnsitz weitergeführt werden (Stadt Wien 2025). Erst seit den 1990er Jahren und seither aber in stark steigender Zahl fanden immer mehr ausländische Staatsbürger/innen Zugang zu diesem Segment.

Private Mietwohnungen

Diese dominieren vor allem den während der Gründerzeit (ca. 1840–1918) errichteten Wiener Altbaubestand (Kumnig et al. 2025). Die Gebäude befanden sich seit ihrer Errichtung primär im Besitz von privaten „Hausherren", wurden in den letzten Dekaden aber zunehmend von Kapitalgesellschaften aufgekauft, wobei sich die Mietzinsentwicklung an Lage- und Qualitätsparametern orientiert (Musil et al. 2021, S. 23ff). Für Ausländer/innen bestanden zu keinem Zeitpunkt legistische Zugangsbeschränkungen. Viele frühere „Gastarbeiter/innen" aus dem ehemaligen Jugoslawien und der Türkei wohnen beispielsweise nach wie vor im gründerzeitlichen Altbau, zunehmend wechselten diese Herkunftsgruppen aber in den sozialen Wohnbau (Kohlbacher und Reeger 2000). Für das Gros der Geflüchteten der Jahre 2015/16 bildete primär dieses Segment die wichtigste Eintrittspforte in den Wohnungsmarkt und eine Mehrheit lebt nach wie vor hier, u. a. in vermieteten Eigentumswohnungen Privater.

Eigentumswohnungen (und Eigenheime)

Aus Gründen der höheren Kosten sind diese Wohnungen vor allem Mittel- und Oberschichten zugänglich, werden mit der langfristigen Integration in den Arbeitsmarkt aber auch für Geflüchtete attraktiv.

Der gesamte Gebäudebestand der Stadt Wien betrug im Jahr 2021 175.760 Gebäude. Davon befanden sich 25.547 Gebäude im Eigentum von Gebietskörperschaften und 19.950 Gebäude im Besitz von gemeinnützigen Bauvereinigungen; 11.694 Gebäude gehörten sonstigen juristischen Personen und 118.569 standen im Eigentum von Privatpersonen (vgl. Magistrat der Stadt Wien, Stadt Wien Wirtschaft, Arbeit und Statistik 2024, S. 31ff). Der Wohnungsbestand lag im selben Jahr 2021 bei 1.074.967 Wohneinheiten. Daten nach Wohnnutzfläche, Ausstattungskategorien, Hauptwohnsitzen und Bewohnerzahlen sind verfügbar, würden an dieser Stelle aber zu weit führen.

Die wichtigste Einflussgröße der Wohnintegration sind die starken Preissteigerungen auf dem Wiener Wohnungsmarkt. Zwischen 2009 und 2018 ist die Durchschnittsmiete

inklusive Betriebskosten um 36,6 Prozent gestiegen; im privaten Mietwohnungssegment sogar um 49,2 Prozent (Kadi 2019, S. 1). Die Preise für Eigentumswohnungen haben im selben Zeitraum um 73,8 Prozent zugelegt (OeNB 2019). Der Anstieg der Wohnkosten in Wien lag damit über dem österreichweiten Durchschnitt (Miete +33,3 %; Eigentum +67 %, vgl. OeNB 2019) und deutlich über dem EU-Schnitt (Eigentum +15 % 2010–2018; vgl. Eurostat 2019; Gruber et al. 2022).

Ukrainer/innen fanden vor allem in der Anfangsphase ihres Aufenthalts in Wien primär über freiwillige „Wohnraumspenden" engagierter Privatpersonen, die Vermittlung von NGOs (z. B. Diakonie, Caritas) und den „Fonds Soziales Wien" Zugang zu verschiedenen Wohnungsmarktsegmenten (Caritas Österreich 2025; Diakonie 2025). Seitens der Wiener Kommunalpolitik kann aktive Integrationspolitik nur im Rahmen der auf Bundesebene beschlossenen Gesetze und Maßnahmen betrieben werden. Auch die Stadt Wien bewegt sich hinsichtlich ihrer Integrationsstrategien also in einem durch den Staat bestimmten legistischen Rahmen, hat aber aufgrund der großen Zahlen von Geflüchteten und in Kooperation mit NGOs österreichweit die meisten Integrationsangebote geschaffen (Fonds Soziales Wien 2024).

Zudem vermag die Kommunalpolitik die Wohnintegration nachhaltiger zu beeinflussen als jene auf dem Arbeitsmarkt (Kadi 2019). Bei der Wohnintegration haben sich Bottom-up-Strategien der Einbeziehung der betroffenen Menschen hinsichtlich der Entwicklung von Angeboten und Maßnahmen ebenso wie im Rahmen von deren Reflexion und Weiterentwicklung als besonders effizient erwiesen (Ritt 2015). Als „größter Hausherr Europas" besitzt die Stadt Wien einen facettenreicheren „room to manoeuvre" als die Stadtverwaltung in Lwiw, wobei letztere die Errichtung der „modular cities" als innovative Lösungsstrategie in den Prozess der Wohnintegration von „internally displaced persons" (IDPs) eingebracht hat.

Die Wohnungsmärkte in Wien und Lwiw spiegeln grundsätzlich unterschiedliche Strukturen und institutionelle Modelle wider, ein divergierendes Ausmaß staatlicher Eingriffe sowie ungleiche Möglichkeiten zur Integration von Vertriebenen. Der Anteil des kommunalen oder sozialen Wohnungsbestandes ist in Lwiw gering, während der private Sektor sowohl im Primär- als auch im Sekundärsegment dominiert. Am 1. Jänner 2024 entfielen im Strukturmix des Wohnungsmarktes von Lwiw auf den privaten Sektor 67,2 Prozent des Wohnungsbestandes. Zusammen mit Eigentümergemeinschaften von Mehrfamilienhäusern (OWG) und Wohnbaugenossenschaften (WBG) nimmt dieses Segment also mehr als zwei Drittel des Marktes ein. An zweiter Stelle steht das kommunale Eigentum mit 21,7 Prozent. In diesem Zusammenhang sei darauf hingewiesen, dass sich in der gesamten Ukraine etwa 95 Prozent des Wohnungsbestandes in Privatbesitz befinden und nur 5 Prozent staatlich oder kommunal verwaltet werden (Mysak und Moiser 2022).

Laut den Daten in Tabelle 2 liegt die Durchschnittsmiete in Lwiw mit ca. 740 Euro zwar erheblich unter jener in Wien (1.045 Euro), jedoch ist die relative Belastung der Haushalte im Verhältnis zum niedrigeren Durchschnittseinkommen deutlich höher: Die Einwohner von Lwiw geben im Durchschnitt 56 Prozent oder mehr ihres Einkommens für Wohnen aus, während es in Wien 27 Prozent sind. Die erhebliche Kluft in der Kaufkraft wird zudem durch das Niveau der Hypothekarzinsen verstärkt: 13,4 Prozent in Lwiw gegenüber 3,5 Prozent in Wien.

	Wien	Lwiw
Immobilienart*	**Durchschnittliche monatliche Miete**	
Studio (unter 40 m²)	630 – 890 Euro	–
1-Zimmer-Wohnung (40–60 m²)	975 – 1.045 Euro	290 – 390 Euro
2-Zimmer-Wohnung (60–90 m²)	1.396 – 1.531 Euro	325 – 475 Euro
3-Zimmer-Wohnung (über 90 m²)	1.599 – 2.393 Euro	± 515 Euro
Lage		
Zentrale Bezirke Premium	+20 bis +40 Prozent	+40 Prozent
Vororte / Stadtrandbezirke	–15 bis –25 Prozent	–20 Prozent
Kaufpreis der Wohnung pro m² ****		
im Stadtzentrum	9.805,26 Euro	1.678,45 Euro
außerhalb des Zentrums	5.654,76 Euro	949,22 Euro
Gehälter und Finanzierung**		
Durchschnittliches monatl. Nettoeinkommen (nach Steuerabzug)	3.042,91 Euro	471,89 Euro
Jährlicher Hypothekenzinssatz (20 Jahre Festzins)	3,47 Prozent	13,43 Prozent

* Datenbasis: durchschnittliche Jahresdaten Jänner bis Juli 2025 von „Investropa“ (ein Unternehmen bzw. Service, das sich auf Immobilienanalysen für ausländische Investoren spezialisiert) und LUN (ein ukrainisches IT-Unternehmen und Online-Portal mit Fokussierung auf den Immobilienmarkt). Eigener Entwurf.

** Datenbasis: Numbeo (2025).

Quellen: Investropa (2025): Average Rent in Vienna. – *https://investropa.com/blogs/news/average-rent-vienna?utm* (Zugriff: 15.11.2025); LUN (o. J.): Статистика оренди – Львів. – *https://lun.ua/misto/stat/rent/lviv* (Zugriff: 15.11.2025); Numbeo (2025): Cost of Living Comparison: Vienna, Austria vs Lviv, Ukraine. – *https://www.numbeo.com/cost-of-living/compare_cities.jsp?country1=Austria&city1=Vienna&country2=Ukraine &city2=Lviv* (Zugriff: 15.11.2025). Eigener Entwurf.

Tab. 2: Vergleichende Wohnungsmarktstatistiken für Wien und Lwiw

Somit ist das Wohnen in Lwiw zwar formal günstiger, in absoluten Preisen aber deutlich kostspieliger und für IDPs weniger zugänglich. Die Mietpreise in Altbauten sind um 45 Prozent höher als vor zehn Jahren (The International 2025). In Lwiw stieg der Medianwert der Mietpreise für Wohnungen in diesem Zeitraum um mehr als 220 Prozent (M2bomber). Nach Beginn des Einmarsches der Russischen Föderation kam es in Lwiw zu einem Boom in der Wohnungsnachfrage, der die Preise erheblich beeinflusste. Infolgedessen nimmt Lwiw nun in der Ukraine hinsichtlich der Wohnkosten eine Spitzenposition ein und übertrifft inzwischen sogar die Hauptstadt des Landes.

Für ukrainische Geflüchtete und „internally displaced persons“ (IDPs) sind diese strukturellen Unterschiede von zentraler Bedeutung. In Wien werden die längerfristigen Integrationsmöglichkeiten durch den Zugang zu einem umfangreichen sozialen Wohnungssektor bestimmt, der finanzielle Risiken deutlich reduziert, jedoch Zeit (Aufenthaltsdauer) für den formalen Eintritt in das System erfordert. In Lwiw hingegen ist die Fähigkeit der Haushalte entscheidend, auf dem privaten Markt unter Bedingungen eines Angebotsdefizits zu konkurrieren, das durch Kriegsrisiken und Spekulationen verschärft wird. Das Fehlen eines großflächigen sozialen Wohnungsbestandes sowie die begrenzten staatlichen Instrumente zur Mobilisierung von Wohnraum erschweren die langfristige Integration von IDPs.

Der Vergleich der beiden Städte mit so unterschiedlichen Wohnungsbestandsstrukturen ist methodologisch wertvoll, da er es ermöglicht, Unterschiede sowohl in den Wohnintegrationsverläufen der zwangsumgesiedelten Personen als auch in den Integrationsansätzen der aufnehmenden Städte nachzuvollziehen und damit das Spektrum möglicher Modelle zur Reaktion auf Wohnungsengpässe aufzuzeigen.

5 Spezifische Herausforderungen der Wohnungsmarktintegration für ukrainische Geflüchtete / Binnenvertriebene in Wien und Lemberg [Lwiw]

5.1 Die Wohnungsmarktintegration in Wien

Trotz der geringen Fallzahlen im Sample sollen bei der zentralen Fragestellung nach den Schwierigkeiten des Auffindens einer Wohnung auch Prozentwerte angegeben werden. In Wien war das Gros der Befragten mit erheblichen Schwierigkeiten konfrontiert: 40 Prozent fanden die Wohnungssuche *„sehr schwierig“*, 35 Prozent *„schwierig, aber möglich“*, ein Zehntel bezeichnete die Situation in Bezug auf die Wohnungssuche als *„eher unrealistisch“*. Lediglich 15 Prozent der Geflüchteten – viele in diesem Segment verfügten über Unterstützung – fanden es *„ziemlich einfach“*, eine Wohnmöglichkeit zu finden. Die Ursachen für die Zugangshürden bilden primär folgende Faktoren:

- Das starke Bevölkerungswachstum Wiens (von 1.797.337 Menschen im Jahr 2015 auf 2.028.289 zu Jahresbeginn 2025, vgl. Statistik Austria 2025), vor allem infolge jahrzehntelang beträchtlicher Immigration (2015/16 als sogenannte „Asylkrise“), welche eine anhaltend starke Konkurrenz auf dem Immobilienmarkt bedingt;
- der Wohnungsmarkt in Wien, der seit Jahren zu den dynamischsten in Europa zählt (vgl. Eurostat 2019; Kadi 2019);
- der limitierte Zugang zu leistbarem Wohnraum (Kadi 2019, S. 1f);
- negativ konnotierte Stereotypen gegenüber Geflüchteten seitens mancher Vermieter/innen;
- die oftmalige Unmöglichkeit für Geflüchtete, bestimmte lokal typische Anforderungen des Mietmarktes zu erfüllen (Kautionszahlung, Ex-ante-Mietdauerfixierung bzw. Befristungen derselben);

- die zum Befragungszeitpunkt bestehende Ungewissheit über die langfristige Zukunft des Aufenthaltes der Ukrainer/innen nach Ablauf ihrer Aufenthaltsgenehmigungen in Österreich (diese wurden kürzlich bis März 2027 prolongiert).

Da nur die wenigsten Befragten im Sample bereit waren, ihre persönlichen bzw. haushaltsspezifischen monatlichen Mietkostenbelastungen (vor allem in Relation zu ihrem jeweiligen Einkommen) exakt zu nennen, kann mangels Daten aus unserer Erhebung nur eine auf publizierten Analysen basierende generelle Deskription der angespannten Lage auf dem Mietwohnungssektor in Wien erfolgen. Die Mietkosten sind in den vergangenen zehn Jahren stark angestiegen – auch im sozialen Wohnbau. Im neuen Wiener Regierungsprogramm plante die Koalition der zwei in Wien regierenden Parteien SPÖ und Neos, in den nächsten fünf Jahren 1.500 Gemeindewohnungen zu errichten. In der Legislaturperiode davor waren es noch 5.700. Zudem sollen in den nächsten Jahren 22.000 Genossenschaftswohnungen entstehen. Wien ist das österreichische Bundesland, in dem am meisten Menschen in Mietwohnungen leben – mehr als 75 Prozent der Bevölkerung (vgl. ORF vom 6. Juni 2025).

Der Quadratmeterpreis für Mietwohnungen stieg im Jahr 2024 auf 19,2 Euro, was einem Anstieg von 11 Prozent im Vergleich zu 2023 entsprach. Damit liegt Wien nach Tirol an zweiter Stelle im Mietpreisvergleich der Bundesländer. Die Durchschnittsmiete für eine 70-m^2-Wohnung lag 2024 bei 1.343 Euro. Im Vergleich zum Vorjahr stieg die Nachfrage nach Mietwohnungen in Wien 2024 um 29 Prozent (vgl. Die Presse, Ausgabe vom 21. 11. 2024). Laut dem Mietspiegel für Wohnungen lagen die Mietpreise pro Quadratmeter bei Wohnungen unter 40 m^2 in Wien bei 21,97 Euro (Österreich: 20,43 Euro), bei Wohnungen der Größenkategorie 40–90 m^2 bei 19,71 Euro (Österreich: 16,18 Euro) und für Großwohnungen über 90 m^2 bei 20,10 Euro (Österreich: 18,06 Euro (vgl. ohnemakler-Immobilienportal 2025).

Die Mietpreissteigerungen betrafen alle Segmente des Wohnungsmarktes, also auch den sozialen Wohnbau. So stiegen die Mieten in den letzten zehn Jahren im „Gemeindebau“ von durchschnittlich 6,3 Euro pro m^2 auf 8,2 Euro. In Genossenschaftswohnungen betrugen die Durchschnittsmieten 2014 noch 6,5 Euro pro m^2, zehn Jahre später schon 8,8 Euro. Für alle anderen Mietverhältnisse außerhalb des kommunalen bzw. geförderten Wohnbausegments war der Anstieg am höchsten: von 8,4 Euro pro m^2 auf mittlerweile 12,2 Euro. Die Mieterhöhungen lagen dabei immer über den Steigerungen des Verbraucherpreisindex (ORF vom 6. Juni 2025).

Zu den Kausalfaktoren der Mieterhöhungen zählen vor allem das starke Bevölkerungswachstum (infolge Asylmigration, Fluchtbewegungen) und die daraus resultierenden Nachfragesteigerungen, mit welchen die Wohnbauleistung (außer im Luxussegment) nicht mithalten kann. Hinzu kommt das als Konsequenz großflächiger Sanierungen erfolgte Wegbrechen der bis in die 1990er-Jahre im gründerzeitlichen Altbau (vor 1910 errichtete Wohngebäude) noch sehr häufigen Substandardwohnungen (ohne WC und/oder Badezimmer), die vor allem für Immigrant/inn/en günstige Wohnmöglichkeiten boten.

Vor allem infolge der Zuwanderung besonders stark angestiegen ist die Wohnungsnachfrage in den ehemaligen Arbeiter- und nun mehrheitlich von Menschen mit Migrationsbiographien bewohnten Bezirken, nämlich im 21. Bezirk (Floridsdorf, + 73 %), im 10. Bezirk (Favoriten, + 63 %) und 16. Bezirk (Ottakring, + 62 %), aber auch im 12. Bezirk

(Meidling, + 54 %) und im 15. Bezirk (Rudolfsheim-Fünfhaus, + 43%). In den zentralen Bezirken Wiens waren die Preissteigerungen ebenfalls besonders ausgeprägt. Die Mietpreisniveaus stiegen in Leopoldstadt (2. Bezirk) von 17,0 auf 19,4 Euro (+ 14 %) und in Alsergrund (9. Bezirk) von 17,0 auf 21,0 Euro (+ 24 %) sowie in Margareten (5. Bezirk) (Anstieg + 18 %) (vgl. Die Presse, Ausgabe vom 21.11.2024).

Ein weiteres Problem manifestiert sich in den starken Anstiegen der befristeten Mietverträge. So sind in Wien bereits fast 20 Prozent aller Mietverträge befristet – die meisten davon auf drei Jahre. Dieses Faktum wirkt sich auch auf die Höhe der Mieten aus. So bezahlen Mieter/innen für Mietverträge mit weniger als zwei Jahren Laufzeit im Schnitt 13,2 Euro pro m^2. Jene mit zwei bis fünf Jahren Befristung 12,3 Euro. Bei einer Vertragsbindung von fünf bis zehn Jahren sind noch 10,5 Euro pro m^2 zu bezahlen. Besonders augenfällig ist der direkte Vergleich: Bei einer befristeten Miete sind im Schnitt 14,1 Euro pro m^2 zu begleichen. Bei einer unbefristeten sind es hingegen 9,2 Euro – also immerhin um rund fünf Euro weniger (ORF vom 6. Juni 2025).

Gemäß Daten der NGOs war die Bereitschaft zur Verfügungstellung von Wohnraum durch Privatpersonen zu Beginn des Ukrainekrieges im März 2022 noch sehr hoch. Laut den Expert/inn/eninterviews trat vielfach nach sechs Monaten eine Krise ein, wenn die privaten Quartiergeber/innen feststellten, dass der Ukrainekonflikt noch unbestimmte Zeit andauern werde. Somit wurde die Gastfreundschaft der nicht professionellen Gastgeber/innen auf eine harte Probe gestellt. Dies veranlasste viele, ihre Wohnzusagen sehr kurzfristig zurückzuziehen. Die Betroffenen mussten sich dann auf dem ohnedies überhitzten Wohnungsmarkt unter hohem Zeitdruck nach einer lage- und qualitätsmäßig oft kaum akzeptablen neuen Bleibe umsehen.

> *„Selbst wenn du Geld hast, kannst du abgelehnt werden. Nicht nur, weil man menschlich nicht passt, sondern auch, wo man arbeitet, ob man ein festes Einkommen hat, ob man die Miete langfristig garantieren kann. Das Hauptproblem besteht darin, dass die Vermieter einen langfristigen Mietvertrag wünschen. Wir sagen ehrlich, dass wir nicht wissen, wie lange wir hierbleiben werden […].“* (Resp. 1)

> *„Ich denke, dass der Eigentümer der Wohnungen nie weiß, wie lange die Leute bleiben werden. Wir haben nur Verträge mit einer Laufzeit von drei Jahren, das ist die Mindestlaufzeit. […] Deshalb wollten die Eigentümer keine Ukrainer aufnehmen. Einige Eigentümer sagen: ‚Wir wissen nie, wie lange sie bleiben und von wem sie das Geld bekommen.‘“* (Exp. 3)

Ein Hindernis bei der Wohnungssuche ist die übliche Notwendigkeit, dem/r Vermieter/in eine Einkommensbescheinigung in Österreich für die letzten sechs Monate vorzulegen (Einkommen aus der Ukraine wird kaum berücksichtigt). Für Wohnungssuchende, die aufgrund eines Arbeitsverhältnisses in der Ukraine, mangelnder Deutschkenntnisse oder der Notwendigkeit der Nostrifikation der Studienabschlüsse nicht in Österreich beschäftigt sind, ist diese Anforderung unrealistisch. Einkommen aus der „Grundversorgung für Vertriebene“ wird von den Vermieter/inne/n häufig nicht akzeptiert.

Darüber hinaus bestehen vielfältige finanzielle Hürden: Aufbringung der Kaution (in der Regel drei Monatsmieten) als Rücklage für den/die Vermieter/in für den Fall, dass die Miete nicht gezahlt wird oder Schäden an der Wohnung entstehen. Zudem besteht bei Geflüchteten oft die Befürchtung, einen hohen Betrag aus (vorhandenen) Rücklagen einzubüßen, ohne die Dauer des Aufenthalts in Wien realistisch einschätzen zu können.

Die narrativen Interviews ergaben, dass die Aufenthaltsdauer eine wichtige Determinante darstellt. Im Rahmen eines längeren Aufenthaltes in Wien können Wohnungssuchende ein fundierteres Wissen über die lokalen Wohnungsmarktcharakteristika und Vergabeusancen gewinnen und vermeiden Fehler der Anfangsphase. Zudem sind Vermieter/innen dann meist eher bereit, mittel- oder längerfristig zu vermieten. Last but not least ist es für eine erfolgreiche Wohnungssuche häufig notwendig, die Dienste eine/s/r marktkundigen Maklers/in zu finanzieren (meist in der Höhe mehrerer Monatsmieten plus 20 Prozent Mehrwertsteuer).

> *„Ich weiß, dass es wichtig ist, seine Rechte und alle Nuancen des Einzugs in eine Mietwohnung zu kennen, denn Menschen können betrogen werden." (Resp. 12)*

> *„Hier muss man eine Gebühr zahlen, man muss einen festen Job haben und drei Monate bezahlen. Das heißt, wenn Sie keinen offiziellen Job haben, werden Sie keine Wohnung finden. Du wirst viel Geld bezahlen müssen." (Resp. 2)*

Geflüchtete sind neben rechtlichen und administrativen Hürden auch mit xenophoben Klischees seitens der Haus- bzw. Wohnungseigentümer/innen konfrontiert. Ein für Ukrainer/innen unbekanntes Novum ist, dass Wohnungen in Wien überwiegend unmöbliert vermietet werden, was im Herkunftsland meist unüblich ist. Mobiliar und die Grundausstattung für das tägliche Leben sind also neu anzuschaffen und erhöhen die Kosten für den Bezug einer Wohnung erheblich.

> *„[…] die möblierten Wohnungen sind in Wien nicht üblich. Sie verkaufen sie und finden eine schöne Möbelwohnung, weil es keinen Markt gibt. Normalerweise bringen die Leute alles mit und suchen nicht nach so vielen möblierten Wohnungen." (Exp. 3)*

5.2 Die Wohnungsmarktintegration in Lwiw

Im Vergleich zu Wien wurden in Lwiw die Schwierigkeiten des Auffindens einer Wohnung etwas anders bewertet. So gab die Hälfte der Befragten an, dass es *„schwierig, aber möglich"* sei, eine Unterkunft zu finden, für 20 Prozent der „internally displaced persons" (IDPs) war es *„sehr schwierig"*, für 15 Prozent war es *„eher unrealistisch"* und für die restlichen 15 Prozent sei es *„ganz einfach"* gewesen.

Auch in Lwiw bilden finanzielle Hürden das wichtigste Hindernis für eine rasche Wohnintegration, vor allem, da sich die Wohnungspreise und das Mietzinsniveau drastisch erhöht haben und sich auch ein vor dem Krieg seltenes „Spekulantentum" entwickelt hat.

IDPs in Lwiw werden vor allem mit zwei Hauptproblemen der Wohnintegration konfrontiert: den hohen Immobilienpreisen und voreingenommenen Haltungen seitens eines Teils der Vermieter/innen gegenüber russischsprachigen Wohnungsnachfrager/inne/n. Dies führt nicht selten zu individuell prekären Situationen und birgt das Risiko der Obdachlosigkeit. In solchen Fällen stellt die temporäre Unterbringung durch die Stadtverwaltung (vor allem in modularen Siedlungen) eine wesentliche Hilfestellung dar.

> *„Der Preis! Wir kommen aus einer Kleinstadt und haben nie genug verdient, um solche Immobilienpreise decken zu können."* (Resp. 38)

> *„Eine 100-prozentige Vorauszahlung an einen Makler ist ein Albtraum. Sie müssen über ein finanzielles Polster verfügen, um zwei Monate im Voraus 100 Prozent an den Makler zahlen zu können. Das heißt, Sie müssen immer noch mindestens 30.000 Griwna* [750 Euro] *auf einmal bei sich haben und niemand kümmert sich um Ihre Probleme."* (Resp. 21)

Trotz dieser Barrieren erwägen rund 50 Prozent der Vertriebenen langfristig nicht, außerhalb der Metropole in der weiteren Region außerhalb Lwiws zu leben, obwohl es solche Möglichkeiten unweit der Stadt im Erholungsgebiet gäbe. Vorübergehend werden die Quartiere im Umland allerdings genutzt. In Lwiw ist hinsichtlich der klaren Präferenz für einen urbanen Wohnstandort die Situation sehr ähnlich zu jener der Flüchtlinge in Wien. Binnenvertriebene, die unter Stress stehen, traumatisiert sind und sich oft an Stereotypen orientieren, wollen kaum ein Risiko eingehen und andere Wohnoptionen erwägen als jene, die sie sich konkret vorgestellt haben.

> *„Was die Ansiedlung außerhalb der Stadt betrifft, gibt es eine 50:50-Spaltung. Denn wer in der Stadt gelebt hat, will auch in der Stadt leben. Gleichzeitig bestehen in der Region Ansiedlungsmöglichkeiten. Zum Beispiel in Truskavets, Drohobych* […]. *Schlafsäle, die nicht funktionierten und verlassen wurden, heute sind sie alle bewohnt, Fenster wurden ersetzt, Heizung und Strom funktionieren. In diesen Städten gibt es auch Krankenhäuser und ASCs* [Anm: Ambulante Operationszentren]*, die gesamte Infrastruktur funktioniert. Manchmal haben Binnenvertriebene Angst, in der Region zu leben, weil sie denken, dass sie weit weggehen und es dort nichts gibt."* (Exp. 2)

Seit Februar 2022 war ein deutliches Emporschnellen der Mietzinsniveaus zu beobachten. So stieg die durchschnittliche Miete für Einzimmerwohnungen im Jahr 2022 von etwa 270–280 Euro auf über 400 Euro Ende des Jahres, was einer Steigerung von mehr als 45 Prozent entsprach (LUN, n. d.). Im Zeitraum von 2023 bis 2025 blieb der Wohnungsmarkt angespannt: Die Mietpreise setzten ihren Anstieg fort und erreichten neue Spitzenwerte: etwa 480–500 Euro für Einzimmerwohnungen und über 520 Euro für Zweizimmerwohnungen. Diese Entwicklung war auf den gleichzeitigen Wohnungsmangel, den Zustrom Binnenvertriebener und die hohe Nachfrage nach kurzfristigen Mietobjekten zurückzuführen. Somit ist die Medianmiete für Wohnungen durch den starken Einfluss

der kriegerischen Ereignisse im Zeitraum von 2022 bis 2025 um etwa 50–80 Prozent gestiegen.

Einzelne Befragte wiesen darauf hin, dass ihr verfügbares Einkommen nicht ausreiche, um eine Wohnung zu mieten, weshalb sie entweder gezwungen seien, die unkomfortablen Bedingungen in den von der Stadt bereitgestellten temporären Unterkünften (z. B. Wohnheime) in Kauf zu nehmen oder ihre Ausgaben für andere Grundbedürfnisse zu reduzieren, um die Wohnkosten decken zu können. Eine vollumfängliche quantitative Analyse ist aufgrund der unvollständigen Datenlage nicht möglich, die qualitativen Interviews bestätigen jedoch die hohe finanzielle Belastung der meisten Haushalte von „internally displaced persons" (IDPs).

Die Hauptursachen für den eingeschränkten Zugang von Binnenvertriebenen zu Wohnraum sind also folgende:

- Die Wohnungsnachfrage, die infolge der massenhaften Ankunft von IDPs in den Jahren 2022–2023 stark angestiegen ist;
- die Mietpreissteigerungen in Lwiw;
- das begrenzte Angebot an Mietwohnungen, wobei insbesondere das Segment günstiger Einzimmerwohnungen einen krassen Mangel verzeichnet;
- die zunehmenden Investitionskäufe, die 2022–2023 zu weiteren Preissteigerungen führten und die Zahl der für die langfristige Vermietung verfügbaren Wohnungen reduzierten;
- die spezifischen Anforderungen der Vermieter/innen (hohe Kautionszahlungen, kurze Mietdauer, mangelnde Bereitschaft, offizielle Verträge mit IDPs abzuschließen);
- die ungünstige Einkommensstruktur der IDPs, die nicht mit der Dynamik des Mietmarktes Schritt hält;
- das Fehlen eines systematischen Mietpreisregulierungsmechanismus, welches 2022 zu einer schnellen Überhitzung des Marktes beitrug.

Im Unterschied zu Wien besteht in Lwiw ein bedeutender kompensatorischer Mechanismus: die Möglichkeit einer temporären Unterbringung in modularen Siedlungen, die 2022 von der Stadtverwaltung in Zusammenarbeit mit internationalen Partnern rasch errichtet wurden. Diese modularen Anlagen gewährleisten grundlegende Wohnbedingungen und verringern teilweise den Druck auf den Mietmarkt, lösen jedoch nicht das Problem der langfristigen Wohnintegration der Binnenvertriebenen in der Stadt.

> *„In Lwiw gibt es Unterkünfte, aber einige Unterkünfte, die im Rahmen internationaler Projekte betrieben wurden, wurden geschlossen, und diese Projekte wurden eingestellt. Bisher erhalten die Binnenvertriebenen, die sich innerhalb der bestehenden Warteschlange bei uns bewerben, bis zu einen Monat lang eine Unterkunft. Wir beherbergen jeden, der dort leben möchte. […] wenn die Bedingungen stimmen, werden die Menschen innerhalb eines Monats untergebracht. Wenn die Bedingungen nicht geeignet sind, wird ihnen angeboten, auf eigene Faust eine Wohnung in der Stadt oder Region zu suchen. Natürlich können sich die Menschen nach einiger Zeit erneut um eine Wohnung bewerben, wenn sich ihre Umstände ändern."* (Exp. 2)

Während Vermieter/innen in Wien vor allem aus Gründen finanzieller Risiken sowie der Unsicherheiten bezüglich der Dauer des Mietverhältnisses davor zurückschrecken, an ukrainische Geflüchtete zu vermieten, existieren in Lwiw in der lokalen Bevölkerung Vorurteile gegenüber bestimmten Subgruppen von IDPs aus den benachteiligten Ostregionen. Diese Einstellungen haben historische Wurzeln,[2)] da viele Menschen in den östlichen und südlichen Regionen der Ukraine russischsprachig sind, was bei der Bevölkerung der Westukraine angesichts der aktuellen Kriegshandlungen und der Erinnerungen an die Opfer des Sowjetregimes häufig Ressentiments hervorruft. Darüber hinaus ist die Bevölkerung in den Westregionen generell konservativer, wenn es um die Einhaltung von ukrainischen Traditionen und die Begehung religiöser Feiertage geht. Diese werden von Binnenvertriebenen oft in geringerem Ausmaß eingehalten. Last, but not least wird den IDPs häufig ein weniger sorgfältiger Umgang mit Wohnimmobilien vorgeworfen. Diese Vorurteile haben sich aber im Verlauf der letzten Dekade etwas verringert:

> *„Die voreingenommene Haltung von Vermietern gegenüber Binnenvertriebenen besteht, sie ist jedoch nicht so ausgeprägt wie in den Jahren 2015/16. Die Gründe dafür sind der oft nachlässige Umgang mit der von ihnen gemieteten Immobilie, das Niveau der Verhaltenskultur an öffentlichen Orten sowie die mangelnde Rücksichtnahme auf die Besonderheiten der Kultur und auf den Respekt der Bewohner der Westukraine für die Feier kirchlicher Feiertage und Sonntage als freie Tage. […] Folgende Faktoren verhindern also, dass Binnenvertriebene in Lwiw eine Unterkunft finden: das Sprachproblem; die voreingenommene Haltung der Einwohner von Lwiw gegenüber Binnenvertriebenen und der ziemlich hohe Preis für die Miete einer Wohnung."* (Exp. 4)

Als Zwischenfazit ist festzustellen, dass die Wohnungsknappheit sowie finanzielle Aspekte (extreme Mietpreissteigerungen) in beiden Städten die schwierigsten Hürden der Wohnintegration darstellen. Lediglich im Segment der Luxuswohnungen besteht ein großes Angebot, welches aber für die befragten Vertriebenen nicht leistbar ist. In Wien kommt die Finanzierung der Wohnungsmakler/innen hinzu. Die (Miet-)Preissteigerungen stellen in Wien ein bereits seit Jahrzehnten kontinuierlich feststellbares Phänomen dar, in Lwiw wurden sie vor allem ab 2014 durch ein Zusammenwirken des starken Zustroms von IDPs bei einem gleichzeitigen Rückgang der Neubauleistung verursacht. Als weitere Hindernisse in Wien treten hinzu: die Vorlage einer Einkommensbescheinigung in Österreich für die letzten sechs Monate sowie die unsichere Dauer des Mietverhältnisses. Des Weiteren ist die Qualität der über NGOs (Wien) oder in „Modular Cities" (Lwiw) angebotenen Wohnungen häufig nicht zufriedenstellend.

Von den nicht finanziell determinierten Wohnintegrationsbarrieren ist für Lwiw zu erwähnen, dass rund 50 Prozent der Binnenvertriebenen langfristig nicht erwägen, außerhalb der Metropole in der weiteren Region zu leben und solche Quartiere nur vorübergehend

[2)] In den östlichen Regionen der Ukraine hat sich die russische Sprache aufgrund des historischen Einflusses des früheren Russischen Reiches und der Sowjetunion verbreitet, wobei eine aktive Russifizierung, eine Repression der ukrainischen Kultur und das Verbot der ukrainischen Sprache stattfanden.

nutzen. In beiden Städten ist hinsichtlich der Präferenz für einen urbanen Wohnstandort die Situation sehr ähnlich. Ein lokales Spezifikum sind Ressentiments der Bevölkerung Lwiws gegenüber der russischsprachigen Subgruppe von IDPs.

Hinsichtlich der Strategien der Bewältigung der Zugangsprobleme bestehen die am häufigsten genannten darin, dass die Geflüchteten zu (unerwünschten) Kompromissen gezwungen werden oder, sofern Zeit- und finanzielle Ressourcen dies erlauben, langwierige Suchprozesse auf sich nehmen müssen, um eine akzeptable Bleibe zu finden.

6 Typische Eigenschaften von Geflüchteten in Wien und Lemberg [Lwiw]

Die ukrainischen Geflüchteten in Wien unterscheiden sich deutlich von bisherigen stereotypen Bildern „typischer" Geflüchteter in der Bundeshauptstadt. Im Gegensatz zu Personen aus Syrien, Afghanistan oder dem Irak, bei denen es sich größtenteils um allein ankommende jüngere Männer handelte, besteht das Gros der ukrainischen Vertriebenen aus Frauen und Kindern. Dies ist darauf zurückzuführen, dass ukrainischen Männern im Alter von 18 bis 60 Jahren aufgrund des geltenden Kriegsrechts die Ausreise aus dem Land untersagt ist. Darüber hinaus verfügen etliche ukrainische Geflüchtete über private Fahrzeuge, Haustiere etc., was neue Herausforderungen für die Aufnahmeinfrastruktur bedingte.

> *„Das [Anm.: ukrainische Geflüchtete in Wien] sind Mütter mit kleinen Kindern, während Geflüchtete aus den Vorjahren meistens Männer zwischen 20 und 30 Jahren waren."* (Exp. 6)

> *„Menschen aus Syrien konnten nicht mit dem eigenen Auto kommen. Menschen aus der Ukraine kamen mit ihren Autos. […]. Sie sind sehr qualifiziert.* […]. *Das ist alles neu. Es ist eine völlig andere Situation 2015 und 2022* […]*."* (Exp. 1)

Im Gegensatz zu Wien kamen in Lwiw sowohl Frauen als auch Männer mit Kindern weitgehend ungehindert an. Viele dieser jüngeren Männer meiden jedoch nach wie vor die offizielle Registrierung als Binnenvertriebene und halten sich aus der Öffentlichkeit fern, um nicht erfasst und potenziell militärisch verpflichtet zu werden. Unter den Befragten in beiden Städten befanden sich zudem auch Personen, die bereits zweimal zur Flucht gezwungen worden waren – erstmals 2014 und erneut im Jahr 2022.

Unsere Recherchen bestätigen, dass ukrainische Vertriebene häufig über ein hohes Bildungsniveau verfügen. Über 80 Prozent der befragten Personen in beiden Metropolen gaben Hochschulabschlüsse an.

Eine Besonderheit der Geflüchteten in Wien ist, dass sie bei der Wahl ihres Wohnortes weit wählerischer sind als die Asylwerber/innen der Jahre 2015/16. Da es sich bei den meisten um Mütter mit Kindern handelt, ist die Frage der Sicherheit im neuen Wohnkontext für sie ein wichtiges Anliegen. Dementsprechend interessieren sie sich bei der Wohnungssuche auch für die Bewohnerstruktur und Kriminalitätsraten in verschiedenen Bezirken und „Grätzeln" (traditionelle Wiener Bezeichnung für das lokale Wohnumfeld).

Außerdem sind die Pflege intensiver Nachbarschaftsbeziehungen und häufiger Kommunikation mit den Nachbar/inne/n spezifische Merkmale von Personen ukrainischer Herkunft. Daher sind Geflüchtete nicht nur an der Lage und Ausstattung der Wohnung per se interessiert, sondern auch am nachbarschaftlichen Umfeld. Dieses Faktum kann – so die Kritik einiger Befragter – seitens der NGOs etc. oftmals zu wenig berücksichtigt werden.

> *„Viele Leute kamen und sagten uns: ‚Nein, aber ich möchte nicht in diesem Teil Wiens leben, weil es zu viele Muslime gibt, es gibt zu viele Syrer, es gibt zu viele Menschen aus Afghanistan oder aus der Türkei'. Für uns ist das ziemlich erstaunlich, denn für uns ist man auch nur die Person, die aus einem anderen Land kommt. Außerdem wählen wir die Stadtteile, in denen wir leben, nicht abhängig von unseren Nachbarn aus. Normalerweise wählen wir aus, wie gut die Anbindung an das öffentliche Verkehrssystem ist. Wie hoch ist die Miete? Wenn es dann irgendwo in der Nähe eine Schule gibt, wenn ich Kinder hätte, würde ich wahrscheinlich auch dort zum Arzt gehen. Aber wir haben nie Kontakt zu unseren Nachbarn."* (Exp. 7)

Was den Familienstand anbelangt, so waren 65 Prozent der Befragten in Lwiw verheiratet, 20 Prozent waren ledig, 10 Prozent geschieden und 5 Prozent verwitwet. In Wien waren ebenfalls 65 Prozent der Befragten verheiratet, mit 25 Prozent war ein höherer Anteil ledig und der Rest geschieden oder verwitwet.

Fazit: Der Strukturvergleich der beiden Samples ergab vor allem in Wien einen erheblichen zahlenmäßigen Überhang von Frauen (meist mit Kindern), während sich unter den Binnenvertriebenen in Lwiw auch ein höherer Männeranteil fand, obwohl davon viele die offizielle Meldepflicht aus Furcht vor dem Militärdienst umgehen. Charakteristisch für Vertriebene in beiden Städten (besonders aber in Wien) ist deren zumeist hohes Bildungsniveau. In Bezug auf den Familienstand dominierten jeweils verehelichte Personen, vor ledigen und geschiedenen. Ein für nach Wien Geflüchtete neues Phänomen war im Vergleich zu den Asylberechtigten etwa aus Afghanistan oder dem Mittleren Osten die ausgeprägte Selektivität der Wohnungsnachfrager/innen hinsichtlich des Wohnstandortes. Diese interessierten sich bei der Wohnungssuche vor allem auch für die Bewohnerstruktur in verschiedenen Bezirken und „Grätzeln" sowie in der unmittelbaren Nachbarschaft. Auch Kriminalitätsraten wurden als Entscheidungskriterium der Wohnstandortentscheidung herangezogen.

7 Kompensatorische Unterstützungsmaßnahme lokaler Behörden und NGOs zur Förderung der Wohnintegration von Geflüchteten in den beiden Städten

Angesichts der vielfältigen Hindernisse für Geflüchtete und „internally displaced persons" (IDPs), eigeninitiativ den Sprung in die lokalen Wohnungsmärkte zu schaffen, war es für viele Befragte wichtig, kompensatorische Unterstützung von lokalen Behörden zu erhalten, die den Betroffenen nicht nur Beratung und Unterstützung bei der Suche nach einer Unterkunft und beim Umgang mit den rechtlichen Rahmenbedingungen von Miet-

verhältnissen, sondern auch konkrete Unterbringungsmöglichkeiten bieten konnten. Es ist hervorzuheben, dass die Reaktionen der lokalen Behörden auf die neuen Herausforderungen aufgrund der seit 2015/16 gesammelten Erfahrungen durchwegs rasch erfolgten und ein breites Spektrum an Unterstützungsmaßnahmen umfassten (vgl. Fonds Soziales Wien 2024; Österreichischer Integrationsfonds/ÖIF 2025).

> *„Wir konnten sehr schnell reagieren, da die Stadt Wien an Flüchtlinge gewöhnt ist. Wir haben seit 2015 gelernt. Wir konnten sehr schnell einen nachhaltigen Fonds einrichten, um Unterkunft und alles zu bieten. Es dauerte 48 Stunden und wir hatten die ersten Wohnungen. […] Wir arbeiteten auch mit Privatpersonen zusammen, mit der Zivilgesellschaft, die ihre Wohnungen anboten. Wenn eine Person aus der Ukraine sagte: ‚Ja, ich brauche eine Wohnung,' dann haben wir das Matching gemacht. […] Die Stadtverwaltung leistet sehr schnell Hilfe. Es ist gut, dass wir 2015 trainiert haben."* (Exp. 1)

> *„Wir haben auch Unterkünfte organisiert von der Stadt Wien aus. Es gab verschiedene Wohnformen: Es gab sogar Wohnungen, große Gebäude mit Zimmern, in denen man wohnen konnte. […] Private Investoren stellten diesen Wohnraum zur Verfügung."* (Exp. 7)

Die Stadt Wien (Fonds Soziales Wien/FSW 2024) hat gemeinsam mit anderen Organisationen (Caritas Österreich 2025; Caritas Wien und Niederösterreich Ost 2025; Diakonie 2025) versucht, jenen Ukrainer/inne/n eine Unterkunft zu verschaffen, die eine solche nicht selbst finden konnten, und hat für diesen Zweck private Unterkünfte angemietet. Der Fonds Soziales Wien/FSW stellt im Rahmen der Grundversorgung sowohl Möglichkeiten für individuelles als auch für organisiertes Wohnen zur Verfügung (Fonds Soziales Wien/FSW 2020).

> *„Diese Ankunftszentren sind für einen Zeitraum von ein paar Wochen gedacht. Aber wenn man von der Regierung eine organisierte Unterkunft erhält, die im Grunde eine dauerhafte Unterkunft ist, gibt es keine Begrenzung, bis wann man dort leben kann. Die einzige Einschränkung ist, dass man arbeiten darf, während man dort wohnt, aber Sie dürfen bestimmte Einkommensgrenzen nicht überschreiten. Sobald man mit seiner Arbeit zu viel verdient, muss man nach ein paar Monaten wieder gehen. Denn Wohnraum wird für Menschen bereitgestellt, die bedürftig sind."* (Exp. 6)

Wie in Wien auf Basis der Erfahrungen mit der Aufnahme von Geflüchteten aus Syrien, dem Irak und Afghanistan, so hatte auch im Fall von Lwiw die Expertise mit der Aufnahme von Binnenvertriebenen seit Besetzung der Halbinsel Krim im Februar 2014 einen positiven Einfluss auf die Qualität und das Tempo der Reaktionen auf die neuerliche Fluchtwelle von 2022. Gleichzeitig haben die Behörden in Lwiw mittels zusätzlicher Präventivmaßnahmen umgehend auf die Aufnahme von IDPs reagiert.

> *„So wurde zum Beispiel auf Initiative des Bürgermeisters im Sommer 2021 ein Sicherheitsprotokoll entwickelt. Demnach wurden Evakuierungskommissionen ein-*

gerichtet. Jeder Bezirksverwaltung der Stadt wurden Busse zugewiesen, um die ankommenden Menschen vom Bahnhof abzuholen und sie umgehend in Schulen und andere Notunterkünfte umzusiedeln. Dieser Mechanismus wurde sofort aktiviert und begann dank der Vorbereitungen zu funktionieren. Niemand wusste, ob es einen Krieg geben würde oder nicht, aber es war besser, zu planen und sich vorzubereiten [...].“ (Exp. 2)

Gemeinsam mit internationalen Partnerorganisationen gelang es der Stadt Lwiw außerdem, rasch modulare Siedlungen zu errichten, die dazu beitrugen, das Problem der dringenden Ansiedlung von Neuankömmlingen teilweise zu lösen.

„Innerhalb von drei bis vier Monaten kamen uns unsere Partner, d.h. die polnische Regierung, mit dem Bau von Modulsiedlungen zu Hilfe. Im Mai 2022 wurde die erste Siedlung im Stryiskyi-Park für 350 Menschen eröffnet, dann in der Pulujia-Straße [...]. Zwei Wochen später eröffneten wir eine neue modulare Siedlung, eine nach der anderen [...]. Es gibt insgesamt vier davon: drei Sommer- und eine Wintermodulsiedlung. Jetzt wird nur die Wintersiedlung genutzt, die den aktuellen Bedarf an Unterkünften deckt. Außerdem gibt es Unterkünfte in der Ternopil- und der Uhorska-Straße sowie Wohnheime für Menschen, die in der Berufsschule untergebracht sind. Für die Instandsetzung dieser Wohnheime werden Zuschüsse verwendet.“ (Exp. 2)

Die rechtzeitige Bereitstellung von Wohnraum für Vertriebene wäre ohne die koordinierte Zusammenarbeit zwischen staatlichen, kommunalen und nichtstaatlichen Organisationen sowie internationalen Stiftungen nicht möglich gewesen. Vor allem die NGOs waren und sind wichtige Partner und bieten nicht nur Unterkünfte, sondern auch Support und Beratung in verschiedenen Lebensbereichen. Insbesondere leisten die NGOs aktiv soziale Unterstützung in der neuen Umgebung. Dazu gehören Rechtsberatung, medizinische und psychologische Versorgung sowie Hilfe bei der Ausbildung und beim Finden einer Beschäftigung. Eine weitere wichtige Aufgabe besteht darin, die Integration in das neue soziale Umfeld zu erleichtern, zum Beispiel durch die Organisation von Sprachkursen, kulturellen Veranstaltungen, Freiwilligenarbeit und andere Initiativen, welche die Interaktionen zwischen Geflüchteten und der einheimischen Bevölkerung fördern (vgl. Bundesministerium für Inneres 2025; Fonds Soziales Wien/FSW 2024; Österreichischer Integrationsfonds/ÖIF 2025).

„Was wir also in der Zwischenzeit machen, ist, dass wir unsere Klienten beraten, wie sie eine andere Bleibe finden können, welche Möglichkeiten sie haben und was sie als Voraussetzung brauchen, um eine dieser Möglichkeiten zu nutzen. Und für den Fall, dass sie sich gar nichts leisten können, [...] eine Unterkunft, die von der Regierung zur Verfügung gestellt wird.“ (Exp. 6).

Die befragten Wiener Expert/inn/en betonten die wichtige Rolle von NGOs bei der Suche nach einer Unterkunft. Einige dieser Organisationen sowie weitere internationale arbeiten auch mit IDPs in Lwiw. Die Befragung der Geflüchteten ergab, dass sie dank der NGOs die

notwendigen Informationen nicht nur über die Unterbringung, sondern auch über andere Aspekte des Lebens in Wien erhalten konnten. Sie nannten in diesem Zusammenhang insbesondere Diakonie, Caritas, Malva, Austria Center Vienna, Volkshilfe und andere (vgl. Diakonie 2025; Caritas Wien und Niederösterreich Ost 2025; Volkshilfe Wien 2025). Auch der Österreichische Integrationsfonds bietet auf seiner Homepage eine Fülle an Informationen, zum Beispiel zur Auffindung von Unterbringungsmöglichkeiten (Österreichischer Integrationsfonds 2025). Es ist anzumerken, dass die Nachfrage der Geflüchteten nach Unterkünften insgesamt nicht mehr so stark ist wie in den ersten Monaten der russischen Invasion:

> *„Wir arbeiten in allen Bereichen des sozialen Lebens und bieten den Ukrainern grundlegende Unterstützung in verschiedenen Fragen. […] Selbst wenn es sich um eine Frage der Wohnung oder der Arbeit handelt, bieten wir Informationen an. […] Wir arbeiten zum Beispiel mit verschiedenen Organisationen zusammen und vermitteln die Menschen an sie weiter. Wir geben Hilfestellung bei der Arbeitssuche, bei der Wohnungssuche, bei der Ausbildung, bei der Weiterbildung, […]. Wir kümmern uns auch um die Gesundheit der Flüchtlinge."* (Exp. 5)

Der zivilgesellschaftliche Sektor spielt in der ukrainischen Gesellschaft eine sehr wichtige Rolle. Verschiedene zivilgesellschaftliche Organisationen bieten eine breite Palette von Dienstleistungen für Binnenvertriebene an, um für diese eine Unterkunft zu finden.

> *„Die Stadtverwaltung arbeitet mit IOM, UNICEF, Caritas, World Central Kitchen, Danish Refugee Council, Norwegian Refugee Council, dem Ungarischen Ökumenischen Dienst, dem Jesuitenrat für Flüchtlinge, der Salesianerkongregation Don Johannes Bosco für die Bereitstellung von Wohnraum und anderen lebensnotwendigen Gütern für Binnenvertriebene in Lwiw zusammen."* (Exp. 2*)*

Anders als in Wien suchten die Binnenvertriebenen in Lwiw öfter bereits von Anfang an selbst über das Internet, mit Hilfe von Freund/inn/en und Verwandten nach Informationen über verfügbaren Wohnraum. Nur 10 Prozent der Befragten gaben an, dass sie sich an Organisationen gewandt hatten, um Informationen über Wohnungen zu erhalten. Unter den Organisationen wurden das städtische IDP-Zentrum, die IOM (International Organization for Migration) und die Notunterkünfte von den befragten IDPs am häufigsten kontaktiert.

> *„Ich habe einen schriftlichen Antrag bei der Militärverwaltung in Lwiw gestellt. Sie halfen mir mit Informationen über die Adressen und Telefonnummern von Diensten, die mein Problem der Unterbringung in einer modularen Siedlung lösen könnten. Sie boten mir sogar eine sofortige Unterbringung in einer modularen Siedlung an, allerdings in der Region."* (Resp. 32)

In beiden Städten war die Unterstützung der Geflüchteten durch die Zivilgesellschaft beträchtlich. Als die ersten Flüchtlinge in Österreich ankamen, halfen ihnen viele freiwillige Helfer/innen aktiv bei der Unterbringung, manche boten bereitwillig an, ihre Wohnungen

für eine bestimmte Zeit mit Geflüchteten zu teilen (KOMMUNAL 2022). Der Krieg endete jedoch nicht und immer öfter stieß daher die Möglichkeit, die Ukrainer/innen längerfristig in den privaten Wohnungen zu beherbergen, an ihre Grenzen. Daher forderten den Expert/inn/en gemäß die meisten Gastgeber/innen die Geflüchteten nach einiger Zeit (häufig lag eine kritische Grenze bei sechs Monaten) auf, sich eine neue Unterkunft zu suchen.

> *„Viele Leute boten entweder Zimmer in ihren eigenen Häusern oder ihre eigenen Wohnungen an, manchmal sogar ganze Wohnungen, die vielleicht leer standen oder für einige Zeit frei waren. […] Denn jeder hoffte, dass der Krieg vielleicht nur ein paar Wochen dauern würde, dann wäre er vorbei und alle könnten nach Hause gehen."* (Exp. 7)

In Lwiw halfen die Einwohner/innen ebenfalls bei der Unterbringung von IDPs, entweder durch kostenlose Unterbringung in ihren Häusern oder durch die Bereitstellung von benötigten Dingen des täglichen Bedarfs an den Orten vorübergehenden Aufenthalts, zum Beispiel in Schulen, Kindergärten usw. Die Menschen versuchten, ihr Leben so weit als möglich zu konsolidieren. Die Suche nach verfügbarem Wohnraum erfolgte auch durch Anfragen bei lokalen Behörden und Kommunen, die zur Gebietskörperschaft Lwiw gehören. Solche Anfragen werden laufend entgegengenommen. Die lokale Bevölkerung war eher bereit, IDPs aufzunehmen, die sie bereits kannten oder die ihnen von Bekannten empfohlen wurden. Es wurden auch Fälle unangemessenen Verhaltens von IDPs in temporären Unterkünften wahrgenommen, was sich negativ auf das Image der Vertriebenen im Allgemeinen auswirkte.

Resümierend ist festzustellen, dass in beiden Städten die Unterstützungsmaßnahmen aus einem Zusammenwirken staatlich-kommunaler Stellen, NGOs und engagierter Privatpersonen sehr rasch einsetzten und in den meisten Fällen optimal aufeinander abgestimmt waren. In Wien konnte man auf den vielfältigen Erfahrungen im Rahmen der sogenannten „refugee crisis" der Jahre 2015/16 aufbauen. In Lwiw halfen vorhandene und ab 2022 erweiterte Strukturen der Beratung, Unterstützung und Unterbringung, die bereits seit 2014 im Zuge der Fluchtbewegung nach der ersten russischen Invasion etabliert worden waren. Jedenfalls leisteten in beiden Städten die Kommunen, NGOs sowie die Zivilgesellschaft einen erheblichen Beitrag zur Bewältigung dieser Krise.

8 Die Wohnsituation von ukrainischen Geflüchteten in Wien und Lemberg [Lwiw] – 2022 und 2024 im Vergleich

Eine vergleichende Analyse der Wohnsituationen ukrainischer Geflüchteter in Wien zu Beginn des Jahres 2022 und zum Zeitpunkt der Befragung im Jahr 2024 zeigt, dass die Flüchtlinge die erste Unterkunft überwiegend bei hilfsbereiten Privatpersonen (35 %) oder bei Verwandten und Freund/inn/en (30 %) fanden. Etwa ein Drittel der Geflüchteten verfügte also bereits vor dem Krieg über soziale Kontakte in Wien, was die Entscheidung für Wien als Zufluchtsort maßgeblich beeinflusste. 15 Prozent der Befragten konnten in Hotels wohnen oder kurzfristig Unterkünfte anmieten (10 %), was auf die verbreitete Hoffnung auf ein baldiges Kriegsende und eine rasche Rückkehr in die Heimat hindeutet. Nur 5 Pro-

zent nutzten Flüchtlingswohnheime bzw. das Erstaufnahmezentrum in Wien (Schlossberggasse 8, 1130) und weitere 5 Prozent zum Beispiel vom Fonds Soziales Wien organisierte Sozialwohnungen.

Im weiteren Verlauf machten sich viele Geflüchtete mit den Besonderheiten des privaten Mietwohnungsmarktes vertraut und bereits 2024 konnten 60 Prozent eine Wohnung anmieten. Die von NGOs organisierten Sozialwohnungen machten einen Anteil von rund 30 Prozent aus, bei hilfsbereiten Nachbar/inne/n oder Freund/inn/en wohnten nur mehr jeweils 5 Prozent der Befragten.

Während ihres Aufenthalts in Wien wechselten 45 Prozent der Geflüchteten ihren Wohnort dreimal oder häufiger. 20 Prozent zogen nur einmal um, 15 Prozent wechselten zweimal die Unterkunft, während weitere 20 Prozent den gesamten Zeitraum hindurch in derselben Wohnung blieben. Die Dauer des Wohnungssuchprozesses variierte stark: 11 Prozent der Befragten fanden innerhalb weniger Tage oder Wochen eine Unterkunft, 16 Prozent innerhalb eines Monats, weitere 11 Prozent innerhalb von zwei Monaten. Zudem gab es auch einige Befragte, die sich zum Zeitpunkt der Erhebung noch immer auf Wohnungssuche befanden und in provisorischen Unterkünften lebten. Zu den häufigsten Gründen für einen Wohnungswechsel zählten die zeitlich begrenzte Verfügbarkeit der Unterkunft (z. B. bei Freund/inn/en, Verwandten oder Freiwilligen), unzureichende und unbefriedigende Wohnbedingungen in von NGOs bereitgestellten Quartieren, zu hohe Mietkosten, Probleme mit dem Aufenthaltstitel sowie die Notwendigkeit, Bildungs- und Betreuungseinrichtungen wie Schulen oder Kindergärten zu wechseln.

> *„Zuerst wurden wir vom Roten Kreuz im 13. Bezirk untergebracht. Aber die Bedingungen dort waren einfach schrecklich: Die Wände waren schmutzig, die Räume waren nicht verschlossen. Davor lebten dort Rumänen oder andere Leute, einige Kranke und so weiter. Es war unmöglich, dort zu bleiben. Es gelang uns jedoch, Sozialwohnungen zu bekommen."* (Resp. 18)

In Lwiw zeigte der Vergleich der ersten Unterkunft nach der Flucht mit jener im Jahr 2024 einige Unterschiede, aber auch Parallelen zur Situation in Wien. Bereits 2022 mieteten 30 Prozent der „internally displaced persons" (IDPs) eine eigene Wohnung, ungefähr derselbe Prozentsatz fand bei Verwandten oder Freund/inn/en eine Bleibe. Rund ein Fünftel nutzte Flüchtlingsunterkünfte und 15 Prozent durch die Kommune bzw. NGOs organisierte Sozialwohnungen. Bei hilfsbereiten Nachbar/inne/n kamen 5 Prozent unter. Im Jahr 2024 hatten bereits 55 Prozent eine eigene Wohnung angemietet und 35 Prozent bewohnten Sozialwohnungen (z.B. in modularen Siedlungen). Bei Verwandten/Freund/inn/en oder Nachbar/inne/n logierten jeweils 5 Prozent der Befragten.

Die Gründe, warum Vertriebene Lwiw als Zufluchtsort wählten, waren vielfältig. 45 Prozent der Befragten kannten die Stadt von früheren Aufenthalten. 10 Prozent schätzten den Faktor Sicherheit und hatten Lwiw bereits vor dem Krieg als möglichen Fluchtort in Betracht gezogen. 15 Prozent waren ursprünglich auf dem Weg zu einem anderen Ziel, entschieden sich aber spontan, in Lwiw zu bleiben. 20 Prozent erreichten die Stadt über Evakuierungszüge in die Westukraine, 5 Prozent kamen zum Studieren und derselbe Prozentsatz zur Arbeitsuche. Weitere 5 Prozent wählten Lwiw auf Empfehlung anderer IDPs.

In Lwiw unterscheidet sich die Situation hinsichtlich der Häufigkeit von Wohnungswechseln etwas von der in Wien. 35 Prozent der Befragten haben während ihres Aufenthaltes ihren Wohnsitz nicht gewechselt, 10 Prozent wechselten einmal und 25 Prozent taten dies zweimal. Ein Drittel der IDPs mussten dreimal oder öfter den Wohnort wechseln. Es ist zu beachten, dass es eine offizielle Verordnung gibt, nach der die IDPs in Lwiw für den Zeitraum des russischen Angriffskriegs auf die Ukraine eine vorübergehende Unterkunft erhalten müssen. Die Bandbreite des Zeitrahmens für die Wohnungssuche war erheblich: Die Mehrheit gab an, dass ihre Wohnungssuche nicht länger als einen Monat gedauert hatte. Einige fanden sofort eine Unterkunft, während andere monatelang nach einer passenden Bleibe suchten.

> *„Die ersten drei Monate unseres Aufenthalts in Lwiw verbrachten wir mit der Suche nach einer Unterkunft. Mit unserem Einkommen ist es unrealistisch, ein Haus zu mieten, also bleiben nur Sozialwohnungen."* (Resp. 31)

Für die Mehrheit der in Lwiw Befragten waren vor allem die hohen Wohnkosten, unangenehme Lebensbedingungen und unzumutbare Verhältnisse in den Sozialwohnungen die Hauptgründe, um nach einer neuen Unterkunft zu suchen. Ein erheblicher Teil wechselte (analog zu Wien) auch deshalb die Unterkunft, weil sie aus den Wohnungen von Freund/inn/en oder Verwandten ausziehen mussten, bei denen sie zu Beginn des Krieges bereitwillig untergekommen waren. In Lwiw waren 45 Prozent der befragten Binnenvertriebenen mit ihren aktuellen Lebensbedingungen unzufrieden, wobei verschiedene Ursachen dafür ausschlaggebend waren:

> *„Die Küche in der Modularsiedlung ist schlecht, die Leute benehmen sich nicht angemessen, die Kinder sind nicht gehorsam."* (Resp. 28)

Der Vergleich der Wohnsituationen in Wien für die Jahre 2022 und 2024 zeigt, dass viele Geflüchtete anfangs bei hilfsbereiten Privatpersonen, bei Verwandten oder Freund/inn/en untergebracht waren. Etwa ein Drittel verfügte also bereits vor dem Krieg über soziale Kontakte in Wien oder profitierte von der Welle der Hilfsbereitschaft vieler Wiener/innen. Diese Faktoren waren in vielen Fällen auch maßgeblich für die Entscheidung für Wien als Ziel der Flucht. Während rund 15 Prozent der Befragten (entsprechende finanzielle Ressourcen vorausgesetzt) vorübergehend in der Hotellerie wohnten, mietete nur rund jede/r Zehnte bereits 2022 eine Unterkunft an. In krassem Gegensatz etwa zu Geflüchteten aus Syrien, dem Irak und Afghanistan nutzten nur 5 Prozent das Erstaufnahmezentrum der österreichischen Bundeshauptstadt. Im weiteren Verlauf ihres Aufenthaltes ging der Wohntrend eindeutig in Richtung des privaten Mietwohnungsmarktes.

Auch in Lwiw zeigte sich diese Tendenz zur privaten Mietwohnung 2024 deutlich, jedoch spielten modulare Siedlungen und von der öffentlichen Hand organisierte Sozialwohnungen nach wie vor eine wichtige Rolle. 2022 suchte etwa ein Drittel der IDPs Zuflucht bei Verwandten oder Freund/inn/en, im Gegensatz zu Wien konnten nur 5 Prozent bei engagierten aufnahmebereiten Privatpersonen Aufnahme finden. Ein mit einem Drittel erheblich höherer Anteil als in Wien mietete sofort privat eine Unterkunft. Mit rund einem

Fünftel war der Anteil, der in Flüchtlingsunterkünften lebte, sehr hoch. Mehr als ein Drittel war in organisierten sozialen Unterkünften wie modularen Siedlungen, Wohnheimen oder Notunterkünften untergebracht. Im Jahr 2024 hatte bereits mehr als die Hälfte eine eigene Wohnung angemietet, nur noch 5 Prozent wohnten weiterhin bei Verwandten, Freund/inn/en oder Nachbar/inne/n.

9 Schlussfolgerungen

Wien und Lwiw sind für Tausende von Ukrainer/inne/n, die vor dem Krieg geflohen sind, vorübergehend oder dauerhaft zur neuen Heimat geworden. Dieser beträchtliche Zustrom von Geflüchteten hat für beide Städte beträchtliche Herausforderungen mit sich gebracht, wobei aber in Wien auf die vielfältigen Erfahrungen der sogenannten „refugee crisis" der Jahre 2015/16 zurückgegriffen werden konnte. Dies verdeutlicht die dringende Notwendigkeit, die Stadtpolitik zu flexibilisieren, um auch künftig diese Menschen rasch unterzubringen und zu unterstützen. Die vergleichende Analyse der Wohnintegrationsprobleme sowie der Wohnsituationen für ukrainische Geflüchtete in Wien und Lwiw ermöglichte es, folgende zentrale Fragestellungen zu beantworten:

1. *Welche Eigenschaften und soziostrukturellen Charakteristika weisen die ukrainischen Geflüchteten in Wien und die Binnenvertriebenen in Lwiw auf?*

Bei der Majorität der aus den von Kampfhandlungen betroffenen Regionen der Ukraine vertriebenen Personen handelt es sich um Frauen und (begleitete bzw. unbegleitete) Minderjährige, hinzu kommen in geringerer Zahl ältere Personen. Aufgrund des Verbots für ukrainische Männer, während der Geltungsdauer des Kriegsrechts in das Ausland zu reisen, blieb deren prozentueller Anteil in Wien im Vergleich zu Lwiw sehr gering. Ein nicht unerheblicher Teil der Geflüchteten reiste mit eigenen PKWs an und die meisten zählten zur Mittelschicht. In beiden Städten verfügten die Respondent/inn/en zu mehr als 80 Prozent über Hochschulabschlüsse. Trotz ihres sozioökonomisch zumeist mittleren bzw. höheren Status war das Gros der Vertriebenen aufgrund des spontan erzwungenen Charakters ihrer Flucht nicht auf die finanziellen Herausforderungen vorbereitet, mit denen sie auf den Wohnungsmärkten der beiden Metropolen konfrontiert wurden.

2. *Welche strukturellen Spezifika und Unterschiede kennzeichnen die Wohnungsmärkte der beiden Städte?*

Die Wohnungsmärkte der beiden Städte weisen insbesondere in Bezug auf ihre Strukturen und den Einfluss wohnungspolitischer Faktoren grundlegende Unterschiede auf. Wien ist durch einen deutlich segmentierten Markt mit beträchtlichen Anteilen kommunaler sowie teilweise durch die öffentliche Hand subventionierter Genossenschaftswohnungen (Wohnungsbestand der „Gemeinnützigen") charakterisiert, der mittels gezielter politischer Maßnahmen etwas erleichterte Integrationsmöglichkeiten für Geflüchtete bietet, obwohl primär finanzielle Barrieren, aber auch geforderte Mindestaufenthalts-

dauern weiterhin bestehen. In Lwiw dominiert der private Sektor, der sich aus Neubauten und gebrauchten älteren Wohnungen zusammensetzt. Der kommunale Wohnbau ist wenig relevant. Dies ist ein Faktum, welches den Zugang zu erschwinglichem Wohnraum aufgrund explodierender Preise und durch den Krieg rapide steigender Konkurrenz auf dem Wohnungsmarkt erschwert. Gleichzeitig setzt(e) Lwiw jedoch verstärkt auf innovative mittelfristige Lösungen wie die Errichtung von modularen Siedlungen, um Binnenvertriebene temporär unterzubringen. Allerdings wurde seitens der „internally displaced persons" (IDPs) hinsichtlich der Qualität und der Fläche der Wohneinheiten sowie des Verhaltens von Mitbewohner/inne/n häufig Kritik geäußert.

3. *Mit welchen Hauptproblemen hinsichtlich ihrer Wohnintegration sind die vertriebenen Ukrainer/innen in Wien und Lwiw konfrontiert?*

Der Vergleich der Situationen auf den urbanen Wohnungsmärkten zeigt markante Unterschiede, aber auch einige Gemeinsamkeiten auf: In Wien berichtete die Mehrheit der Befragten von erheblichen Schwierigkeiten, eine Unterkunft zu finden. Die größten Hindernisse manifestierten sich in der starken Konkurrenz auf dem Immobilienmarkt, im limitierten Zugang zum relativ kleinen Segment leistbaren Wohnraums, ablehnenden Stereotypen gegenüber Immigrant/inn/en seitens mancher Vermieter/inn/en sowie Anforderungen, die für Geflüchtete per se schwer zu erfüllen sind, wie etwa (inländische) Einkommensnachweise, hohe Kautionen oder Maklergebühren. Diese Probleme wurden durch die generelle Unsicherheit über die voraussichtliche Aufenthaltsdauer der Geflüchteten verschärft, was eine langfristige Vermietung für Eigentümer/innen weniger wahrscheinlich und somit unattraktiv machte. Zudem erschwerten komplexe administrative und legistische Hürden den Wohnintegrationsprozess für viele Befragte erheblich.

In Lwiw manifestierten sich etwas andere lokale Herausforderungen. Während die Hälfte der Befragten im Sample den Wohnungssuchprozess zwar als schwierig, aber als bewältigbar einstufte, wurden als Haupthindernisse (wie in Wien) die hohen Immobilienpreise genannt. Dazu kamen in Lwiw Vorurteile seitens mancher Vermieter/innen gegenüber Wohnungssuchenden aus russischsprachigen Regionen der Ostukraine. Im Gegensatz zu Wien bot und bietet Lwiw jedoch alternative Möglichkeiten für eine vorübergehende Unterbringung in modularen Siedlungen, was den Druck des Suchprozesses auf Binnenvertriebene aus kurzfristiger Perspektive erheblich verringert. Dies stellt einen wichtigen Aspekt der Förderung ihrer Wohnintegration dar. Diese temporären Wohnangebote ermöglichen es trotz qualitativer Defizite, das dringende Unterbringungsproblem relativ rasch zu lösen, sie können jedoch keine langfristige Gegenstrategie gegen die exorbitant steigenden Mietzinsniveaus bilden.

4. *Welche kompensatorischen Unterstützungsmaßnahmen seitens der lokalen Behörden und zivilgesellschaftlicher Organisationen fördern die Wohnintegration von Geflüchteten in den beiden Metropolen und wie?*

Hervorzuheben ist an erster Stelle, dass in beiden Städten die Wohnintegration durch die intensive Kooperation von lokalen kommunalen Behörden, NGOs und internationalen Or-

ganisationen (z. B. Rotes Kreuz) erleichtert wurde. Zivilgesellschaftliche Organisationen spielten eine zentrale Rolle bei der Diffusion von Informationen, bei der Rechtsberatung und der praktischen Unterstützung. In Wien wurden durch die Kooperation von Stadtverwaltung (Fonds Soziales Wien) und NGOs (Diakonie, Caritas Wien, Volkshilfe, Samariterbund etc.) private („Wohnraumspenden") und kommunale Unterkünfte bereitgestellt, während in Lwiw modulare Siedlungen rasch errichtet wurden, um die Notwendigkeit der Schaffung von zusätzlichem Wohnraum abzudecken. Im Detail erfolgten in beiden Städten durchaus unterschiedliche Herangehensweisen an die Problematik. Eine Gemeinsamkeit besteht in der koordinierten Kooperation der oben genannten Akteure.

5. *Auf welche Weise haben sich die Wohnsituationen der ukrainischen Geflüchteten in Wien und Lwiw entwickelt?*

Die persönlichen Gründe seitens der Vertriebenen für die Wahl von einer der beiden Städte als Fluchtziel divergierten beträchtlich, jedoch spielten soziale Beziehungsnetze, die bereits vor dem Krieg bestanden, eine wichtige Rolle. Die Wohnintegrationsverläufe divergierten vor allem hinsichtlich der Häufigkeit des Wohnungswechsels, wobei die Dauer der jeweiligen „Wohnepisoden" nicht systematisch abgefragt wurde. Nur einige Befragte machten hierzu exakte Angaben. Es konnte aber festgestellt werden, dass in Wien ein höherer Prozentsatz der Geflüchteten gezwungen war, Unterkünfte mehrmals und in kürzeren Abständen zu wechseln: zum Beispiel von privaten „Wohnraumspenden" in Notfallswohnungen von NGOs und organisierten Wohnmöglichkeiten in der Wiener Grundversorgung bis zum Auffinden einer leistbaren privaten Unterkunft, während in Lwiw viele IDPs zeitlich längere Stabilitäten in ihren Wohnverhältnissen erlebten, da kommunale Regelungen zur Bereitstellung zeitlich befristeter (gemieteter) Unterkünfte halfen, die Situation abzumildern. Die Zurverfügungstellung von Unterkünften von privater Seite (Freund/inn/en, Nachbar/inn/en etc.) spielte in Lwiw sowohl 2022 als auch 2024 ebenfalls eine Rolle.

Auch viele der Binnenvertriebenen in Lwiw berichteten von der Notwendigkeit, die Wohnungen von Freund/inn/en oder Verwandten nach von diesen gesetzten Fristen zu verlassen, weiters von nicht zufriedenstellenden Wohnbedingungen in den modularen Siedlungen, hohen Mietzinsniveaus sowie unzureichenden Wohn- und Lebensqualitätsbedingungen (Lärm, Überfüllung, Nachbarschaftskonflikte etc.) in den bereitgestellten Sozialwohnungen. Die Akkumulation dieser Faktoren bedingte, dass viele ebenfalls nach unterschiedlichen Zeitintervallen gezwungen waren, nach neuen Unterkünften zu suchen. Auch in Wien manifestierten sich ähnliche Herausforderungen, wobei hier (wie in Lwiw) das hohe Mietzinsniveau, aber zusätzlich die Anpassung an legistische Regeln des privaten Wohnungsmarktes (z. B. Einkommensnachweise, Dauer der Mietverträge) eine zusätzliche Rolle spielten. Als gemeinsames Resümee für beide Städte war zu konstatieren, dass gemäß der Datenerhebung die Wohnungssuche vom Gros der interviewten Personen als „schwierig" erlebt wurde.

Hinsichtlich der Zukunftspläne wurde festgestellt, dass mehr als die Hälfte der Befragten im Erhebungszeitraum noch plante, nach dem Krieg in ihre Heimatregion zurückzukehren. Der Faktor Sicherheit erwies sich als Schlüsselfaktor pro bzw. kontra

Rückkehrentscheidung. Für einige Geflüchtete in Wien bildeten auch der aus militärischen Gründen erzwungene Verbleib von männlichen Angehörigen in der Ukraine oder von Familienmitgliedern, die sich aus Altersgründen weigerten, das Land zu verlassen, wichtige Motivationen für die Rückkehr.

In Lwiw hat sich ein beträchtlicher jedoch kaum exakt quantifizierbarer Anteil von IDPs bereits vollständig integriert und ist zu einem Teil der lokalen urbanen Gesellschaft geworden. Vor allem viele Personen, deren Herkunftsregionen russisch besetzt sind oder zerstört wurden und für die eine Rückkehr unmöglich ist, sind aufgrund dieser Zwänge am ehesten bereit, eine Integration in den Wohnungs- und Arbeitsmarkt von Lwiw oder von Österreich langfristig zu planen. Rund ein Fünftel der Befragten in den Samples in beiden Städten hatte zum Zeitpunkt der Befragung bereits beschlossen, nicht zurückzukehren, ein geringerer Prozentsatz zögerte noch. Je länger der Krieg inzwischen andauert (wir befanden uns Ende 2025 im vierten Jahr dieses Konflikts), desto schwieriger wird die Rückkehr, da in den urbanen Aufnahmekontexten neue soziale Bindungen entstehen, sich (im Falle Wiens) die (deutsche) Sprachkompetenz verbessert, die Arbeitsmarktintegration voranschreitet, sich die Kinder in das lokale Schulsystem integrierten usw. Es soll auch nicht gänzlich außer Acht gelassen werden, dass sich angesichts der bildungsmäßigen Ressourcen der Geflüchteten diese in Mangelberufen, zum Beispiel im Pflegesektor, rasch integrieren.

Resümierend ist zu konstatieren, dass trotz der vielfältigen Strategien in beiden Städten, akzeptable Unterkunftsmöglichkeiten für Geflüchtete möglichst rasch und in ausreichendem Ausmaß bereitzustellen, die meisten Betroffenen hinsichtlich ihrer Wohnintegration mit erheblichen Problemen konfrontiert waren. Primär die hohen und nach wie vor steigenden Kosten für Wohnen und Energie sowie die häufig negativ beurteilte Qualität der verfügbaren Unterkünfte bilden zentrale Faktoren, welche die Lebensqualität, die Integrationsverläufe und Rückkehrintentionen der Geflüchteten auch längerfristig beeinflussen werden.

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Decline of Town and Village Centres? Delineation and Analysis of Historic Centres in Upper Austria Based on the Franciscan Cadastre

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Summary

This article analyses the condition and development of historic town and village centres in Upper Austria and closes a research gap in the empirical recording of these central settlement areas. Based on a semi-automated delimitation using the Franciscan cadastre ('Franziszeischer Kataster') (1817–1861) and statistical data from 2001 and 2018, a methodologically robust procedure was developed that makes historical centres morphologically and functionally comparable.

The results show an area of tension between structural redensification and social depopulation: despite rising building and housing numbers, most town and village centres recorded declining populations, increasing vacancy rates and the loss of their commercial functions. The shift towards a (semi-)public service sector and the erosion of architectural heritage are particularly characteristic of this development in peripheral regions. A cluster

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analysis identifies five types of historic town and village centres with widely diverging development paths – from dynamic centres of densification to structurally endangered centres.

The study illustrates that historic town and village centres are neither static relics nor self-sustaining resilient spaces. Their future viability depends on integrated, data-based and type-specific strategies that take revitalisation, mobility and building culture into account in equal measure.

Keywords: Town centres, village centres, structural analysis, delineation, Franciscan cadastre, image-classification, cluster analysis, Upper Austria

Zusammenfassung

Niedergang von Stadt- und Ortskernen? Abgrenzung und Analyse historischer Ortskerne in Oberösterreich auf Basis des Franziszeischen Katasters

In der vorliegenden Studie werden der Zustand und die Entwicklung historischer Ortskerne in Oberösterreich analysiert und eine Forschungslücke in der empirischen Erfassung dieser zentralen Siedlungsräume geschlossen. Auf Basis einer teilautomatisierten Abgrenzung der historischen Ortskerne mit Hilfe des Franziszeischen Katasters (1817–1861) und statistischer Daten aus den Jahren 2001 und 2018 wurde ein methodisch belastbares Verfahren entwickelt, das historische Zentren morphologisch und funktional vergleichbar macht.

Die Ergebnisse zeigen ein Spannungsfeld zwischen baulicher Nachverdichtung und sozialer Entleerung: Trotz steigender Gebäude- und Wohnungszahlen verzeichneten die meisten Ortskerne in Oberösterreich Bevölkerungsrückgänge, zunehmenden Leerstand und den Verlust ihrer Handelsfunktionen. Der Wandel hin zu einem (halb-)öffentlichen Dienstleistungssektor und die Erosion des baukulturellen Erbes prägen diese Entwicklung besonders in peripheren Regionen. Eine Clusteranalyse identifiziert fünf Typen historischer Ortskerne mit stark divergierenden Entwicklungspfaden – von dynamischen Verdichtungszentren bis zu strukturell gefährdeten Kernen.

Die Studie verdeutlicht, dass historische Ortskerne weder statische Relikte noch selbsttragende resiliente Räume sind. Ihre Zukunftsfähigkeit hängt von integrierten, datenbasierten und typenspezifischen Strategien ab, die Revitalisierung, Mobilität und Baukultur gleichermaßen berücksichtigen.

Schlagwörter: Ortskerne, Dorfkerne, Stadtkerne, Strukturanalyse, Abgrenzungsverfahren, Franziszeischer Kataster, Bildklassifikation, Clusteranalyse, Oberösterreich

1 Introduction

Town and village centres are regarded as central locations for social, functional and cultural interaction (Powe 2020) and have been the focus of spatial science and planning policy considerations for decades. Recently, the discussion about their stabilisation and revitalisation has gained considerable importance in spatial planning policy (Hospers 2017). In mission statements and technical recommendations, terms such as

redensification, inner-before-outer development and vacancy management are established as the cornerstones of sustainable spatial development. These terms refer to a political and planning discourse that emphasises the functional and symbolic value of town and village centres as spaces that create identity (Gushchin and Divakova 2019), while at the same time their importance is steadily declining in favour of other settlement areas (ARL 2020).

The transformation of these centres is the result of complex interactions between social, economic and spatial structural processes. Phenomena such as digitalisation, structural change in retail, changing mobility patterns and demographic ageing are leading to profound shifts in the functional structure of settlement areas (Mensing 2019; VLP-ASPAN 2016). While historic town and village centres have functioned as economic, administrative and cultural hubs for centuries, they are now increasingly facing competition from suburban and 'de-spatialised' centres (especially the internet), which, at least subjectively, have the upper hand in people's everyday lives (ARL 2020). The result is a loss of function and vitality, which in many communities is accompanied by growing vacancy rates, declining mixed use and socio-spatial monofunctionality (Hospers 2017).

Against this backdrop, the question of the actual condition and development trends of historic town and village centres is once again becoming the focus of spatial research. Despite the high level of political attention and numerous support programmes, there is still no uniform empirical basis for systematically identifying and defining historic town and village centres and comparing their structural characteristics (Pissourios 2014; Mollay et al. 2018). The lack of reliable data makes it difficult to formulate spatial planning measures and evaluate existing strategies.

This research gap forms the starting point for the study, which uses the example of the federal state of Upper Austria to carry out a semi-automated delimitation and subsequent structural analysis of historic town and village centres. Methodologically, the study is based on the 'Franciscan cadastre' *(Franziszeischer Kataster)* as a historical mapping basis and on statistical data from 2001 and 2018. The aim was to develop a methodologically robust set of tools for identifying historic centres and, building on this, to describe key trends and challenges facing these areas in the 21st century.

The study therefore pursues three research questions:

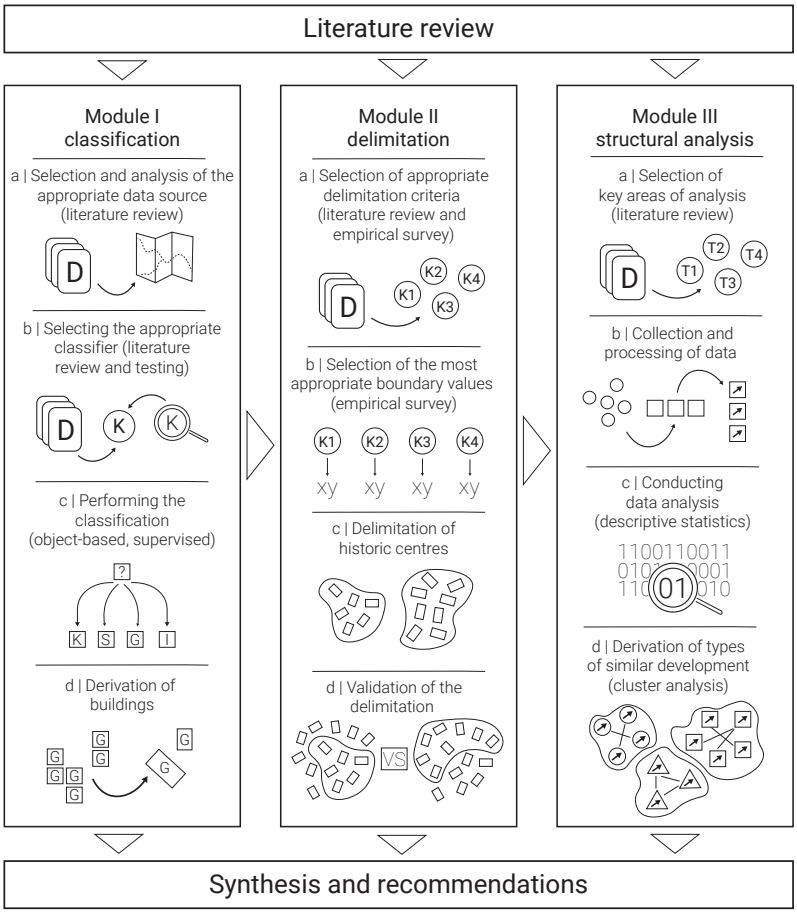
(1) What are the potential benefits and limitations of a semi-automated delineation of historic town and village centres based on the Franciscan cadastre?
(2) What socio-economic, functional and spatial developments characterise the historic town and village centres of Upper Austria, and how can these developments be systematically classified?
(3) What recommendations for action can be derived from the empirical findings for evidence-based centre policy at state and federal level?

2 Theoretical and Conceptual Framework

The delimitation of town and village centres has long been a subject of academic interest (Pissourios 2014). As town and village centres do not have clear spatial or data-based

boundaries separating them from their surroundings (WURM et al. 2019), there have been many different attempts to define these 'fuzzy spaces' (e.g. SUN et al. 2016; CHESHIRE et al. 2018; XIE et al. 2021; MARAKAKIS et al. 2022; SOARES et al. 2022).

The methodologies applied differ significantly but can be broadly categorised into morphological and functional delimitation (SOARES et al. 2022). Functional delimitations focus on the functions of town and village centres and define them on the basis of existing functions (e.g. the presence of businesses and shops, increased presence of people). Morphological definitions focus on the built environment (e.g. building density). However, there are significant limitations to existing studies. The current focus is primarily on the delimitation of individual case studies and on larger cities. Smaller towns or villages, by contrast, are not considered in the current literature. Nor are there any studies on structured



Source: Author. Graphic: Own compilation, own design.

Figure 1: Methodological design of the study

data analysis of these town and village centres. However, these are particularly relevant to the planning and development of rural areas (Soszyński et al. 2021).

A structured delimitation is above all necessary for a comparative statistical analysis in order to establish comparability and identify spatial trends. Furthermore, this delimitation can be linked to policies and funding that support and strengthen the centres (Soares et al. 2022). The study therefore took the approach of delimitate town and village centres based on morphological features and historical building structures that can be interpreted as 'material relics' (Schönwandt 2001; Weichhart 2018) of social and functional centrality.

This approach contrasts with the numerous attempts at functional delimitation in practice and was deliberately chosen in order to rule out distortions in the statistical analysis of town and village centres. For example, the functional delimitation does not include historic town and village centres that have already been 'degraded' (Szczepańska and Pietrzyk 2025). Similarly, variables included in the delimitation can no longer be analysed, as they already formed the basis for the delimitation.

The methodological approach of the study is therefore based on a multi-stage design that combines theoretical, cartographic-morphological and statistical-analytical approaches (see Figure 1). This made it possible to delineate a very large number of town and village centers – a method that had hardly been used until now. The following sections describe the method for delimitation and analysing town and village centres, using the federal state of Upper Austria (Austria) as an example.

3 Delineation of Town and Village Centres

3.1 Methods

The delineation of historic town and village centres was based on the *Franziszeischer Kataster* ('Franciscan cadastre') (1817–1861), a historical cadastral survey of the former Habsburg Monarchy (see Figures 2 and 3). This dataset represents one of the most detailed and comprehensive spatial documentations of pre-industrial settlement structures in Central Europe. It includes high-resolution information on buildings, parcels, land use and transport infrastructure and was digitised and georeferenced by the federal state of Upper Austria. The geometric precision and thematic richness of the cadastral sheets allow for the reconstruction of historical settlement morphologies, many of which still influence contemporary spatial structures.

The methodological approach follows a GIS-based, semi-automated object-oriented workflow that combines elements of historical map classification with spatial analysis. The choice of a semi-automated procedure is rooted in both theoretical considerations and empirical constraints.

From a methodological perspective, the classification of historical maps can be differentiated along three main dimensions (Mather and Koch 2011; de Lange 2020):
(1) degree of automation (supervised versus unsupervised)
(2) classification unit (pixel-based versus object-based), and
(3) classification algorithm.

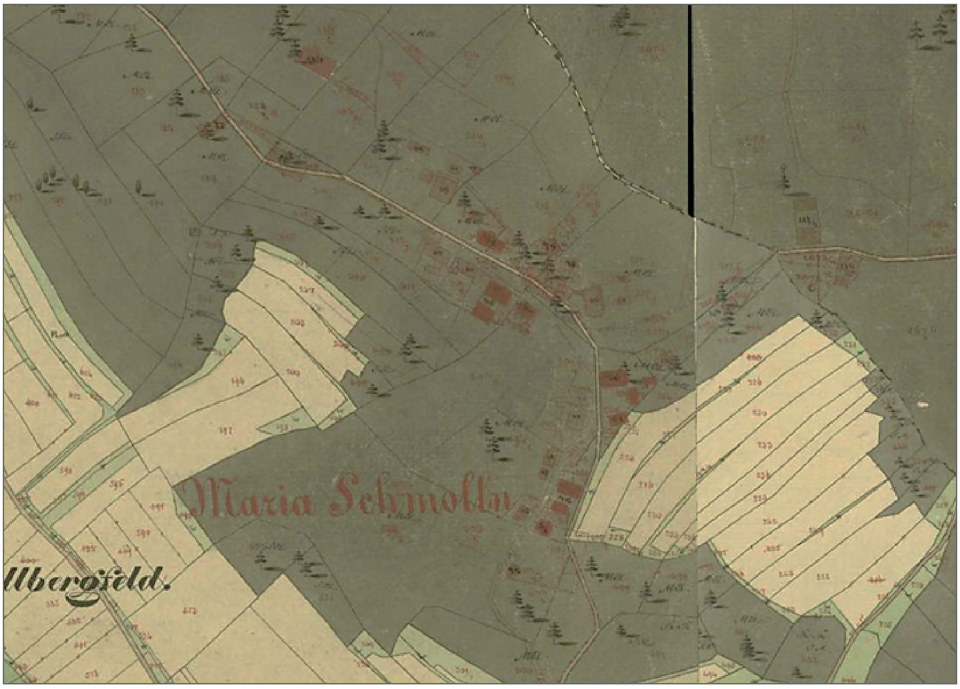


Source: Upper Austrian Provincial Archives [Oberösterreichisches Landesarchiv], Austrian State Archives [Österreichisches Staatsarchiv]

Figure 2: Example from the Franciscan Cadastre [*Franziszeischer Kataster*]: A typical cut from the original file ('Urmappe'): Buildings in bright red (stone buildings), dark red (public buildings), and yellow (farm buildings). Borders in red and yellow, roads in brown and pink.

Existing literature indicates a general preference for supervised, object-based approaches, as they allow the integration of spatial context (e.g. geometry, neighbourhood relations) and yield more coherent classification results compared to purely pixel-based methods (ZATELLI et al. 2019). In particular, object-based methods are advantageous when extracting discrete entities such as buildings, as they reduce noise effects (e.g. "salt-and-pepper") and enable the use of morphological characteristics (DE LANGE 2020).

However, advanced supervised approaches such as *Support Vector Machines* or *Deep Learning* require extensive and well-distributed training datasets. For neural networks, several thousand labelled objects per class are typically necessary to achieve robust results (GOODFELLOW et al. 2018). Due to the absence of such training data for the *Franziszeischer Kataster* ('Franciscan cadastre') these methods were not applicable in this study. Instead, a semi-automated classification approach was implemented, combining rule-based extraction with manual validation.



Source: Upper Austrian Provincial Archives [Oberösterreichisches Landesarchiv], Austrian State Archives [Österreichisches Staatsarchiv]

Figure 3: An extreme example from the Franciscan Cadastre [*Franziszeischer Kataster*]: The settlement was not established until after the original map had been drawn up; buildings and plots were added later in; the map is badly yellowed

The starting point of the analysis was the georeferenced raster dataset of the cadastral sheets. Pre-processing steps included visual inspection, correction of georeferencing inaccuracies and the handling of typical artefacts of historical maps such as discoloration, scanning noise and symbol interference. These issues are known to significantly affect classification performance and therefore require careful consideration in historical GIS workflows.

The selection of classification parameters was not arbitrary but based on a combination of literature review and empirical testing. To ensure robustness, test classifications were conducted on a representative sample area (approximately 3 × 3 km near the city of Wels), which includes a wide range of land-use classes and typical artefacts of the cadastral maps. This approach enabled the systematic evaluation of classification performance under realistic conditions.

The quality of classification results was assessed using established validation techniques such as confusion matrices, which compare classified outputs with reference data and allow for the identification of systematic misclassifications (Rotzenstein and

KARNIELI 2011). This validation step was crucial for refining parameters and ensuring the reliability of the final delineation.

The comparative validation of the classification approaches reveals that the pixel-based *Support Vector Machine* (SVM) model can partially compete with the object-based approach but does not outperform it overall (see Figure 4). The pixel-based model achieved a notably high class-specific accuracy of 92 percent for stone buildings, exceeding the performance of the object-based model in this class (82 percent). However, across all other classes, the object-based approach consistently produced higher accuracy values, in some cases substantially so.

The exclusion of discoloured map areas (yellowing artefacts) during the training phase led to a marked improvement in model performance for both approaches, indicating the importance of pre-processing steps. Within the pixel-based variants, the model excluding such artefacts clearly outperformed those including additional predefined classes such as boundaries or roads (which are red and yellow), as the latter resulted in systematic misclassification of linear features as buildings (which are also red and yellow). Although this variant requires post-processing to remove falsely classified linear elements, this task proved significantly less time-consuming than reconstructing omitted buildings in alternative variants.

In contrast, the object-based approach showed limitations in distinguishing geometrically similar features: more than 100 buildings (approximately 24 percent) were misclassified in one variant and over 200 buildings (around one-third of all cases) in another. This highlights that geometric similarity between fragmented boundary lines and large building structures can reduce classification accuracy even in object-based workflows. Overall, despite some advantages of the pixel-based model, particularly in specific classes, the object-based approach was selected as the preferred method due to its higher overall robustness and lower post-processing effort.

After applying the most suitable classification model and deriving building outlines, all buildings were then manually reviewed once again, misclassifications (such as boundaries classified as buildings) were removed, and buildings that had not been classified were added. This constituted the largest non-automated workload. Only then were the historic centres derived through a multi-stage process:

(1) Identification of main buildings

Main buildings were distinguished from ancillary buildings based on their footprint area (> 35 m^2). This threshold was derived empirically and reflects typical minimum sizes of residential or economically relevant buildings in historical cadastral records (HECHT 2014; HARIG et al. 2014).

(2) Identification of building clusters

Extracted buildings were aggregated into clusters using a distance-based approach (≤ 35 m distance). This parameter is based on average building distances observed in contemporary settlement structures in Upper Austria and serves as a proxy for functional and morphological cohesion.

Pixel based

		with yellowing			without yellowing		
		var. I	var. II	var. III	var. I	var. II	var. III
producer's accuracy	stone buildings	90%	65%	46%	92%	67%	47%
	farm buildings	55%	57%	43%	74%	65%	56%
	borders yellow	---	74%	65%	---	73%	63%
	borders red	---	62%	58%	---	67%	62%
	streets	---	---	91%	---	---	91%
user's accuracy	stone buildings	86%	62%	57%	88%	63%	53%
	farm buildings	15%	10%	8%	87%	67%	63%
	borders yellow	---	70%	71%	---	78%	81%
	borders red	---	60%	70%	---	61%	72%
	streets	---	---	63%	---	---	63%
detected area (%)	stone buildings	---	---	---	68%	---	---
	farm buildings	---	---	---	60%	---	---
	borders yellow	---	---	---	48%	---	---
	borders red	---	---	---	50%	---	---
	streets	---	---	---	36%	---	---
overall accuracy		66%	65%	65%	74%	70%	69%
Kappa		0,64	0,62	0,62	0,71	0,68	0,66
unclassified buildings		---	---	---	100/603	---	---
overhanging surface		---	---	---	23%	---	---

Object based

		with yellowing			without yellowing		
		var. I	var. II	var. III	var. I	var. II	var. III
producer's accuracy	stone buildings	83%	81%	77%	82%	83%	79%
	farm buildings	82%	43%	86%	86%	76%	76%
	borders yellow	---	86%	86%	---	88%	85%
	borders red	---	76%	62%	---	64%	67%
	streets	---	---	89%	---	---	89%
user's accuracy	stone buildings	85%	71%	69%	89%	71%	75%
	farm buildings	39%	10%	24%	91%	81%	87%
	borders yellow	---	70%	77%	---	76%	89%
	borders red	---	83%	88%	---	84%	90%
	streets	---	---	70%	---	---	70%
detected area (%)	stone buildings	---	---	---	86%	87%	88%
	farm buildings	---	---	---	72%	74%	74%
	borders yellow	---	---	---	50%	72%	78%
	borders red	---	---	---	46%	56%	50%
	streets	---	---	---	6%	20%	79%
overall accuracy		73%	68%	68%	76%	73%	72%
Kappa		0,70	0,65	0,65	0,73	0,70	0,70
unclassified buildings		---	---	---	49/603	42/603	36/603
misclassified buildings		---	---	---	---	142/603	204/603
overhanging surface		---	---	---	28%	57%	34%

Source: Author. Data: Own calculations, own representation

Figure 4: Results of the method comparison regarding class variants, classification methods and the identification of test areas within yellowed patches. Some parameters have been calculated only for selected models.

(3) Integration into the current settlement system
Only clusters located within present-day settlement areas were considered. This step ensures spatial relevance and excludes historically documented but currently non-existent or functionally irrelevant structures.

(4) Minimum size criteria
To qualify as a town or village centre, clusters had to meet at least one of the following thresholds:
- a minimum of 10 buildings, or
- a total building footprint of at least 1,700 m².

These thresholds were derived from empirical observations and correspond to approximately ten times the average building footprint, ensuring a minimum level of structural density.

(5) Exclusion of mono-functional large structures
Large complexes with singular functions (e.g. castles, barracks or industrial facilities) were excluded, as they do not represent multifunctional settlement centres.

(6) Exclusion of heavily transformed areas
Areas that have been significantly altered or completely overwritten by modern developments (e.g. industrial expansion such as the voestalpine steelworks in Linz) were excluded to maintain historical continuity.

3.2 Results

The result was a comprehensive identification of 731 historic town and village centres in Upper Austria. Of these, 360 were classified as town and village centres in the main settlement of the municipality, 288 as town and village centres in other parts of settlements and 83 as other historic settlements. These boundaries served as the spatial basis for the subsequent structural analysis.

In a final step, the results were validated on the basis of alternative delimitations. By cross-referencing the centre zone designations from the local land use plans, it was determined how closely the defined historical town and village centres corresponded to the recently defined town and village centres. It was found that there was a very high degree of matching, confirming that the delimitation method using the Franciscan cadastre has considerable potential – especially as a starting point for participatory town and village centre delimitation.

3.3 Potential Benefits and Limitations of the Approach

Despite the robustness of the approach, several limitations must be acknowledged. Historical cadastral maps exhibit varying levels of accuracy and are affected by ageing

processes, digitisation artefacts and inconsistencies in representation. Furthermore, the absence of large training datasets limits the applicability of advanced machine learning methods, necessitating a semi-automated approach with manual intervention.

Nevertheless, the chosen methodology represents a pragmatic balance between automation and interpretability, allowing for a reproducible and scalable delineation of historical settlement centres across large study areas. Overall, the delimitation method yielded good results and offers both potential and limitations.

The main advantages are that the cadastre has a very high (geometric) resolution in light of its age and is available for large parts of Central Europe (all areas that were part of the Habsburg Monarchy at the time). This allows for large-scale comparisons across federal state and even national borders. The method is also particularly suitable for subsequent statistical analysis, where functional criteria would introduce bias. The standardised approach, on the other hand, is primarily beneficial for funding bodies that require a uniform method of classification in order to allocate funding fairly. Thanks to its semi-automated nature, the method also saves time and, consequently, financial resources. Although more labour-intensive than raster-based approaches, the method enables a substantially more precise delineation of town and village centres, which would otherwise be inadequately captured by coarse grid resolutions given that the median size of identified centres is only about 4 ha.

Nevertheless, limitations have also emerged with regard to the methodological approach. Town centres are still relational, historically and socially formed areas of interconnection with fluid transitions, whose material manifestations such as buildings, streets and squares merely represent the visible expression of these processes (Löw 2018, p. 7). These spaces, which are automatically defined on the basis of their morphology or functions, must therefore, above all, be subject to feedback from the local population when it comes to the planning and development of these centres (ÖROK 2019). Semi-automated delimitations are not the end point but can be a starting point for the necessary social negotiation processes that ultimately lead to the final delimitation.

Furthermore, a delimitation such as the one carried out here is only possible where historical maps of good quality and spatial resolution are available. This is not the case in large parts of the world.

4 Main Characteristics of Town and Village Centres in Upper Austria

4.1 Current Visions for Town and City Centres in Austria

To characterise and examine the historic town and village centres in Upper Austria, four bundles of characteristics and 45 indicators (see Table 1) were defined, which were derived from the evaluation of 14 spatial planning concepts and scientific literature from Austria. These thematic areas reflect the current collective vision for the future of town and village centres in Austria.

(1) Town and village centres as (moderately) densified centres:
(Historic) town and village centres should continue to form the focal point of settlement and the vital centre of the community in the future. Indicators used (simplified): densification and building structure – measured by building density, the proportion of inhabited buildings, the vacancy rate and the age structure.

(2) Town and village centres as multifunctional centres:
(Historic) town and village centres will continue to be characterised by their mixed use in the future. Living, working, everyday shopping, leisure and mobility are concentrated in these central, functional interlinked areas. Indicators used (simplified): diversity of industries, proportion of inhabited buildings, number of employees in the industries.

(3) Town and village centres as easily accessible hubs:
Town and village centres should be easily accessible hubs – whether on foot, by public transport or by bike. Indicators used (simplified): accessibility on foot, accessibility by bike, accessibility by public transport, frequency of public transport services.

(4) Town and village centres as protected architectural heritage:
Town and village centres are places of identification, primarily due to their historic buildings. This architectural heritage must therefore be protected. Although densification is desirable in this area, it must be carried out with sensitivity to the existing buildings. Indicators used (simplified): Proportion and number of historic buildings.

4.2 Methodological Approach

To analyse town centres and their development, current statistical data (from Statistics Austria and other public data sources) was retrieved based on these four subject areas and 45 indicators, particularly from 2001 and 2018 (see Table 1). The data was either available

Dynamic Indicators (2001–2018)	Static Indicators (2018)
1| Development of primary residences (%)	21| Population density / ha of building land (population/ha)
2| Development of the number of buildings (%)	22| Building density / ha of building land (buildings/ha)
3| Development of the number of residential buildings (%)	23| Housing density / ha of building land (dwellings/ha)
4| Development of housing occupancy (%)	24| Housing occupancy (persons)
5| Development of the number of households (%)	25| Households per dwelling (households)
6| Development of household budgets per dwelling (%)	26| Undeveloped area in building land (%)

Dynamic Indicators (2001–2018)	Static Indicators (2018)
7| Development of housing vacancy rates (flats minus households) – estimates (%)	27| Newly built flats per newly built residential building – Estimators (flats)
8| Development of the number of flats per residential building (flats/residential buildings)	28| Flats without primary residence in all Flats – Appraisers (flats)
9| Trend in the number of families with at least one child (%)	29| Families with at least one child per household (%)
10| Trend in the number of families with at least one child (%)	30| Percentage of buildings constructed after 1980 (%)
11| Development of the Herfindahl Index (Index)	31| Number of sectors (industries)
12| Development of employment figures (employees) excluding the primary sector (%)	32| Employees (employees) excluding primary sector per inhabitant (employees/inhabitant)
13| Growth in retail employment (%)	33| Herfindahl Index (Index)
14| Development of employment in the gastronomy and accommodation sector (%)	34| Employees in retail per inhabitant (employees/inhabitant)
15| Development of employment in finance and ITC (%)	35| Employees in the gastronomy and accommodation sector per inhabitant (employees/inhabitant)
16| Development of employment in other services (%)	36| Employees in the (semi-)public sector per inhabitant (employees/inhabitant)
17| Development of employment in the (semi-)public sector (%)	37| Maximum value (MAX) of accessibility on foot (accessible buildings)
18| Development of employment in goods manufacturing (%)	38| Maximum value (MAX) of accessibility by bicycle (accessible buildings)
19| Development of historic buildings up to the year of construction 1919 (%)	39| Average value (AVG) of accessibility on foot (accessible buildings)
20| Development of the proportion of historic buildings constructed before 1919 (%)	40| Average value (AVG) of accessibility by bicycle (accessible buildings)
	41| MAX public transport quality classes (class)
	42| Average public transport quality classes (class)
	43| Residents per departure
	44| Dominance of the best bus/train stop (%)
	45| Percentage of historic buildings (%)

Source: Author. Own compilation

Table 1: Overview of all 45 indicators considered in the analysis

as spatial data or was retrieved from official statistics for each submitted polygon. This included demographic, socio-economic and infrastructural indicators at municipal level or as a geo-dataset. By combining these two data levels – historical morphology and current structural parameters – it was possible to record the current situation and present-day development of historic town and village centres and to draw conclusions about the overall condition of historic town and village centres in Upper Austria.

All indicators were calculated for the years 2001 and 2018 in order to be able to show any changes. Since the development of town and village centres also depends on their spatial context, comparative values were calculated in each case. These comparative values were calculated from the total municipal value with the subtraction of the value for the town and village centre(s). In the analysis, the town and village centres were therefore always compared with the rest of the municipality.

A cluster analysis (Ward's method, Euclidean distance with prior principal component analysis) was then carried out to identify types of similar development. Clustering enabled the town and village centres to be grouped according to development dynamics and areas of weakness. Due to confidentiality requirements when retrieving very small polygons, it was not possible to collect data from official statistics for all centres. The structural analysis was only carried out for those historic town and village centres for which data could be provided for all variables – a total of 265 historic centres.

4.3 Results of the Data Analysis

The empirical study of the 265 historical town and village centres analysed in Upper Austria reveals a complex, regionally differentiated picture of structural and functional developments. The results are presented below on the basis of the four defined thematic areas of analysis. In addition, cluster analysis identified five types of similar development, which are explained in more detail in the next section.

Town and village centres as densely populated centres?

Between 2001 and 2018, the historic centres of Upper Austria experienced ambivalent development: despite measurable redensification – for example, a 4 percent increase in the number of buildings and a 26 percent increase in the number of dwellings – the median population declined by around 6 percent, and in 60 percent of the centres by even more. While the remaining municipal areas recorded average growth of 6.5 percent, the historic centres lost not only population (−3 percent on average) but also families with children (−20 percent), indicating an ageing and depopulation of the centres.

At the same time, the average vacancy rate rose by around 14 percentage points to almost a quarter of all residential units (compared to 9 percent in the rest of the municipality), illustrating the so-called "vacancy-new construction paradox": Densification took place without leading to an increase in population numbers. Peripheral regions were particularly affected, while centres with a high degree of distance dominance – such as Linz and Braunau – remained comparatively stable. Although structural densification did indeed take place in many historic town and village centres – as evidenced by the increase

in buildings, flats and residential units – this did not lead to functional or demographic densification. The town and village centres thus became denser in terms of construction, but not in social terms.

Town and village centres as multifunctional centres?

Between 2001 and 2018, historic town and village centres underwent a significant functional change: while overall employment rose slightly (+2 percent), growth lagged far behind that of the remaining municipalities (+30 percent), and in almost half of the centres, the number of employees actually declined. The retail sector was particularly hard hit, losing jobs in 70 percent of centres and increasingly losing its importance as a defining component of local economic activities. At the same time, the diversity of industries declined and the concentration on a few sectors – primarily public administration, education, health, gastronomy and accommodation – increased, indicating increasing functional one-sidedness.

Although the historic town and village centre remains a relevant place of work, its economic multifunctionality is declining and increasingly dependent on the (semi-)public sector. Increasing specialisation, the decline in revitalising retail and service functions, and growing vacancy rates are also reducing the quality of life. Most historic town and village centres have therefore evolved from formerly diverse supply and employment centres into functionally limited locations with a focus on the public and social sectors.

Town and village centres as easily accessible hubs?

An analysis of the accessibility of historic town and village centres shows that, despite functional and structural changes, they can still be considered relatively easy to reach. Around 60 percent of historic centres are the most easily accessible areas within their municipalities on foot. Around half of them are also easily accessible by bicycle. This means that their central location within the settlement structure remains a significant locational advantage, particularly with regard to climate-friendly mobility. Regarding public transport, however, the picture is more nuanced: although town and village centres generally have better accessibility than the rest of the municipality, only around 45 percent of centres meet the minimum level of accessibility required in strategy papers.

Peripheral centres in particular perform significantly better in this respect than those in central locations or in the vicinity of Linz, where the relocation of stops and dynamic settlement developments have weakened the historical town and village centre location. Despite these differences, the data shows that public transport provision remains above average. Town and village centres in Upper Austria can therefore still be considered easily accessible centres, albeit with limitations in terms of public transport connections.

Town and village centres as protected architectural heritage?

The study on the architectural development of historic town and village centres shows that, despite moderate redensification, the preservation of historic buildings is not guaranteed across the board. Between 2001 and 2018, an average of around 5 percent of historic buildings were lost, with two-thirds of the town and village centres studied losing significantly more. In the most severely affected centres, one in ten historic buildings

disappeared, reducing the proportion of historic buildings in the total building stock by an average of 17 percentage points to only about one in five buildings. The loss was particularly distinctive in centres of minor central importance, where demolition and redensification with modern new buildings led to visible structural changes.

Although the proportion of historic buildings in town and village centres remains higher than in the rest of the municipality, the trends point to a progressive erosion of the architectural heritage – whether through active demolition in dynamic regions or through decay in peripheral locations. Despite the existing historical substance and selective conservation efforts, many town and village centres are therefore at risk of losing their architectural character.

5 Classification of Historic Town and Village Centres

The cluster analysis summarises the diverse developments of Upper Austria's historic town and village centres into five characteristic groups, which highlight different challenges and development paths (see Figure 5).

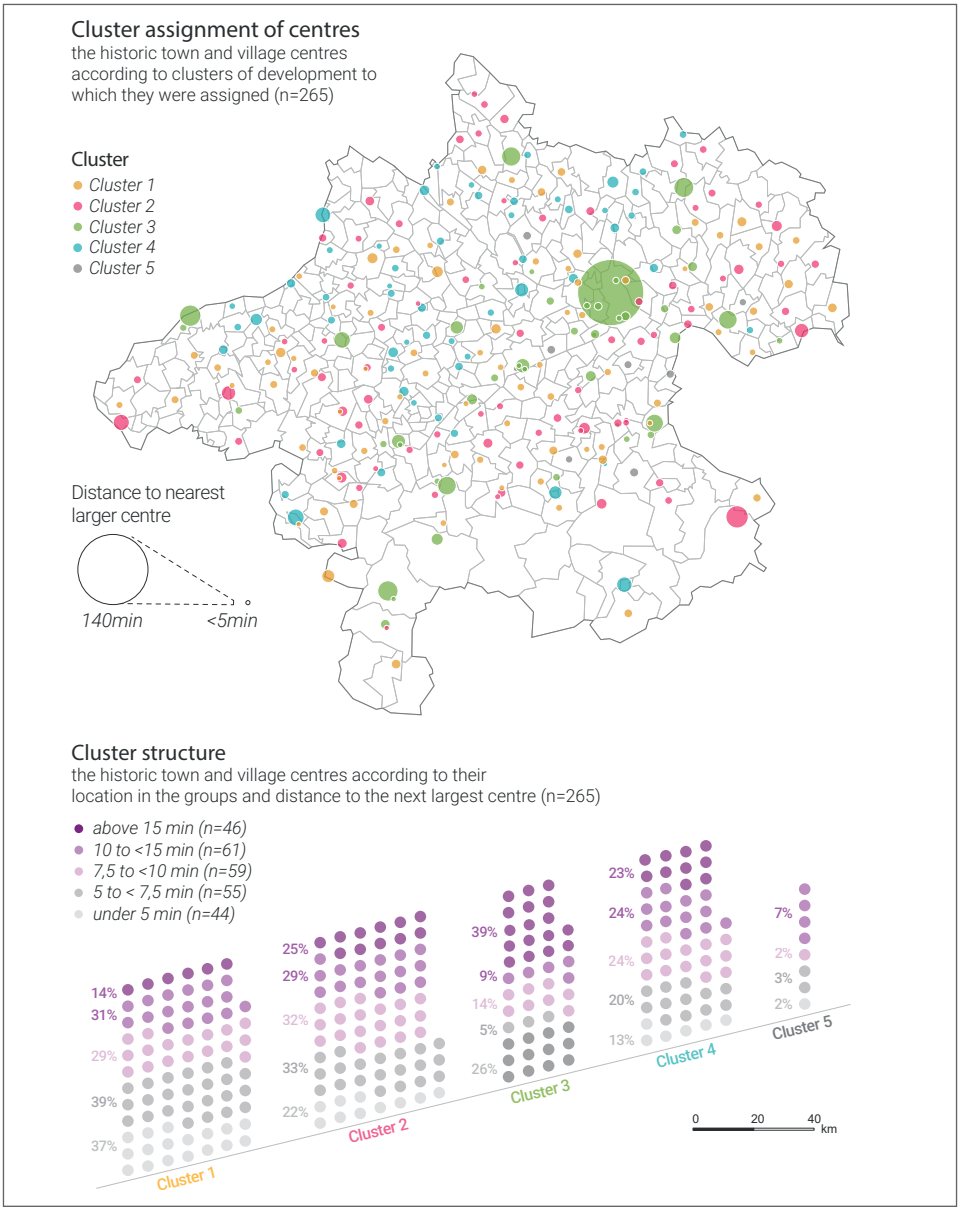
Cluster 1 comprises those centres which, despite poor accessibility on foot and by public transport, have experienced extremely positive economic development. They function as lively places of work and supply, whose central task in future will be to improve accessibility.

Cluster 2, on the other hand, represents the problem group: Between 2001 and 2018, these town and village centres lost a significant amount of population (−15 percent) as well as jobs (−15 percent) and functions. The decline is particularly pronounced in trade and families, indicating structural ageing and functional impoverishment. These centres are mainly concentrated in the peripheral regions.

Cluster 3 is characterised by excellent public transport connections but poor walkability. These mostly larger city centres or suburban centres around the Upper Austrian capital of Linz are experiencing moderate growth in population and employment but are suffering from significant structural change in the retail sector.

Cluster 4 is characterised by stagnating or declining demographic and economic developments, but at the same time good accessibility within the community on foot. The challenges here lie in stabilising incipient negative trends in order to prevent further decline. Geographically, these centres are mainly found in the Innviertel and western Mühlviertel regions.

Cluster 5, the smallest group, brings together the few town and village centres in the greater Linz-Steyr area that have undergone exceptionally high levels of redensification, with growth of over 90 percent in primary residences and over 100 percent in households in some cases. This densification has been accompanied by rising employment figures but raises questions about architectural and structural compatibility and the preservation of the historic town and village scape.



Source: Author. Own calculations, own representation

Figure 5: Historic town and village centres by cluster type and distance to the nearest larger centre ('Nearest larger centre' is defined as the nearest town centre accessible by car whose combined population and number of jobs exceed those of the centre in question)

Overall, the cluster analysis shows that the historic town and village centres of Upper Austria do not present a homogeneous picture of development: while some function as vibrant places to work and live, others are struggling with structural decline and loss of function. Town and village centres with greater central importance seem to be less affected by negative trends. In any case, the results make it clear that future strategies for strengthening town and village centres must be differentiated and tailored to specific types.

6 Conclusion and Practical Implications

The present results illustrate that historic town and village centres in Upper Austria are undergoing profound structural and functional change. The delimitation method based on the *Franziszeischer Kataster* (Franciscan cadastre) has proven suitable for consistently recording historic settlement areas and decoupling them from functional attributions. The approach enables an analytically clean, spatially comparable investigation, which is supported by validation with current core zone delimitations. Nevertheless, the method is not free of uncertainties: differences in the timing of surveys, cartographic distortions and heterogeneous data qualities can cause local inaccuracies. For future applications, further development towards automated, learning-based methods is recommended in order to enable large-scale analyses with greater precision. The latest studies can be drawn upon here – such as the "RePaSE project" (Göderle et al. 2024), in which a model for the automated detection of buildings from the *Franziszeischer Kataster* was developed.

In terms of content, the analyses reveal a clear tension between structural densification and functional emptying. Despite an increase in the number of buildings and dwellings in historic town and village centres, there has been no corresponding growth in population. Instead, the population has aged, households have become smaller and vacancy rates have risen. This "vacancy-new construction paradox" points to a misallocation between housing supply and actual demand. In many centres, the demographic doughnut effect has intensified, with more vibrant outskirts and increasingly sparse centres. The results thus underscore the need to mobilise vacant properties and unused land as a resource for sustainable inner-city development without endangering the historic building fabric.

When it comes to accessibility, the picture is mixed: historic town and village centres are usually within walking distance and easily accessible by bicycle within their communities, which offers considerable potential for climate-friendly mobility. At the same time, however, there is considerable room for improvement in some centres, particularly in terms of public transport connections. Around half of the centres surveyed do not have a stop in the immediate centre – a finding that weakens the attractiveness of these areas as everyday locations. This threatens a further decline in visitor frequency and the local supply function.

Overall, several recommendations for action can be derived from the results: Firstly, it is recommended that town and village centres be recorded in future on the basis of uniform, comprehensible demarcation criteria in order to enable comparability and targeted control

of measures. Secondly, measures to revitalise vacant properties and functionally reactivate retail locations are necessary, which go beyond purely construction policy approaches. Thirdly, local mobility and public transport connections need to be strengthened in order to ensure frequency and amenity value. Fourthly, the conscious handling of historical buildings as an identity-forming element is central to preserving the cultural value of town and village centres. Finally, a supra-regional, type-specific approach – at the Austrian or a broader level – could be established to identify good practice examples and promote a learning network of vibrant town and village centres. The latest developments in the vectorisation of the *Franziszeischer Kataster* ('Franciscan cadastre') can be a valuable driving force in this regard.

In summary, it is clear that the historic town and village centres should not be viewed as static relics or intrinsically resilient centres. Rather, they are hybrid spaces between heritage and renewal, whose future viability depends crucially on the coherent interlocking of planning, social and economic strategies. Integrated, data-based and type-sensitive planning can help developing historic town and village centres as lively, multifunctional centres of architectural value in the future.

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The Controversial Issues of Megalopolis and Megalopolis-like Clusters

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Summary

Jean Gottmann proposed the concept of Megalopolis and Megalopolis-like cluster (MMLC) in 1957. However, he did not provide an exact definition of the MMLC. As a result, a series of controversial issues has emerged in the related research. This article systematically explores the practical controversies faced by MMLC from multiple perspectives, including the confusion of concepts, disputes over spatial categories, and differences among stakeholders. Then, it analyses the causes of these controversies. Moreover, this paper carries out philosophical reflections and puts forward effective ways to deal with the controversies. Finally, it is not difficult to see that, although the MMLC describe cities with a relatively dominant level of socio-economic development, there are always differences among different urban areas in the MMLC and the tendency for different types of people to form distinct groups continues to exist. Essentially, the specific geographical phenomenon referred to as MMLC does not constitute a fully coherent or stable geospatial

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system. Rather, it should be understood as a complex geographical region with boundaries that remain inherently vague.

Keywords: Megalopolis, megalopolis-like cluster, metropolis, megaregion, mega-urban region, mega-city region, urban agglomeration, conurbation

Zusammenfassung

UMSTRITTENE FRAGEN BEI DER DEFINITORISCHEN FASSUNG UND KONZEPTIONELLEN EINORDNUNG DER BEGRIFFE „MEGALOPOLIS“ UND „MEGALOPOLIS-ÄHNLICHER CLUSTER“

Jean GOTTMANN schlug 1957 das Konzept der Megalopolis und des Megalopolis-ähnlichen Clusters (MMLC) zur Analyse und Beschreibung von räumlich ausufernden Stadtlandschaften, in denen mehrere Millionenstädte weitgehend zusammengewachsen sind, vor. Er lieferte jedoch keine genaue Definition des MMLC. Infolgedessen kam es in der Fachliteratur zu einer Reihe unterschiedlicher Auffassungen zum Konzept der MMLC. In diesem Artikel werden die in diesem Zusammenhang entstandenen Kontroversen aus verschiedenen Perspektiven systematisch untersucht, darunter in Bezug auf die Verwirrung hinsichtlich der Konzepte, auf Streitigkeiten über räumliche Kategorien und Unterschiede zwischen den Interessengruppen. Anschließend werden die Ursachen dieser Kontroversen analysiert. Darüber hinaus enthält dieser Artikel grundsätzliche Überlegungen und schlägt wirksame Wege zum Umgang mit den Kontroversen vor. Schließlich ist es nicht schwer zu erkennen, dass die MMLC zwar Städte mit einem relativ dominanten sozioökonomischen Entwicklungsniveau beschreiben, es jedoch immer Unterschiede zwischen verschiedenen Gruppen innerhalb der MMLC gibt und die Tendenz, dass sich verschiedene Arten von Menschen zu unterschiedlichen Gruppen zusammenschließen, weiterhin besteht. Im Wesentlichen stellt das spezifische geographische Phänomen, das als MMLC bezeichnet wird, kein vollständig kohärentes oder stabiles georäumliches System dar. Vielmehr sollte es als komplexe geographische Region mit Grenzen verstanden werden, die von Natur aus vage bleiben.

Schlagwörter: Megalopolis, Megalopolis-ähnlicher Cluster, Metropole, Megaregion, Stadtagglomeration, Conurbation

1 Introduction

Before GOTTMANN, the term *“megalopolis”* referred specifically to the name of an ancient Greek city (RICHARDS 1945). In 1957, Jean GOTTMANN reintroduced the term in a new geographical context. He observed that a series of metropolitan areas, each organised around a substantial urban nucleus, had expanded and gradually merged along the northeastern seaboard of the United States. The super-metropolitan character of this vast and functionally interconnected region, he argued, required a distinctive designation, which he termed *Megalopolis*. The coastal corridor stretching from Boston to Washington

was presented as a representative example (Gottmann 1957). Furthermore, as additional metropolitan areas continued to expand outward through suburbanisation, Gottmann anticipated that similar but smaller formations would emerge elsewhere; these he referred to as *megalopolis-like clusters*.

Gottmann emphasised that a megalopolis is spatially extensive, often spanning hundreds of kilometres and integrating multiple metropolitan regions. He described it as the largest form of urban cluster in the world at that time (Gottmann 1957). In contrast, a megalopolis-like cluster is smaller in scale, though it shares similar structural characteristics. Importantly, Gottmann implied that there exists a continuum between megalopolis and megalopolis-like clusters rather than a rigid categorical distinction. Nevertheless, subsequent scholarship has tended to focus primarily on the concept of the megalopolis, while paying comparatively limited attention to the megalopolis-like cluster. To address this imbalance, the present study discusses the two concepts together under the abbreviation MMLC (*Megalopolis and Megalopolis-like Cluster*), thereby drawing attention to their conceptual interrelationship.

However, Gottmann did not provide explicit quantitative criteria for defining either the megalopolis or the megalopolis-like cluster. Nor did he establish standardised methodological procedures for their identification. This lack of formalised standards has generated considerable controversy in subsequent research. For instance, the U.S. Census Bureau defines an "urban cluster" as a settlement with a population of at least 2,500 and fewer than 50,000 residents (Ratcliffe et al. 2016). Clearly, this official definition differs substantially from Gottmann's conception of a megalopolis or megalopolis-like cluster. The two are neither equivalent in scale nor comparable in theoretical intent.

As early as 1910, the U.S. Census Bureau introduced the concept of the *metropolitan area*, defined as a region containing at least one central city or urbanised area of a specified size (Gardner 2021). Yet the criteria for delineating metropolitan areas have not remained fixed; they have been revised repeatedly in response to demographic and socio-economic changes. Consequently, even the foundational concept of the metropolitan area lacks absolute stability. This inherent flexibility further complicates efforts to define and delimit MMLC in a consistent manner.

In recent decades, a substantial body of research has examined MMLC from various perspectives. Much of this literature concentrates on development strategies, policy coordination, and lessons drawn from particular cases, such as the Tokaido Megalopolis in Japan (Sorensen 2019). However, the deeper theoretical and practical controversies embedded in the concept of MMLC have received comparatively limited systematic attention. Indeed, certain studies contain internal inconsistencies or unresolved contradictions.

More broadly, controversy is not unusual in geographical research, as geographical phenomena are often characterised by ambiguity and indeterminacy. Fisher (2000) argues that the formal recognition of vagueness in geographic phenomena is long overdue and should be welcomed in geographical analysis, including geographic information systems. The inherent ambiguity of spatial phenomena easily gives rise to conceptual and methodological disputes. Despite this, there has been no comprehensive and systematic examination of the controversies specifically surrounding MMLC. Therefore, this paper begins

by identifying the major practical controversies associated with MMLC and proceeds to analyse their underlying causes.

2 Analysis of the Controversial Issues of the MMLC

Chaotic Concepts

Since GOTTMANN first articulated the concept of the megalopolis, an increasing number of related terms have emerged in academic and policy discourse. These concepts have multiplied over time, and their meanings have continuously evolved – and will likely continue to do so. As illustrated in Table 1, a wide range of terminologies are associated with MMLC, reflecting both theoretical diversification and conceptual fragmentation.

In 1976, GOTTMANN further identified six major megalopolitan systems around the world, including the Northeast United States, the Great Lakes region of the United States, England in the United Kingdom, the Tokaido corridor in Japan, the Amsterdam–Ruhr–Northern France axis in Northwestern Europe, and the urban constellation centred on Shanghai in China (GOTTMANN 1976). These formations were also described as *metropolitan systems*. Subsequently, scholars have continued to employ the term "megalopolis" to describe various large-scale geographical spaces, sometimes extending its meaning beyond GOTTMANN's original framework (MA 2022; VELAZQUEZ et al. 2025).

As metropolitan regions expanded throughout the latter half of the twentieth century, and their boundaries became increasingly blurred, new conceptual labels were introduced. The U.S. Regional Plan Association proposed the concept of the "*megaregion*" (HAGLER 2009), which has since been widely adopted in multiple countries (ZHANG et al. 2018). Meanwhile, the U.S. Census Bureau introduced the notion of the "megapolitan area," which extends beyond Gottmann's original conception of the megalopolis (LANG and DHAVALE 2005). Closely related to this is the term *"megapolitan region"*, and in practice the two are often used interchangeably despite subtle conceptual differences (LENG et al. 2023). Building upon the megapolitan area, the idea of the *"megapolitan cluster"* emerged, defined as a spatial formation larger than a single megapolitan area (NELSON and LANG 2011), and this terminology has also been applied in various national contexts (DOU et al. 2025).

In response to the distinctive pattern of mega-city expansion observed in ASEAN countries, MCGEE (1995) introduced the concept of the "mega-urban region." This term was subsequently extended to other national and regional settings (YEUNG et al. 2020). Furthermore, HALL and PAIN (2006) proposed the concept of the *"mega-city region,"* emphasising networked polycentric characteristics, and this formulation has been widely cited (HALBERT 2008; YEH and CHEN 2020). In addition, similar expressions such as *"megacity cluster"* have appeared in more recent studies (NARITA 2021; HU et al. 2024).

Despite the proliferation of terminology, scholars have not reached a unified conceptual consensus. From the perspective of regional cooperation driven by government planning and centre–periphery structural dynamics, terms such as *"economic zone"* (Nica et al. 2023) and *"economic circle"* (WAN et al. 2024; GUO et al. 2020) have been employed. In

order to move beyond Gottmann's emphasis on the "largest urban cluster" and to adapt the concept to broader contexts, expressions such as *"urban cluster"* and *"city cluster"* have been widely adopted in practice (Zhang et al. 2012; Tselios 2020; Li et al. 2017).

Similarly, the term "urban agglomeration" has been used to describe interconnected cities located in relative proximity to a core city, characterised by comparatively high levels of spatial integration (Frankhauser 1998; Fang and Yu 2017). The concept of "conurbation" has also been applied to denote the expansion and merging of neighbouring cities across administrative boundaries (Zhou and Wu 2000; Kassa 2013). Additionally, "city belt" is used to describe linear urban formations extending along rivers or major transportation corridors (Hitz et al. 1994; Wan et al. 2013).

In Japan, large-scale urban formations are commonly referred to as "metropolitan areas" or "metropolitan regions" (Getis and Ishimizu 1986). The Tokyo metropolitan area, for example, is also described as the "Tokyo megalopolis" (Umezaki et al. 1999). Nakanishi and colleagues (2021) have suggested that the development of maglev rail connections between Tokyo and Osaka, reducing travel time to approximately seventy minutes, signifies the emergence of a mega-region. Earlier, Rimmer (1986) argued that Japan's three major metropolitan areas have effectively been welded together by high-speed transport infrastructure, forming what can be termed the "Tokaido megalopolis". In China, some scholars similarly refer to MMLC using the terminology of "metropolitan areas" (Zhou and Wang 2018).

Since the 1990s, related conceptual frameworks have also been applied extensively in the Chinese context, including "metropolitan interlocking region" (Zhou 1991; Rimmer 2002) and "extended metropolitan region" (Ginsburg 1991; Sit 1996). At present, many Chinese scholars translate terms such as megapolitan area, megapolitan region, megaregion, mega-urban region, mega-city region, megacity cluster, city cluster, urban cluster, conurbation, and urban agglomeration into a single Chinese concept – "Chengshiqun." In practice, these translated terms are often endowed with similar connotations and are frequently used to describe large-scale formations such as the Yangtze River Delta and the Pearl River Delta. Notably, the term "urban agglomeration" has become particularly prevalent in Chinese academic discourse.

However, the spatial scales implied by these terms differ considerably across countries. For example, the U.S. Census Bureau defines an "urban cluster" as a settlement with a population between 2,500 and 50,000 residents, which differs significantly from the usage of "urban cluster" within the Chinese academic community. Likewise, although the term "urban agglomeration" is used in both Western and Chinese contexts, the spatial scale in European and American usage is typically much smaller than the formations that Gottmann described as megalopolises.

In 2010, when revising urban area criteria, the U.S. Census Bureau consulted 65 experts regarding possible population thresholds. Among them, six suggested a threshold of one million residents, thirty supported a threshold of 250,000, and eleven advocated retaining the 2000 standard. Ultimately, the 2000 definition was maintained, defining an urbanised area as having more than 50,000 residents (U.S. Census Bureau 2011). This example illustrates the absence of unified standards even within a single national context.

Concepts	Geospatial Examples	Some Representative Experts
"Megalopolis" or "Metropolitan system" or "Biggest urban cluster	Northeast, USA Great Lakes, USA England, UK Northwestern Europe (from Amsterdam to the Ruhr area and to Northwestern France) Tokaido, Japan Urban constellation centred on Shanghai, China	Jean GOTTMANN
Metropolis-like cluster	Smaller than megalopolis	Jean GOTTMANN
Megalopolis	Pearl River Delta, China Beijing – Tianjin – Hebei, China Yangtze River Middle, China Chengdu – Chongqing, China Mexico City, Mexico	Minda MA Alejandro VELAZQUEZ
Metropolitan interlocking region	Yangtze River Delta, China Pearl River Delta, China	Yixing ZHOU Peter RIMMER
Extended metropolitan region	Pearl River Delta, China Lower Yangtze Valley, China	Victor Fung Shuen SIT Norton GINSBURG
"Metropolitan area" or "Metropolitan region"	Tokyo, Japan Osaka, Japan Nagoya, Japan Yantze River Delta, China	Arthur GETIS Jun ZHOU
"Megapolitan area" or "Megapolitan region"	Northeast, USA Midwest, USA Yangtze River Delta, China Pearl River delta, China	Robert LANG Ranhao SUN
Metropolitan cluster	Great Lakes, USA Northeast, USA Mountain, USA Yangtze River Delta, China	Arthur NELSON Dou YIN
Megaregion	Northeast, USA Great Lakes, USA Texas Triangle, USA Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China	Yoav HAGLER Yanning GUAN
Mega-urban region	Johor – Singapore – Riau Growth Triangle Kuala Lumpur – Klang Valley, Malaysia Bangkok, Thailand Metro Manila Mega Region, Philippines Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China	Terry MCGEE Pak Shing YEUNG

Concepts	Geospatial Examples	Some Representative Experts
Mega-city region	Paris Basin, France Rhine-Main-Region, Germany South East England, UK Yangtze River Delta, China Pearl River Delta, China Lanzhou – Xining, China	Peter Hall Anthony Gar-On Yeh
Megacity cluster	Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China	Run Liu Dan Narita
City cluster	Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China Central Yunnan, China Okyo-Kyoto, Japan Guangdong – Hong Kong, China Singapore – Johor Bahru – Bintan	Xueliang Zhang KyeongAe Choe
City belt	Yangtze River Delta, China North of Zurich, Switzerland	Zhong Zhong Hansruedi Hitz
Urban cluster	Lower Yangtze River Valley, China Pearl River Delta, China Beijing – Tianjin – Hebei, China Chengdu – Chongqing, China London, UK Île-de-France, France	Yunfeng Hu Vassilis Tselios
Urban agglomeration	Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China Tianshan Montains Northern Slopes, China Franche-Comté Region, France Besançon, France	Chuanglin Fang Pierre Frankhauser
Conurbation	Yangtze River Delta, China Addis Ababa, Ethiopia	Lingqiang Zhou Fekadu Kassa
"Economic circle" or "Economic zone"	Yangtze River Delta, China Pearl River Delta, China Beijing – Tianjin – Hebei, China Chengdu – Chongqing, China Tirana – Durres, Albania	Mengyao Han Chunchi Ma Kriselda Sulcaj Gura

Table 1: Different concepts related to MMLC (Megalopolis and Megalopolis-like cluster). Own compilation.

The divergence between American and Chinese understandings of "urban agglomeration" further underscores the extent of conceptual inconsistency.

In summary, the numerous terms associated with MMLC have all been influenced, directly or indirectly, by GOTTMANN's original formulation. However, their English designations do not share identical connotations, and their practical applications vary significantly. The result is a persistent state of logical confusion. It becomes exceedingly difficult to assert that any given concept must correspond to a specific and universally accepted set of criteria. Instead, interpretations are often shaped by disciplinary orientation, methodological preference, and regional context, leading to a conceptual paradox at the theoretical level.

Uncertain Geographical Spaces

The conceptual confusion surrounding MMLC is directly reflected in the instability of their corresponding geographical spaces. Ambiguity at the level of terminology inevitably manifests as divergence in spatial delineation. GOTTMANN once analysed the evolutionary trajectory of the megalopolis and divided it into four developmental stages: isolation and dispersion, formation of an urban system, embryonic megalopolis, and mature megalopolis (GOTTMANN 1987). This framework implies that a megalopolis does not emerge instantaneously; rather, it is the outcome of socio-economic development reaching a particular stage across multiple cities.

In 1976, GOTTMANN speculated that, beyond the six megalopolises he had identified worldwide, three additional cases might soon emerge: the Rio de Janeiro–São Paulo complex in Brazil, the northern Italian triangle centred on Milan–Turin–Genoa, and the California corridor extending from Los Angeles to the San Francisco Bay Area (GOTTMANN 1976). However, he could not precisely determine how many megalopolises would ultimately exist globally, nor could he define their definitive geographical boundaries. His conclusions were necessarily probabilistic and inferential. In subsequent research, an increasing number of regions have been classified as MMLC. For example, some scholars consider Beijing–Tianjin–Hebei, the Yangtze River Delta, the Pearl River Delta, the Middle Reaches of the Yangtze River, and the Chengdu–Chongqing region in China to be megalopolises (MA et al. 2022). VELAZQUEZ (2025) regarded Mexico City as a megalopolis in the State of Mexico.

Furthermore, certain concepts were initially limited to specific regional contexts but were later generalised. For instance, the term "mega-urban region" originally referred to distinctive urbanisation patterns observed in ASEAN countries, including the Johor–Singapore–Riau Growth Triangle, Kuala Lumpur–Klang Valley, the Bangkok region, Metro Manila, Jabotabek, and Bandung (MCGEE and ROBINSON 1995). Similarly, the concept of the "mega-city region" was first applied primarily in Northwestern Europe, where HALL and PAIN (2006) identified eight such regions, including the Paris Basin, Rhine–Main, and South East England. Over time, however, these concepts were extended to other countries and continents, thereby broadening their spatial applicability.

Even within a single country, there is no consensus regarding the number or spatial scope of MMLC. In the United States, according to criteria proposed for defining "megapolitan areas," it has been projected that by 2050 there could be as many as ten such areas,

including the Midwest, Northeast, Piedmont, and others (Lang and Dhavale 2005). Nelson and Lang (2011), by contrast, identified two megapolitan areas and eight megapolitan clusters, such as the Sierra Pacific megapolitan area, the Twin Cities megapolitan area, the Great Lakes megapolitan cluster, and the Northeast U.S. megapolitan cluster. Additionally, the "America 2050" strategic spatial framework proposed by the Regional Plan Association identified eleven megaregions in the United States, including the Great Lakes and Northeast regions originally described by Gottmann (Hagler 2009). These varying classifications illustrate how different methodological approaches yield divergent spatial outcomes.

Population scale further complicates the issue. Papaioannou (1998) argued that with technological advancement and economic transformation, both megacities and megalopolises exhibit unstable population thresholds. He suggested that megacities may contain populations of around ten million, while megalopolises may exceed one hundred million inhabitants. Such expansionary logic increases the uncertainty of MMLC classification and intensifies disagreement among scholars, research institutions, and governmental agencies regarding spatial boundaries. Nevertheless, a common tendency persists: MMLC are generally used to describe regions with relatively high levels of socio-economic development or strong development potential. Even so, it remains difficult to determine precisely how many MMLC exist globally.

The ambiguity is particularly evident in China, where planning and policy discourses place strong emphasis on MMLC development. In 2021, the National People's Congress approved the 14th Five-Year Plan and the Long-Range Objectives Through 2035, which emphasised the optimisation, upgrading, and cultivation of 19 urban clusters nationwide. Yet substantial academic debate persists regarding how many MMLC actually exist in China. Zhou (1991) proposed that China had only two metropolitan interlocking regions: the Yangtze River Delta and the Pearl River Delta. Other scholars identified nine urban clusters, including the Pearl River Delta, the Middle Yangtze River Valley, the Lower Yangtze River Valley, and Beijing–Tianjin–Hebei (Zhang et al. 2012). Still others suggested that China has five megalopolises – Beijing–Tianjin–Hebei, the Yangtze River Delta, the Pearl River Delta, the Middle Reaches of the Yangtze River, and Chengdu–Chongqing (Ma et al. 2022). Alternatively, based on government planning documents, Yeh and Chen (2020) identified 19 mega-city regions. These divergent interpretations reveal the absence of a stable national consensus.

Even when the same term is employed, the spatial scope it denotes may vary considerably. Chinese scholars frequently use the term "urban agglomeration" to describe MMLC, yet the number and classification differ substantially across studies. Fang and Yu (2017; 2020), for example, proposed a "5+9+6" framework consisting of five national-level urban agglomerations, nine regional urban agglomerations to be cultivated, and six smaller local agglomerations to be guided in development. By contrast, Gao et al. (2017) argued that only five national-level urban agglomerations should be recognised, contending that existing strategic plans significantly exaggerate both the number and spatial extent of such formations. These discrepancies demonstrate that controversy is not incidental but structural.

In practice, the spatial boundaries of specific MMLC are frequently adjusted over time. The Yangtze River Delta provides a representative example. In 2010, following approval by the State Council, the National Development and Reform Commission issued the "Yangtze River Delta Regional Plan," which encompassed 16 cities, including Shanghai, Nanjing, Suzhou, Wuxi, Hangzhou, Ningbo, and others. In 2016, the "Development Plan for the Yangtze River Delta" expanded the region to 26 cities, incorporating additional municipalities such as Hefei, Wuhu, and Yancheng. In 2019, the "Outline of the Development Plan for Regional Integration in the Yangtze River Delta" further expanded the scope to 27 cities with the inclusion of Wenzhou. This pattern of progressive expansion illustrates the fluidity of spatial delineation in response to policy priorities and development strategies. Similar phenomena can be observed in many other cases.

Clearly, the geographical scope of "Megalopolis and Megalopolis-like Cluster" (MMLC) remains highly uncertain. Although urban expansion may generate new forms of spatial connectivity rather than discrete separations (LANG and KNOX 2011), the configuration before and after expansion is not directly comparable. Changes in boundary definition involve not only adjustments in territorial coverage but also transformations in spatial structure and regional differentiation. Consequently, the geographical space of MMLC is not a stable container but a dynamic and continually redefined construct.

Non-Organic Whole

Under conditions of chaotic concepts and uncertain geographical space, MMLC is not a natural organism but rather the result of subjective human judgment. Within an MMLC, different geographical spatial units do not necessarily experience prosperity or decline simultaneously. In other words, the various geographic units that constitute an MMLC are not inherently or consistently closely connected. GOTTMANN (1976) proposed that the concept of the megalopolis applies to very large polynuclear urbanised systems endowed with sufficient continuity and internal interconnections. By contrast, for any MMLC characterised by different scales and levels of development, it does not form a complete whole, let alone an organic one. This remains true even for a megalopolis, which is often regarded as having evolved into a higher-order state.

For example, PLATT pointed out that the megalopolis is essentially a semantic and graphical concept representing a vast collection of political units that have little in common and may not significantly care about one another. The Boston–Washington megalopolis in the United States ("BosWash") is physically fragmented by watersheds and mountains, economically divided between rich and poor areas, and culturally differentiated by newspaper circulation patterns, political ideologies, religious traditions, and vernacular cuisines. According to PLATT (2010), the internal differences appear to outweigh those forces that bind it into a single entity. In other words, any MMLC is itself a fragmented geographical space. Indeed, this remains the case for all MMLC formations.

Therefore, the so-called MMLC does not constitute a fully integrated cluster with converging interests. These super-regions typically exist in a relatively loose structural state.

For example, the commonly referenced Beijing–Tianjin–Hebei region is described as a loosely defined area (Gao et al. 2017). Despite ongoing regional integration efforts and peripheral development strategies, issues of spatial exclusion and core–periphery structures persist in the Yangtze River Delta (Qin et al. 2023). Even when delineated by national governments, future development continues to face distinctive challenges, including fragmented jurisdictions, socio-spatial inequality, and environmental externalities (Yeh and Chen 2020). Other related MMLC also generally have similar problems.

Such conditions inevitably generate paradoxical tensions among different stakeholders. Certainly, an MMLC is composed of multiple cities, numerous townships, and countless villages; therefore, it does not constitute a single "super city" or a unified large city in a literal sense. Different cities, as well as different districts (counties) and towns, remain independent geographical spaces within the MMLC. These geographic units may engage in cooperative collaboration or, alternatively, intense competition. For example, there may be fierce competition for political performance achievements within MMLC contexts. In addition, different industries and various organisations involve distinct stakeholders. Even within the same occupational category, different units maintain divergent interests. Furthermore, differentiation persists even within a single organisational unit.

At the micro level, individuals of different ages, identities, and social positions experience varying degrees of benefit. Consequently, no policy measure or public service within an MMLC can produce identical effects for all stakeholders. Some policies may prove useful or even highly beneficial for certain groups, yet it is difficult to ensure that they generate comparable advantages for others.

Ultimately, various groups or sub-clusters will emerge within an MMLC. In any MMLC, the diverse and evolving relationships among stakeholders render social dynamics increasingly complex and variable, including shifting boundaries, divisions, alliances, struggles, and processes of selective survival. Where the total volume of available benefits is limited, some actors will gain more while others receive less; indeed, not everyone benefits. For those who successfully obtain advantages, life within an MMLC may represent a highly favourable experience. However, for those who do not benefit, the outcome may be far less positive.

In order to provide geographic spaces at different scales with more effective mechanisms for collaboration within an MMLC, coordinated development and spatial integration have attracted significant attention. In theory, MMLC can be constructed as a new form of spatial organisation capable of promoting coordinated regional development (Li et al. 2022). However, the integrated development characteristics of MMLC do not emerge naturally. Rather, they must be continuously emphasised through deliberate policy design and supported by effective intervention measures, which are inherently difficult to implement.

In other words, any MMLC can be further subdivided into multiple relatively unrelated geographic spaces. Geographic space is not homogeneous, and individuals cannot all function as harmonious partners. Ultimately, every MMLC will continue to differentiate into various groups or clusters, rather than forming a completely unified geospatial entity.

3 Discussions on the Causes of Controversial Issues

No Unified Standard for MMLC

At present, there is no unified conclusion regarding the standards for measuring MMLC. Typically, each study employs its own evaluation indicators, reflecting a strong degree of initiative and subjectivity. Consequently, this inevitably leads to conceptual confusion and divergence in the delineation of geographic space. GOTTMANN never standardised the criteria for defining MMLC in the course of his extensive research. By 1987, he had only systematically analysed characteristics of the megalopolis such as industrial structure, population size, labour force composition, land use, and transportation infrastructure. He described features including a core composed of several metropolitan areas, surrounding areas with strong socio-economic linkages to those metropolitan centres, a residential population exceeding 25 million, relatively high average densities of more than 250 persons per square kilometer, at least one-fifth of the national population concentrated within the region, and highways, railroads, waterways, telephone lines, pipelines, water supply, and sewage systems crisscrossing the entire area (GOTTMANN 1976; GOTTMANN 1987).

However, the 2000 census data indicated that the population of the Northeast megalopolis and the Great Lakes megalopolis in the United States accounted for only 17.68 percent and 19.18 percent of the national population, respectively. By 2025, the population shares of both megalopolises are projected to decline to around 17 percent (HAGLER 2009). This empirical reality deviates significantly from GOTTMANN's earlier prediction that the growth of the megalopolis throughout its history would be more rapid and continuous than that of many other urban areas (GOTTMANN 1957).

Moreover, with the advancement of urbanisation, improvements in infrastructure, and socio-economic development, an increasing number of regions worldwide have exceeded or diverged from GOTTMANN's original standards. As a result, more regions can potentially be categorised as MMLC. With the expansion of mega-cities in ASEAN countries beyond national borders and the establishment of new towns, industrial zones, and housing projects in formerly rural areas, household incomes and employment opportunities have increased. At the same time, however, environmental protection issues, land-use conflicts, and inadequate housing and services have emerged. Under such circumstances, the concept of the mega-urban region was proposed (MCGEE and ROBINSON 1995). Similarly, HALL and PAIN (2006) used indicators such as development around one or more global cities, the clustering of cities and towns, and physical separation combined with intensive networking within a complex spatial division of labour to delineate the mega-city region in Northwestern Europe.

Some experts and scholars in the United States have argued that MMLC are based on metropolitan areas and that new MMLC emerge through the extension and integration of adjacent metropolitan areas. As SHORT (2009) contends, these neighbouring metropolitan areas may be defined as a megalopolis. The U.S. Census Bureau has proposed as many as ten criteria for defining megapolitan areas, two of which emphasise the presence of at least two metropolitan areas and contiguous metropolitan and micropolitan areas (LANG and DHAVALE

2005). Another view holds that a megapolitan cluster is larger than a megapolitan area and must contain two or more key anchor urban cores (Nelson and Lang 2011). In addition, the Regional Planning Association in the United States has developed five county-level criteria to define megaregions, including core basic statistical areas, population density, population growth rate, total population, and employment growth rate (Hagler 2009).

A relatively common approach to defining MMLC relies on combinations of economic and social indicators. However, the specific indicators selected vary considerably across studies, and their selection is often shaped by subjective preferences. For example, Zhou (1991) identified metropolitan interlocking regions using indicators such as cities with populations exceeding one million, foreign ports, convenient transportation routes, dense populations, and strong economic linkages between urban and rural areas, concluding that the Yangtze River Delta and the Pearl River Delta met these criteria. Sit (1996) regarded the Pearl River Delta as an extended metropolitan region, characterising it as an exo-urbanisation region driven by foreign investment and rapid urbanisation.

Similarly, Zhang et al. (2012) selected transportation accessibility and eight additional indicators – including the number of cities, area, population density, urbanisation rate, per capita GDP, economic density, total population, and economic type – to measure urban clusters, identifying a total of nine such clusters. Fang and Yu (2017), Fang (2019), and Fang and Yu (2020) applied ten indicators to define urban agglomerations, identifying 20 urban agglomerations. These indicators included the number of cities and total urban population, total population volume, urbanisation level, economic density, the share of non-agricultural GDP, GDP per capita, total economic output of the central city, transportation conditions and commuting time, outward economic orientation, and cultural similarity. From the perspective of the mature stage of the pole–axis urban system, Gao et al. (2017) defined central cities, assessed the completeness of the urban system and socio-economic relationships, and evaluated the evolutionary stage of the urban system, concluding that China possesses five urban agglomerations.

In addition, more advanced methodological approaches have been employed. For example, complex fractal measurement techniques combined with digital mapping were used to define urban agglomerations in the Franche-Comté region and Besançon (Frankhauser 1998). High-technology methods have also been introduced. Remote sensing technologies have been applied to delineate spatial extents (Day et al. 2017), and nighttime light data from defense meteorological satellites have been used to identify urban clusters in London and Île-de-France (Tselios and Stathakis 2020).

Other scholars base their work directly on national policies and governmental planning documents. For instance, Yeh and Chen (2020) identified 19 mega-city regions based on China's 13th Five-Year Plan (2016–2020). Gura et al. (2023) analysed the Tirana–Durres economic zone using territorial planning strategies. Wan et al. (2024) examined the Chengdu–Chongqing twin-city economic circle.

Some experts and scholars do not provide strict or quantifiable criteria but instead use more flexible academic designations. For example, Ma et al. (2022) directly referred to Beijing–Tianjin–Hebei, the Yangtze River Delta, the Pearl River Delta, the Middle Reaches

of the Yangtze River, and Chengdu–Chongqing as megalopolises without specifying detailed criteria. Similarly, VELAZQUEZ et al. (2025) discussed the megalopolis of Mexico City; ZHOU and WU (2000) described the conurbation of the Yangtze River Delta; WAN et al. (2013) referred to the city belt of the Yangtze River Delta; HU et al. (2024) pointed out megacity clusters such as Yangtze River Delta, the Beijing–Tianjin–Hebei, and the Pearl River Delta; and GUO et al. (2020) examined economic zones such as Beijing–Tianjin–Hebei, the Yangtze River Delta, and the Pearl River Delta.

Evidently, substantial gaps exist among the various approaches used to define MMLC. The scientific results derived from these approaches can only be justified within specific analytical frameworks or regarded as reference points, but they inevitably remain subject to disagreement. In other words, definitional standards are often flexibly interpreted in accordance with researchers' professional orientations and methodological preferences.

Lack of Precision in Research on MMLC

Given the absence of a unified standard for defining Megalopolis and Megalopolis-like Cluster (MMLC), research in this field often reflects strong subjective perspectives, and consequently, research findings inevitably diverge. As WEBER (2001) notes, seemingly straightforward defining metrics – such as population size, area, behavioural characteristics, economic indicators, or commuting patterns – are not truly precise. Furthermore, MMLC are continuously evolving and transforming, which inherently complicates efforts to define them accurately.

GOTTMANN (1957) once observed that urban and suburban territories were expanding rapidly in the United States, and that without such expansion, a vast area such as the megalopolis would not have emerged. However, he was unable to determine precisely how large the megalopolis might ultimately become, nor could he clearly define its boundaries, let alone fully explain the dynamic mechanisms underlying its expansion. His observations were based on limited temporal perspectives, allowing him only to identify broad trends in land expansion and to infer possible developmental trajectories.

In practice, MMLC frequently evolve beyond prior expectations. For example, case studies of eleven megaregions (MMLC), including the Northeast United States and the Great Lakes region, indicate that economic fields do not fully correspond to the officially demarcated megaregions. TÓTH and KINCSES (2023) argue that the concept of the megaregion should be reconsidered in order to align more closely with actual spatial economic landscapes. Nevertheless, no study has been able to definitively determine the ideal or optimal spatial structure of such regions.

Moreover, a growing body of research shows that regional population decline has become increasingly widespread across many countries, posing significant challenges for the development of MMLC. In recent decades, shrinking cities have appeared worldwide, characterised by substantial population loss, economic stagnation, and deterioration in spatial quality. Cities experiencing population contraction are primarily located in Europe, East Asia, and the Northeastern United States, with China containing the largest number of shrinking cities

(Meng et al. 2021). From iconic cases such as Detroit in the Great Lakes region of the United States to small villages in Japan, population loss often occurs in unexpected locations and more frequently than previously assumed (Luescher and Shetty 2013).

Although China remains in a stage of rapid urbanisation, the future trajectory of urban development is difficult to predict, especially in the context of the new urbanisation strategy and rural revitalisation strategy. Since 2022, China has experienced continuous negative population growth, and the reality of demographic decline has become increasingly evident. Under such circumstances, MMLC will inevitably be affected by depopulation pressures.

In addition, factors such as technological upgrading, shifts in the international geopolitical environment, national strategic adjustments, natural disasters, accidents, and resource and environmental constraints may pose substantial risks to the healthy development of MMLC. The excessive concentration of production and living factors within MMLC has generated massive volumes, high densities, and complex spatial configurations, making it more difficult to obtain accurate and reliable data and to capture meaningful details. This complexity not only increases potential risks and hidden dangers but also raises the difficulty of effective regional cooperation and hinders efforts to reduce regional disparities.

Furthermore, the spatial scale of MMLC is extensive, and disparities in natural and human geographic conditions, socio-economic development levels, and cultural backgrounds are inevitable among constituent regions. These differences make it extremely challenging to establish universally applicable definitional criteria. When multiple factors are superimposed, variations in research focus inevitably lead to divergent problem identification and differing expectations regarding outcomes. In short, research findings often generate controversy rather than achieving logical consensus.

Various Barriers in MMLC

The existence of multiple barriers renders the geographic space of MMLC incomplete and obstructs their capacity to form an organic whole. Gottmann (1957) viewed MMLC from a relatively optimistic perspective and suggested that different states within a megalopolis might be more integrated in daily life than they were with more distant areas within the same "Commonwealth." In contrast, numerous studies have demonstrated that a variety of barriers persist within MMLC.

The scale of MMLC itself is not inherently problematic; rather, friction arises in the context of shared urban governance at large scales. Such barriers include transaction costs, the absence of a clear regional identity, the lack of a common formal institutional framework, and the reluctance of narrowly defined institutions to relinquish authority over cross-boundary issues. Additional structural obstacles include fragmentation, inequality, anti-metropolitan sentiment, racial segregation, urban–rural divides, and other related challenges (Davidson 2023).

Moreover, ambitious growth trajectories are constrained by material scarcity, climatic conditions, circadian rhythms, and the spatial dispersion of resources and labour. At the global scale, planetary urbanisation aimed at integration is limited by constraints related

to social interaction, cultural preferences, and political-administrative structures (GOMEZ 2017). Natural environmental hazards also present significant risks. For example, aging infrastructure in the Northeast U.S. megalopolis is highly vulnerable to climate-related hazards (POURMOKHTARIANET al. 2022).

Other forms of socio-economic risk also exist. Research indicates that proximity to casinos in the Northeastern United States may generate gambling-related problems, negative socio-economic consequences, and even increased crime within urban communities. The primary beneficiaries of such developments are legislators, community workers, social service professionals, academics, and the casino-gambling industry (O'GILVIE 2022).

In summary, the megalopolis in the Northeast United States faces a wide range of mobility, climate, economic, and social challenges (YARO 2021). Despite its abundant natural resources, well-developed transportation networks, and the prominence and vitality of its major cities, the Northeast has been losing competitive advantage relative to other regions within the nation and globally (YARO and CARBONELL 2017).

At the global level, there is no universal formula for achieving smooth regional integration. Relevant studies indicate that local protectionism and enclave phenomena are unavoidable within MMLC. In the case of foreign minorities, municipalities within a megalopolis often must adjust policies to accommodate and integrate immigrant populations (ROZANOVA 2014). Furthermore, significant cultural gaps may exist between traditional cultures and the culture associated with the megalopolis. Research suggests that traditional societies may resist or reject megalopolitan cultural forms (PROROKOVIĆ 2015).

Because cultures are inherently pluralistic, it is difficult to assert that a unified cultural identity has been achieved within MMLC. Ensuring a high degree of consistency in people's values and perspectives is inherently challenging. Consequently, experiences of MMLC vary widely: some individuals perceive them as spaces of opportunity and prosperity, while others encounter marginalisation or disadvantage, giving rise to a series of paradoxical tensions.

Even leading experts and scholars in MMLC research maintain distinct subjective perspectives. Although such views may represent minority positions, unanimous academic consensus is unlikely to be achieved. Disagreements regarding conceptualisation, definitional methods, and spatial evolution are inevitable. Nevertheless, even intense academic debate does not necessarily lead to serious negative consequences. The phenomenon of diverse schools of thought has long characterised the social sciences. Therefore, it is neither possible nor appropriate to render simplistic judgments about who is entirely correct or incorrect.

4 Reflections on Ways for Dealing with Controversial Issues

Fully Recognise the Ambiguity of Naming Forms Related to MMLC

MMLC is not a purely natural phenomenon; it is inevitably influenced by human intervention, and no one can accurately predict its development or future transformations. There-

fore, regardless of which subjective standard is adopted, it is difficult to derive a fully accurate and universally reliable geospatial law. This situation gives rise to controversial issues, particularly the ambiguity reflected in chaotic concepts and uncertain geographical spaces.

The understanding and application of related concepts vary across historical periods, research institutions, and individual scholars. In the process of employing different conceptual terms, professionals often seek similarities and differences among them in order to articulate their own distinctive perspectives. While the introduction of a new terminology may serve as a shortcut to theoretical innovation, it also contributes to increasing conceptual complexity. Since the emergence of theories related to MMLC, numerous associated terms have appeared, and the absence of unified standards has intensified ambiguity in both conceptualisation and empirical research. Consequently, the practical significance and developmental trajectory of this special geographical phenomenon frequently become subjects of controversy. Ultimately, such ambiguity may lead to logical tensions and a perceived lack of scientific precision. Therefore, it is essential to fully acknowledge that the naming of the megalopolis and related forms is characterised by flexibility and uncertainty – that is, inherent ambiguity. In the field of social sciences, similar ambiguities are often seen.

Although it is difficult to prove that this ambiguity represents subjective error within academia, there is also insufficient evidence to conclude that it results solely from inaccurate understanding of the concept's connotation. Nor can it be definitively determined whether misunderstandings arise from translation discrepancies in professional terminology across domestic and international contexts. At the very least, however, it can be stated that these concepts function as ambiguous naming forms for a particular type of a geographical phenomenon.

In theory, an MMLC should not be the product of forced administrative consolidation; rather, it should emerge as a designation when production and living factors have developed to a sufficiently advanced stage. MMLC represent distinctive geographical phenomena with unique attributes. After all, no one would casually label a small town as an MMLC. At the same time, MMLC are not entirely the result of spontaneous self-organisation, just as roads do not form naturally without human intervention. Their formation is always subject to human constraints and institutional arrangements. However, once subjective human intervention becomes significant, it becomes difficult to maintain unified concepts, stable geographical spaces, or consistent standard-setting methods. As a result, considerable ambiguity persists in related academic research.

Dynamically Viewing the Development and Changes of MMLC

In addition to the proliferation and evolution of related concepts, MMLC themselves continue to transform alongside economic and social development. They do not possess fixed or immutable geographical spaces. Historically, MMLC have not existed continuously. For example, before European colonisation in North America, there were no large cities in what later became the United States for extended periods. After the founding of the United

States in 1776, centuries of industrialisation and urbanisation were required before the Boston–Washington megalopolis identified by GOTTMANN emerged.

Similarly, the development of Tokyo originated from Edo Castle in the 1550s; prior to that, the area was merely a small fishing village. The Pearl River Delta in China, once geographically isolated by high mountains, had historically served as a remote frontier and even a place of exile. It was not until the Ming and Qing dynasties that gradual development occurred. Shanghai likewise rose during the Ming Dynasty. In particular, following China's reform and opening-up policies and the establishment of special economic zones, these regions experienced rapid growth. All of these developments represent outcomes of industrialisation and urbanisation reaching particular historical stages.

As socio-economic development advances and urbanisation levels increase, the phenomenon of MMLC emerges in response to contemporary needs. Throughout the development process, whether characterised by relative agglomeration or relative diffusion, changes involve not only the physical evolution of geographical space but also transformations in socio-economic indicators. Although the development of MMLC may appear to correspond to the collective advancement of multiple cities, in reality it is closely tied to the trajectory of individual cities, especially central cities that often play leading roles in shaping regional dynamics. Furthermore, the rise or decline of any city is influenced by broader national socio-economic conditions as well as macro-level policy interventions.

The evolution of MMLC is marked by spatial irregularity and uncertainty regarding future directions. Development plans – whether at the level of MMLC, individual cities, or even individuals – are often only partially realised. That is, they tend to fulfill certain expectations while leaving others unmet. They may solve some practical problems while generating new ones. Similar patterns can be observed in various social organisations and urban–rural development plans. Therefore, any MMLC composed of countless individuals and multiple urban–rural areas will inevitably confront complex and interrelated challenges. In practice, the realities of development are rarely as straightforward or feasible as theoretical expectations suggest.

Distinguish Between Different Geographic Spatial Units in MMLC

At present, the geographical space of MMLC does not exhibit a unified or stable pattern. Because the spatial configuration of an MMLC is not fixed, and because different geospatial units within it do not necessarily constitute an organic whole, it is necessary to adjust boundaries dynamically according to practical circumstances. Such adjustments allow the geographical scope to better reflect actual developmental conditions. Strictly speaking, no MMLC forms a permanently fixed or complete group.

On the one hand, significant population mobility and factor flows constantly occur between MMLC and external regions, including the movement of labour, capital, and other production and living factors. On the other hand, within the context of global value chains, national cultural self-confidence, and localisation processes, MMLC must balance

local protection, regional integration, and international coordination. These trade-offs add complexity that extends beyond purely geographical considerations.

Then, any MMLC, composed of different cities, villages, industries, cohorts, and individuals, may not represent a truly unified collective entity. Rather, it can be viewed as an idealised spatial designation assigned by external observers. In this sense, MMLC function as speculative constructs within spatial planning discourse rather than as definitive explanations of underlying social reality. Within any MMLC, people and events cannot simply be merged into a single category; different actors and activities belong to different levels and forms of grouping.

Therefore, MMLC do not determine all common functions of cities or villages within the same geographic space, nor do they fully define the nature of interactions among them. Although MMLC aim to incorporate multiple individuals and sub-groups within a single framework, geospatial reasoning may sometimes be overly generalised or simplified. Under the influence of diverse individuals and groups operating at multiple levels, MMLC remain relatively vague frameworks – indeed, more ambiguous than the definition of a specific social group.

Even within a single city, substantial group disparities exist. For example, contrasts may be observed between central urban populations and suburban or rural residents; between law-abiding citizens and criminal organisations; between high-income groups and low-income groups; between healthy individuals and those facing illness; between law enforcement agencies and those subject to enforcement; between insiders within institutional systems and those outside them; between migrant populations and long-term local residents; and between distinct ethnic minorities and majority populations.

It is evident that MMLC do not constitute harmonious and homogeneous spaces. Instead, they function as relatively vague and idealised frameworks composed of diverse cities, villages, groups, and individuals. It remains unclear whether removing a specific geographic unit would necessarily disqualify a region from being considered an MMLC. Similarly, it cannot be conclusively verified that adding a specific spatial unit would automatically qualify it as such. For many spatial units that do not occupy central positions, their inclusion or exclusion may have limited impact on the overall structure. Therefore, within MMLC, it is essential to recognise the substantive differences among geospatial units and to evaluate them based on actual developmental conditions, rather than assuming that all units possess equal significance or desirability.

5 Conclusion

In the course of academic discussions among experts and scholars worldwide, the proliferation of similar terms related to Megalopolis and Megalopolis-like Cluster (MMLC) has generated considerable confusion. At present, a situation has emerged in which numerous related concepts coexist simultaneously within academic discourse. Fundamentally speaking, however, aside from the presence of central cities, any MMLC is composed of multiple cities, towns, villages, nature reserves, and undeveloped areas,

incorporating countless interest groups and individuals and involving diverse elements of production and everyday life. Within any MMLC, changes occurring in a single city, the transformation of a particular interest group, or shifts in specific production or living factors may contribute to broader regional changes, leading either to expansion or contraction. In short, MMLC encompass highly complex regional categories, and the geographical phenomenon they represent should be understood as a multidimensional and dynamic spatial system.

Within any MMLC, numerous groups and individuals coexist at different hierarchical levels. Significant barriers exist that hinder the integration of these diverse levels into a cohesive and unified collective. Differences in location, wealth, social status, access to resources, and life trajectories all reflect varying degrees of social and spatial distance. The phenomenon commonly described as "birds of a feather flock together" persists in such contexts, reinforcing internal segmentation. From the perspective of individual agency and differentiation, individuals possess both the possibility of joining certain groups and the possibility of leaving them. Consequently, stable and permanent group structures cannot be assumed within a city, let alone within a large and complex MMLC.

Internally, an MMLC may be subdivided into multiple geographic spatial units according to different zoning or classification methods. These units may include cities, districts (counties), townships, streets, communities, villages, or even individuals as the smallest units when viewed through administrative or analytical frameworks. When a number of such sub-geospatial units collectively constitute an MMLC, their relationships may vary considerably. Some units may exert profound mutual influence, while others may remain relatively isolated and demonstrate limited interaction, forming patterns that resemble an incomplete or unstable system.

The coexistence of similarity and difference in these relational patterns suggests an alternative logical framework for observing MMLC objectively. Accordingly, this relationship may be expressed conceptually as follows:

$$f_j(x_1, x_2, \ldots x_i) \begin{matrix} \neq \\ = \end{matrix} \frac{dx_i}{dt}$$

where the set ($x_1, x_2, \ldots x_i$) represents the overall geospatial space composed of multi-level spatial units, such as an MMLC. Each x_i denotes the *i-th* geospatial unit according to a specific hierarchical division, such as districts (counties), townships, streets, or individuals. The variable t represents time. Considering that certain geospatial units exert mutual influence and may even affect the overall spatial configuration, while other relatively isolated units may not exert comparable influence, both the equality sign (=) and inequality sign (≠) can be employed to symbolically represent similarities and differences in relational influence. In essence, within geospatial planning activities, the overall spatial space composed of multiple hierarchical units selected by planners or researchers may not always function as a fully integrated and complete system. Therefore, accurately defining the geographical scope of MMLC remains a topic deserving sustained and in-depth theoretical reflection.

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The Evolution of Market Institutions and their Role in Chinese Industrial Development: Evidence from an Industrial Agglomeration in Guangdong

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Summary

Many rural areas in China have experienced a fast industrialisation process since 1978 when the "reform and opening-up" policy was initiated. The evolution of market institutions is a specific institutional manifestation of decentralisation and marketisation (accompanied by the globalisation) in this national economic reform. From the actor perspective considering the firm heterogeneity, how these successive institutions interact with each other and co-evolve with the industrial agglomerations has rarely been investigated in literature.

Three major forms of market institutions which represent the milestones in Chinese industrial development history – specialised market, trade fair and electronic market – are identified. Drawing on the evolutionary concepts and approaches of institutional economics and political economy and through a case study of the Lecong-Longjiang-Jiujiang furniture industrial agglomeration in Guangdong, China, this paper seeks to better explain how market institutions evolve and how do heterogeneous firms in the industrial agglomeration evolve differently with the institutional change.

Findings include that the evolution of the market institution system is a path-dependent layering process, with partial replacement and conversion of older institutions. Local firms evolve from single-institution followers into seven groups with different market institution portfolios. Results suggest the limitations of a single theoretical model of evaluation, and the usefulness of a neoclassical approach in institution-agglomeration research is reemphasised.

Keywords: Market institutions, industrial agglomeration, firm heterogeneity, evolution, layering, replacement, conversion, path dependence, furniture industry, industrial development, Guangdong, China

Zusammenfassung

Die Entwicklung der Marktinstitutionen und ihre Rolle für die industrielle Entwicklung in China, analysiert am Beispiel einer industriellen Agglomeration in Guangdong

Viele ländliche Gebiete in China haben seit 1978, als die Politik der „Reform und Öffnung" eingeleitet wurde, einen raschen Industrialisierungsprozess durchlaufen. Die Entwicklung

von Marktinstitutionen ist in diesem Kontext eine spezifische institutionelle Manifestation der Dezentralisierung und Marktorientierung (begleitet vom Prozess der Globalisierung) im Rahmen dieser nationalen Wirtschaftsreform. In der Forschung wurde bisher aus der Akteursperspektive und unter Berücksichtigung der Heterogenität der Unternehmen nur selten untersucht, wie die verschiedenen Marktinstitutionen miteinander interagieren und sich gemeinsam mit den industriellen Ballungsräumen entwickeln.

Im Rahmen dieser Untersuchung werden drei Hauptformen von Marktinstitutionen identifiziert, die Meilensteine in der industriellen Entwicklung Chinas darstellen: historisch gewachsene Spezialmärkte,Messen und elektronische Märkte. Auf der Grundlage der evolutionären Konzepte und Ansätze der Institutionenökonomie und der politischen Ökonomie und anhand einer Fallstudie über den Möbelindustrie-Ballungsraum Lecong-Longjiang-Jiujiang in Guangdong, China, soll in diesem Beitrag versucht werden, besser zu erklären, wie sich Marktinstitutionen entwickeln und wie sich die heterogenen Unternehmen in dem Industrie-Ballungsraum im Zuge des institutionellen Wandels unterschiedlich entwickeln.

Zu den Ergebnissen gehört, dass die Entwicklung des Marktinstitutionensystems ein pfadabhängiger Schichtungsprozess ist, bei dem ältere Institutionen teilweise ersetzt und umgewandelt werden. Lokale Unternehmen sind in ihrer Entwicklung nicht mehr auf einzelne Marktinstitutionen ausgerichtet, sondern können in sieben Gruppen mit unterschiedlichen Marktinstitutionenportfolios differenziert werden. Die Ergebnisse weisen auf die Grenzen eines einzigen theoretischen Erklärungsmodells hin und unterstreichen die Nützlichkeit eines neoklassischen Ansatzes in der Institutionen-Agglomerationsforschung.

Schlagwörter: Marktinstitutionen, industrielle Agglomeration, Evolution, Schichtung, Transformation, Pfadabhängigkeit, Marktportfolios, Möbelindustrie, industrielle Entwicklung, Guangdong, China

1 Introduction

The study of industrial agglomeration has long been a staple of economic geography. Much recent innovation on this subject has alighted on the institutional bases of agglomeration (Amin and Thrift 1992; Schmitz 1999) including as this plays into the evolution of industrial agglomerations (Potter and Watts 2011). The processes of vertical disintegration or integration (Scott 1986; Scott 1983) and their spatial reach (Phelps 2004; Anas et al. 1998) reflect change in the division of labour based on the specialisation of manufacturing and marketing activities.

Institutions regarding marketing have a complex relationship to the evolution of industrial agglomerations. Historical evidence suggests that institutional development can be as much cause as effect of industrial agglomeration. Moreover, although not their intention, historical schemes (Duranton 2001) can give the impression of the simple linear replacement of institutions over time. Rarely have some of the complexities of how institutions co-evolve to shape the evolution of industrial agglomerations been investigated in the economic geographical research (Boschma and Frenken 2009; Strambach 2010). In the

present, for example, the disintermediation promoted by the rapid emergence of electronic market based on the information technology (GELLMAN 1996; ANDERSON and ANDERSON 2002) is layered onto traditional institutions (e.g., trade fair) posing the question: Do successive market institutions coexist inertly, negate, augment or displace each other in the development of industrial agglomerations? Starting from the market institutions which are closely associated with the industrial development, this paper aims to dig deeper into the complex co-evolution of institutions and industrial agglomerations.

In mainland China, many rural areas have experienced a fast industrialisation process since 1978 when the "reform and opening-up" national policy was initiated. Industrial agglomerations, which emerged in many villages and small towns (QIAO et al. 2016; BELLANDI and DI TOMMASO 2005), embody this development process in geographical space (HE and ZHU 2009; HO and LIN 2004). Two major driving forces of this process which have been widely recognised are the decentralisation and the economic globalisation (HE et al. 2016). Decentralisation brought about the quickly emerging and now flourishing private enterprises (LIN and MA 1994; HE and WANG 2012). The dynamics of globalisation is often interpreted as foreign direct investment (FDI) (HE 2008; ZHAO et al. 2012) or international processing trade (LEMOINE 2010; YANG et al. 2015).

In the transitional process of China's industrial economy, the role of different forms of markets and their evolution with interactions, which can be viewed as compound manifestations of the institutional results of both decentralisation and economic globalisation, are underplayed in literature. Their relationship to the evolution of industrial agglomerations still lacks adequate interpretation. Brick-and-mortar markets which emerged due to the expansion of domestic demand of China in the early 1980s (e.g. specialised markets) have experienced substantial upgrades (HUANG et al. 2008; BELLANDI and LOMBARDI 2012). The more recent physical forms (e.g. trade fairs) and virtual forms (e.g. electronic markets), which emerge as a result of the extension of market reach, further complicate the evolution of China's industrial economy (ZHANG et al. 2020; BATHELT and ZENG 2015).

In terms of the evolution history of market, market as a key institution of economic activities develops from traditional marketplaces in the preindustrial era to now modern transaction places in various specific forms[1)] (e.g. stock market, shopping mall) (FEINMAN and GARRATY 2010; JEGADEESH and TITMAN 1993). Regarding the industrial product distribution in China, the authors identified three major forms of markets which represent the milestones in the Chinese industrial development history – the traditional brick-and-mortar specialised market, the modern trade fair and the electronic market (hereafter e-market).

The traditional wholesale specialised market is supposed to reduce searching costs for both manufacturers and buyers as well as increasing scale economies of industrial clusters (BELLANDI and LOMBARDI 2012, DING 2012). Trade fairs help expand the market scale of export by creating agglomeration benefits, and reduce the research and development costs by generating knowledge spillovers (BATHELT et al. 2014; BATHELT et al 2004). As

[1)] In this study, market institutions can be viewed as socio-economic constraints that can lower transaction costs. Such a conception of institutions is the mainstream view of new institutional economics (NORTH 1990; RUTHERFORD 1994; WILLIAMSON 1985) .

for the e-market, existing literature discussed more on the downstream product distribution (Löhe and Legner 2010; Steinfield et al. 1995) and the platform economies per se (Langley and Leyshon 2017; Gorman 2002) while rarely focused on industrial clusters, especially the manufacturers and the relations between (Steinfield and Scupola 2008), and the empirical work at the industrial level over past three decades has generated inconsistent and complicated results (Galliano and Roux 2008; Koch and Schultze 2011; Alt and Klein 2011). View of the transition of relations from the hierarchy to the market governance (Clemons et al. 1993; Malone et al. 1987) and the elimination of intermediaries between manufacturers and consumers (Anderson and Anderson 2002; Gellman 1996) both seem to imply dissolution of established industrial clusters.

However, many empirical cases have revealed that a balance or trade-off between costs and sales through online and offline channels is often made by firms (Holland and Lockett 1997; Brynjolfsson et al. 2009), and both the market governance and the disintermediation are not complete (Chircu and Kauffman 2000; Koch and Schultze 2011). Instead of continuing with the debate on transaction costs or profits, with tacitly acknowledging that industrial clusters remain, another strand of literature from the perspective of value chain is more interested in the description of industrial upgrading brought by the e-market, and a profound change in both the Chinese e-market and the manufacturing industry has been noticed (Gereffi 2001; Li et al. 2019).

Compared with the high-tech industries emerging in recent decades, traditional labour-intensive industries in China have experienced a full-scale institutional change since the pre-industrial time. Therefore, research case from traditional industries suits the purpose of studying both the institution and the evolution. Furthermore, being a connection between upstream suppliers and downstream consumers industrial agglomerations engaged in finished product manufacturing are more significantly influenced by the market institutions. The manufacturing industry of finished furniture products is a typical labour-intensive sector which contributes to a major part of the domestic sales and exports of China's industrial products. As a low-tech industry, furniture manufacturing and marketing primarily rely on the product design (especially the appearance design) and services. Conclusions drawn from the study case selected from this industry thus are able to generalise about the agglomerations of light industry with similar characteristics in China. Empirical findings of this study also may be instructive for the development of industrial agglomerations and the improvement of market system in countries as the world's factories (e.g., Vietnam, Indonesia) sharing a similar history of industrial development and undergoing changes in their market institutions.

Based on a case study of the furniture industrial agglomeration in Lecong, Longjiang and Jiujiang (LLJ) region of Guangdong Province, we will decompose a complicated institutional layering process, in which old market institutions also have faced varying degrees of replacement or conversion brought by the new ones. The furniture industry in the LLJ region originated with a specialised market in early 1980s. Despite being located in the countryside, the three towns possess advantageous transportation connecting major cities (Guangzhou, Shenzhen and Hong Kong) in South China. Due to the reform and opening-up, the rural surplus labour force began to engage in non-agricultural businesses. The

No. 325 national road which crosses the three towns and connects nearby cities naturally became a low-cost channel for product distribution. Due to the scarcity of light industry products at that time, furniture shops and factories increasingly emerged along the road.

Drawing on the evolutionary concepts and approaches of institutional economics and political economy which have been linked to economic geography (MacKinnon et al. 2009), this paper seeks to explore the evolution of three important market institutions – specialised market, trade fair and e-market – and explain the reflexive relationship between the institutional evolution and the evolution of industrial agglomeration in China since the economic reform in 1980s. This study not only reveals an industrial evolution pattern in China which was downplayed in existing literature but also reminds that certain firm-level dynamics may not be fully explained by a single evolutionary or institutional theory, which calls for more future work.

2 A Brief Literature Review of Industrial Agglomeration, Institutions and Evolution

2.1 Factors Influencing the Performance of Industrial Agglomerations

China's economic transition has been summarised as a triple process of decentralisation, marketisation, and globalisation (He 2008). And the three factors are believed to have a significant impact on China's industrial agglomerations (Batisse and Poncet 2004). Decentralisation which generates local protectionism has served as a centrifugal force for Chinese industries as it hurdles industrial specialisation and geographic concentration. By contrast, marketisation and globalisation both have stimulated the spatial concentration of Chinese industries. Not only for China, the impact of globalisation on industrial clusters has been widely recognised by scholars around the world. How the foreign investment, trade liberalisation, global production networks (GPNs) and the firm internationalisation therein affect local relations (Mariotti et al. 2008; Coe and Yeung 2019) and the competitiveness or resilience of local production systems (Power and Hallencreutz 2007; Rabellotti 1999) has been extensively researched. As for the market, what has been mostly discussed is the market extent of local industries (Levy 1984; Duranton and Jayet 2011).

Scholars in industrial economics believe that the market expansion for local products not just means a sales growth but enhances a division of labour among firms. In addition to the macro-level factors aforementioned, extra-local knowledge linkages are believed to play an important role in maintaining the innovativeness of industrial agglomerations (Bathelt 2007; Morrison et al. 2013; Expósito-Langa et al. 2015) and may even redirect their evolutionary paths according to the cluster life cycle model (Ter Wal and Boschma 2011). At the micro-level the characteristics of firms are also treated as a major factor which may influence the local technique and the relational structure of clusters (Chandra and Macpherson 1994; Neffke et al. 2018).

While literature on the performance of industrial agglomerations covers numerous specific themes, it basically belongs two major categories – the agglomeration dynamics

and the (collective) performance of cluster agents. In terms of the agglomeration dynamics, externalities and relations between local agents are two fundamental aspects being frequently discussed. The Marshall-Arrow-Romer (MAR) externalities (specialisation externalities) indicate the dynamics of single-industry agglomerations while the Jacobs' externalities (diversity externalities) reflect the major characteristics of the multi-industrial ones (Romer 1986; Jacobs 1969; Neffke et al. 2011).

As for local relations, scholars have explored the networks of sociality (Fu et al. 2013; Searle et al. 2018), innovation or knowledge (Camagni 1999; Cooke and Morgan 1993), and vertical supply (Gordon and McCann 2000; Provan 1993). The structure (Markusen 1996; Schutjens and Stam 2003) and governance (Loasby 1994; Clemons et al. 1993) of these relational networks have been frequently researched. As regards the (collective) performance of cluster agents, it covers a variety of dimensions including innovation (Anokhin et al. 2019; Audretsch 1998), economic growth (Bathelt and Taylor 2002; Eriksson and Lindgren 2008), and position in value chains (Humphrey and Schmitz 2002; Giuliani et al. 2005).

As a transitional economy, China has passed through a fast-pace process of marketisation (accompanied by the globalisation) in which certain institutions have played a key role in the genesis and development of industrial agglomerations. In this study, we will focus on the key institutional factors in this marketisation process and find out how they shape the dynamic performance (including the externalities, supply relations, agglomeration scale, the business and innovation operation of different firms) of industrial agglomerations and are in turn shaped by the agents therein.

2.2 A Reemphasis on Linking Institutions with the Evolution of Industrial Agglomerations

The causal relationships between local institutions and the performance of industrial agglomerations have been identified by economic geographers. For example, the so-called institutional thickness was asserted strongly that it could explaine the success of many industrial clusters in the world (Henry and Pinch 2001; Amin and Thrift 1995). For many labour-intensive or craft industrial agglomerations in the global south, policy or institutional development was held key to unleashing external economy effects (Schmitz 1995; Schmitz 1999). However, existing studies concerning the institutions and their change remain largely disconnected to the study of industrial agglomerations. Despite the role of institutions having been implied in the literature on the evolution or life cycles of industrial agglomerations (Menzel and Fornahl 2010), the causality often drawn between the fluctuating fortunes of institutions and industrial agglomerations also leave questions of the exact contribution of institutions to the dynamic performance unanswered.

Although "renewal" or "replacement", and "constant mutation" have been theorised in the adaptive version of evolutionary opinions (Martin and Sunley 2011), they still explain the cluster evolution primarily based on the internal dynamics, which does not distinguish the different roles of institutions therein. How multiple institutions in the process

of their complex interactions drive the agglomeration development and co-evolve with the agglomeration(s) seem to be neglected in the rich body of literature.

Received theories of agglomeration, including their institutional variants, continue to speak primarily to place-based processes subject to long historical sweeps of slow change in which one institution replaces another in the evolution of industrial agglomerations (DURANTON 2001). The buzz-and-pipelines approach (BATHELT 2007; BATHELT et al. 2004) overcomes some of the localism (and some of the tautology of agglomeration theory) and perhaps prioritised particular institutions (i.e. trade fairs). However, contemporary industrialisation in some global south or transition economies has taken place at break-neck speed and unprecedented scale, which gives rise to more or newer forms of market institutions. More recently e-market has begun to challenge long established institutions such as brick-and-mortar emporiums and trade fairs, posing open questions for how the evolution of market institutions in recent decades have influenced the industrial agglomerations.

Three market institutions, namely, the specialised market, the trade fair, and the electronic market, emerged sequentially in different periods of China's industrialisation process and have greatly promoted the development of manufacturing clusters.

The specialised market (SM) in China is where economic agents mainly conduct wholesale on one type of merchandise. The SM is a unique institution of Chinese economy and is distinct from other modern market institutions (e.g. supermarket), and from the regular 'marketplaces' in the history of western countries (BRAUDEL 1973; WANG et al. 2013) as well as centrally-located merchant-operated bazaars found in the Middle East (KESHAVARZIAN 2007; ROTBLAT 1975). Chinese specialised markets are situated near or within industrial agglomerations in the periphery of major cities or adjacent to transport hubs, and most shops in the SMs are run by manufacturers (DING 2012). Creating market access to many distant specialised clients, specialised markets realize the economies of scale for agglomeration manufacturers by reducing searching costs and allowing mass production.

Similarly, trade fairs (TFs) held around the world, including those in China, broaden the market reach of manufacturers (BATHELT and ZENG 2014; BATHELT et al. 2014). However, more than expanding market trade fairs continuously generate knowledge spillovers to industrial agglomerations based on the buzz-and-pipeline mechanism (BATHELT 2007; BATHELT et al. 2004).

As for the e-market, existing literature did not offer a clear conclusion on what it has brought to the upstream agents and relations within industrial agglomerations. Inferring from the views that the governance of supply relations would move from the offline hierarchy to the online market (CLEMONS et al. 1993; MALONE et al. 1987) and that the intermediaries between manufacturers and consumers would be eliminated (ANDERSON and ANDERSON 2002; GELLMAN 1996), industrial clusters would disintegrate. However, the conflict between online and offline channels still remains (CHIRCU and KAUFFMAN 2000; KOCH and SCHULTZE 2011). Large volume of industrial products in China have been distributed primarily through third-party exchange (3PXs) type of e-market channel in the past 15 years (PHELPS et al. 2022) and how this online retail has influenced the industrial agglomerations thus requires further exploration.

2.3 Seeking an Approach to Better Portray Heterogeneous Firms, Diverse Institutions and their Co-evolution

A major defect of the literature on industrial agglomerations is that it lacks an actor perspective and often neglects that firms are heterogeneous (Ter Wal and Boschma 2011; Giuliani 2007). Firm heterogeneity is part and parcel of industrial agglomerations, and might even be considered a driving force of agglomeration evolution (Boschma and Fornahl 2011; Menzel and Fornahl 2010). However, studies of industrial agglomerations have not explained much on how heterogeneous firms response to the institution evolution (Strambach 2010; Avnimelech and Teubal 2008). Geographical literature focusing on the technological heterogeneity of firms (Giuliani 2011; Morrison 2008) lacks evolutionary and institutional perspectives both. Meanwhile, for the handful of empirical studies which mentioned the response of different firms to the institutional changes (Hilliard and Jacobson 2011), they failed to notice that institutions can be created and reshaped by agglomeration actors over time. It seems that research on the co-evolution of multiple institutions and industrial agglomerations with heterogeneous firms still remains in the evolutionary economic theories (Van Den Bergh and Stagl 2003).

To better understand the institutional dynamics of industrial agglomeration evolution, the variety and the coexistence of institutions cannot be bypassed. The emphasis of evolutionary economics on the rational behaviour of firms centred on the economisation on production and transaction costs (North 1995; Williamson 1985; Coase 1998) may fit best with the existing theories of industrial agglomeration in economic geography (Marshall 1920; Phelps 1992; Scott 1983). However, with few insights into the diversity of institutions most work in evolutionary economics does not deconstruct the institutions of local economies (David 1994; Acemoglu and Robinson 2006).

The relational structure of diverse institutions is more emphasised in economic sociology and political economy (Amable 2000; Hall and Thelen 2009), and their approach has seeped into economic geography (MacKinnon et al. 2009). Streeck and Thelen (2005) identified several modes of institutional change: replacement, layering, and conversion[2)] which view that institutional change is cultivated by agents within the context of existing institutions. Replacement happens as new models emerge and diffuse while traditional behaviours are overtaken by new institutions (Fligstein 1996; Powell and DiMaggio 2012). Layering takes place by gradually adding new rules or new functions to existing institutions (Streeck and Thelen 2005). Conversion is that existing institutions are realigned to serve new functions (Martin 2010).

In this sense, the theoretical modes in economic sociology or political economy aforementioned which consider the heterogeneity of both institutions, agglomeration firms and their co-evolution simultaneously seem to be an appropriate analytical tool for the empirical research. Moreover, this approach is able to explain the enduring unchanged phenomena from the past (negative) outcomes (Khalil 2013), which means it does not conflict with the path dependence approach in the evolutionary studies (Martin 2010).

[2)] Drift and exhaustion of institutions in this approach are not applied to discussing the market institutions in this paper, as not all the five modes of institutional change will occur in cases in an ergodic way in the context of China's economic development.

2.4 Three Market Institutions Emerged Sequentially Along with the Development of Chinese Industrial Agglomerations

To avoid a full-scale discussion on the overcomplicated inter-institution relationships in the whole institution system and the possible ambiguity concerning the 'institutional thickness' (HENRY and PINCH 2001), in this exploratory study the authors particularly focus on three market institutions, namely, the specialised market, the trade fair, and the electronic market, which emerged sequentially in different periods of Chinese industrialisation. The three specific institutions correspond with three different but comparable forms – permanent and brick-and-mortar; temporary and brick-and-mortar; permanent and virtual. In addition, the chronological order in which the three market institutions emerged also reflects a trend of industrial evolution – towards the forward integration in the supply chain – from wholesale to franchising, and then to retail.

The 'reform and opening-up' in China since 1979 made the huge domestic demand for light industry products be suddenly released, which caused the *'specialised market'* (translated from mandarin *'zhuanye shichang'*; hereafter SM) to emerge (DING 2012). The SM emerged naturally as an institutional response to the scarcity of channels for commodity circulation in the early time of China's transition from a planned economy. SM is an institution by which economic agents mainly conduct wholesale in large volumes on one type of merchandise at a fixed site. SM thus aggregates customer demand at a regional, national, or even global scale into a small supplying space (e.g. a small town) (MAO 2011), which helps lower the searching costs of local wholesalers (most of them are manufacturers) and realise the economies of scale through mass production. Since a SM functions as a low-cost and shared marketing platform for its neighbouring industry, SMs play an important role in the genesis and development of industrial agglomerations (BAI 2010).

The recent global shifts have seen the emergence of *trade fairs* (TFs) in East Asia due to the reorganisation of global supply chains. The prosperous trade fairs in China are closely associated to the great development of modern manufacturing industries and their demand for market expansion (BATHELT and ZENG 2014; LI 2015). From the 1990s, support policies at all levels of government in China led to a convention and exhibition centre building boom that continued into the late 2000s (BATHELT et al. 2014). As of year 2019 before the COVID-19 pandemic, the total gross exhibition space in China has reached 14.9 million m^2 and 11,003 trade fairs have been hosted with an average size of over 34,000 square meters,[3)] which ranks first in the Asia-Pacific region. In addition to promoting market expansion (especially for the export) and thus increasing the economies of scale for manufacturers, research which primarily focuses on the knowledge effects of trade fairs (TFs) has contended that TFs continuously serve as temporary hot spots of innovative knowledge compared with permanent industrial clusters by setting a short innovation cycle and gathering the highly innovative firms. Therefore, the knowledge spillovers of TFs to in-

[3)] Source: Global Association of the Exhibition Industry (UFI) data for 2008/9; 2019 Statistical Report on Chinese Trade Fair Industry.

dustrial clusters also help reduce the research and development costs of firms (Maskell et al. 2006; Bathelt et al. 2004).

E-market is the platform on which e-commerce is conducted. Discussions about the effects of e-commerce are frequently found in management literature. Due to its research purpose and paradigm, instead of focusing on industrial agglomerations in the upstream of supply chain directly existing literature mainly explores the downstream product distribution (Löhe and Legner 2010; Steinfield et al. 1995) or the platform economies *per se* (Langley and Leyshon 2017; Gorman 2002). Views that the governance of supply relations would shift from the hierarchy to the market (Clemons et al. 1993; Malone et al. 1987) and the intermediaries between manufacturers and consumers would be eliminated (Anderson and Anderson 2002; Gellman 1996) both seem to imply the dissolution of established industrial agglomerations. However, many empirical cases have revealed that considerable existing agents and the offline relations between them still remain (Chircu and Kauffman 2000; Koch and Schultze 2011) because a trade-off between costs and sales through online and offline channels can be made by firms (Holland and Lockett 1997; Brynjolfsson et al. 2009).

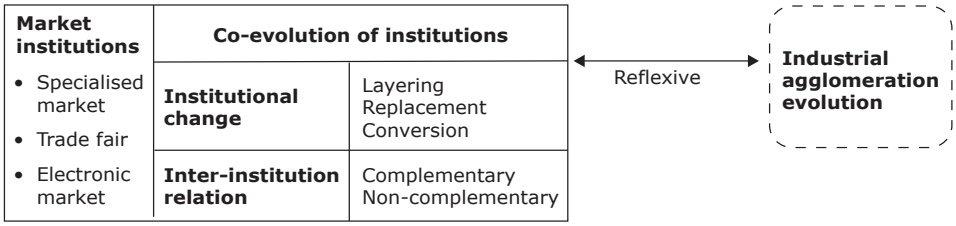
According to the operation mode of the e-market (Wang and Archer 2007; Chelariu and Sangtani 2009), e-markets can be divided into three types: third-party exchange (3PXs), industry-sponsored marketplaces (ISMs), and private trading networks (PTNs). The 3PX is a neutral, many-to-many intermediary that provides a marketplace for sellers and buyers without participating in it on either side. After a fast-pace development of e-commerce in the past decade, the distribution of most finished products in China has moved onto the 3PX e-markets. In 2019 before the COVID-19 pandemic, the gross merchandise volume of the e-market in China reached CNY 34.81 trillion, having increased by 816.1 percent compared with that in 2009. The online retail sales (ORS) was CNY 10.63 trillion which is 40.1 times larger than those in 2009.[4] The ORS of China was ranked the first around the globe in 2019, and so is its average growth rate in the recent decade.[5] Along with the e-market boom, offline industries have quickly connected with the Internet.

In light of the omissions of literature and several shortcomings of theories and approaches discussed above, this study chooses to apply the methods that analyse institutional change in political economy and the path dependence approach to giving a better description and explanation on how diverse institutions evolve and how do heterogeneous firms in the industrial agglomeration evolve differently with the institutional change. By focusing on the three market institutions which emerged sequentially in China's industrialisation process, we intend to articulate the institution-industrial agglomeration co-evolution process through a case study of a furniture agglomeration in South China. The analytical framework is summarised in Figure 1.

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[4] Source: China E-commerce Report (2019). See: *https://www.asendia.com/resource/china-e-commerce-report-2019*.

[5] Source: Report by eMarketer. See: *https://www.emarketer.com/content/global-ecommerce-2019*.



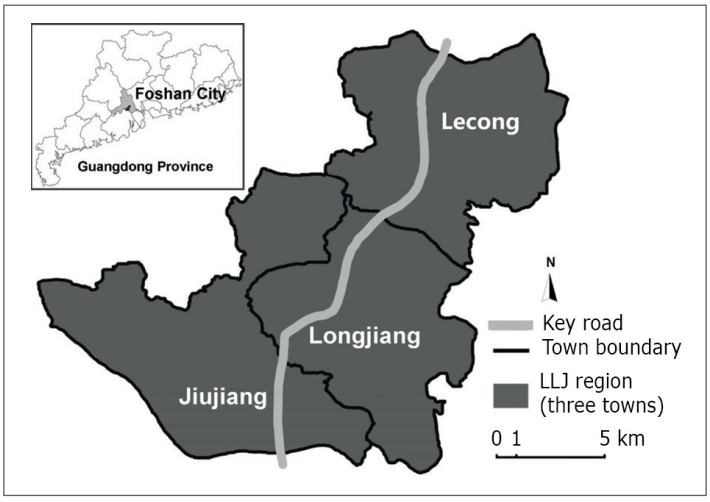
Source: Authors

Figure 1: The framework of analysis

3 Study Case and Methods

3.1 Study Case

Compared with the high-tech industries which emerge in recent decades, traditional labour-intensive industries in China have experienced a full-scale institutional change since the pre-industrial time. Moreover, most of industrial agglomerations in China belong to the labour-intensive industries, and the manufacturing of finished furniture is a typical one. Conclusions drawn from the case can help generalise about the complex co-evolution between spatial agglomerations of the labour-intensive industry and the institutions (at least the three market institutions). Choosing the study case from this industry thus suits the research purpose.



Source: Authors

Figure 2: Location of the Lecong-Longjiang-Jiujiang (LLJ) furniture industrial agglomeration

The study case is located in a region that is comprised of three adjacent towns, namely Lecong, Longjiang and Jiujiang (LLJ) in Foshan City of Guangdong province, South China (Figure 2). This LLJ region is China's one of the four largest furniture production bases (Table 1).

	Lecong	Longjiang	Jiujiang
Area (km^2)	78.0	78.3	94.8
Number of enterprises	1,300 manufacturers 4,100 shop lessees	2,300 manufacturers 3,000 raw-material suppliers and supporting-service providers	700 manufacturers
Employees (year 2019)	70,000	100,000	57,000
Specialised markets	• The global largest market of finished furniture products • The capital of China furniture trade[a]	Markets of raw and auxiliary materials, including the largest timber market in Asia	//
Trade fairs	//	Longjiang International Dragon Furniture Fair	//
Electronic market	• National-level pilot town of e-commerce[b] • Platforms: Alibaba*	• The E-Commerce Capital of Chinese Furniture Industry[c] • Platforms: JD.com,** Alibaba	E-commerce pilot town of Foshan city for traditional industry upgrading

a Conferred by the China National Light Industry Council in 2004.
b Conferred by the Ministry of Industry and Information Technology of the People's Republic of China in 2010.
c Conferred by the China Electronic Commerce Association in 2015.
// Means no typical manifestations.
* Alibaba Group Holding Limited is a Chinese e-commerce company that provides C2C, B2C and B2B sales services via Web portals. On 18 September 2014, Alibaba achieved the biggest US IPO in history. Its retail business surpasses Walmart to be the world's largest as of April 2016 (Source: Alibaba Group's portal, *http://www.alibabagroup.com/en/global/home*).
** Jingdong or JD.com is China's largest online direct sales company which currently holds close to a quarter of the Chinese B2C market. In May of 2014, JD.com was listed on the Nasdaq stock exchange, which marked the largest listing in the year (Source: *http://www.joybuy.com/help/question-7.html*).

Source: Shunde Yearbook (2020); Report on the Development of Shunde Furniture Industry (2014); Nanhai Yearbook (2020)

Table 1: Basic information of the furniture manufacturing and commerce in the LLJ region

3.2 Data and Method

Mixed methods of data collection were used. Secondary data were collected from statistical reports, newspapers and year books. Primary data were collected through a questionnaire

survey of furniture businesses, semi-structured interviews with firms, government, industry associations, institution administrators, and observations conducted in the field during January to June 2017, March to May and November to December 2019. Two supplementary short-term surveys were also conducted after the COVID-19 epidemic lockdown.

First-hand data were mainly collected from 175 face-to-face semi-structured interviews which permits analysis of themes unforeseen in the set-up of research (LONGHURST 2016). Industry associations were approached first, and firms were surveyed with the assistance of associations. Since no complete and up-to-date firm directories could be provided by the local Industry and Commerce Administration Bureaus, a non-probabilistic convenience sampling was employed for the questionnaire survey of firms, which ensured that firms following each of the three market institutions were included. Firms being interviewed were selected based on the questionnaire sample and through a mixed random and purposive sampling (BRYMAN 2012). Administrators of the market institutions and civil servants in government departments were also interviewed. Interviews with the trade fair organiser and the exhibiting firms were arranged after the busy fair events.

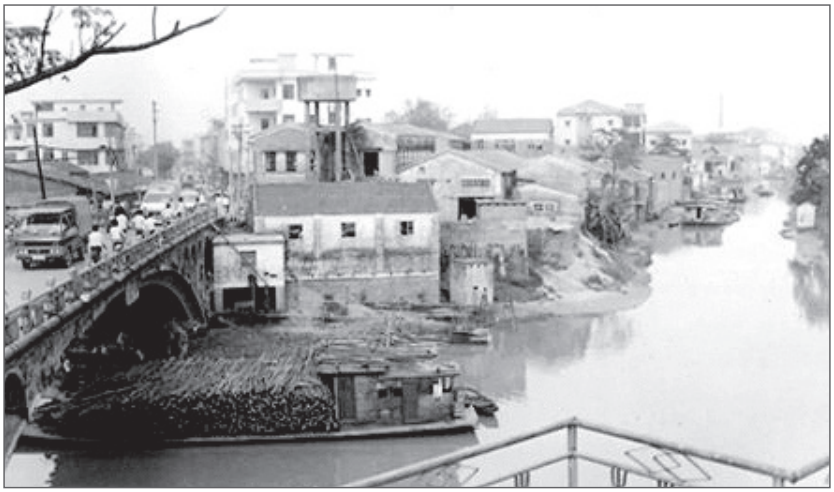
188 firms in total were approached. Only 154 of them finally completed our survey, which resulted in a response rate of 81.9 percent. In the interview sample, the numbers of firms which purely operate shops in the specialised market, exhibit at the fair and sell products on the e-market are 51, 29 and 39 respectively. 11 firms sold both through the specialised market and the trade fair. 17 firms were both fair exhibitors and online retailers. 3 firms did business online and maintained their shops in the specialised market simultaneously. The remaining 4 interviewees were firms following the three market institutions at the same time. The qualitative analysis of the data followed a procedure being widely adopted in human geography – transcription, annotation, classification, and connection (KITCHIN and TATE 2013).

4 Findings

4.1 The Single Market Institution Leading to the Emergence and Growth of the Lecong-Longjiang-Jiujiang Furniture Agglomeration: Specialised Market

The furniture industry in the Lecong-Longjiang-Jiujiang (LLJ) region originated with a specialised market. From early 1980s, the agricultural production in China began to be organised with the family as a unit, breaking with the past communes in Chairman Mao's era. The transformation from food shortage into an abundant supply of agricultural products generated a surplus of labour force in the countryside, which pushed some farmers to start non-agricultural businesses (JEONG 2002; BELLANDI and LOMBARDI 2012). Initially, the *Hukou* (the Household Registration System) restriction and the high threshold on retailing licenses in cities prevented rural residents to sell commodities in urban areas (CHAN 2010). Thus, such a specialised market, which was located in the countryside yet enjoyed the convenient transportation connecting major cities, naturally became a low-cost distribution channel for industrial goods produced in rural areas (interviewee 3, deputy director of Economy & Technology Promotion Bureau, January 2017).

In 1983, privately-owned business was permitted, ending the monopoly of state-owned enterprise and the 'supply and marketing cooperatives' (*Gongxiaoshe* in mandarin) in commodity transaction. For the LLJ case, farmers were free to sell their home-made furniture along the No. 325 national road which connects nearby cities without incurring any legal risk (interviewee 5, furniture association secretary, January 2017). Due to the scarcity of light industry products, it was easy to sell furniture along the No. 325 national road. Shops and factories emerged together along the road. Before 1990 farmers used bamboo, wood and clay to build sheds for trading and manufacturing (Figure 3). This earliest form of specialised market, which developed into the largest global market of finished furniture products later, stretched along the national road for about six kilometres.



Source: Photo was provided by the Lecong government.

Figure 3: Primitive constructions of the specialised market built on the ponds in the Lecong-Longjiang-Jiujiang region in early 1980s

The prosperous "road market" led to a massive capital accumulation for local manufacturers. In the 1990s, the Lecong authority requisitioned 2.4 million m^2 of agricultural land (about 80 percent of the current land area of the specialised market) located adjacent to the national road from different village collectives, converted this land into urban development land for commercial use, and encouraged private establishments to invest in the construction of the new emporiums (interviewee 89, director of Economy & Technology Promotion Bureau, March 2019). A few manufacturers[6)] which had accumulated their fortunes naturally became the investors for the modernisation and upgrading of the specialised market later (Figure 4).

[6)] These firms later abandoned furniture manufacturing and became professional management corporations for the commercial properties.

By the end of the 1990s, all the sheds had been demolished, and the total construction area of the modern specialised market exceeded 2.85 million m^2. In parallel with the market modernisation, increasing areas of farmland (including that being relatively far from the national road in all three towns) were turned into industrial land by local villagers (interviewee 11, manager of a furniture manufacturing firm, January 2017). Approval for new industrial and commercial land ceased after 2010 when the three town governments slashed their approvals for land conversion to preserve the remaining farmland (interviewee 3, deputy director of Economy & Technology Promotion Bureau, January 2017). Increasing numbers of professional merchants undertaking wholesale business in different regions of China emerged and came to the specialised market to purchase goods, and now more than 70 percent of total orders are from furniture manufacturers in other parts of China and foreign countries (interviewee 15, manager of a furniture emporium, January 2017).



Source: Photos provided by the Shunde Huangchao (Property Management) Corporation.

Figure 4: Construction of the first modern furniture emporium in the early 1990s: (a) the commencement ceremony, (b) construction before completion

During the 1990s, the cost of importing western-style modern furniture was much higher than the manufacturing cost of homemade goods. For example, the purchasing price of imported sofas was 8,000 to 12,000 Yuan per set. Yet the cost of producing a similar set was just 3,000 Yuan. At the market price at that time, the profit margin gained from each homemade set was double that achieved by selling the imported goods, or even higher. This gave impetus for local firms to manufacture similar products themselves. They found that the internal structure and workmanship of imported furniture was not very complicated and could be imitated to produce similar products (interviewee 32, manager of a furniture emporium, January 2017). Local firms were eager to gain more advanced and sophisticated manufacturing techniques. Knowledge spillovers in the specialised market filled this gap: A considerable proportion of imported commodities were sold, and thus at this early stage the specialised market played an important role in bringing external knowledge into the local industry.

In the early 2000s, emporium operators of the specialised market invested about 24 million Yuan each year on advertising. From 2006 onwards, commodities of the specialised market were able to export to more than 120 countries. From 2001 to 2009, the total sales value experienced a fivefold increase – from 600.2 million Yuan to 2.9 billion – and

the proportion of export grew from less than 10 percent to 55 percent. As of the end of our survey the number of firms at the LLJ region which followed the specialised market (including those following more than one market institutions) was around 3,320.

The specialised market is a revolutionary institution for the development of modern labour-intensive industrial agglomerations in China because it incubates small and medium-size enterprises (SMEs) which were formerly not capable of establishing their own marketing networks and helps them grow. In sum, before 2009 the expansion and modernisation of the specialised market and the growth of the industrial agglomeration were mutually reinforcing.

4.2 Trade Fair as the First-time Institutional Stretching: The Complementary Layer upon the Specialised Market

The rise of trade fair was driven by the endogenous dynamics. Planning on the trade fair industry is often relegated to a section of tourism planning in China, and urban and regional planning often lacks a clear and detailed exposition of trade fairs. In contrast to the hub trade fairs in the first-tier cities like Shanghai and Guangzhou which receive strong support from the government (Bathelt et al. 2014; Bathelt and Zeng 2014), the development of the for-the-local-supply type of fairs which are located in smaller cities and close to industrial clusters receives the least support from the government and thus highly relies on the private capital. In the 1990s, the primary approach to commodity distribution was wholesale on the specialised market. There were several tiers of wholesalers which earned a major proportion of the total profit along the distribution chain.

Entering the new century, local manufacturers began to realise the important role of brand in increasing their profit margin and were anxious to cooperate with the franchisees which could do the direct retailing in a particular consumer region to gain more profits, and they also wanted to increase their export proportion (interviewee 89, director of Economy & Technology Promotion Bureau, March 2019). Therefore, with enough capital accumulated during the past two decades, hundreds of entrepreneurial firms began to invest on marketing further. In the late 1990s, the Longjiang town government approved the construction scheme for the Qianjin Exhibition Centre, and soon the Longjiang International Dragon Furniture Fair became an influential trade fair for the furniture industry in China (Figure 5b).

Nearly 400 local manufacturers exhibit at the trade fair semi-annually.[7] About 25 percent of exhibitors at each fair event will be replaced by new participants in the following year, and this has occurred iteratively since the year when the Longjiang fair started in 2001 (interviewee 27, chief executive of the Longjiang furniture fair organising company, April 2017). About 15 percent of the exhibiting firms attended the fair only once a year. Thus, it can be estimated that by the end of our survey about 360 local firms continue to exhibit at the fair every year while about 1000 firms which had formerly exhibited at the

[7] The total number of exhibitors at one fair event ranges from 428 to 480. Exhibitors also include firms that exhibit once per year and those quitted in the next year.



Source: Photos provided by the authors

Figure 5: The specialised market at Lecong (a) and the trade fair at Longjiang (b)

fair had ceased to do so. We are particularly interested in whether the behaviours of these adherents or quitters mean the function of the specialised market was replaced or not.

First, most firms which ceased to exhibit at the trade fair (including both the conservative and the ambitious firms) retained their shops in the specialised market throughout. For the conservative ones, the trade fair was more of an event to establish a particular group of loyal customers rather than a sustained transaction platform to attract new buyers. Attending trade fairs regularly is a costly investment for those conservative manufacturers. If the benefit gained at the fair is not large enough, they will give up, merely stick to their pre-existing customers accumulated before, and keep purely relying on the specialised market again (interviewee 93, a cadre of Longjiang town government, March 2019). Therefore, once the long-term cooperative franchisees were gained through several trade fair events, these buyers plus the customers on the specialised market would be sufficient for these firms to earn a respectable profit. As for the ambitious firms which had grown bigger and moved to higher-tier international trade fairs, operating shops in the specialised market in parallel was not regarded as a cost burden.

For those firms which chose to abandon shops in the specialised market and exhibit at the Longjiang fair continuously, their old institution was not replaced as well. There is no considerable overlap between the customers on the specialised market and the Longjiang fair, because the trade fair is primarily oriented toward franchisees and export orders

(interviewee 73, vice president of the Longjiang furniture fair organizing company, June 2017). In addition, each year numerous start-ups chose to enter the specialised market as their first step to accumulate customers. Hence the specialised market has not been affected.

In fact, rather than generating conflicts, the two institutions benefit from each other. On the one hand, the area of the exhibition centre is limited, while the specialised market is much larger to accommodate local manufacturers' shops. When buyers from distant places come to the LLJ region, they know that they will not only view products at the exhibition centre but also see more in the specialised market (interviewee 95, manager of a local manufacturer, March 2019). In this sense, the specialised market increases the attractiveness of the trade fair; in turn, the trade fair also spreads the name of the specialised market.

In sum, the emergence of the trade fair did not lead to the replacement or triggered the conversion of the specialised market. The local market institution system was layered without combination. Moreover, the vitality of the older institution increases due to the high complementarity between the two. A further integration of downstream product distribution of local firms provides the dynamics for the rise of the trade fair

4.3 Second-time Institutional Stretching: Partial Replacement and Conversion of Existing Institutions Caused by the e-Market

Survey evidence from furniture manufacturers reveals that the online domestic B2C market has taken a major market share from the traditional offline specialised market, and the B2B export e-market has moved 20 percent of the business relations established via the trade fair onto the Internet. More specifically, a few firms entered the e-market earlier in the 2000s than other local manufacturers. With the first-mover advantage, the increase in their online sales means that the offline market share of many other firms was encroached upon. In order to survive, most of the late-moving manufacturers started doing contract-manufacturing for the early-movers which control the online distribution channel from 2009. As of the end of our survey, about 2,260 local firms had been involved in the e-commerce, of which about 410 were e-retailing firms while the remaining had become contract manufacturers.

However, replacement is unlikely to be complete as preexisting market institutions possess multidimensional characteristics which represent different functions in product distribution. Firms following the older institutions show different responses to the e-market, which complicates the picture of evolution.

(1) Response of the firms following both the two old institutions to the new e-market layer

Not more than 130 local furniture manufacturers (about 3 %) participate in the Longjiang fair and operate shops in the specialised market in parallel. These firms show high adaptability when facing the impact of the e-market.

First, exporting is still heavily reliant on the trade fair, and the B2B e-market has very limited capability to aggregate the foreign demand and thus can hardly grab the market

share of trade fair. Second, despite facing pressure from the B2C e-market on the domestic distribution, firms following both of the two old institutions are able to differentiate their offline products from the online ones (interviewee 109, manager of a local manufacturer, June 2019). Hence firms following both of the two older institutions are able to maintain their existing market institutions without being influenced by the e-market.

However, this does not mean that preexisting market institutions remain unchanged. These multi-institution followers only account for a very small proportion. In fact, about 80 percent of local firms (SMEs) are not capable of investing in both product distribution markets. For these single-institution following firms, the impacts of the e-market on pre-existing market institutions are much more complicated.

(2) Large-scale replacement of the specialised market's domestic sales

From 2008, the domestic B2C e-market quickly developed into a marketplace of monopolistic competition. Only a small number of local firms in the LLJ agglomeration were able to distribute their products through retail on the e-market, while the majority had not successfully realised such e-retailing (Interviewee 92, furniture association secretary, March 2019). This means that the minority e-retailing firms inevitably encroach upon the market share of most local manufacturers which have failed to enter the e-market. Triggered by the e-market, the evolution trajectories of local manufacturers which operated shops in the specialised market began to diverge.

In the initial stage (years 2008 and 2009), the 3PX online retail platforms *Tmall.com* and *JD.com China* were initially entrepreneurial projects that emulated those of the Netherlands and the United States. The two e-commerce platform companies offered favourable terms to manufacturers: online start-ups could enjoy a large discount on their membership and service fees (interviewee 23, marketing manager of a furniture manufacturer, April 2017). In the first few years, online retail not only reduced the purchasing costs of consumers but also lowered the distribution costs of manufacturers. With the fast increase of online consumers, the e-market grew quickly, and a few early-moving firms were thus attracted to it.

However, after 2010 the duopoly of the e-retailing market in China led to a fierce competition of e-sellers. And e-markets impose a high charge for the top positions of searched key words. In this sense, the 'rent' of e-shops in the virtual world sets an exorbitant investment threshold which prevents many late-moving manufacturers from doing online retail (interviewee 31, manager of a contract manufacturer, April 2017). Early movers have encroached on the offline market share of many other local manufacturers. However, meanwhile their own capacity could not satisfy the online demand. Therefore, many late-moving manufacturers having lost much offline market share began to do contract manufacturing for the early-movers.

More than 1800 local firms in the specialised market were now turned into contract manufacturers (CMs) working for the e-retailing firms. Compared to the trade fair, the specialised market has a much lower export proportion (under 30 %). The diminished domestic market share explains why these CMs, which were formerly independent firms, lack resistance to the impact of the domestic B2C e-market. The majority of CMs struggle

to maintain their shops in the specialised market and retain less than 50 percent of sales through this traditional distribution channel. However, they believe that keeping selling through the specialised market lowers the operational risk: If they quit the specialised market and purely supplied the e-market, their fate would completely depend on the e-retailing firms, because if the e-retailing firms shut down, these CMs would die very soon (interviewee 136, manager of a contract manufacturer, November 2019).

The above results suggest that although the brick-and-mortar specialised market still exists, its function of traditional wholesaling and selling the franchise has been largely replaced by the B2C e-retailing. Nevertheless, this replacement process still reflects the high dependence of most manufacturers on the specialised market.

Different from the above situation, about 25 percent of the firms still do business solely on the specialised market, showing strong resistance to the e-market. These firms primarily focus on several niche markets which are free from the influence of the e-market. For example, for office furniture trading, in which the negotiation process is complicated and the transaction value per order is large, face-to-face transactions at the brick-and-mortar shops are thus necessary. As for the remainder on the specialised market which neither joins the contract manufacturing nor focuses on the niche markets, they in fact operate at a loss and fall into decline.

(3) A small-scale replacement and conversion of the trade fair's function

The impact of the e-market on the exports of exhibiting firms at the Longjiang trade fair is minimal. However, the exhibitors are unavoidably affected by the booming domestic B2C e-market. Informants at the trade fair told that they had experienced a 10 percent to 20 percent decrease in their domestic sales since 2015. However, such decreases did not accrue annually and were less than those decline experienced by firms in the specialised market.

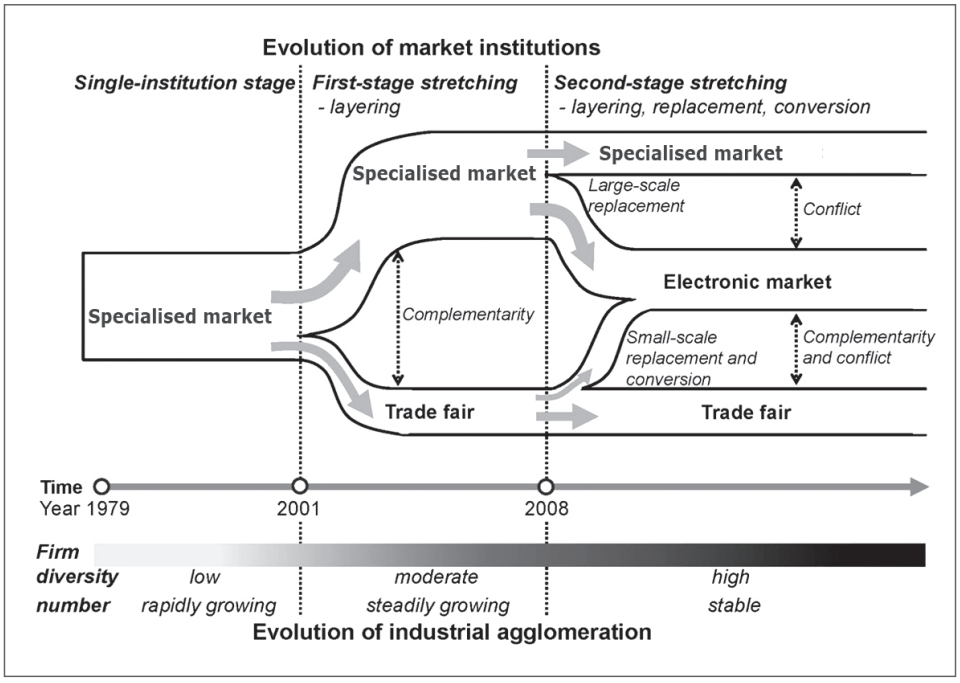
Pure e-retailing firms (PERFs) tend to search contract manufacturers (CMs) through the trade fair and prefer firms exhibiting at the trade fair to those in the specialised market, because the former have a higher level of product design and manufacturing efficiency. Some manufacturers exhibiting at the trade fair (hereinafter referred to as REMs for short) also do direct e-retailing. These REMs also want to identify some potential contract manufacturers (CMs) during the trade fair because sometimes their self-owned plants are not able to manufacture sufficient products due to the seasonal instability of demand (Interviewee 112, furniture association secretary, May 2019).

Hence, at the fairground, there exist three different categories of firms that are willing to establish contract-manufacturing relations:

– the exhibiting firms as single-institution followers, which can become contract manufacturers (CMs) for other firms;
– the pure e-retailing firms (PERFs), which try to persuade certain exhibiting firms to supply online shops;
– and the manufacturers exhibiting at the trade fair (REMs) as two-institution followers, which sometimes need to search CMs to supplement their own production capacity.

Since the proportion of the exhibiting firms' manufacturing capacity being allocated to online product supply does not exceed 50 percent, their business does not depend on the PERFs or the REMs. For these exhibiting firms, contract manufacturing for e-retailing is more of a strategic adjustment rather than a passive reaction. From the news report and the interview with the manager of the Qianjin Exhibition Centre, we learn that since 2014 the fair organiser has set aside a 4000 m^2 *ad hoc* area for the product exhibition of potential contract manufacturers (CMs) and the contract negotiation between all exhibitors and visitors which engage in e-commerce. After 2016 this special zone was cancelled to enable all the exhibitors to get as many orders as possible from a variety of visitors in different channels. Then contract-manufacturing negotiation widely occurs across the fairground and all exhibitors are involved in them (interviewee 27, chief executive of the Longjiang furniture fair organizing company, April 2017). The e-outsourcers and the CMs may re-match with each other via the trade fair every half year.

This makes the fairground into a space where periodic negotiation on e-market-related contract manufacturing occurs. In this sense, a new and constant function has been added to the trade fair, which can be viewed as a partial conversion of this market institution. Based on the above analysis, Figure 6 below summarises the interactions between market institutions and the co-evolution process.

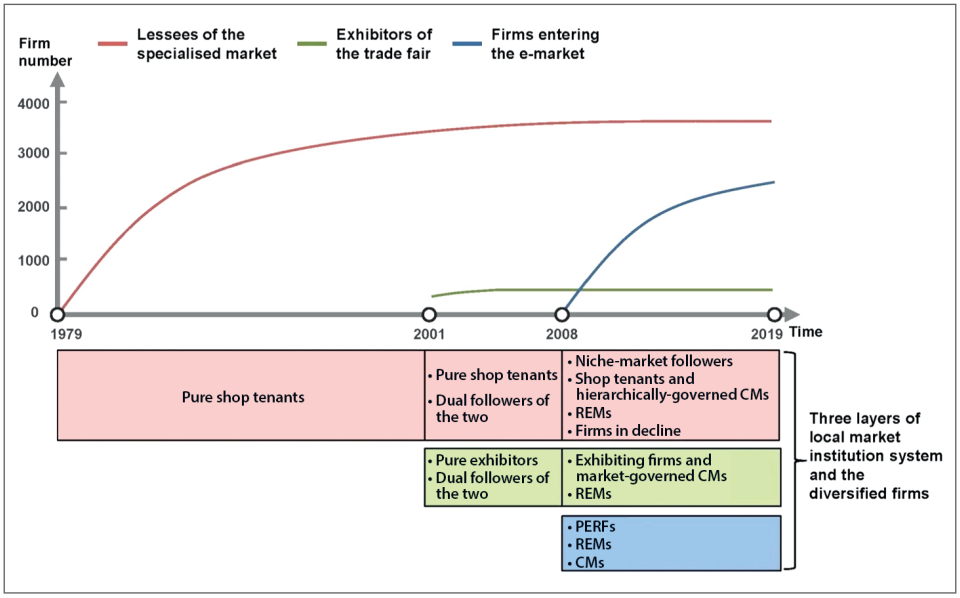


Source: Authors

Figure 6: The co-evolution process of the market institutions and the Lecong-Longjiang-Jiujiang furniture (LLJ) industrial agglomeration

5 Discussion: Evolution of Market Institutions and Firm Diversification

The diagram below (Figure 7) shows how the number of firms following each institution has changed since 1979 and it also shows the specific types of firms involved in each institution layer. After 40 years of development, there are currently seven categories of firms which have developed different market institution portfolios.



CM ... contract manufacturer; PERF ... pure e-retailing firm; REM ... manufacturer exhibiting at a trade fair

Note: As some firms follow two or three market institutions, the total number of each institution's followers in the diagram is larger than the total number of firms in the case industrial agglomeration.

Source: Authors. Own elaboration

Figure 7: The increase and the diversification of local firms along with the layering evolution of marketing institutions

By identifying the specific functions of each market institution in product distribution and their corresponding change, the evolutionary dynamics of market institutions can be further revealed (Table 2).

Result of the first stretching of the local market institution system is simple layering: with the emergence of the trade fair as a new institutional layer, the two institutions coexisted and complemented each other. On the one hand, the major functions of the trade fair – including negotiation on the franchise and export – were highly complementary to the specialised market. On the other, the specialised market has strengthened the brand image of the LLJ region and thus increased the attractiveness of trade fair.

First-time stretching of local institution system				
Functions of the market institutions		**Institutional change**	**Types from firms**	**Institutional path**
Specialised market	• Wholesale and little franchise selling • Small-proportion export	• The older being uninfluenced • Complementary relationship	Emporium tenants	Path dependence
Trade fair	• Franchising • More export		Fair exhibiting firms	New path creation
Second-time stretching of local institution system				
Functions of the market institutions		**Institutional change**	**Types from firms**	**Institutional path**
Specialised market	Domestic distribution	Large-scale replacement, reject contract manufacturing	Declining emporium tenants	Path dependence
		Uninfluenced	Emporium tenants specialising in niche markets	
		Large-scale replacement, accept contract manufacturing	Emporium tenants and CMs in hierarchical relations	Low path dependence and new path creation
		Large-scale replacement, turn to online retailing	REMs	
	Brand showcase and intensification	Uninfluenced		
Trade fair	Export	No replacement	All exhibiting firms	High path dependence and new path creation
	Domestic distribution	Small-degree replacement, accept contract manufacturing	Exhibiting firms and CMs in market relations	
		Small-degree replacement, turn to online retailing	REMs	
	Contract manufacturing negotation	New conversion	All exhibiting firms	New path creation
Electronic market	B2C domestic retailing B2B export	New layer	PERFs REMs CMs	New path creation

CM ... contract manufacturer; PERF ... pure e-retailing firm; REM ... manufacturer exhibiting at a trade fair

Source: Authors. Own elaboration

Table 2: Specific change in the institutional functions among different groups of firms

With the emergence of the third institution – the e-market – although there is a layering of institutions bearing on the industrial agglomeration, a degree of replacement and conversion of old institutions has occurred. The domestic distribution function of both the specialised market and the trade fair has been replaced to some extent by the e-market, while their functions on branding and exporting are not affected. Moreover, the trade fair has gained a new function as a platform where exhibiting firms can negotiate the outsourcing-and-contract-manufacturing for the online supply. The overall evolution shows the dependence of firms on the older market institutions.

Path dependence usually means the outcomes of a system evolve as a consequence of its own history (Arthur 1989; David 1994). Instead of being merely past dependent, it is a probabilistic and contingent process which shapes the possible future development (Belussi and Sedita 2009). Path dependence can be caused by both negative and positive feedback. The negative feedback often comes from the sunk costs of local assets (Notteboom et al. 2013). In the case of the Lecong, Longjiang and Jiujiang (LLJ) region of Guangdong Province, a major reason leading to the path dependence of firms on the specialised market is their big investment on it (e.g. shop decoration, high rent). The positive feedback derives from a variety of self-reinforcing or self-reproducing effects (often caused by the dynamic increasing returns or learning effects) (Pierson 2000; Martin 2010). Due to the brand showcase function of the specialised market, it develops a complementary relationship with the trade fair.

This mutually-reinforcing effect partially explains why the specialised market still remains after the e-market rises. Moreover, the dependence of e-retailers on the contract manufacturers is in essence the dependence on the existing tacit knowledge of manufacturing. Otherwise, all firms would evolve into e-OBMs with in-house manufacturing only. Similarly, the path dependence of exhibiting firms on the trade fair, to a large extent, results from firms' learning brought by the knowledge externalities. In addition, the large export market share of trade fair which continuously brings increasing returns also explains why many local manufacturers still remain as exhibitors.

Despite that more emphasis has been placed on change rather than merely on continuity in the revised version of path dependence model (Martin 2010), certain phenomena in the process of regional industrial evolution still cannot be simply explained by the model. Economic agents may give a flexible interpretation of the institutions (this flexibility is termed "plasticity" by some scholars) (Strambach 2010; Notteboom et al. 2013). Such flexibility means a state which can develop along the old paths or create new ones. As the LLJ case shows, most firms exhibiting at the trade fair are able to adjust both the proportion of export and domestic sales and the proportion of offline and online product distribution flexibly.

6 Conclusion

This paper has sought to uncover the evolution process of market institutions and a typical industrial agglomeration concerned. Overall, the evolution of the market insti-

tutions of the LLJ industrial agglomeration is a path-dependent layering process, with partial replacement and conversion of older institutions. Local firms evolve from single-institution followers into seven groups with different market institution portfolios. The old institution (*specialised market*) which contributed to the genesis of the study case, although its function was largely replaced by the new institution, has not become exhausted. Meanwhile, the degree of conversion of the two older institutions – the *specialised market* and the *trade fair* – is low. The co-existence of old and new institutions suggests complex complementary and non-complementary facets of inter-institution relationships.

The results of institution-driven evolution of industrial agglomeration recounted here may be a supplement to the existing theories of industrial agglomeration and evolutionary economics. First, behaviours of economic agents (firms) and institutions are both heterogeneous and reflexive which belies the simple notions of a selection environment, and the selection notion in 'generalised Darwinism' (HODGSON and KNUDSEN 2006; ESSLETZBICHLER and RIGBY 2010) thus may be insufficient to explain the co-evolution of institutions and industrial agglomerations. Second, though to a large extent for many local firms the older market institutions have shown continuity which echo the dynamic increasing returns, learning and reinforcing effects in the path dependence model, the flexible state of a few firms which can jump nimbly between the old and a new path suggests that there are still phenomena that cannot be fully explained by a single evolution model. Third, our examination does not discount neoclassical 'rational choice' explanations of adjustments by firms to institutional change based on the production and transaction cost considerations (EGGERTSSON 1990; NORTH 1990; WILLIAMSON 1985) which have been extended to an understanding of processes of industrial agglomeration (SCOTT 1986; PHELPS 1992). Each institution layer has a functional significance to firms. Firms evaluate which combinations of market functions are beneficial and are within their cost budget while retaining a certain degree of dependence on pre-existing institutions.

The study case in west Pearl River Delta suggests an endogenous industrial evolution process in China which seems to be downplayed by existing literature. In China, industrial agglomerations which develop based on the foreign direct investment (FDI) and the international processing trade have attracted much academic attention (YANG and LIAO 2010; GE 2009). However, for many Chinese traditional industrial agglomerations which originate completely from the domestic market demand and expand with foreign trade being gradually integrated into it, this layering evolution driven by the three market institutions may be another general pattern.

The complicated interactions between market institutions which underlie this industrial development remind that more complex evolutionary paths of industrial agglomerations influenced by many other different types of institutions at both the society and community levels need to be further unpacked. Differing capabilities of firms determine that not all firms will follow new institutions. The heterogeneity of economic agents complicates the firm-level responses to institutional evolution, which, however, is often downplayed in the industrial agglomeration literature, also reminds that more attention needs to be paid to the micro-level dynamics in future research.

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Tourismus

Tourism

The Use of Animals for Urban Tourism: Horse Sports and Equestrian Events in St. Moritz, Switzerland

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Summary

Animals contribute to tourism, but tourism-related research focuses primarily on free-ranging or captive wildlife tourism. St. Moritz in Switzerland is a premium destination where horses have been used for tourism for more than 160 years, for instance in White Turf racing and Snow Polo. Therefore, the aim of this article is to analyse how

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horses contribute to the tourism event economy of St. Moritz and how locals and tourists perceive equestrian event tourism.

To address these questions, a survey with 352 questionnaires and ten expert interviews were conducted. A total of 74.7 percent of the inhabitants surveyed found the equestrian events positive, with the main reasons they cited including the traditional nature of the events locally (equestrian events have been held regularly since 1906), the associated entertainment and marketing for St. Moritz, the horses themselves as animals and related equestrian sports. The equestrian event tourism is responsible for many primary and secondary effects that are important for the region, resulting in an added value of at least CHF 47,000,000 annually, generated by at least 60,000 visitors. The effort expended, including the preparation of infrastructure for the horse races and polo on the frozen lake in winter, is internationally unique.

This equestrian tourism demonstrates how forms of animal-based tourism can contribute significantly to the economy while ensuring international recognition derived from the annually held events that contrast clearly with other established forms of animal-based tourism like zoos or safaris. This demonstrates that successful animal-based tourism can be achieved not only with unique wildlife species in their natural habitats, but with non-unique domesticated species.

Keywords: Animal-based tourism, animal geographies, more-than-human geographies, equestrian sports events, frozen lake, White Turf, St. Moritz, Switzerland.

Zusammenfassung

DER EINSATZ VON TIEREN IM STÄDTISCHEN TOURISMUS: REITSPORT UND REITVERANSTALTUNGEN IN ST. MORITZ, SCHWEIZ

Tiere sind ein signifikanter Bestandteil des Tourismus, jedoch konzentriert sich die Forschung diesbezüglich primär auf freilebende oder in Gefangenschaft lebende Wildtiere. Eine Destination, die seit mehr als 160 Jahren Pferde für touristische Zwecke nutzt, ist St. Moritz in der Schweiz (zum Beispiel mit den Events White Turf und Snow Polo). Das Ziel dieses Artikels ist es, zu analysieren, wie Pferde zur Tourismuswirtschaft von St. Moritz beitragen und wie Einheimische und Touristen dies wahrnehmen.

Zur Beantwortung dieser Fragen wurden 352 quantitative Umfragen und 10 qualitative Experteninterviews durchgeführt. 74,7 Prozent der befragten Einwohner von St. Moritz / dem Engadin bewerteten die Pferdesportevents positiv; die Hauptgründe hierfür waren, dass die Veranstaltungen Teil der lokalen Tradition sind (seit 1906 finden Pferdesportevents regelmäßig statt), weiters der gebotene Unterhaltungswert und die damit einhergehende Werbung für St. Moritz sowie das Pferd als Tier selbst und der damit verbundene Reitsport. Die Pferdesportevents sind für viele primäre und sekundäre Effekte in der Region verantwortlich, die jedes Jahr eine Wertschöpfung von mindestens 47 Millionen Schweizer Franken durch mindestens 60,000 Besucher generieren. Dazu gehören der Aufbau einer außergewöhnlichen Infrastruktur auf dem gefrorenen St. Moritzersee für die international einmaligen Pferderennen sowie Polo auf Eis und Schnee im Winter.

Die Pferdesportevents in St. Moritz haben gezeigt, wie tierbasierte Tourismusformen durch jährlich stattfindende Veranstaltungen im Kontrast zu anderen etablierten Formen wie Zoos oder Safaris erheblich zur Wirtschaft beitragen und gleichzeitig zu internationaler Wahrnehmung führen. Dies zeigt, dass erfolgreicher tierbasierter Tourismus nicht nur mit einzigartigen Wildtierarten in ihren natürlichen Lebensräumen möglich ist, sondern auch mit domestizierten Arten erreicht werden kann.

Schlagwörter: Tierbasierter Tourismus, Tier-Geographie, nicht-menschbezogene Geographie, Pferdesportevents, gefrorener See, White Turf, St. Moritz, Schweiz.

1 Introduction

Animals in Tourism

Tourism is an internationally important economic sector, contributing about 10 percent to global GDP and creating every tenth job worldwide, which can be an important economic driver for rural areas (UN Environment Programme, n.d.). However, not all the actors involved are human, as seen in animal-based tourism, which can be highly significant for destinations with species suitable for tourism (e.g. de Vasconcellos Pegas 2015; Raasakka and Ojuva 2018). As an attraction or as labourers, animals contribute particularly to the economy of rural areas, moreover, they function as marketing symbols and can create place identity (de Vasconcellos Pegas 2015, pp. 240f, 247; García-Rosell and Äijälä 2018, p. 12; Markwell 2015a, pp. 3, 20; Raasakka and Ojuva 2018, p. 8; Wearing and Jobberns 2015, p. 78).

Animals are important for tourism and thus GDP, which is made evident by captive forms of wildlife tourism: about 2,600,000 animals in over 10,000 zoos and aquariums annually attract over 700,000,000 visitors worldwide (Scollen and Mason 2024; Speiran and Hovorka 2024). Wildlife tourism (captive and free-ranging forms) makes up an estimated share of about 20 percent of all international tourism, with annual trips growing by 10 percent per year (Mkono and Hughes 2025; Speiran and Hovorka 2024). Certain animal species are physiologically best suited to certain habitats, allowing destinations in these habitats to profit directly from the related tourism, as illustrated by the example of Lapland, where 15 percent of all tourism businesses offer animal-based forms of tourism (like sledge-rides with dogs or reindeers) and 68 percent of tourists consider animal-based activities to be an important reason for visiting (García-Rosell and Äijälä 2018, pp. 11f).

Research on animal-based tourism focuses mostly on free-ranging or captive wildlife tourism rather than on domesticated animals, which are not perceived as equally exotic or authentic (cf. Fennell 2015; Jęczmyk et al. 2021). While research on (free-ranging) wildlife tourism is relevant for the natural habitats of these species and surrounding destinations (like national parks), animal-based tourism with domesticated species can be implemented in many more destinations and may contribute substantially to the economy. One destination that has implemented such animal-based tourism in the form of equestrian events is St. Moritz, which lies in a remote alpine area of Switzerland.

In recent years, debates on more-than-human and human-animal geographies have emerged with a broad range of research foci, including wildlife (conservation) conflicts (for instance between humans and wolves or boars) and related territorial tensions between animals and humans; varied theoretical approaches have been applied to explore the role of animals as actors in space and in networks (including their related agency) (cf. Fleischmann et al. 2024; Pütz 2017; Steiner et al. 2022; Schröder 2022). Animal-based tourism can be regarded as a sub-category of these debates. This article focuses on horse-based events as a business branch, including horses and related sports as attractions.

Against this background, the aim of this paper is to evaluate the use of horses for tourism and their importance for animal-based events that create income in St. Moritz, Switzerland. The main research questions are: How does equestrian event tourism contribute to the economy of St. Moritz and how is equestrian event tourism in St. Moritz perceived by tourists and locals?

In the following, the use of animals for tourism is contextualised and then the more specific role of horses in this sector is discussed. The case study of St. Moritz is presented, summarising first the historical importance of horses for this destination, before turning to a situational analysis of the current situation, combined with key information on equestrian tourism in St. Moritz. After the research methods are explained, the results are summarised and discussed with regards to the literature. The article closes with a conclusion and suggestions for further research with consideration of the limitations of the methods and findings.

Animal-based Tourism

Many different forms of animal-based tourism exist, like zoos, animal parks and shows, wildlife-, safari- and hunting tourism, animal cafés, animal races (greyhound or horse), swimming with animals (dolphins) or whale watching, carriage or sledge rides (horses or dogs) and agri-tourism (pet zoos) (Giampiccoli et al. 2020; Jęczmyk et al. 2021; von Essen et al. 2020).

These forms can be categorised into four settings: fully natural (wilderness), semi-natural (national parks), semi-contrived (zoos) and fully contrived (circus) (Giampiccoli et al. 2020, pp. 3f; Rickly and Kline 2021, pp. 8f). The modes of interaction between tourists and animals include direct involvement (e.g. an "employed" donkey carrying tourists up the steps on Santorini) and indirect involvement (e.g. horses carrying supplies to isolated tourist camp sites), and similarly can be non-consumptive (whale watching), low-consumptive (zoos) or consumptive (hunting, fishing tourism) (cf. Curtin 2013; Dashper 2021; Giampiccoli et al. 2020; Guo 2021; Kline et al. 2021; Tully and Carr 2021). The non-consumptive forms are considered to have a smaller impact in terms of sustainability and wildlife conservation (Tan 2022, p. 212). Impacts of consumptive forms can include a loss of endangered fauna, but non-consumptive forms can also have undesirable effects like animal abuse or non-intended fatalities (Jęczmyk et al. 2021; Legg et al. 2022; von Essen et al. 2020). In all settings and modes, factors influencing the experience of (wildlife) tourists can be authenticity, excitement generated by an experience, uniqueness, duration, species popularity and whether animals are endangered (Mutanga et al. 2017, p. 3).

Some animals are clearly more favourable than others for economic or tourism use, as different species have different (aesthetic) charisma and attractiveness (e.g. horses vs. snakes) and are of varying appeal to tourists, as has been addressed by the literature (cf. de Vasconcellos Pegas 2015; Fleischmann et al. 2024; Giampiccoli et al. 2020; Lorimer 2007; Markwell 2015a; Markwell 2015b; Mkono 2015; Skibins 2015; Wearing and Jobberns 2015; Wiener 2015). Large, rare, exotic, charismatic or "flagship" species (e.g. bald eagle and bison for the USA, moose for Sweden, panda for China, elephant for Thailand, kangaroo and emu for Australia or the African "Big Five", i.e., lion, leopard, rhinoceros, elephant and Cape buffalo) are favourable for animal-based tourism and often a primary motivation for a trip (Curtin 2013; de Vasconcellos Pegas 2015; Pütz and Schlottmann 2020; Skibins 2015).

While animal species can enhance the tourism potential of a destination, as is the case with feral rabbits on Ōkunoshima Island (the number of tourists increased by more than 4,000 percent from 2013 to 2015), they can also decrease the tourism potential of a destination (for instance through aggressive street dogs, mosquitos, rats in gastronomy or sharks at bathing destinations) (cf. Chen 2024, pp. 76–78; Markwell 2015a, pp. 8, 15f). In both scenarios, officials can support or counter the effects, for example by making certain species a mascot for destinations, e.g. otters in Singapore, or by removing unwanted animals before major tourist events, e.g. street dogs in Bangkok or rats in Paris before the Olympics 2024 (BBC News 2003; Oli 2024; Tan 2022). A species that has long been widely used for tourism is the horse. Equestrian tourism has developed in many destinations while related research has also been conducted examining tourism based on this species.

Horses for Animal-based Tourism

After the horse lost its function for transportation, what remained were its role in specialised work (like logging horses, police horses) and to a greater extent in sports, recreation and tourism (e.g. rodeo) (Danby and Grajfoner 2022; Rezapouraghdam et al. 2025). Prominent examples of equestrian tourism are horse races (events), which can attract many tens of thousands of spectators, in some cases even exceeding 150,000 visitors (e.g. Kentucky Derby, Royal Ascot) (cf. Chance and Reynolds 2019; Marinitsch and Sischka 2007).

Equestrian tourism is defined as *"all equestrian activities undertaken by tourists outside their normal place of residence, i.e. training courses, improvement courses and other aspects or diverse types of vacation principally revolving around the horse"* (International Federation of Equestrian Tourism 2012, as cited in Cernaianu and Sobry 2019, p. 4). This includes activities in which the horse is the main focus of interest (e.g. sporting events) (ibid., p. 4). The literature identifies several elements necessary for the development of equestrian tourism: a real equine sector, a structured tourism sector and an environmental policy, all of which are coordinated to work together (Cernaianu and Sobry 2019, p. 14).

Research indicates that equestrian tourists are mainly motivated by entertainment (and therefore the quality of the events), the aesthetics of horses, group affiliations, family and

eustress, while attention has also been drawn to the importance of complementary activities (e.g. gastronomy, museums, sports) and the quality of accommodation for increasing the likelihood of overnight stays (Daniels and Norman 2005; Gallardo and Rojas 2025; Pavić et al. 2019). This indicates that offers and services need to meet expectations, but also that the animal itself is a very important attraction and a main actor, partly due to its historical importance, aesthetics, beauty and charisma (Dashper 2020; Sutherland 2021). Further, social components of equestrian tourism are significant, as can be seen at Royal Ascot or the Kentucky Derby (Daniels and Norman 2005, pp. 208f).

Equestrian tourism can in some cases result in very large business clusters due to the variety of services related to equestrian sports and tourism, like breeding, auctioning, training, specialised veterinary services and racing events. One example is the town of Newmarket (UK) with more than 340,000 annual visitors and a total of 8,500 direct and indirect jobs (District Council Forest Heath 2015, p. 3). In rural areas, equestrian services can be a driver for tourism, as in Iceland where an appreciable percentage of tourists (14.2 percent of foreign tourists in summer 2014) ride horses and small businesses work together in clusters (Dashper 2020; Mhlauli and Ezeuduji 2022; Sigurðardóttir and Helgadóttir 2015; Sigurðardóttir and Steinthorsson 2018). Equestrian tourism is far from a small elite market niche (Bambi et al. 2023; Rezapouraghdam et al. 2025). Horses can be part of the image and branding strategy of destinations as well as a unique selling point and equestrian tourism can be a lifestyle business (see Adelman 2020; Helgadóttir and Sigurðardóttir 2020; Pütz et al. 2022; Rezapouraghdam et al. 2025).

Research on equestrian tourism is quite limited, with some exceptions for horseback riding as a form of sustainable (eco-)tourism and a development model for rural areas, but there has been little research to date on equestrian event tourism, especially luxury equestrian event tourism (cf. Rezapouraghdam et al. 2025, pp. 473–475). Although studies on the types, functions and effects of event tourism exist, interdisciplinary assessments of event tourism in general are not sufficiently developed (Nilufar 2025).

2 Case Study St. Moritz, Switzerland

The premium alpine tourism destination of St. Moritz in Switzerland has a deeply rooted tradition with horses, which ensured tourism even before the "birth" of winter tourism in the mid-1860s (Quin 2023 p. 138). One important reason for its development as a tourist destination lies in its unique geographic conditions, as the town is located 1,800 m above mean sea level and next to a lake that is 1.6 km long, which ensures low temperatures and large amounts of snow and ice in winter, as the nearby mountains mostly exceed 3,000 metres and are most suitable for winter sports (Kraas and Spohner 2023, pp. 45f).

Horses have been used in St. Moritz for tourism – sledge rides through the snow – and sporting purposes since the establishment of tourism. In 1899, British soldiers created a polo field in St. Moritz as one of the first in continental Europe (Evviva Polo St. Moritz AG n.d.; Lütscher 2014, p. 205). Horse racing was introduced shortly afterwards. Hoteliers together with a carriage company owner and officials, arguably influenced or inspired by British tourists or soldiers, introduced horse races on the frozen lake of St. Moritz in 1907;

these races have since been held annually and since 1994 have been known as "White Turf" (Conrad 2021, p. 9; Jegen et al. 2007; Lütscher 2014).

Not only was the idea of a horse race on ice and snow revolutionary, the race modes themselves were innovative, for example the unmounted and untethered Skijöring – i.e., a race where a skier is pulled behind a horse – which was the first of its kind (Delaquis 1980; Lütscher 2014). The unique races led to the involvement of royals (e.g. Austria's archduke Ferdinand) and catered for both the premium and standard segments (Delaquis 1980, pp. 17, 42; Lütscher 2014). With growing numbers of spectators, additional trains were organised to reach St. Moritz for this annual event (Delaquis 1980; Lütscher 2014). In 1959, the "Winter Concours Hippique", a show jumping competition, was introduced and is now called the "St. Moritz Concours Hippique, n.d.)." (Engadiner Post 1959; Schiess 2019; St. Moritz Concours Hippique, n.d.). In 1985, "Snow Polo" was established as the only polo tournament on ice and snow worldwide, held like the horse races on the frozen St. Moritz Lake (Evviva Polo St. Moritz AG n.d.; Lütscher 2014). The introduction of the smaller (and therefore less significant) summer events followed with the "Summer Concours Hippique" in 1996 and the "Summer Polo Cup" in 2011 (Engadiner Post 1998, p. 9; Engadiner Post 2011, p. 10).

Nowadays, the winter events White Turf and Snow Polo attract the largest numbers of visitors (combined, 61,000 visitors in 2026) to St. Moritz, together with the "Audi FIS Ski World Cup" (14,000 visitors in 2025) (ASESE n.d.; Evviva Polo St. Moritz AG 2026; Gemeinde St. Moritz 2022, p. 102; Rennverein St. Moritz 2026). White Turf and Snow Polo take place on the frozen lake in winter, together with other non-equestrian events. All events on the lake share temporary infrastructure, e.g. in the form of VIP tents, food booths and sanitary facilities, which need to be built on the frozen lake every year (Jegen et al. 2007). Additionally, permanent facilities like the stables are required in close proximity.

The infrastructure on the lake results in a temporary "village" consisting of 75 (partially heated) tents, which is built under a tight time schedule dictated by the thickness of the ice and the date of the first events (see: Conrad 2021; Jegen et al. 2007). The racecourse and the event area cover a combined surface of 130,000 m² (Jegen et al. 2007, p. 40; Oerlemans and Keller 2023, p. 1085). The annual construction costs of White Turf alone are in range of CHF 1,100,000 (2024) and if mechanical (not artificial) snow is required, the costs of racecourse preparation can increase by an additional CHF 70,000 (2002) (cf. Jegen et al. 2007; Rennverein St. Moritz 2023; Rennverein St. Moritz 2025a, p. 15). The ice and the conditions of the track are measured and monitored throughout the events to ensure the safety of horses and riders (Oerlemans and Keller 2023). The prize for the main race is CHF 100,000 (2024), making it the largest of the country (Jegen et al. 2007; Rennverein St. Moritz 2024b).

Many primary and secondary effects are generated by equestrian tourism. Primary tourism effects refer to direct tourism expenditures, including hotels, restaurants and flights, while secondary effects refer to indirect expenditures, including retailers or construction and infrastructure (Koutoulas 2024; Miočić and Čavlek 2024). In St. Moritz, first and foremost, the hotel businesses benefit, but also gastronomy, other connected events, the operators of sport infrastructure and sport equipment businesses, stores – especially the many

stores offering luxury brands, museums, construction companies – including the annual temporary construction of infrastructure on the lake, arts and crafts (like ice sculptures for events and gastronomy) and, of course, the event sponsors (Jegen et al. 2007, pp. 84–87).

It is estimated that the horse races alone contribute to the economy of the region with about CHF 25,000,000 (2024) and 35,000 visitors (2026) annually, while most annual visitors (up to 150,000) stay in St. Moritz during the winter equestrian events (cf. Gemeinde St. Moritz 2023, p. 103; Kraas and Spohner 2023, p. 45; Rennverein St. Moritz 2024a; Rennverein St. Moritz 2026). These visitors spend CHF 652 (1995) per day and stay an average of six days, which is twice as long (2022) as tourists spend in St. Moritz through the year as a whole (Gemeinde St. Moritz 2022, p. 96; Jegen et al. 2007, pp. 86f). Snow Polo attracts about 26,000 visitors annually (Evviva Polo St. Moritz AG n.d.; Evviva Polo St. Moritz AG 2026). Clearly St. Moritz has remained closely involved in and has profited from equestrian events ever since they were introduced by entrepreneurial hoteliers for British polo-playing tourists in 1899, 126 years ago.

The equestrian events of St. Moritz are an internationally unique selling point, as there is now no other location worldwide where horse races or polo are held on ice and snow since Arosa, about 100 km away, abandoned a 100-year-old tradition of races on ice and snow in 2017 as the ice on the lake no longer froze sufficiently (Bosshard 2017; Davoser Zeitung 2015; GRHeute 2018; Kavallo 2019; Lütscher 2014). Whether St. Moritz Lake will continue to freeze annually to the required degree and a sufficient amount of snow will be available to prepare the racetrack and polo field is an open question – forecasts suggest that by 2060 the day of freezing-over will have shifted by about 11 days (Kraas and Spohner 2023, p. 50; Oerlemans and Keller 2023, p. 1089).

3 Materials and Methods

A mixed-methods approach was chosen for this research project, including quantitative anonymous surveys of residents, tourists, households and shops as well as expert interviews. The quantitative surveys were chosen to analyse the perceptions of locals and tourists. However, as data regarding primary and secondary tourism effects cannot be obtained well using this method, expert interviews, a common method in more-than-human geographies, were conducted to provide a more complete understanding of the actors involved and their motives in this equestrian tourism destination (cf. Mariani and Baggio 2020; Mason et al. 2021; Steiner et al. 2022, pp. 23f).

As equestrian events in St. Moritz take place in July and August for the Summer Polo Cup and the Concours Hippique, and in January and February for the Horse Snow Cross Week, Snow Polo and White Turf, the fieldwork was conducted in July and August 2023 and January and February 2024. The quantitative surveys were voluntary and anonymous and were distributed in person and online in the form of flyers in German and English with QR codes leading to online surveys explaining the research topic and stating that the Institute of Geography at the University of Cologne was conducting them.

Whenever potential participants were met on the street, comprehensive information about the purpose of the research and the use of personal data was provided and all their ques-

tions were answered. Participants could voluntarily scan the QR-Code, fill out the surveys at will and exit at any time. To take part in the surveys, participants needed to confirm their submission by clicking a "send" button at the end; incomplete surveys without "sent"-status could not be received by the researchers, as only complete "sent" surveys were saved by the system. The final sending of the survey was rated as clear informed (active) consent by the participants to join the research study. Only adults could participate.

The QR-code flyers were handed out in person to pedestrians throughout St. Moritz (residents and tourists) and to almost every store owner (in the winter season); they were displayed at multiple sites during the events, at multiple information centres and on public notice and billboards in St. Moritz; they were delivered to the mailboxes of almost every household in St. Moritz and were distributed to the town administration and further afield in digital form by the administrative e-mail distribution system. In the summer, 1,500 flyers were distributed and 111 surveys were filled out (7.4 percent response rate), during winter 3,440 flyers were distributed and 241 were filled out (7.0 percent response rate), resulting in a total of 352 responses.

The surveys employed only non-critical questions with no coercion, deception or physical involvement, had no risks for the participants and were unlikely to trigger strong emotions or discomfort among them. The survey questions were partially derived from the literature in terms of motivations of equestrian tourists and the reasons for positive perceptions (entertainment and preferences for horses as animals, partly due to aesthetics, and social contacts) and aimed at understanding, first, the perception of the events by tourists and locals (positive perceptions enabling the maintenance of a social license are important for long-established events), second, the reasons why people perceive the events differently and, third, whether people profit from the events thanks to secondary effects (Blanco et al. 2023; Daniels and Norman 2005; Dashper 2020; Gallardo and Rojas 2025; Pavić et al. 2019).

The results of the summer and winter surveys were combined for analysis, which involved basic statistical methods such as the evaluation of percentages. No ethical approval was required for the surveys based on the DFG (German Research Foundation) guidelines due to the methods used and the results generated by this research (cf. Deutsche Forschungsgemeinschaft 2023). While 50.0 percent of the participants were male, 49.4 percent were female and 0.6 percent were diverse. The 18- to 29-year-olds represented 12.2 percent of all respondents, 30- to 39-year-olds 14.2 percent, 40- to 49-year-olds 17.3 percent, 50- to 59-year-olds 24.2 percent, 60- to 69-year-olds 17.9 percent, 70- to 79-year-olds 12.2 percent and the 80+ year-olds 2.0 percent. Inhabitants of St. Moritz and the Engadin accounted for 56.3 percent of all respondents, tourists for 43.7 percent. People living in Switzerland represented 85.8 percent of all respondents, people living in Germany 8.2 percent and people living in Italy 1.7 percent.

One online and nine face-to-face interviews were conducted with experts responsible for the events: an official of Snow Polo (Interview 07), an official of White Turf (Interview 10), a participant in the sports events (Interview 09), a former host for horses participating in the sports events (Interview 08), different departments of the municipality of St. Moritz (official of the department for tourist infrastructure: Interview 03, a municipal official: Interview 04), an expert for the annual construction of the lake's infrastructure (Interview

06), an expert from a carriage company (Interview 01) and sponsors of the events (Interviews 02 and 05), thus covering different perspectives by different occupational groups.

The interviews were guided expert interviews held in German with questions derived to some extent from the literature (Helgadóttir and Sigurðardóttir 2020; Koutoulas 2024; Miočić and Čavlek 2024; Pütz et al. 2022; Rezapouraghdam et al. 2025) and related to the importance of the equestrian events for St. Moritz (unique selling point and connected primary and secondary effects), their identity function (image and branding for St. Moritz), the function of the equestrian events as folk festivals, event innovations, uniqueness of the sports, motivations behind creating, supporting and participating in these events and the future of equestrian sports in St. Moritz.

The shortest interview was 14 minutes, the longest lasted 89 minutes. The average length of the interviews was 43 minutes, the median duration was 35.5 minutes. The interviews were recorded and manually transcribed in German. The codes were partially derived deductively from the aforementioned literature, but as literature on equestrian tourism is quite limited, codes were also inductively developed from the expert interviews to capture information about financial profits and secondary effects, the situation during the events, sponsorship, future prognoses and adaption to climate change, image and media, infrastructure, uniqueness of equestrian tourism and services for luxury tourism (Flick 2023; Mayring and Fenzl 2022). For this article, the interview quotes were translated as closely as possible from German to English. Additionally, field observation and photo documentation of the events were undertaken and further information derived from a visit to a carriage museum.

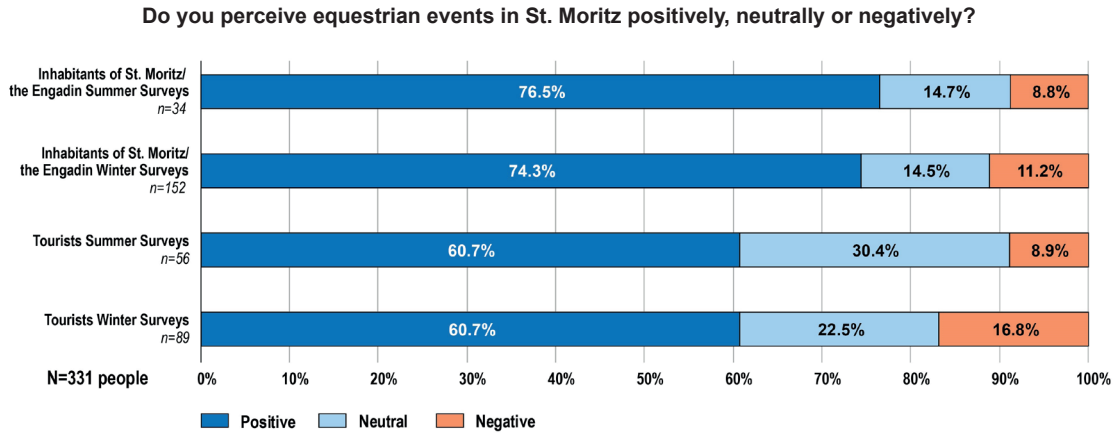
The significance of the surveys is limited to a certain extent, as the proportion of people who own a horse (11.9 percent) or practice equestrian sports (18.2 percent) is higher in our surveys than for the Swiss population in general (0.5 percent equine ownership rate; 0.7 percent people who practice equestrian sports) (cf. Swiss Equestrian 2023, p. 8; Perey und Schneider 2024; Swiss Federal Department of Foreign Affairs 2023; Swiss Federal Department of Economic Affairs, Education and Research 2023). A certain bias might have influenced the findings, as the surveys took place during the equestrian events when the number of equestrian tourists could be expected to be greatest. For the summer surveys, only a smaller percentage of households were given the QR-codes and they were not distributed to businesses in St. Moritz. Linguistic barriers might have caused an impact on the surveys, as a substantial proportion of Italian tourists did not speak English, which could have led to a certain selectivity of respondents.

4 Research Results

Perception of the Equestrian Events

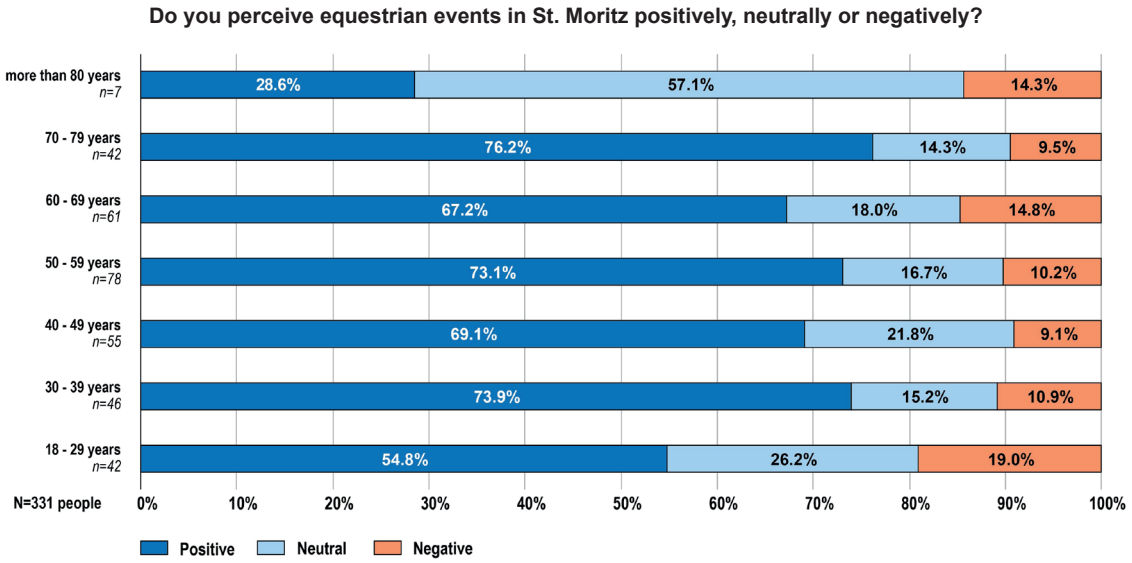
The quantitative surveys showed important differences in the perceptions of the equestrian events between tourists and inhabitants of St. Moritz respectively the Engadin. The events were rated positively by 74.7 percent of the surveyed inhabitants of St. Moritz/the Engadin, compared to 60.7 percent of the tourists, while both groups had almost the

same positive perception in the summer and winter surveys. Only 8.8 percent of surveyed inhabitants of St. Moritz/the Engadin rated the events negatively in the summer surveys and 11.2 percent in the winter surveys, while 8.9 percent of tourists rated the events negatively in the summer surveys and 16.8 percent in the winter surveys (Figure 1).



Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 1: Perceptions of equestrian events in St. Moritz by inhabitants of St. Moritz/the Engadin and tourists



Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

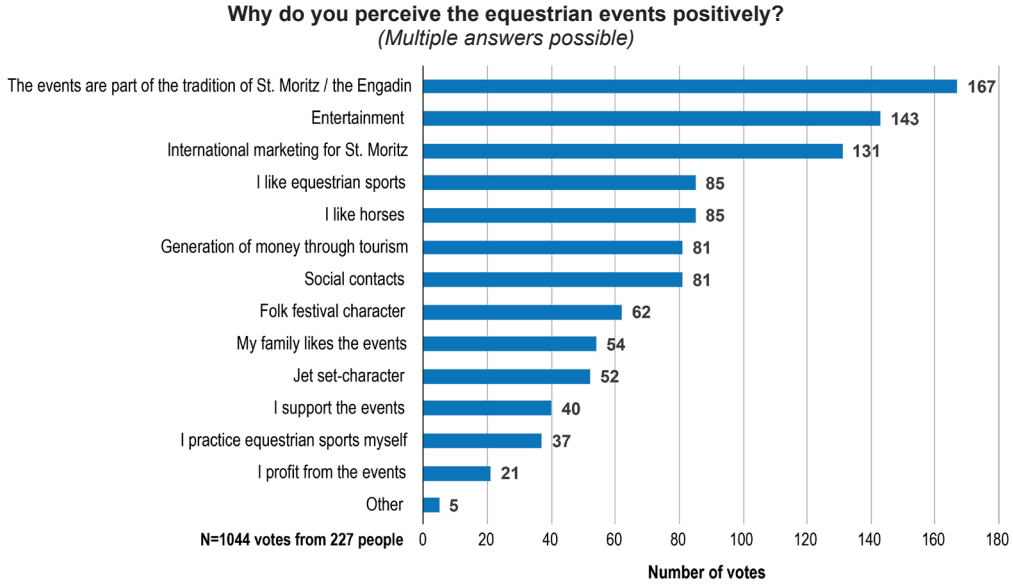
Figure 2: Perceptions of equestrian events in St. Moritz by different age groups

Perceptions differed considerably by age groups. The 70–79 age group perceived the events most positively (76.2 percent), while the 18–29 age group (54.8 percent) followed the 80+ year-olds as those with the least positive perceptions (28.6 percent) (Figure 2).

Another important difference in the positive perception of the events was found between people who practice equestrian sports (84.7 percent positive) and those who do not (65.1 percent positive).

Reasons for Perceptions

The main reasons for a positive perception were that the events are part of the traditions of St. Moritz (16.0 percent of all votes), entertainment (13.7 percent of all votes), international marketing for St. Moritz (12.5 percent of all votes), horses as animals and equestrian sports in general (both 8.1 percent of all votes) and the generation of money through tourism and social contacts (both 7.8 percent of all votes) (Figure 3).

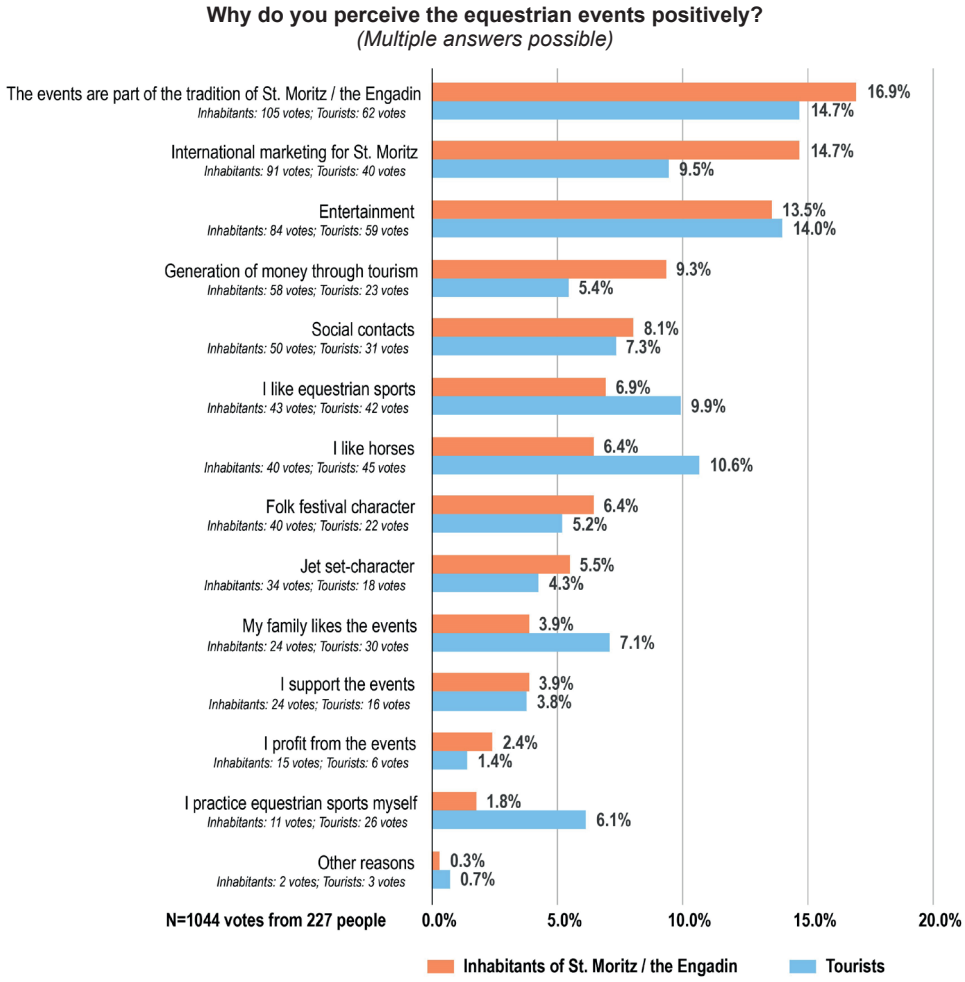


Source: Own surveys (summer 2023, winter 2024). Graphic: N. ELVERICH.

Figure 3: Reasons for a positive perception of equestrian events in St. Moritz

Compared to tourists, a greater proportion of inhabitants of St. Moritz/the Engadin viewed the equestrian events as positive because they are part of local traditions, they allow international marketing for the town and generate revenue (Figure 4).

A greater proportion of inhabitants of St. Moritz/the Engadin stated that the events are part of the traditions of St. Moritz in the summer surveys (20.0 percent) than in the winter surveys (16.3 percent) (Figure 5).

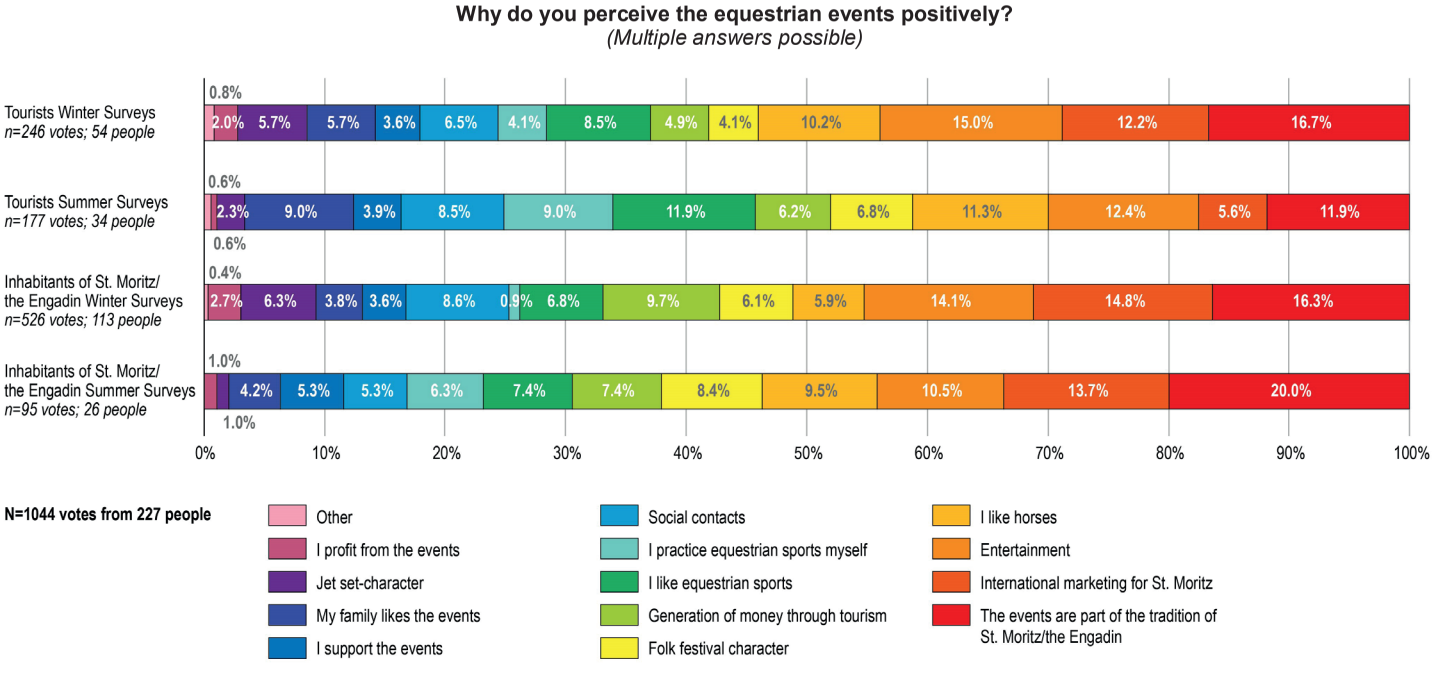


Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 4: Reasons for a positive perception of equestrian events in St. Moritz by inhabitants of St. Moritz/the Engadin and tourists

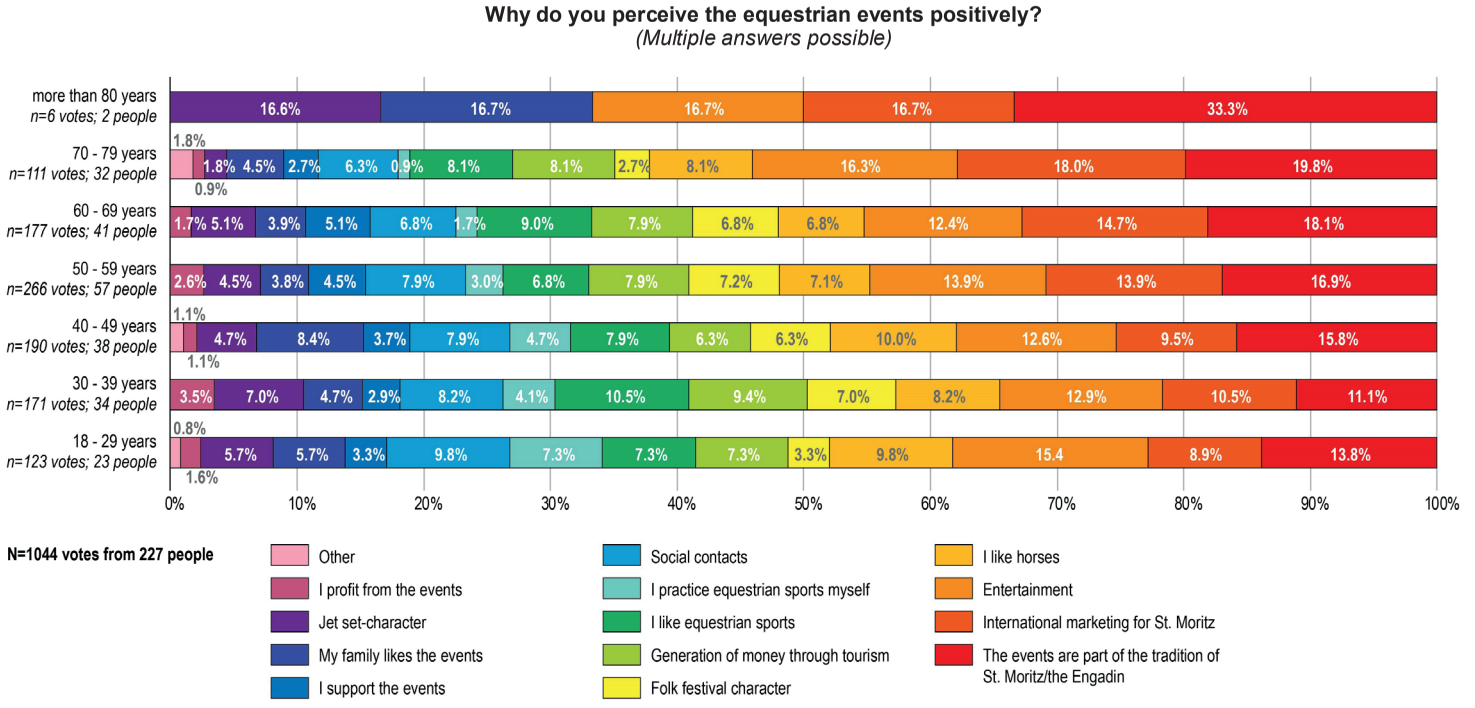
Differences between age groups became evident with older groups having the highest proportion of positive perceptions because of the traditional nature of the events, thus the 70-79 group (19.8 percent) was second only to the 80+ year-olds, while the group of 30 to 39 year-olds had the lowest proportion (11.1 percent) (Figure 6).

The international marketing for St. Moritz was valued most by the 70- to 79-year-old respondents (18.0 percent) and least among the 18- to 29-year-olds (8.9 percent). Negative perceptions of the events were most often put down to the jet-set character of the events (23.1 percent of all votes), environmental damage (21.2 percent of all votes) and too much traffic (17.3 percent of all votes) (Figure 7).



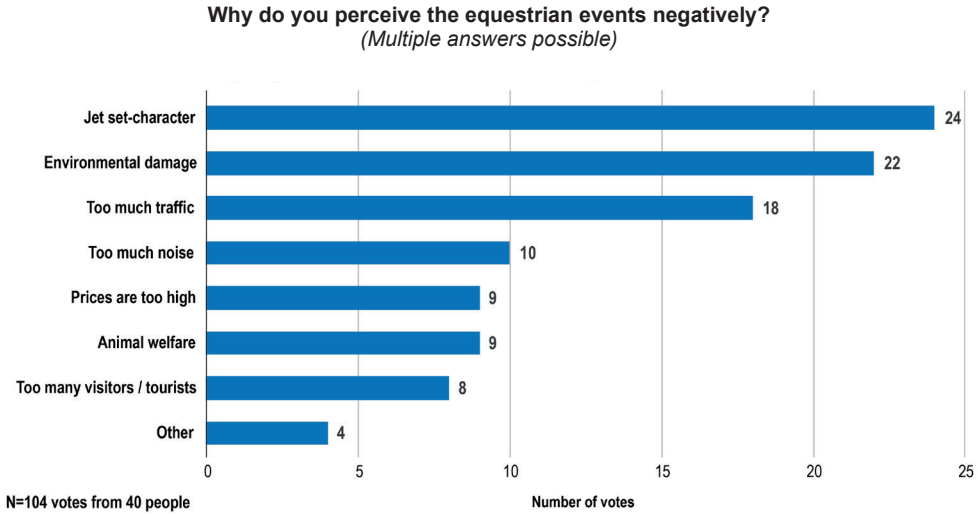
Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 5: Reasons for a positive perception of equestrian events in St. Moritz by inhabitants of St. Moritz/the Engadin and tourists in the summer and winter surveys



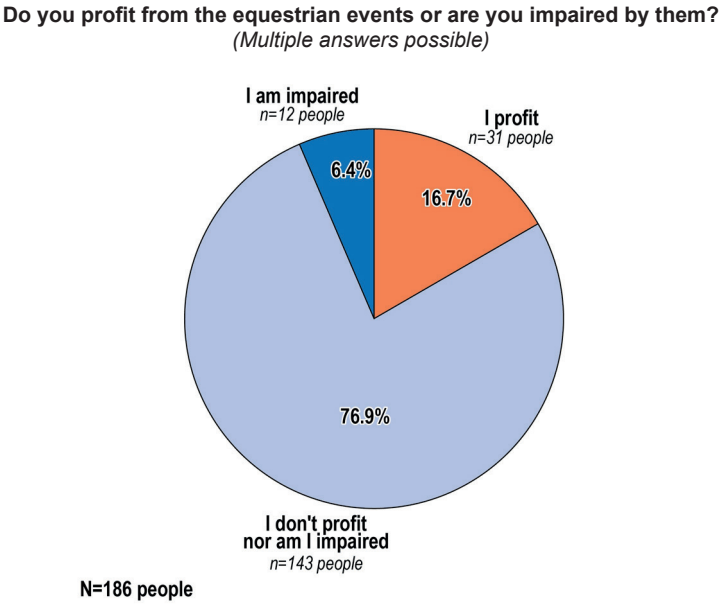
Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 6: Reasons for a positive perception of equestrian events in St. Moritz by different age groups



Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 7: Reasons for a negative perception of equestrian events in St. Moritz



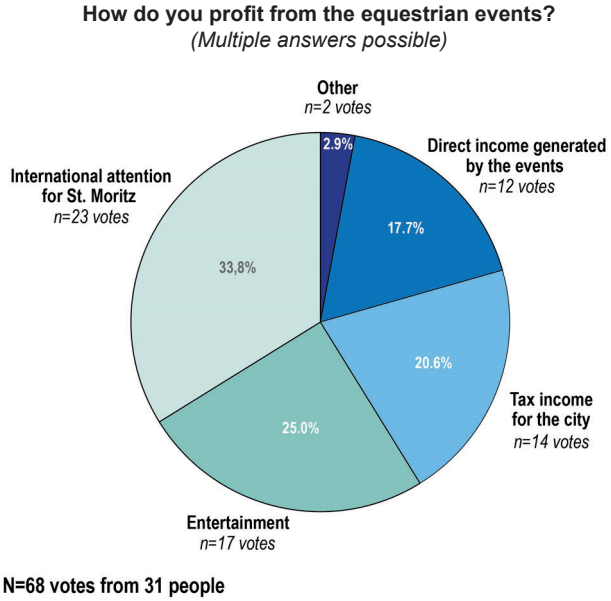
Source: Own surveys (summer 2023, winter 2024). Graphic: N. ELVERICH.

Figure 8: Effects of equestrian events in St. Moritz on inhabitants of St. Moritz/the Engadin

Profiting from the Events plus Primary and Secondary Effects

In terms of profiting from the events, 76.9 percent of the respondents said that they neither profit nor are impaired, while 16.7 percent profit and 6.4 percent said they are impaired (Figure 8).

The reasons for profiting comprised international attention for St. Moritz (33.8 percent), entertainment (25.0 percent), tax income for the city (20.6 percent) and direct income generated by the events (17.7 percent) (Figure 9).



Source: Own surveys (summer 2023, winter 2024). Graphic: N. Elverich.

Figure 9: Reasons for profiting from equestrian events in St. Moritz by inhabitants of St. Moritz/the Engadin

The interviews confirmed that people and their businesses in St. Moritz profit especially from primary and secondary effects:

> *"[…] You generate a lot of overnight stays, that's one thing, but people are also here to enjoy themselves, some of them are here on vacation beyond the whole White Turf, these are people who have racehorses themselves, train or own or breed them and they don't always have to have a horse at the start, but of course they come and spend their vacation here, that's one thing. The other is […] what you generate in the catering trade and so on, and then […] you have to know the many pictures that go out where you can see for example the skyline here or whatever that ultimately benefits all of us locals"* (Interview 10).

It was indicated that the local hotel industry is one of the biggest profiteers (especially from the winter events):

> *"[…] The five-star hotels live well from it and when they are full, then we actually have good business"* (Interview 02), while the guests of such hotels are important for other local businesses: *"[…] there is a certain amount of added value involved, but I think the hotel industry is way ahead of us retailers in this respect […]"* (Interview 02). But it is not only the people and businesses of St. Moritz who benefit from the events: *"[…] I would say that these events are very, very important. And I would even say for the whole region. So St. Moritz alone doesn't just benefit. I think that certain hotels from Maloja, Sils to [...] Champfèr will probably also benefit from the fact that something is happening on the lake […]"* (Interview 06). *The value of the equestrian tourism in St Moritz is very high: "[…] the added value of Snow Polo […], the University of St. Gallen found out a few years ago, is about 22,000,000 Swiss francs […]"* (Interview 07).

This income is largely generated by visitors to the events:

> *"People have become used to the fact that there are 10–15,000 people on this lake every Sunday in February"* (Interview 04).

However, the large number of visitors and tourists during the (short) period of the winter events was also described as problematic:

> *"It's extremely full […] during that time, so the whole of Switzerland is on vacation, then we have the events, whether it's polo or the three race Sundays, […] the infrastructure really reaches its limits […]"* (Interview 02).

This concentration of equestrian events in January and February in combination with other events leads to the problem of insufficient hotel infrastructure:

> *"We've even had discussions about the gourmet festival, because it is at the same time as the Snow Polo, certain customers complained that they couldn't find a hotel room, […] because you have an event calendar in February that's almost too tightly packed, […] and then they poach each other's customers because there's almost too little infrastructure available in terms of accommodation"* (Interview 06).

This potential loss of customers was seen as problematic, while simultaneously the financial potential of the tourists was stressed:

> *"It's a bit of a shame that all the events take place somewhere in the same month, but that's just the time when people are there, when it's worthwhile, but you could*

spread it out a bit over 3 months, […] the place is full and there are also some very wealthy people. […] equestrian sport is an expensive sport and that's why it's not pensioners who come up here […]" (Interview 02).



Source: Photo by authors.

Figure 10: White Turf on the lake on 4 February 2024. An example of the larger winter events



Source: Photo by authors.

Figure 11: Summer Polo Cup on 23 July 2023. An example of the smaller summer events

Sponsoring

This concentration of financially potent customers in peak season was seen as a primary motivation for sponsoring the equestrian events:

"But where there are sponsors, of course they want to present to as many people as possible, but not sometime in March when no one is there, or in September […], then it makes little sense" (Interview 02).

Other primary reasons for sponsoring the equestrian events are important:

"Why does a sponsor sponsor us? So the three most important points: It's St. Moritz, it's polo, so it's local, we have a local market that already exists for these services. They have the opportunity to bring their customers or business partners to St. Moritz as an incentive, it's a high-quality package and then the message to the outside world" (Interview 07). This can relate to the sponsor's image: *"[…] the acquisition of these sponsors […] is achieved via the emotional channel […] i.e. events that are well received that correspond to the image, that correspond to the philosophy of the sponsor, of the company […]"* (Interview 10).

Although big international sponsors can be found, many sponsors of the equestrian events are local to St. Moritz or from the Engadin, and profit directly or indirectly from their sponsorship:

> *"[…] White Turf, for example, we […] sell on the lake. That's pretty important for us and the volume of people is also important for us"* (Interview 02).

As the sponsorship of the winter equestrian events is financially important for sponsors, the sponsorship of the smaller events in summer can be seen as a zero-sum game:

> *"So if we don't lose out, that's fine, let's put it that way"* (Interview 02). Sponsorship is especially crucial for the smaller equestrian events without an entrance fee: *"[…] there's also financial sponsorship involved, […] because most of the events up here are, it's just without admission. […] But without sponsors up here, it's just impossible"* (Interview 02).

In addition to private sponsors, the administration of St. Moritz and the surrounding villages are involved in sponsoring the events, also because of the awareness of secondary effects:

> *"[…] they get event subsidies from the municipality, then something comes from tourism, then we get infrastructure contributions and with this money it works on the lake. So if these events had to finance […] all by themselves, without any subsidies, I think that not every event would exist anymore. So the municipality is well aware that it is something important for them, which is why they finance it"* (Interview 06).

This also underscores the problem of finding sponsors for the events:

> *"So it's not as easy as it used to be, because the sponsors are breaking away. […] But as the organiser of a festival, […] you can't pick and choose. No event is in a position to simply say we can turn it down"* (Interview 04). *"I don't think it's the case anymore that these events are simply self-propelled"* (Interview 03). As social media is an attractive platform for sponsors due to its reach, the events may face difficulties: *"If there are […] 15,000 people on the lake every weekend, that's a lot. But if you have a million followers somewhere on the internet these days, then of course you have a different kind of reach" (Interview 06).*

Future Developments and the Problem of the Freezing Over of the Lake

The large number of tourists and problems of sponsoring are partly the reason why some events have become smaller than they once were:

> *"There were peaks where people said, we've reached a point where we can't go any further, it was almost too much […]. Today, […] we're taking it down a notch to the normal, to the simpler, and that suits us wonderfully"* (Interview 10).

But as conditions for the construction of infrastructure on the ice have shifted due to rising temperatures, this development also suits capacities:

> *"So there were years already when you had to do slimmed-down versions. For example, the hospitality was then on land, or in the riding hall, instead of on the lake"* (Interview 03). Such adaptations are seen as options for the future: *"You can certainly make some adjustments to the infrastructure, with weight. That has already been done. Here the tents have been taken apart and there are fewer tents and smaller stands. They have already reacted and I think it can only go in that direction. […], everything else will depend on the weather […]"* (Interview 10). In addition, a timewise adaptation could be possible: *"[…] [if] the whole lake freezes over later, maybe they'll have to postpone the whole thing somewhere for a week"* (Interview 02).

The shorter time span during which the ice on the lake is usable was noted by officials of the events, while for Snow Polo (which requires less space than the horse races) an alternative seems to exist:

> *"What is clearly happening is that the time window is getting smaller and smaller. So where it just freezes and then stays frozen. So I assume we can still do this for a long time and if we can no longer do it on the lake, […] I've had a plan B for a long time"* (Interview 07).

Like in Arosa (where horse races on the frozen lake had to be given up), the problem of the lake freezing sufficiently is seen with concern:

> *"[…] and it doesn't get any easier for us in winter with the lakes. […] Arosa already has the same problem, they no longer have horse sports on the frozen lake, they had them for a very, very long time. And I think the only question is, when will it happen to us?"* (Interview 06). But there are other opinions about St. Moritz: *"[…] at the moment we just have less snowfall and less snow insulates less, and because of that we still have almost better ice than everyone else"* (Interview 06).

But if the lake does not freeze reliably in the future to the degree necessary for horse races, the future existence of this event is doubtful:

> *"[…] White Turf is what we see here today and otherwise it's not White Turf"* (Interview 10). Although it is also emphasised that it is the location that makes the events special: *"Polo and horse racing is the lake. When the lake was […] close to not freezing over, they thought about doing it in the village, in St. Moritz Bath*

and on the polo field, but it's an event on the lake and that's what makes it special" (Interview 02).

The international uniqueness of the winter events is also recognised by the officials of St. Moritz who are involved in sponsoring the events:

"That [the winter events] was of course a sensation and remains a sensation to this day" (Interview 04). Their importance is equally highlighted: *"These are the events that make St. Moritz famous and are also extremely important for […] it. No effort is spared to make them possible"* (Interview 03).

Infrastructure and Efforts for the Events

The infrastructure that needs to be built every year on the ice of the lake reveals that no effort is spared:

"So the entire basic infrastructure that [is constructed] for four major events […] Snow Polo, for White Turf, for The ICE and for Amusements on the Lake with the preparation for the ice rink and so on. But the turnover is around 3,000,000 CHF. So that's about the effort […]. Only for January to the beginning of March" (Interview 06). This marks a significant cost factor for the events, a reason why they are special and a fundamental difference to normal equestrian events that can use permanent infrastructure: *"[…] because if we build something on a greenfield site, then we have the advantage of already having a basic infrastructure of water pipes, sewage pipes and power lines. We redo everything every year"* (Interview 06).

In addition to these investments in the infrastructure, the schedule is a major challenge, as it depends on the freezing of the lake and the date of the first event:

"We almost had a week and a half because it was very, very tight. […] And we were able to do a relatively large amount of preparatory work thanks to helicopter flights, because our problem was, […] we have to have around 30 cm [of ice thickness] *to be allowed to drive with vehicles on the lake. And we didn't have that, we were always so close to 24* [cm]. *And then we were allowed to go up on foot, with light machines, […] but […] they can't come with their light trucks and simply bring material"* (Interview 06).

Even after the successful construction of the infrastructure, sudden snowfall can endanger the events:

"[…] [If] the night before the event there is half a metre of snow, that's the worst case scenario. So then everyone has to drive in the middle of the night, clear it,

do it and the effort is brutal. But it has happened before and it has worked" (Interview 06).

In addition, the transport infrastructure of Engadin Airport is important for visitors to the events:

"And then we have the airfield, which is also important. The horses don't come in there, but the people, the guests […]. For the Polo, 60 to 70 jets come in. That's incredible" (Interview 07). The events also require work power: *"[…] if you look around here, all those in the blue jackets, around 200 volunteers as we call them, […] without them, we all know, none of these events would be possible"* (Interview 10). The same number of people work for the Snow Polo: *"In total, around 200 people work for us at the weekend"* (Interview 07).

Another immense cost factor is the insurance to cover losses for events that are cancelled due to unfavourable weather conditions (e.g. too much snow) or an insufficiently frozen lake, but: *"[…] they are very expensive […]"* (Interview 10).

5 Discussion

St. Moritz has experienced fundamental changes in respect to the use of horses since the 1860s, like almost everywhere in the world. A difference to other cities and towns is the continued importance of the horse for tourism. To assess how this animal contributes to the economy of St. Moritz today and how it could continue to serve this purpose, it is important to understand the perception of stakeholders and their motives in combination with historical and possible future developments.

Differences in the perceptions of the equestrian events by inhabitants of St. Moritz/the Engadin and tourists are evident. Inhabitants of St. Moritz/the Engadin see the equestrian events more positively than tourists, which reveals their greater relevance for inhabitants. As the events in summer and winter differ in respect to their size, economic relevance and uniqueness, stronger differences between the positive perception in the summer and winter surveys for inhabitants of St. Moritz/the Engadin and tourists could have been expected. This was not the case. But among tourists, the percentage of people in the winter surveys with a negative perception of the events (in total only 16.8 percent) was almost twice as large as in the summer surveys (8.9 percent), which seems counterintuitive because there are far more tourists for the winter events and the events are bigger attractions.

Further, the differences between age groups were notable, although no continuous trend could be found. The group of 18- to 29-year-olds had (after the very small group of 80+ year-olds) the least positive perceptions, which may become a risk factor in the future in terms of recruiting newcomers to the events and finding new supporters and volunteers. As there are few studies about perceptions of the concept of equestrian event tourism in the literature, this case study provides useful contributions about the perceptions of locals (about 75 percent rated the events positively) and tourists of equestrian

events in the luxury sector, providing useful insights about the public social licensing of animal-based events.

Inhabitants of St. Moritz/the Engadin in general rated the tradition of the equestrian events as being more important than tourists did. This indicates the significance of the longstanding equestrian events for inhabitants of St. Moritz and the region, likely connected to place identity. But inhabitants of St. Moritz/the Engadin rated the tradition as being more important in the summer surveys than in the winter surveys, which is surprising, given the fact that the winter events have a longer tradition (White Turf since 1907, Snow Polo since 1985).

The contrary was found in the tourists' surveys, which indicates contradictory perceptions of the traditions of the summer and winter events for inhabitants of St. Moritz/the Engadin and tourists. The general linking of positive perceptions of the events with their role in local traditions, by especially local people, suggests that longstanding animal-based events can become part of local lived traditions, although little relevant literature exists on this point.

The fact that inhabitants of St. Moritz/the Engadin rated the marketing of St. Moritz and the economic benefits of the events higher than tourists was unsurprising. It shows their economic awareness and indicates that direct and secondary economic effects are important for a local positive perception. The relevance of the equestrian events for the marketing and related destination branding and lifestyle business is somewhat similar to existing literature on horse-based tourism (ADELMAN 2020; HELGADÓTTIR and SIGURÐARDÓTTIR 2020; PÜTZ et al. 2022; REZAPOURAGHDAM et al. 2025).

Furthermore, older people tended to value the traditions more than young people (with the exception of the 18- to 29-year-olds), which could cause difficulties in the long run as younger generations must be attracted to the events. Older people tended to value the marketing and economic aspects more than younger people, which may be due to younger people being less economically involved or failing to recognise the economic value of the events, or due to older people overestimating their economic relevance.

The fact that horses and equestrian sports were among the major reasons for a positive perception of the events indicates the horse's importance as a main driver and attraction (likely because of the species' popularity, charisma and aesthetics) and possibly as a marketing symbol (for which media representation is provided, as revealed in the interviews), suggesting that the horse can thus be viewed as a "destination ambassador" – in line with existing literature but enriching it thanks to the focus on animal-based events (DASHPER 2020; HELGADÓTTIR and SIGURÐARDÓTTIR 2020; REZAPOURAGHDAM et al. 2025; SUTHERLAND 2021).

Furthermore, entertainment (presumably a part of the quality of the events) was among the most popular reasons why people perceived the events positively, which also aligns with the literature on the motivations of equestrian tourists, and the interviews demonstrate recognition of the uniqueness and excitement of these one-off events. Similarly the literature describes the importance of one-off events as a quality factor for the experience of visitors (DANIELS and NORMAN 2005, pp. 206f; GALLARDO and ROJAS 2025, p. 807; MUTANGA et al. 2017. p. 3).

The (limited) negative perceptions of the events were mostly due to their perceived jet-set character, environmental damage and high traffic congestion. As the traffic in St. Moritz culminates mainly on the road along the lakeside and the road network's capacities are limited, the infrastructure is at maximum capacity during the winter events (and cannot be extended) due to the limited time span in which the ice is usable.

Many inhabitants of St. Moritz/the Engadin said that they neither profit from the events nor are impaired by them, while the percentage of people who profit is more than two and a half times higher than the percentage that is impaired. In addition to the large neutral position, there is clearly a positive rather than negative perception of the events by the inhabitants in terms of mostly economic factors. This has not yet been demonstrated in the literature on equestrian event tourism and could indicate an "economic" social license for equestrian events.

As the interviews revealed, the five-star luxury hotel businesses profit directly from the many tourists and many secondary effects are generated, especially on a local level, while other towns in the Engadin also profit from the equestrian events in St. Moritz. Thus in addition to an excellent (five-star) hotel industry (with supreme accommodation quality), complementary services like high-class gastronomy, luxury retail stores and museums not only profit from equestrian tourism, but also increase the likelihood of overnight stays by tourists – which is in line with the results of previous studies but adds findings in terms of secondary effects in this unique luxury setting (cf. Daniels and Norman 2005; Pavić et al. 2019).

In total, equestrian tourism leads to an added value of at least CHF 47,000,000 per year generated by 60,000 visitors to White Turf and Snow Polo alone (Snow Polo: CHF 22,000,000, Interview 07; White Turf: CHF 25,000,000, year 2024) for St. Moritz and the Engadin (Evviva Polo St. Moritz AG 2026; Gemeinde St. Moritz 2022, p. 102; Jegen et al. 2007; Rennverein St. Moritz 2024a, p. 4; Rennverein St. Moritz 2026). This illustrates the great degree to which equestrian tourism contributes to economic well-being and what an important economic driver it is for this alpine area.

It is clear that, in line with the literature (e.g. Curtin 2013; Dashper 2021; Giampiccoli et al. 2020; Rickly and Kline 2021; Scollen and Mason 2024; Speiran and Hovorka 2024), animal-based tourism in fully-contrived, low-consumptive settings with direct involvement of animals can be important for the economy and may be successful even under such difficult and challenging circumstances (frozen lake with snow cover at 1,800 m. above sea level), enabling a new perspective on how animals can contribute to tourism.

As the added value is generated in a short period of time, the problem of cramped event schedules from January to March is not easily solved, for example by adjusting the schedule, as many events depend on the lake being frozen and on the well-coordinated labour- and cost-sharing of construction. Thus, infrastructure and hotels will remain at maximum capacities due to the natural circumstances dictating the presence of a usable ice layer for the equestrian sports. This ensures high occupancy rates in peak season and guarantees maximum attention and attractiveness for sponsors of the events. The high concentration of tourist attractions in the period in which the lake is usable for the top winter events caused interview partners to recommend stretching out the calendar with events that do

not rely on the lake in order to gain a longer peak season, so that particularly expensive infrastructure like hotels and roads could be used more efficiently and economically throughout the year.

For sponsors, this peak season is highly interesting, as not only are there a large number of tourists and particularly extremely wealthy guests, but furthermore networking and co-creation by tourists has benefits, e.g. networking with business partners, as shown in interviews. The uniqueness of St. Moritz as a high-quality destination in combination with the uniqueness of the equestrian sports, which are not to be found anywhere else in the world, is seen as a primary investment reason for sponsors.

These findings about the attractiveness of sponsoring such animal-based events represent a valuable addition to the literature as almost no sources on this topic can be found. Even though tourist numbers at the equestrian events are high and especially VIP tickets quickly and regularly sell out, advertisements on social media can reach more people than the sponsorship of such events, so finding sponsors has become somewhat harder in recent years (DUSCHLETTA 2023). Many events do not charge an entrance fee and it seems unlikely that they can all be financed solely with money spent at the event site. Thus, especially for smaller equestrian events, sponsorship will remain very important.

As the equestrian events are an important attraction for people to visit St. Moritz, even indirect effects are worth sponsoring, as sponsorship by companies and municipalities in the surrounding towns shows (Rennverein St. Moritz 2025b). It is thus unsurprising that, in addition to the private sector, municipal officials also support the equestrian tourism. This in combination with the well-structured tourism sector, the environmental policy (e.g. surrounding use of the lake) and a real equine sector (carriage companies and connected agricultural businesses) whose actors work together (especially for the winter events), complies with the literature in terms of the indicators necessary for the development of equestrian tourism (CERNAIANU and SOBRY 2019, p. 14).

How futureproof the equestrian events in St. Moritz and connected economic benefits will be, depends to a large extent on the reliability of the freezing of the lake. While most events that take place on the lake could, despite drawbacks, be relocated, the horse races can only take place on the lake, as it is the only area in St. Moritz large enough for such an event.

The move towards decreasing the load on the ice compared to times of maximum use (when visitors' cars are additionally parked on the ice) and hosting slimmed-down versions of the events is appropriate to the momentaneous developments. But an important challenge arises from the fact that there are currently few concepts for tackling a situation with an unusable ice layer on the lake. Future climate change scenarios seem unclear, as different place-specific prognoses exist. If relatively warm, snow- and ice-less winter scenarios develop, like in Arosa, it may be possible that equestrian events in winter could turn St. Moritz into a destination for last chance tourism – like glacier tourism in the Alps or polar bear tourism in Kaktovik, Alaska (cf. MILLER et al. 2020; SALIM et al. 2023).

In 1907, entrepreneurial hoteliers, carriage companies and officials initiated the pioneering horse races on the frozen lake, embracing risk-taking and creativity, however, it remains to be seen whether the current actors have enough foresight to tackle potential future problems in lake usability – which requires at least two of three important dimensions

of entrepreneurship in the equestrian sector identified by the literature (Lupoae et al. 2023 p. 35; Sigurðardóttir and Steinthorsson 2018, p. 262).

Despite the uniqueness of the horse races in St. Moritz, which can hardly be implemented and organised anywhere else in the world given the necessary infrastructure (especially in the luxury segment), the innovative equestrian sports of St. Moritz have also led to spin-offs in other locations, namely polo on snow (but not ice) in towns such as Aspen (USA), Cortina (Italy) or Kitzbühel (Austria), showing the way in which a unique equestrian event can be exported and providing insights into exportable events with attractions in the form of horses and equestrian sports (Lütscher 2014). But due to the unique geographical landscape setting in combination with the highly specialised (tourism) businesses, the horse races on ice and snow cannot be copied in Europe, thus protecting St. Moritz's world-class image.

The exceptionality of the equestrian events and the general premium orientation of St. Moritz in the tourism segment leads to a need for highly specialised businesses and infrastructure like the nearby Engadin Airport, which allows visitors, especially VIPs, to access St. Moritz quickly and conveniently. As interviews with experts have shown, the airport is intensively used during the events and is thus an important, if not an essential, piece of infrastructure.

The infrastructure on the lake is also highly specialised, with construction costs of around CHF 3,000,000 each year. Its annual construction can be very demanding under difficult circumstances and tight schedules (which sometimes make helicopter deliveries necessary) and demands a high degree of flexibility from all actors – ranging from those who construct the infrastructure on the lake to secondary actors such as decision-makers, sponsors, hotels, artists (e.g. for ice sculptures) and carriage companies.

There has been little research on this aspect of unique animal-based events that feature cost-sharing to facilitate additional animal-based events and diversify existing offers, so that the case of St. Moritz can provide a valuable contribution. Not only the events on the lake, but also all the equestrian sports and equestrian tourism in St. Moritz require detailed planning and interaction of all actors, which is important for the long-term strategy of equestrian tourism and enabling adaptation and diversification, according to the literature (cf. Esa and Ismail 2023, p. 387). This can be seen historically by the establishment of multiple equestrian disciplines, carriage services and horse-riding vacations in the surrounding valleys.

Clearly, equestrian tourism in St. Moritz involves a fully contrived setting which includes direct and indirect involvement with horses while being low-consumptive, as categorised in the literature (e.g. Curtin 2013, p. 197; Rickly and Kline 2021, pp. 8f).

6 Conclusions

The case of St. Moritz shows how horses kept in the region were the fundamental basis from which entrepreneurial hoteliers and (mostly British) tourists created (winter and summer) tourism in a remote alpine area through the invention and creation of very significant, unique tourism infrastructure and innovations. From the emerging industrial period onwards, the use of horses for transport purposes was transformed to a focus of use in

tourism, sport, recreation and events that has been preserved until the present day, undergoing further evolution and specialisation.

Horses and the sports they are involved in continue to be one of the main foundations of the outstanding uniqueness of St. Moritz as a destination, beyond other forms of exclusive tourism. Today, the equestrian events are the largest and most prominent events of this kind worldwide, far from other (alpine) luxury destinations, attracting more than 60,000 visitors and generating CHF 22,000,000 of added value from Snow Polo and CHF 25,000,000 from White Turf each year, in addition to the other equestrian events, while being positively perceived by locals and tourists.

Numerous secondary economic effects and other forms of equestrian tourism are initiated by the events, resulting particularly during the winter events in booked-out hotels and facilities, bringing the available infrastructure to its limits. Not only the tourism destination itself, but also the events, equestrian sports and complementary services (e.g. in the form of carriage rides) are located in the premium segment, generating high value and involving very demanding efforts to meet the expectations of global clients. These efforts include unique equestrian tourism services, which complement other tourist structures in St. Moritz, such as the five-star hotel businesses, high-class gastronomy and luxury retail stores. The unique geographical circumstances, such as the prominent lake and typical scenery that are well connected by place-specific infrastructure like the nearby heritage train station, also help distinguish St. Moritz from all other international destinations offering equestrian tourism.

The innovative equestrian events combine with the carriage rides, which were initially a necessary form of transport and later a tourist attraction, to create the fundamental preconditions for an equestrian tourism that has been successful for 120 years. The blend of established traditions, pioneering spirit and the special exclusivity of St. Moritz as a destination, combined with the large number of visitors to equestrian events on ice and snow, has contributed to the world-famous image of St. Moritz and its attractiveness.

The international uniqueness and attractiveness of the winter events in particular have rendered St. Moritz internationally famous. Modern developments show that competitors are beginning to copy the winter equestrian events of St. Moritz (with the associated upbranding of existing horse races), for instance in Tibet and (for Snow Polo) in Tianjin, China, especially profiting from a boost in interest in snow sports through megaevents like the Winter Olympics 2022, which was held in China (cf. Lütscher 2014; Zhu et al. 2020).

Possible future research could focus on the significance of long-standing animal-related events for local traditions, as these are a major reason for the positive perception of the events in St. Moritz. In addition, innovations for further improving safety in equestrian tourism could be discussed. Some participants and experts in St. Moritz mentioned possibilities for improvement beyond the current standards.

7 Recommendations

The tight event schedule in peak season is caused by the limited time span in which the lake is usable but combines with the winter vacation time in Switzerland to create a high

touristic impact. To mitigate the annual running costs of hotels and other infrastructure, it is recommended to extend the peak season into the off-season by creating additional attractions, e.g. by additional events that attract different target groups. Such an extended tourism season could also be used for equestrian destination branding. In general, equestrian tourism could be placed more at the focus of branding strategies – as is the case in other destinations, e.g. in France, Hungary, Iceland, Mongolia or Kyrgyzstan (cf. Helgadóttir and Sigurðardóttir 2020 p. 4; Rezapouraghdam et al. 2025, p. 473).

One way of enhancing the visibility of the equestrian events involves using the horses as advertising symbols. For example, the horseshoes of the winners of White Turf could be placed on the footpath around St. Moritz Lake with the dates of the races run (like stumbling stones, local legends or a Walk of Fame), which could raise awareness and the interest of tourists in the events. Due to St. Moritz's position in the premium segment, equestrian tourism could further specialise and diversify in this segment by providing special offers and services such as more complete packages with stays in Grand Hotels, carriage transport to events and VIP-options at events.

Besides recommendations for St. Moritz, this study has shown that large and charismatic domesticated animals are favourable attractions that can be used to create unique animal-based tourism experiences. Therefore, other destinations could also use such species, as domesticated animals are not dependent on (rare) natural habitats. Such attraction-oriented animal-based tourism would have a lower ecological impact than animal-based tourism in rare and exotic habitats that need to be developed for tourism and that may suffer negative effects by human activities.

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Migration

Migration

Trend Analysis of Internal Migration in Serbia

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with 5 figures and 4 tables in the text

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Summary

The aim of this paper is to investigate the characteristics of internal migration trends in the Republic of Serbia by employing various statistical methodologies to analyse patterns at national and district levels. The main objectives are to examine the temporal aspects of overall migration intensity, spatial patterns, and the relationships between internal migration and selected demographic and socio-economic development factors. The results

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indicate a stagnant trend, with no statistical significance, in the dynamics of internal migration in Serbia from 2002 to 2023, as well as contrasting patterns between total population dynamics and internal migration. The study highlights differences in net internal migration, in-migration, and out-migration trends in districts, establishing that population size and GDP per capita are the most significant factors determining the character of internal migration trends at the district level. These findings contribute to a better understanding of the contemporary internal migration process in Serbia.

Keywords: Migration, internal migration, trend analysis, in-migration, out-migration, migration intensity, spatial patterns, Serbia

Zusammenfassung

Trendanalyse der Binnenmigration in Serbien

Ziel dieser Arbeit ist es, charakteristische Trends der Binnenmigration in der Republik Serbien zu untersuchen, indem verschiedene statistische Methoden zur Analyse der räumlichen Differenzierung und der Erscheinungsformen der Binnenmigration auf nationaler und Bezirksebene herangezogen werden. Die Hauptziele bestehen darin, die zeitlichen Aspekte der Intensität der Binnenmigration, räumliche Muster sowie Zusammenhänge zwischen der Binnenmigration und ausgewählten demographischen und sozioökonomischen Entwicklungsfaktoren zu untersuchen. Die Ergebnisse deuten auf einen stagnierenden Trend ohne statistische Signifikanz in der Dynamik der Binnenmigration in Serbien von 2002 bis 2023 hin, sowie auf einen gegensätzlichen Trend bei der Dynamik der Entwicklung der Gesamtbevölkerung und der Binnenmigration. In der Studie werden Unterschiede bei der Netto-Binnenmigration sowie bei den Zu- und Abwanderungstrends in den einzelnen Bezirken Serbiens untersucht und festgestellt, dass die Bevölkerungsgröße und das Bruttoregionalprodukt per Kopf die wichtigsten Faktoren sind, die Struktur und Ausmaß der Binnenmigrationstrends auf Bezirksebene bestimmen. Diese Ergebnisse tragen zu einem besseren Verständnis der aktuellen Trends der Binnenmigration in Serbien bei.

Schlagwörter: Migration, Binnenmigration, Trendanalyse, Zuwanderung, Abwanderung, Migrationsvolumen, räumliche Muster, Serbien

1 Introduction

Migration is a multidimensional process that takes place across both temporal and spatial contexts. The complexity of its causes and consequences has made population mobility an increasingly important issue in academic and public debates (Tataru 2019; Soare and Gherghina 2024). Internal migration, defined as population movements between different territorial units within a country, changes both origin and destination societies and triggers development changes. As a key component of population change, internal migration can significantly influence population structure, dynamics, and size. Managing internal migra-

tion is important because a balanced spatial distribution of population within a country is crucial for sustainable development. Understanding the scale and direction of internal migration, the characteristics of migrants, and determining how many people are moving and who they are is essential for assessing the socio-economic impacts on both sending and receiving regions (Otoiu et al. 2014; Sukamdi and Mujahid 2015; Rodríguez 2023). Analysing trends in internal migration in spatial and temporal contexts is vital for developing effective migration and regional policies (Gürsoy and Badur 2022).

Since the mid-20th century, internal migration in Serbia has been linked to industrialisation, urbanisation, and deagrarisation. At the beginning of the 21st century, internal migration continued to play a key role in Serbia's population distribution (Raduški 2016; Langović et al. 2024). According to the 2022 population census, the total number of internal migrants (persons who have moved within Serbia from one part of the country to another) in 2022 was 2,323,809, representing 35 percent of the total population (SORS 2023a).

This paper investigates contemporary characteristics of internal migration trends in Serbia, focusing on mobility patterns at the national level and in- and out-migration trends at the district level. Uncovering the factors behind these patterns is an integral part of the analysis. The aim is to contribute to a better understanding of internal migration flows in Serbia at the beginning of the 21st century. The main outputs of this paper include systematisation of the complex database on internal migration; application of various methods of statistical and trend analysis; determination of characteristics of internal migration trends; provision of detailed insights into internal migration patterns at the district level that can inform policy and strategy development.

2 Theoretical Background and Previous Research

The theoretical foundations of internal migration can be found in the scientific work of Ravenstein (1885; 1889), who explained migration patterns through his laws of migration, which serve as specific empirical generalisations (Rees and Lomax 2020). One of Ravenstein's observations is that most migrants go only a short distance. Accordingly, King (2012) noted that Ravenstein's empirical generalisations apply more to internal than to international migration. The well-known push and pull theory by Lee (1966) offers insight into various, predominantly, social and economic factors that influence the decision to migrate within or outside the country of origin. According to this theory, push factors (e.g., unemployment, low wages, discrimination) are associated with the place of origin, while pull factors (e.g., better living conditions, economic stability, job opportunities) relate to the destination (Alexandrovna and Galimovna 2018). Harris and Todaro (1970) focused on urban-rural differences in expected earnings when explaining internal migration patterns. Their model shows that a higher probability of job opportunities and higher expected wages in urban areas significantly influence migration from rural regions (Espíndola et al. 2006; Filiztekin and Gökhan 2008).

Neoclassical economics explains migration as the result of individual decisions to maximise income and respond to differences in wages and employment conditions

(Massey et al. 1993). According to this theory, migration should help reduce disparities between regions. Migration flows from areas with low capital intensity to those with high capital intensity, decreasing capital intensity in the receiving region and increasing it in the sending region (Etzo 2008; Hejduková and Kureková 2020). Thus, migration is considered a key driver of economic development, affecting labour supply, productivity, and the spatial organisation of economic activity (Xu 2024). The gravity model of spatial interaction states that interactions between two places are directly proportional to their size, population, or gross domestic product (GDP), and inversely proportional to the distance between them (Ramos 2016; Poot et al. 2016).

In the first decades of the 21st century, the question of why people migrate has remained one of the most important in migration studies. Empirical research indicates that people migrate within a country for various reasons, with spatial socio-economic inequalities serving as the main trigger for migration flows (Rodríguez Vignoli 2008). Moch (2011) noted that although the spatial characteristics of internal migration differ from country to country, the directions of internal migration flows are generally linked to employment characteristics, concentrations of capital, and demographic patterns. Other evidence indicates that internal migration can play an important role in economic development and has the potential to reduce poverty (Deshingkar and Grimm 2005; Soonhwa 2014).

Significant contribution in understanding internal migration trends in Europe was provided by Rowe et al. (2019). Observing the patterns of internal migration at the regional level, the authors found that in Southern and Eastern Europe migration effectiveness is above average, but is offset by low migration intensities. On the other hand, they pointed out that in Northern and Western Europe high intensities are absorbed in reciprocal flows resulting in low migration effectiveness (Rowe et al. 2019). In the study of internal migration flows within 38 European countries, Rowe and Patias (2020) identified the major role of national capital cities in the internal migration system. The research by Pregi and Novotný (2025) highlights the importance of the location of key economic centres in inter-regional migration in Slovakia.

Examining trend analysis of internal migration across 18 OECD countries from 1996 to 2018, Alvarez et al. (2021) aimed to identify variations in these trends and the economic, demographic, and social factors underlying them. They found that all non-European countries showed a decreasing trend. In contrast, the situation in Europe differed, with some countries exhibiting upward trends, others showing no significant trend in either direction, and some experiencing a modest decline.

The literature review revealed that the demographic aspects of internal migration are often explored in relation to age and education. Zaiceva (2014) pointed out that population ageing, which characterises both developed and developing countries, may lead to lower migration rates or increased migration among the elderly. In examining the links between patterns of internal migration and education, Gonzalez-Leonardo et al. (2022) showed that completing higher education increases the likelihood of internal migration by almost three times. In addition, population size and GDP, as key indicators, are included in the analysis of internal migration (e.g., Wang et al. 2025).

In research on spatial mobility in Serbia, internal migration holds a special place, reflecting the intensity and characteristics of the process. Investigating the characteristics of internal migration based on census data from 1981 to 2011 and annual data from 2002 to 2013, Kokotović Kanazir et al. (2016) found that internal migration flows were most pronounced in the Belgrade region and major regional centres – Novi Sad, Niš, and Kragujevac. The authors concluded that internal migration towards cities and regional centres in Serbia is primarily driven by greater employment opportunities. Spasovski and Šantić (2016), using census data from 1961 to 2011, found that, compared to natural growth, emigration and immigration trends significantly shaped the relocation of the urban population in Serbia, and that the concentration of the migrant population in the modern period is closely linked to economic, social, and other determinants of spatial development. Radovanović et al. (2023) showed that the number of companies per 1,000 inhabitants influences emigration in Belgrade, while there are no direct or indirect causes of emigration or immigration in other regions. Barrios Gonzalez et al. (2024), examining the effects of internal migration flows on regional convergence in Serbia from 2000 to 2018, found that internal migration flows between NUTS3 units mainly fostered divergence.

The issue of internal migration was prominent during the Covid-19 pandemic. In a study covering the period from 2018 to 2020, specifically from March to December each year, Lukić et al. (2022) found that the pandemic affected both the volume and spatial patterns of internal migration in Serbia. Belgrade was the most desirable destination for migrants during this period, but migration intensity decreased after the pandemic began. All areas except Belgrade, North Bačka, Nišava, North Banat, and Zaječar had a negative net migration rate, but showed more favourable values in 2020 compared to 2019, indicating a mitigation of the negative trend, though this was due to a smaller volume of out-migration. Lukić et al. (2023) also found that the pandemic led to an increase in rural-to-rural migration and rural in-migration from medium-sized towns.

Internal migration in Serbia was also examined as part of broader research on migration processes in the country. Research conducted in four local self-government units (Leskovac, Užice, Zrenjanin, Zaječar) showed that internal migration intentions are less common comparing to the international migration intentions. Respondents who plan to migrate within Serbia frequently mentioned Belgrade or another regional centre as their intended destination (Šantić et al. 2019). As part of the same research, Todorović et al. (2021) confirmed, that most students intending to stay in Serbia plan to migrate to one of the large regional centres. Šantić et al. (2023) showed that economic reasons are the dominant factor in the emigration process.

3 Methodology

The spatial framework of the research focuses on the territory of the Republic of Serbia at both the national and district levels. Serbia is located in Southern Europe, on the Balkan Peninsula, and within the Danube region. The study covers 24 administrative districts in Serbia and the City of Belgrade, classified as NUTS 3 (Figure 1). Due to a

lack of data, AP Kosovo and Metohija (Kosovo, under the framework of the UNSC Resolution 1244 from 1999), is not included in the analysis. According to the Law on State Administration, an administrative district is established to perform state administration tasks outside the headquarters of the state administration body (Official Gazette of RS, No. 79/2005, 101/2007, 95/2010, 99/2014, 47/2018, and 30/2018 – as amended). The district was chosen as the territorial framework for the research because its level of detail reveals local specificities, while its broader scope captures wider trends and connects these to national trends.



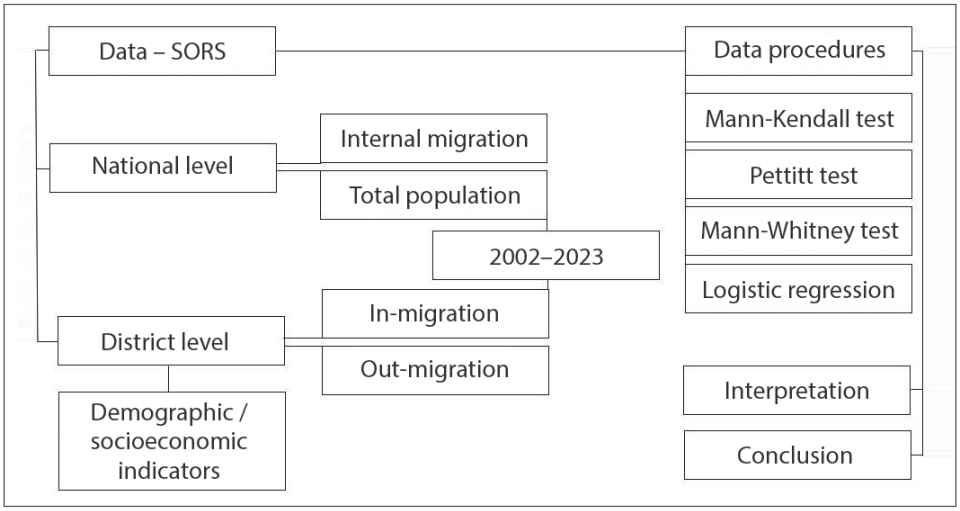
Source: Authors. Own design

Figure 1: Administrative districts of the Republic of Serbia

The aim of the paper is to provide insights into the trends of internal migration in Serbia by analysing:

- Temporal variations of internal migration intensity in Serbia, 2002–2023
- Trend characteristics of internal migration in Serbia, 2002–2023
- Spatio-temporal variations of net internal migration at district level, 2002–2023
- Trend characteristics of in- and out-migration at district level, 2002–2023
- Differences between in- and out-migration trends at district level in terms of selected determinants of demographic and socioeconomic development.

Accordingly, methodological framework of the research includes large sets of data and numerous statistical procedures, which are systematically presented in the Figure 2.



Source: Authors. Own design.

Figure 2: Methodology of the research

In this paper annual data on internal migration in Serbia collected and published by the Statistical Office of the Republic of Serbia (SORS) were used. The dataset includes data on internal migration at the national level, as well as in-migration and out-migration at the district level for the period 2002–2023. The analysis also incorporates data on the total population in Serbia for the same period, using both census data and population estimates (SORS 2006–2024). The data used in this paper are publicly available, which is the main reason for selecting this time series for the research.

Districts in AP Kosovo and Metohija are not included in the study. However, data from 2002 to 2011 for other parts of Serbia include residence registrations of persons from AP Kosovo and Metohija. Due to discrepancies in national in-migration and out-migration data during that period, all procedures for this period used national-level (i.e., Republic of Serbia) data on in-migration.

The descriptive part of the analysis provides an overview of the intensity of internal migration characteristics, including in-migration and out-migration, in the districts of the Republic of Serbia over time. To identify variations in internal migration trends in Serbia, this paper focuses on trend analysis. Applying trend analysis allows researchers to examine the past behaviour of a process, which, through additional methods, helps to understand the mechanisms behind change (Strumpf 2017; ECDC 2024).

For this paper, the Mann-Kendall test was applied. This test is widely used in physical geography (e.g., Langović et al. 2017; Cabral Júnior and Lucena 2019; Langović et al. 2023). Although, to the author's knowledge, it is less commonly used in human geography, some migration studies have employed it (e.g., Mawonike et al. 2021). The Mann-Kendall test is a nonparametric method for analysing time series data. It determines whether a time series shows an increasing or decreasing trend and whether the trend is statistically significant (Khambhammettu 2005). As this test does not require normally distributed data and can handle extreme values that are difficult to address with parametric tests, it is essential for analysing migration trends (Mawonike et al. 2021). In this study, the Mann-Kendall test was applied at both the national and district levels in the Republic of Serbia. Accordingly, regionalisation of in-migration and out-migration trends was conducted at the district level. QGIS was used for cartographic visualisation.

To identify the year of a migration trend reversal (separately for the series of in-migration and out-migration), the non-parametric homogeneity test, the Pettitt test, was applied. This test detects the most likely point of structural change in the time series, without assuming the normality of the data distribution. If Pettitt's test identified a statistically significant point of change ($p < 0.05$), the year of a potential break in homogeneity (referred to as the change year) was determined.

This paper also examined differences between districts in Serbia based on migration trends, focusing on variables related to demographic and economic development. In this context, the Mann-Whitney test was used. This non-parametric test is appropriate for comparing groups without assuming normality of distribution (Pallant 2007). Based on the theoretical framework and literature review, the Mann-Whitney tests in this paper were conducted using the data and indicators presented in Table 1. The selection of indicators was also determined by the availability of data at the district level. The Mann-Whitney test procedure in this paper builds on the results of the Mann-Kendall test. Specifically, the Mann-Whitney test involves two groups of districts:

- In-migration: districts with increasing and decreasing trends in in-migration.
- Out-migration: districts with increasing and decreasing trends in out-migration.

The Benjamini-Hochberg-Procedure (BH test) was used for reporting the p-values of all test indicators in two groups.

We used logistic regression as a basis for multivariate analysis in order to obtain information about statistically significant predictors in in-migration and out-migration models, while controlling for the GDP per capita, share of the population with higher education (Population aged ≥15) and the ageing index.

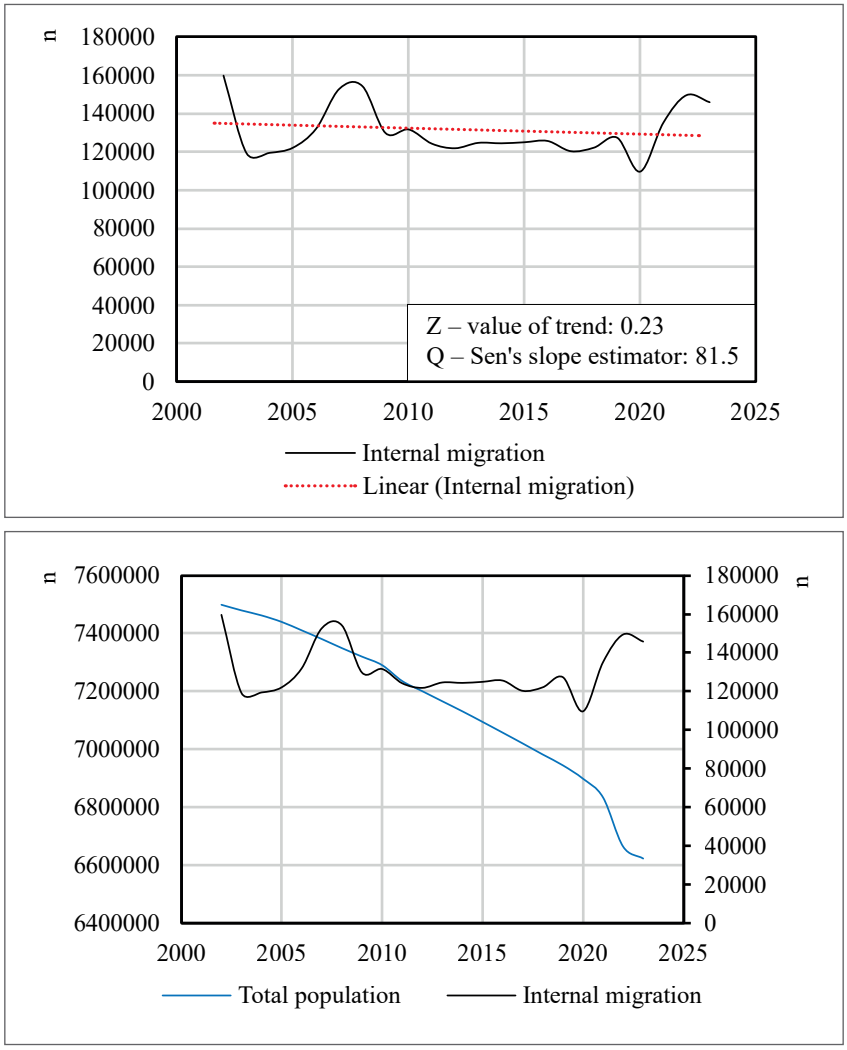
Number	Variable	Source
1.	*Population size*	Census Data Table: Total population, by settlements (Source: SORS 2024a)
2.	*Population density*	Census Data Table: Total population, by settlements (Source: SORS 2024a); Authors calculations
3.	*Urban population (% of total population)*	Census Data Table: Total population, by settlements (Source: SORS 2024a); Authors calculations
4.	*Ageing index*	Publication: Age and sex, Data by settlements (Source: SORS 2023b); Authors calculations
5.	*Share of the population with higher education (Population aged ≥15)*	Publication: Educational attainment, literacy and computer literacy, Data by municipalities and cities (Source: SORS 2023d)
6.	*Share of economically active population (Population aged ≥15)*	Census Data Table: Economically active population performing an occupation by employment status and sex by areas (Source: SORS 2024b); Authors calculations
7.	*GDP per capita*	Publication: Regional Gross Domestic Product, Regions and areas in Republic of Serbia (Source: SORS 2023c)
8.	*Average salary*	Publication: Municipalities and regions of the Republic of Serbia (Source: SORS 2024c)

Table 1: Variables included in the procedure for the Mann-Whitney test (own compilation)

4 Results

The analysis of the Mann-Kendall test shows a stagnant to slightly increasing trend with no statistical significance ($Z = 0.23$) in the dynamics of internal migration over the past 22 years (2002–2023) in Serbia. The value of the Sen's slope estimator ($Q = 81.5$) also indicates a slight positive change in the number of internal migrants on an annual basis during this period. In the observed period, 2002 is singled out as the year in which the largest number of inhabitants in Serbia changed their place of residence (159,685), while in 2020 the fewest internal relocations were recorded (109,747). The dynamics of internal migration in Serbia show different patterns compared to the total population trend, as Serbia's population has been steadily declining for decades (Figure 3).

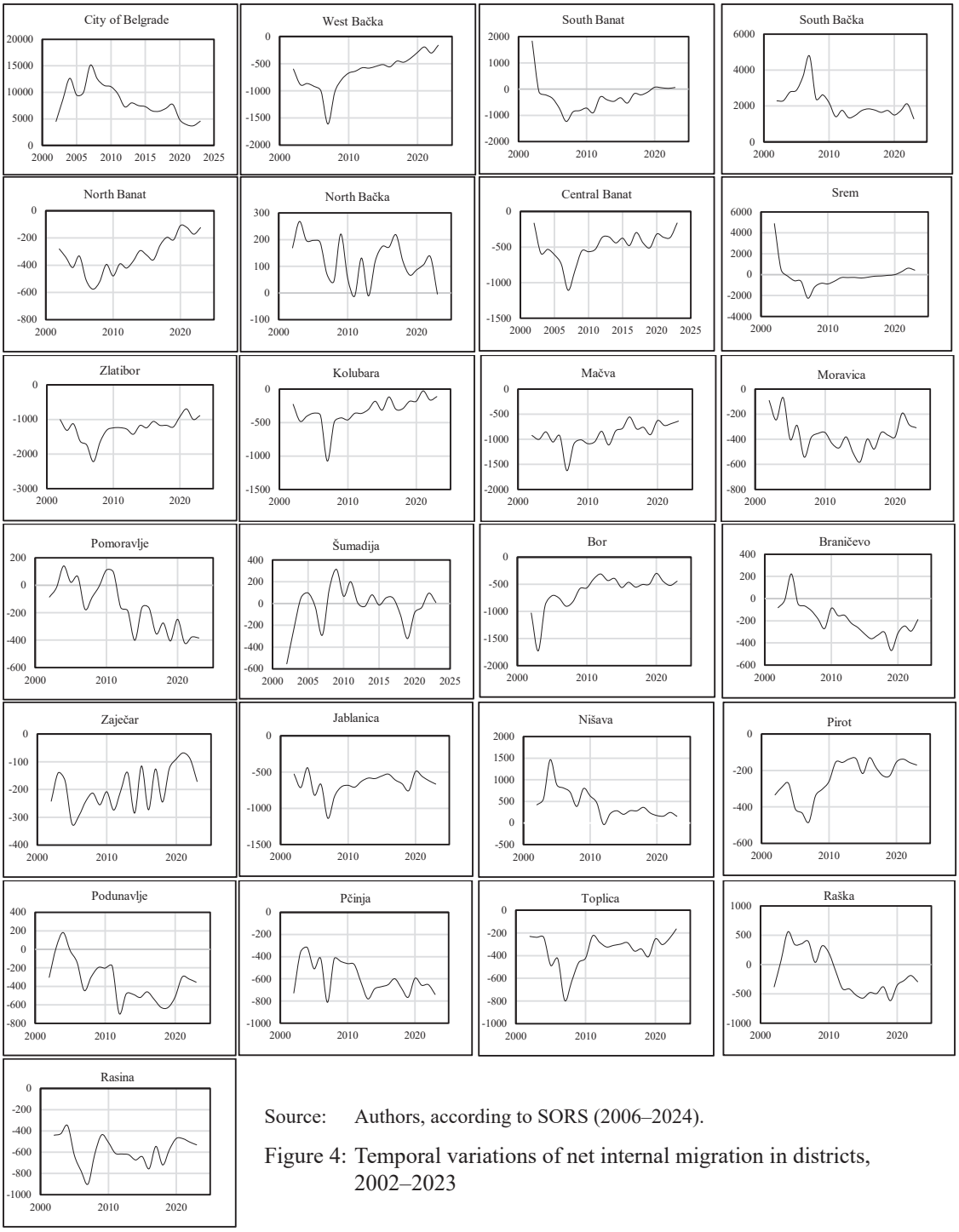
Temporal variations of the net internal migration at the district level revealed that most districts in Serbia were characterised by negative values in the period 2002–2023. The city of Belgrade and South Bačka are the only two regions characterised by positive values of the net internal migration throughout the period. In addition, in Nišava and North Bačka, positive values of the net internal migration were recorded in most years. In Šumadija



Source Authors, according to SORS (2006–2024).

Figure 3: Internal migration trend in Serbia; Results of Mann-Kendall test (a) and comparative review of temporal patterns of internal migration and total population, 2002–2023

district, the net migration value fluctuated during the period, with most years characterised by positive net migration. These are mainly the districts where the regional centres of Serbia are located: Belgrade (City of Belgrade), Novi Sad (South Bačka), Niš (Nišava), and Kragujevac (Šumadija), as well as Subotica (North Bačka), one of the largest cities in the country (by population) (Figure 4).



Source: Authors, according to SORS (2006–2024).

Figure 4: Temporal variations of net internal migration in districts, 2002–2023

Some districts experienced significant changes in net internal migration during this period, shifting from positive to negative or vice versa. In this respect, the South Banat should be mentioned, where the values of the net internal migration have changed from negative to positive from 2020. This change can be seen in light of the spatial proximity to the City of Belgrade and the slightly more favourable living conditions compared to Belgrade, which have contributed to in-migration values exceeding those of out-migration in recent years.

Earlier, Lukić (2011) noted that economic development and a favourable geographic and transportation position relative to Belgrade make Pančevo, the largest town in the South Banat district, attractive to migrants. This pattern also applies to Srem, which shows similar trends as South Banat, and it is located geographically between the City of Belgrade and South Bačka.

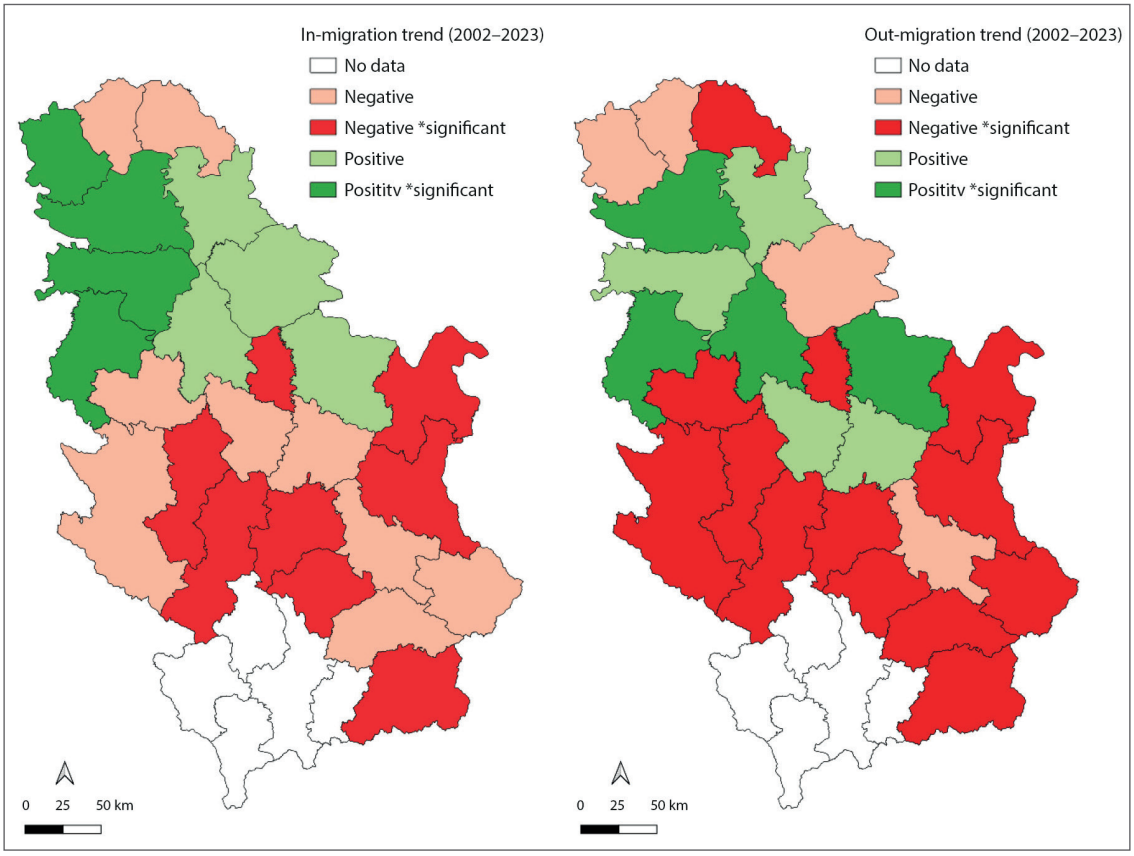
The opposite trend is observed in the Raška district, where the positive values of the net internal migration have turned into negative ones, from 2011. One of the possible reasons for this development is related to the fact that this district received a large number of displaced persons after the events in Kosovo and Metohija in 1999. The influx of displaced persons could have had an impact on the net internal migration in the initial years of the observed period. According to the latest data, Raška is, along with Belgrade, the district with the largest number of displaced persons from Kosovo and Metohija (KIRS 2023).

The results of the Mann-Kendall test show that there are apparent differences between districts in both in- and out-migration trends. Although there are certain deviations, it can be observed that positive trends in the domain of in- and out-migration are primarily characteristic of the northern part of the country, and negative trends the southern part.

Concerning in-migration, 17 districts had a negative or decreasing trend, while eight districts had a positive or increasing trend. Out of the 17 districts where a decreasing trend was recorded, in eight of them (Rasina, Raška, Toplica, Pčinja, Podunavlje, Zaječar, Bor and Moravica) the trend shows statistically significant values. A statistically significant increasing trend occurred in four districts: West Bačka, South Bačka, Srem and Mačva (Figure 5, left).

Out-migration trends also point to differences between districts in Serbia. The Mann-Kendall test reveals a decreasing trend of out-migration in 17 districts, of which in 13 (North Banat, Zlatibor, Kolubara, Moravica, Bor, Zaječar, Jablanica, Pirot, Podunavlje, Pčinja, Toplica, Raška and Rasina) a statistically significant decreasing trend was revealed. On the other side, an increasing trend was determined for eight districts, of which four (City of Belgrade, South Bačka, Mačva and Braničevo) had a statistically significant increasing trend (Figure 5, right).

A detailed analysis of the results of the Mann-Kendall test indicates that in the districts in which a statistically significant decreasing trend of in-migration was revealed, the highest intensity of decline was recorded in the Rasina district. Among the districts in which a statistically significant increasing trend of in-migration was established, slightly smaller variations in the intensity of the growth trend are present. The highest increase intensity was recorded in West Bačka, and the lowest in South Bačka (Table 2).



Source: Authors. Own calculation. Own design.

Figure 5: Spatial variations of annual in- and out-migration trends in the districts of Serbia 2002–2023, according to the results of the Mann-Kendall test

Concerning out-migration, the greatest intensity of decline is recorded in Zaječar and the smallest in Podunavlje. The greatest intensity of increase among the districts characterised by a statistically significant increasing trend of out-migration is seen in South Bačka, and the lowest intensity of growth is recorded in Mačva (Table 2).

The results of the Pettitt test identified a change year, i.e. a year of trend change, in some districts. Based on the analysis, it is evident that the changes predominantly occurred in 2009 and 2010, indicating that significant shifts in migration patterns primarily took place after the financial crisis (Table 2).

Starting from theoretical approaches and empirical conclusions systematically presented in Chapter 2: "Theoretical background and previous research", the further analysis is based on determining the differences between the districts in terms of migration trends, accord-

District	In-migration					Out-migration				
	Z	trend	α	Q	CY	Z	trend	α	Q	CY
City of Belgrade	0.79	i	–	93.7	–	2.48	i	*	496	–
West Bačka	3.16	i	**	30	–	-0.62	d	–	-3.8	–
South Banat	0.90	i	–	13	–	-0.56	d	–	-10.7	–
South Bačka	2.09	i	*	106.8	–	4.34	i	***	163.2	–
North Banat	-0.23	d	–	-1.3	–	-2.37	d	*	-16.1	2010
North Bačka	- 0.93	d	–	-7.3	–	-0.06	d	–	-1.1	–
Central Banat	1.02	i	–	12.6	–	0.01	i	–	-0.7	–
Srem	2.20	i	*	44.6	–	1.24	i	–	21.1	–-
Zlatibor	-1.13	d	–	-42.9	–	-1.80	d	+	-56	2010
Kolubara	-0.68	d	–	-9.8	–	-2.85	d	**	-30.4	2009
Mačva	2.93	i	**	60.3	–	1.92	i	+	31.2	–
Moravica	-2.03	d	*	-39	2010	-1.75	d	+	-36.2	–
Pomoravlje	-0.79	d	–	-12.1	–	0.96	i	–	19.3	–
Šumadija	-0.34	d	–	-4.7	–	0.28	i	–	6.2	–
Bor	-2.65	d	**	-29.2	2008	-2.57	d	*	-59.9	2009
Braničevo	0.45	i	–	5.8	–	2.48	i	*	28.2	–
Zaječar	-3.27	d	**	-24	2010	-4.09	d	***	-27.2	–
Jablanica	-1.64	d	–	-23.4	–	-2.00	d	*	-22.4	–
Nišava	-1.64	d	–	-71.2	2010	-1.13	d	–	-27.7	–
Pirot	-0.56	d	–	-2.4	–	-2.20	d	*	-11	2009
Podunavlje	-3.21	d	**	-51.3	2010	-1.72	d	+	-12.3	–
Pčinja	-3.19	d	**	-63.9	2010	-2.71	d	**	-46.4	2010
Toplica	-3.19	d	**	-28	2010	-3.05	d	**	-29.8	2010
Raška	-3.16	d	**	-108.8	–	-2.43	d	*	-67.8	2012
Rasina	-3.50	d	***	-64.8	2010	-3.44	d	***	-60.9	–

Note: Z – value of trend; i – increasing trend, d – decreasing trend; α – level of significance; Q – Sen's slope estimator; CY – change year (Pettitt test)
Level of significance: *** = 0.001 (0.01 %); ** = 0.01 (1 %); * = 0.05 (5 %); + = 0.1 (10 %); – = level of significance higher than 0.1, i.e. does not indicate any significance in this parameter change

Source: Authors. Own calculation. Own compilation.

Table 2: Results of Mann-Kendall test and Pettitt test, district level, 2002–2023

ing demographic and socio-economic indicators. Based on the results of the Mann-Whitney test (Table 3), the following key conclusions can be drawn:

- Districts with an increasing in-migration trend show higher GDP per capita than those with a decreasing trend: Median "Increasing" = 676,000 vs. Median "Decreasing" = 554,000, two-sided Mann–Whitney p = 0.0495, effect size r = 0.396 (moderate).
- Districts with an increasing out-migration trend have larger population size than those with a decreasing out-migration trend: Median "Increasing" = 267,552.5 vs. Median "Decreasing" = 175,573, two-sided Mann–Whitney p = 0.0495, effect size r = 0.396 (moderate).

Other variables did not show statistically significant differences at the level of $p < 0.05$, but certain values (e.g. average salary and population density) are close to the signif-

Variable	Group	Median (Increasing)	Median (Decreasing)	p	r
Population size	In-migration	262,810	182,047	0.1398	0.303
	Out-migration	267,552.5	175,573	**0.0495**	0.396
Population density	In-migration	72.45	62.80	0.3440	0.198
	Out-migration	81.15	62.40	0.0858	0.350
Urban population (% of total population)	In-migration	54.00	54.60	0.7049	0.082
	Out-migration	58.65	53.20	0.7486	0.027
Ageing index	In-migration	157.65	164.25	0.4747	0.151
	Out-migration	123.29	170.99	0.7108	0.159
Share of population with higher education (Population aged ≥15)	In-migration	13.75	11.70	0.8383	0.102
	Out-migration	13.75	11.70	0.5997	0.010
Share of economically active population (Population aged ≥15)	In-migration	34.90	32.60	0.1898	0.268
	Out-migration	35.25	32.60	0.3078	0.210
GDP per capita	In-migration	676,000	554,000	**0.0495**	0.396
	Out-migration	586,000	554,000	0.1566	0.291
Average salary	In-migration	76,344	72,105	0.0571	0.384
	Out-migration	76,344	72,105	0.0975	0.338

Note: Two-sided Mann-Whitney test with normal approximation (ties handled by approximation). Effect size $r = |Z|/\sqrt{N}$ with tie correction computed from ranks. BH correction is applied across all 16 tests.

Source: Authors. Own calculation. Own compilation.

Table 3: Results of the Mann-Whitney test

icance threshold and could indicate latent patterns that should be investigated further (Table 3).

We see from the Table 4 that population size remains a statistically significant predictor of an increasing trend in both the in-migration and out-migration models, when controlling for GDP per capita, education share, and ageing index. Confidence intervals are wide due to small sample size; therefore, we interpret this as exploratory evidence and report full OR/CI/p values.

Outcome	Predictor (z-score)	OR	95 % CI	p
Increasing in-migration	GDP per capita	1.7239	[0.4590, 6.4750]	0.4199
	Population size	6118.3058	[2.5933, 1.4435×107]	0.0278
	Share of the population with higher education (Population aged ≥15)	0.0254	[0.0006, 1.1491]	0.0590
	Ageing index	1.5265	[0.2123, 10.9776]	0.6743
Increasing out-migration	GDP per capita	0.8896	[0.2196, 3.6029]	0.8698
	Population size	3661.9186	[1.4025, 9.5611×106]	0.0409
	Share of the population with higher education (Population aged ≥15)	0.1230	[0.0074, 2.0341]	0.1432
	Ageing index	3.3043	[0.5122, 21.3167]	0.2089

Note: Predictors are standardised (one standard deviation [SD] increase). CI – confidence interval. Due to n=25 and group imbalance (8 vs. 17), OR estimates can be large and intervals wide. Results are interpreted as exploratory.

Source: Authors. Own calculation. Own compilation.

Table 4: Logistic regression with standardised predictors (odds ratios)

5 Discussion

Analysis of internal migration trends in Serbia in the period 2002–2023 shows that, at the national level, this process generally follows similar patterns each year, with some deviations. These deviations at the national level could be linked to global crises (e.g. financial crisis 2008; Covid-19 2020) that affected the patterns of socioeconomic development and had an evident impact on migration in Serbia as well, as confirmed by earlier research (Šantić et al. 2021; Lukić et al. 2022; Lukić et al. 2023).

In most districts of Serbia, there are decreasing trends, both in-migration and out-migration, which is especially evident in the southern part of the country. The City

of Belgrade, in particular, plays a significant role in attracting internal migration, consistent with the findings of Rowe and Patias (2020), who emphasise the importance of capital cities in the internal migration process. This phenomenon is not a new finding, as previous research has also highlighted the role of regional centres as significant locations for internal migrants (e.g., Kokotović Kanazir et al. 2016; Spasovski and Šantić 2016).

In addition to the City of Belgrade, the South Bačka region also stands out, showing positive migration trends. A detailed analysis indicates that the geographical proximity of Belgrade and the South Bačka district is a factor in the positive changes that occurred in the South Banat district and Srem during the observed period. On the other hand, districts like Rasina, Pčinja, Toplica, and Zaječar show specifically unfavourable trends. The values of Sen's slope estimator indicate a decrease in the intensity of migration in these areas.

Our findings indicate that GDP per capita and population size are particularly important in the process of internal migration. Accordingly, the findings align with earlier concepts emphasising the role of economic factors in shaping migration (Lee 1966; Massey et al. 1993) and support the gravity model. However, our results revealed that districts with an increasing out-migration trend have a larger population size than those with a decreasing out-migration trend, clearly indicating changes in internal migration flows. Considering the long-term decline in demographic potential in districts lacking regional centres, this finding is consistent with broader demographic trends and is therefore not unexpected. On the other side, contrary to some findings (Zaiceva 2014; Gonzalez-Leonardo et al. 2022) that established a relationship between the age of the population and education, our research at the district level did not show a connection. However, we leave room for a deeper examination of this relationship in the future.

The results reveal patterns that are not visible at first glance, demonstrating that positive values do not necessarily indicate that the situation is entirely favourable, while negative values do not specifically indicate that the situation is completely unfavourable and unchangeable. By providing trend analysis results at both the national and district levels in Serbia, we believe our findings are relevant for further action, in line with individual development policies, as each district requires special attention. Here, we primarily refer to key aspects of economic and social development that should consider migration trends into account. Given the observed differences between districts, it is clear that more uniform regional development at the national level would promote balanced growth and provide more effective guidance for internal migration. This is especially relevant for districts in the southern parts of the country, which are characterised by particularly unfavourable trends.

The Economic Migration Strategy of the Republic of Serbia (2021–2027) emphasised the need for more efficient management of internal migration flows in Serbia and recognised the importance of investing in measures for balanced spatial development. Although the process is complex, with deep historical roots and no systematic resolution to date, the initiative represents a positive step toward more effective internal migration measures and sustainable development.

Although our work offers a different approach to researching internal migration in Serbia and combines various methods, we would like to emphasise that the findings of this study should be considered in light of certain limitations. As mentioned, the paper uses official data from the Statistical Office of the Republic of Serbia on internal migration; therefore, we consider these data relevant for researching internal migration processes. However, due to the unclear treatment of internally displaced persons from Kosovo and Metohija in migration statistics until 2012 (Nikitović 2019), our results should be seen with these limitations in mind. Nevertheless, it does not diminish the overall contribution of the research, as our work provides valuable insights into broader trends, highlighting key patterns and relationships. Additionally, our paper offers perspectives on various possibilities for internal migration research and presents a methodological framework that has not yet been applied in internal migration research in Serbia.

6 Conclusion

In this paper, we examined the characteristics of internal migration trends at the national and district levels in Serbia, linking them to selected socioeconomic development indicators. By providing insight into district-level issues, the paper offers an opportunity to consider the findings for each district when developing future strategies. A special contribution of our work is that it offers insight into previously unexplored patterns of trend analysis in Serbia and provides a basis for future research.

Our future work will focus on research at lower territorial units, primarily at the municipal level and, if possible, at the settlement level. We recognise the importance of a longer time frame to observe the dynamics of the process through different stages, and in future research, we will seek to address this gap. Additionally, we intend to include other types of migration in our research. Applying trend analysis to multiple migration types over a specific period will enable a systematic approach to migration management. We recognise that limited data will make this more challenging. Nevertheless, we will attempt to address all types of mobility that can be traced using the given methodological framework.

Since this evidence indicates that the extent of internal migration could also be influenced by global crises, future research should involve experts in the field to examine more deeply the causes of socio-economic changes at the global level (Langović et al. 2025; Srećković et al. 2017; Srećković et al. 2021). We believe it is important to promote this research because it provides a more detailed overview of migration trends and supports timely action. We believe our work has contributed to consideration of this issue.

Acknowledgement

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Physische Geographie

Physical Geography

Mapping and Documentation of Gully Erosion in Selected Areas of Lower Austria

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Summary

Gully erosion is a special form of water-induced soil erosion and is often accompanied by devastating geomorphological effects on the landscape. It is characterised not only by

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high rates of soil loss, but also by lasting changes in the landscape as well as its degradation.

Extensive research on gully erosion has increased in the last two decades. Although studies on this topic had been conducted previously too, they were rather scarce. In Austria, only few studies have dealt with this specific form of soil erosion to date. Accordingly, one of the main objectives of this study was to issue an inventory of gully erosion in a selected study area in Lower Austria. To this end, identified erosion sites were mapped and displayed on a hotspot map to provide an overview of where accumulations of gullying can be found. In addition, a geomorphometric analysis was carried out to provide information about soil and sediment loss induced by gully erosion, as well as other specific characteristics of selected erosion phenomena.

As the results reveal, 2,065 permanent gullies and 289 sunken lanes could be detected in the study area, concentrated in regions characterised by thick loess layers and intensive land use. Moreover, it has been shown that the gullies contribute to considerable soil loss rates. In three representative catchment areas, detailed examinations of the geomorphometric characteristics showed that gully erosion is responsible for more than 1,000,000 m³ of sediment loss. Not only does this lead to the emergence of 'scars' in the affected landscapes, but it also leaves agricultural land unusable.

Since heavy rainfall events are expected to become more frequent in Austria due to the advance of climate change, soil erosion may likewise increase in the future. Therefore, there is an urgent need to intensify research on soil erosion in order to take corresponding measures and protect the soil from devastating erosion events.

Keywords: Soil erosion, gully erosion, gullies, sunken lanes, linear erosion, loess landscape, geomorphometric analysis, digital elevation model (DEM), Lower Austria

Zusammenfassung

KARTIERUNG UND DOKUMENTATION DER GULLY-EROSION IN AUSGEWÄHLTEN GEBIETEN NIEDERÖSTERREICHS

Gully-Erosion (auch: Grabenerosion) ist eine spezielle Form der wasserinduzierten Bodenerosion und geht oftmals mit massiven geomorphologischen Landschaftsveränderungen einher. Zum einen ist sie durch hohe Verlustraten an Boden gekennzeichnet, zum anderen aber auch durch nachhaltige Veränderungen des Landschaftsbildes und seine Degradation.

Intensive Forschungen zum Thema Gully-Erosionen haben sich in den letzten beiden Jahrzehnten gehäuft. Davor gab es zwar auch Studien zu dieser Thematik, allerdings nicht im selben Ausmaß. In Österreich haben sich bislang nur wenige Studien mit dieser speziellen Form der Bodenerosion beschäftigt. Dementsprechend war das Ziel dieser Arbeit, eine Inventarisierung von Gully-Erosionen in einem ausgewählten Untersuchungsgebiet in Niederösterreich zu erstellen. Dafür wurden identifizierte Erosionen kartiert und in einer Hotspot-Karte dargestellt, um einen Überblick darüber zu geben, wo Akkumulationen

dieses Erosionstyps gefunden werden können. Eine geomorphometrische Analyse sollte zudem Aufschluss über den verursachten Bodenverlust sowie über weitere Charakteristika ausgewählter Gullies geben.

Neben insgesamt 2065 detektierten permanenten Gullies wurden im Untersuchungsgebiet auch 289 Hohlwege gefunden. Häufungen dieser Erosionsformen konzentrieren sich auf Regionen mit mächtigen Lössschichten und intensiver Landnutzung. Darüber hinaus tragen die Gully-Erosionen zu beachtlichen Bodenverlustraten bei. In drei repräsentativen Einzugsgebieten des Untersuchungsgebiets wurde eine detaillierte Untersuchung der geomorphometrischen Charakteristika durchgeführt. Dabei stellte sich heraus, dass die Erosionsphänomene für mehr als eine Million Kubikmeter an Bodenverlust verantwortlich sind. Dies führt nicht nur zur Entstehung von „Narben" in den betroffenen Landschaften, sondern beeinträchtigt auch die Nutzung für die Landwirtschaft oder macht Flächen für diese völlig unbrauchbar.

Da die Annahme besteht, dass sich aufgrund des fortschreitenden Klimawandels Starkregenereignisse in Österreich künftig häufen werden, kann es zu einer Verstärkung der Bodenerosion kommen. Daher braucht es dringend auch weiterhin Forschung zum Thema Bodenerosion, um Gegenmaßnahmen zu setzen und die Böden bestmöglich vor verheerenden Erosionsereignissen zu schützen.

Schlagwörter: Bodenerosion, Grabenerosion, Gullies, Gully-Erosion, Hohlwege, lineare Erosion, Lösslandschaft, geomorphometrische Analyse, Digitales Höhenmodell (DEM), Niederösterreich

1 Introduction

Soil erosion is a serious problem across the world as it is associated with different forms of land degradation (incl. loss of soils). Not only does this threaten ecosystems, but it also has significant impacts on food security and human health (FAO 2019; Collins and Owens 2006). Erosion processes can be triggered by both water and wind, although anthropogenic activities, especially in agriculture, are becoming increasingly important in this respect (Strauss and Schmaltz 2020; Poesen 2018; Durán Zuazo et al. 2011).

Gully erosion is a special form of water-induced soil erosion. It constitutes a linear flow process in which surface runoff accumulates in rills and increasingly incises them (Vanmaercke et al. 2021; Frankl et al. 2020; Morgan 2005; Toy et al. 2002). This form of soil erosion is accompanied by high rates of soil loss, with deeply incised permanent gullies often leaving landscapes irreversibly damaged. Gully erosion is particularly disastrous not only due to these high soil loss rates, but also since erosion gullies usually develop within very short timescales (Frankl et al. 2020; Chaplot 2013; Poesen et al. 2003). Moreover, they lead to soil drainage, which is a major problem if it occurs on arable land (Zgłobicki et al. 2017; Valentin et al. 2005).

The formation of gullies is strongly influenced by climatic conditions, especially precipitation events, but also by soil properties, the underlying lithology and their erodibility (Vanmaercke et al. 2021). Other driving factors include the topography, specifically slope

gradient and length (XU et al. 2017), as well as anthropogenic influences, e.g. due to different types of land use and management (CASTILLO and GÓMEZ 2016; DOTTERWEICH et al. 2012; POESEN et al. 2003).

Although gully erosion causes large amounts of soil to be lost, there were barely any studies on the issue until the beginning of the 21st century. This is partly due to the fact that both the *formation* and the *progressive expansion* of gully erosion are relatively complex and not always fully understood (VALENTIN et al. 2005). The complexity of the research is, for instance, reflected in the fact that gullies can be assigned to different types, strongly differing depending on their local occurrence and the impact they cause (CASTILLO and GÓMEZ 2016).

Despite the fact that research on gully erosion has steadily increased in recent years, various gaps in knowledge still remain (CASTILLO and GÓMEZ 2016; VALENTIN et al. 2005). In Europe, there is a lack of research on the existence, characteristics and development of gully erosion. Most research has been limited to studying individual erosion phenomena on a local scale, with a lack of surveys on a larger scale.

There is also a methodological and geographical imbalance. Methodically, the focus so far has been on field studies, emphasising a limited number of gullies or individual systems. The geographical imbalance, meanwhile, prevails due to the fact that research on gully erosion has been carried out only in a few European countries. In addition, there is a very limited number of countries that can provide an inventory of gully erosion, mostly concentrating on specific areas, and with only few including an entire state. As a result, there exists no accurate overview of where gully erosion occurs in Europe (ESDAC 2024).

In Austria, a small number of studies was dedicated to the topic of gully erosion in the past (cf. PETSCHKO et al. 2022; VANMAERCKE et al. 2021; WIESBAUER 2020; WIESBAUER and ZETTEL 2014; KRISSL 1982). However, these studies focussed mainly on one specific gully type, namely sunken lanes, which are a typical feature of the Lower Austrian loess regions. In some areas, these phenomena were mapped, while in others, the investigations highlighted their (historical) formation or possible influencing factors (cf. PETSCHKO et al. 2022; WIESBAUER 2020; WIESBAUER and ZETTEL 2014).

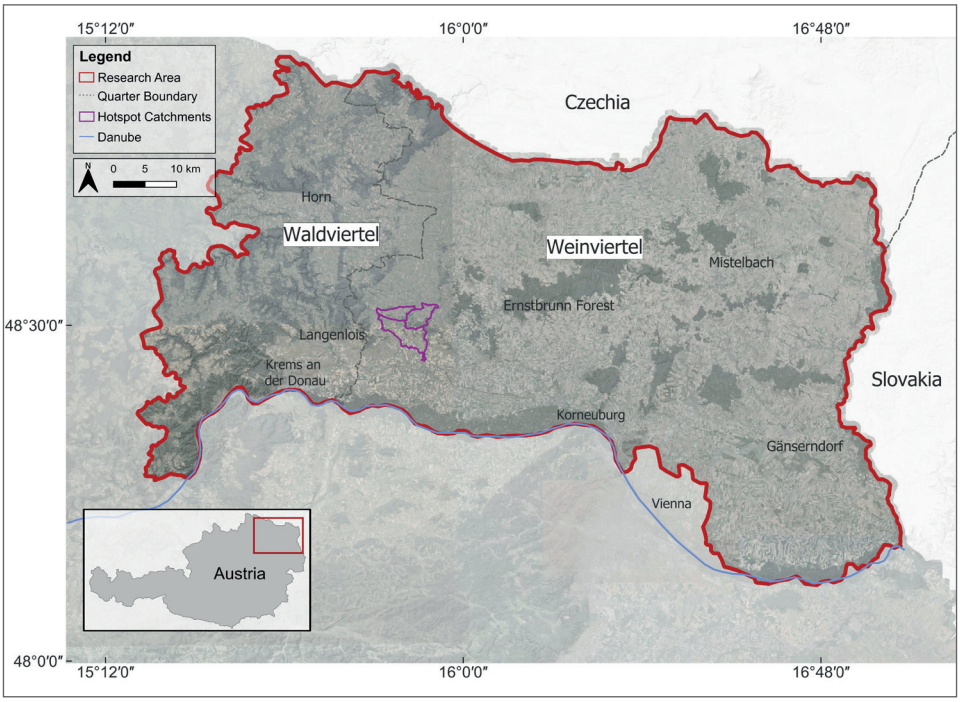
Based on the research gaps as identified above, the main objective of this research was to compile an inventory of gully erosion in a selected study area. The focus was set on the loess regions of Lower Austria, situated north of the Danube. Due to their high fertility, loess soils are often used for intense agricultural cultivation, as is the case in the investigated regions (ZGŁOBICKI et al. 2017; cf. SCHUSTER et al. 2015). However, this particular parent material is highly susceptible to water-induced erosion, especially in combination with intensive agricultural usage (ZGŁOBICKI et al. 2017; CASTILLO and GÓMEZ 2016; WIESBAUER and ZETTEL 2014). Since the study area expands over a large territory, the mapping of gully erosion was not based on a field approach, but on the use of a remote sensing-derived digital elevation model (DEM). DEMs support the analysis of larger areas, especially with regard to the overall occurrence of gullies as well as the spatial distribution and density of erosion processes (VANMAERCKE et al. 2021). The chosen methodolog-

ical approach is therefore well suited for the purpose of compiling an inventory of specific erosion types and is also efficient for studying a larger area.

The study objectives were therefore pursued by 1.) mapping gully erosion using a DEM and presenting the results cartographically in a hotspot map; 2.) distinguishing between permanent gullies and sunken lanes in order to draw attention to the occurrence of different types; and 3.) performing a geomorphometric analysis in three catchment areas to gain an overview of the extent of gully erosion (especially regarding the eroded volumes).

2 Research Area

This research was conducted in the Austrian province Lower Austria, in selected regions north of the Danube (Figure 1). In total, the study area covers more than 6,700 km^2 (Statistics Austria 2021). The entire region of the *Weinviertel* and the eastern parts of the *Waldviertel* (the districts of Horn and Krems-Land) are located within the analysed area. The investigated parts are characterised by a rather dry climate, which is an important prerequisite for soil erosion (BAW 2020). In addition, the region is used intensively for



Source: Digital elevation model (DEM): Provincial Government of Lower Austria; Orthophoto: geoland.at. Own design.

Figure 1: Research area in Lower Austria

agricultural purposes, which results in a low vegetation cover during periods of sowing and early growth stages. These periods, however, correlate with those of intense rainfall, which significantly increases soil erosion potential (BAW 2020; Klik and Eitzinger 2010).

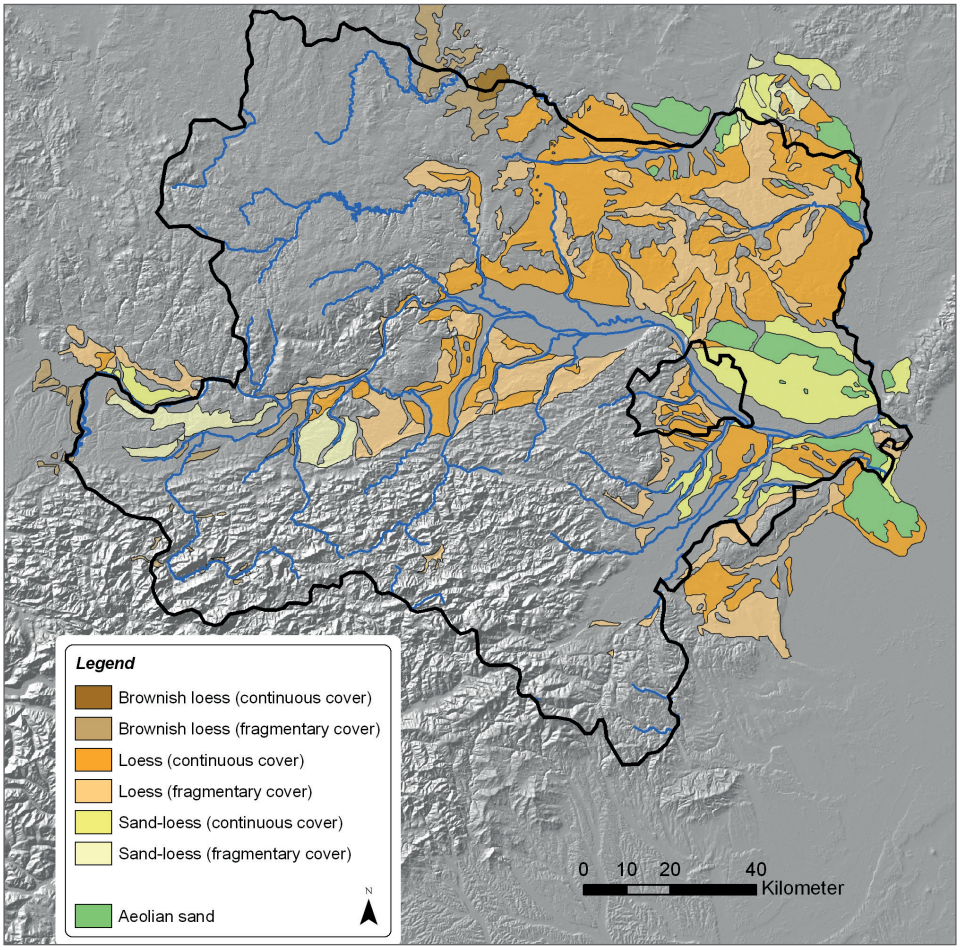
In terms of its geological characteristics, the *Waldviertel* can be determined as part of the Bohemian Massif. Low mountain ranges and hilly landscapes define the area, which is dominated by granite and gneiss and, in the south, is also overlain by sedimentary deposits (e.g. loess, alluvial material) (Schuster et al. 2015; Hofmann 2003). The *Weinviertel*, by contrast, belongs to the Molasse Belt and, to some extent, to the Vienna Basin. Both marine and freshwater deposits (gravels, sands and clays) characterise the landscape (Wagreich et al. 2008).

Since large parts of Lower Austria belong to the Austrian loess belt, this specific parent material can be found in almost the entire study area (Figure 2). In the dry loess landscape, which includes the areas east of the city of Krems, loess layers of several metres in thickness occur (Petschko et al. 2022). Around Krems itself, layers with an average thickness of more than 8 metres can be located (Meyer-Heintze et al. 2018), which strongly increase further to the east towards the municipality of Langenlois, where layers of up to 20 metres can be identified (Thiel et al. 2011). Such thick loess layers can be found across large parts of the study area (Haesaerts et al. 2016); nevertheless, their extent decreases towards the south-eastern border of the research area. In those regions, the parent material is only present in thin, partially fragmented layers (Brandtner 1954).

Due to the prevalence of loess as parent material, Lower Austria is characterised by productive and fertile soils. Cambisol and chernozem are the predominant soil types in the investigated area, with smaller amounts of humid black chernozem and colluvium also occurring (NÖ Agrarbezirksbehörde n.d.).

Because of the high fertility of Lower Austrian soils, intensive agricultural use has been carried out for centuries. During Roman times, the cultivation of wine intensified, for which large areas were terraced (Wiesbauer and Zettel 2014). Agriculture also became increasingly important in the High Middle Ages. Large forest areas were cleared to initiate the cultivation of arable fields. In addition, viticulture continued to flourish, due to which even more settlements emerged, and the population grew steadily. From the 18th century onwards, the cultivation of other crops became important as well. Arable land was dedicated not only to viticulture but also to the cultivation of potatoes and different types of cereals (Krawarik 2006; ÖBIG 1985). Today, around 46 percent of the Waldviertel and 65 percent of the Weinviertel are designated as agricultural land (AMA 2024; Statistics Austria 2021). Viticulture continues to play a prominent role, but overall cultivation has diversified. As a result, various types of cereals, potatoes, sugar beets, rape and pumpkins are raised on Lower Austria's agricultural fields (Provincial Government of Lower Austria 2022; Lamm 2010).

In terms of climate, the Waldviertel, the westernmost part of the study area, is generally defined by Atlantic-Oceanic influences. However, these impacts are rather minor, as this part can be designated as a transition zone to the Weinviertel, which is dominated by Continental-Pannonian influences (Petschko et al. 2022). Accordingly, a rather dry climate prevails in the investigated area. The Pannonian influences result in dry and cold



Source: Terhorst et al. 2009, p. 69; Loishandl and Peticzka 2005.

Figure 2: Loess map of Lower Austria

winters as well as dry and hot summers. Average precipitation in the study area ranges from 500 to just over 600 mm per year (Provincial Government of Lower Austria 2025a, 2016b). The highest monthly precipitation values occur between May and September, whereas the winter months tend to have low rainfall rates (Provincial Government of Lower Austria 2025b). This is also consistent with studies on erosive precipitation. In the studied regions, erosive precipitation falls mainly during the summer months, especially in conjunction with thunderstorms, while erosive rainfall events are also frequent in late spring and early autumn (May–September) (Vásquez et al. 2024). The accumulation of erosive precipitation in late spring, while the vegetation cover in agricultural areas is still low, poses a particular risk for soil erosion (Johannsen et al. 2022).

3 Data and Methods

Within ArcGIS Pro (version 2.7), a Digital Elevation Model (DEM) with a resolution of 1 x 1 m was used to achieve the objective of creating an inventory of gully erosion in Lower Austria. The DEM was provided by the General Building Services Department of the Provincial Government of Lower Austria. It consists of aerial laser scanning data, with the photographs taken in 2011/2012 for small parts in the south of the Weinviertel. For the rest of the study area, however, the recordings date from 2018 and, for the most parts, from 2020. The data acquisition of the present study took place in 2021 and 2022 (see Diem 2022).

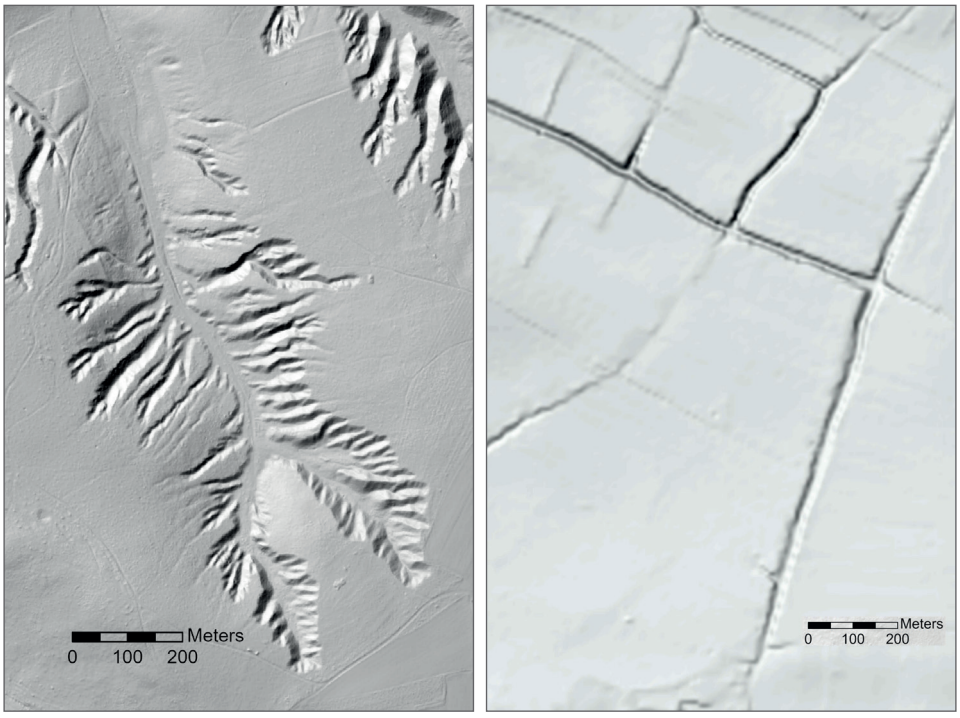
DEMs have increasingly been applied for gully mapping in recent years as they enable a detailed geomorphological and hydrological analysis due to their high resolution. In addition, they offer the advantage that erosion phenomena can be identified easily and swiftly on a larger spatial scale, while also providing an overview of erosion density (Vanmaercke et al. 2021). Based on the DEM, a hillshade was generated in ArcGIS, which was overlaid with a grid measuring 2 x 2 km. The grid was used for the subsequent search of the gullies, whereby each column was scanned manually.

Eventually, two different types of gullies were mapped: permanent gullies and sunken lanes (see Figure 3). A gully is described as permanent if it covers a depth between 0.5 and 20–30 m, which means it cannot be removed by common tillage practices (Borrelli et al. 2022; Zgłobicki et al. 2017). Sunken lanes are also a form of permanent gully erosion, but their formation occurs exclusively due to anthropogenic influences. Sunken lanes mainly developed in the past when the soil of unpaved paths was loosened by carriages and livestock and entrained during precipitation events. Consequently, deep incisions characterised by particularly high walls have formed (Zgłobicki et al. 2021; Wiesbauer and Zettel 2014; Boardman 2013).

Although there are other types of gully erosion, the selected methodological approach only allowed the search for permanent gullies and sunken lanes. For the identification of ephemeral gullies, which are quite small in their extent – max. 0.5 m in depth – (cf. Thwaites et al. 2021; Poesen et al. 2003), the spatio-temporal resolution of the DEM was too low. Moreover, ephemeral gullies tend to appear only for a short time span as they can be obliterated by common tillage practices. It is therefore rather unlikely for ephemeral gullies to be recorded in a time-limited survey such as a DEM (Vanmaercke et al. 2021). Another type of gully that could not be mapped using this methodology is the bank gully. Bank gullies are characterised by a significant drop in elevation (Thwaites et al. 2021; Vandekerckhove et al. 2000; Poesen et al. 1996). As many regions of the study area are used for the cultivation of wine, there existed a great risk of confusing terraced vineyards with bank gullies.

The decisive factor in distinguishing between the two selected types of gullies, while mapping them, was their planform shape (see Figure 3). Permanent gullies are usually strongly branched, with several gullies often forming an entire system. Mostly, they consist of a wide main channel and many smaller and larger branches (see also Thwaites et al. 2021). Sunken lanes, by contrast, are characterised by much more pronounced lateral boundaries, are often longer than permanent gullies and extend more linearly. In addition, no branches are visible. For verification purposes, an orthophoto and a basemap of the study area were

attributed to the DEM to additionally examine the general landscape appearance. Since sunken lanes are mostly used as (agricultural) tracks or roads, their usage differs greatly from the one of permanent gullies, which occur both on agricultural land and in forests and are mostly left fallow.



Source: DEM: Provincial Government of Lower Austria. Own design.

Figure 3: Analysed gully types: permanent gully (*left*); sunken lane (*right*)

Identified erosion features were mapped using the Image Mensuration Tool integrated in ArcGIS. The measurement type 'line' served for the mapping of the gullies. A line can be drawn by splitting it up into several sections, so that each individual gully could be accurately represented. The erosion features were mapped from their head to their drainage area and automatically saved by the programme as polygon feature classes. In addition, the length of each section as well as the total length of a gully were likewise automatically calculated by the programme (ESRI n.d.a).

Once all the gully erosion identified in the study area had been mapped, a hotspot map was created using the *'Kernel Density'*. The Kernel Density requires point or polyline features and a radius for its calculations, with the latter being set either manually or automatically. For this study, the radius was set to 5 km, as this yielded the best results. Eventually, hotspots occur at those points where an accumulation of the input feature class is detected

within the set radius. Hotspots of gully erosion are therefore located where the Kernel Density shows a particularly high density of point features, which were derived from the mapping (ESRI n.d.b).

As a next step, three streams were determined within the calculated hotspot areas, into which as many gullies as possible drained. In the vicinity of these three selected streams, high numbers of gullies were mapped in general, but also in terms of the two distinguished types. Since significantly fewer sunken lanes than permanent gullies were identified, they exist only in two of the three catchments, but also in strong accumulations. Based on the large number of phenomena located in the catchment areas, it was assumed that the results of the geomorphometric analysis could be considered representative of the entire study area.

As with the mapping of the gullies, the *'Image Mensuration Tool'* was likewise applied for the following geomorphometric analysis:

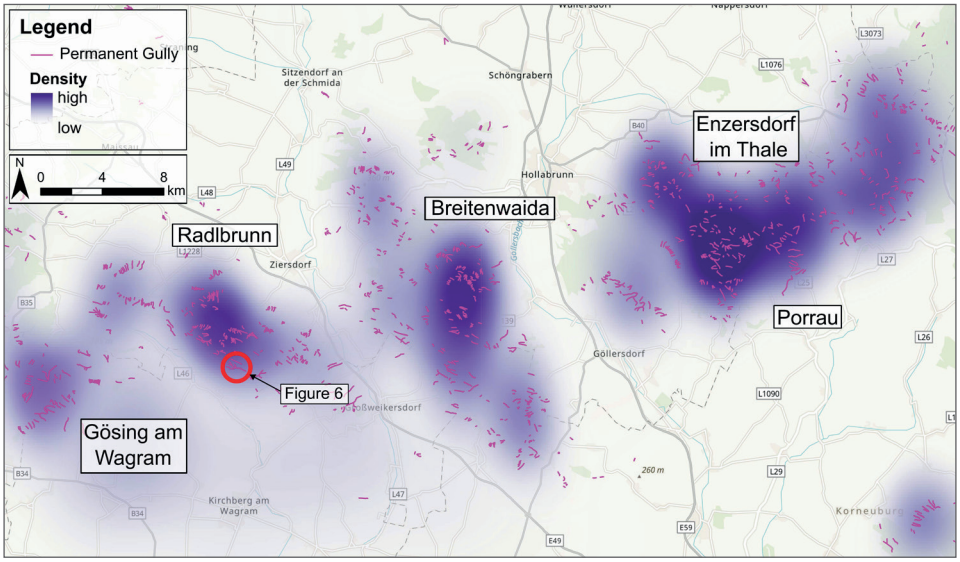
- *Length and width:* The gullies were measured from their head to their drainage area using the Distance Calculation Tool. The shape of the main channel was precisely replicated, while ArcGIS automatically calculated the length of the drawn features in the background (ESRI n.d.a). The same procedure was used to calculate the width.
- *Depth:* The depth was calculated using the 3D Point Calculation Tool. A point was set in the terrain outside the gully, as well as one within the erosion (ESRI n.d.a). The calculated Z values were then subtracted from each other to calculate the differences in height.
- *Volume:* The Volume Calculation Tool was applied to determine the entrained material of each erosion. The tool calculates the cut and fill volume of an object, subsequently generating the total volume. The calculations are based on the elevation data set (ESRI n.d.a). For each erosion phenomenon, the planform shape was explicitly traced.

4 Results

A total of 2,065 permanent gullies and 289 sunken lanes were mapped within the surveyed area, with most of them identified in the southern part of the study area. Although the two types of erosion often occur alongside each other, the hotspots are clearly distinguishable.

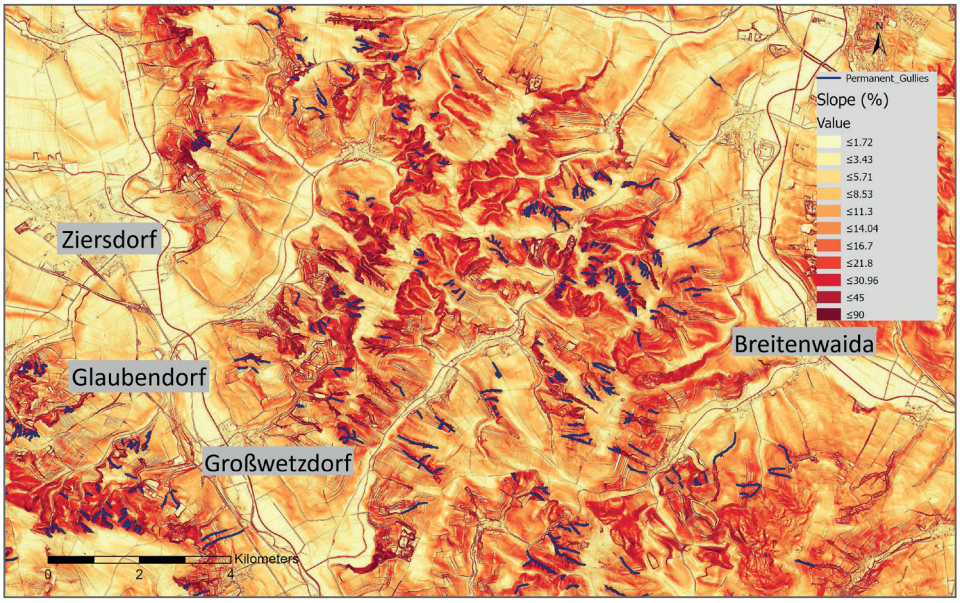
4.1 Permanent Gullies

Permanent gullies are the predominant type of gully erosion identified in the study area (Figure 4). They are distributed across the entire region, occurring both on agricultural land and in forests. The accumulations of permanent gullies in the west (around the area Wagram) developed in a rather flat terrain (average slope gradient smaller than 10 percent). Nevertheless, most gullies are concentrated where the slope gradient increases significantly. Locally, the slope around clusters of permanent gullies exhibits a gradient around 10–20 percent, often even 35 percent upwards. In general, the slope increases towards the eastern clusters. In the Ernstbrunn Forest, the inclination averages out at 10–30 percent, although even steeper slopes can be discovered, too (Figure 5).



Source: Basemap: ESRI 2024. Own design.

Figure 4: Hotspot map of permanent gullies in the study area

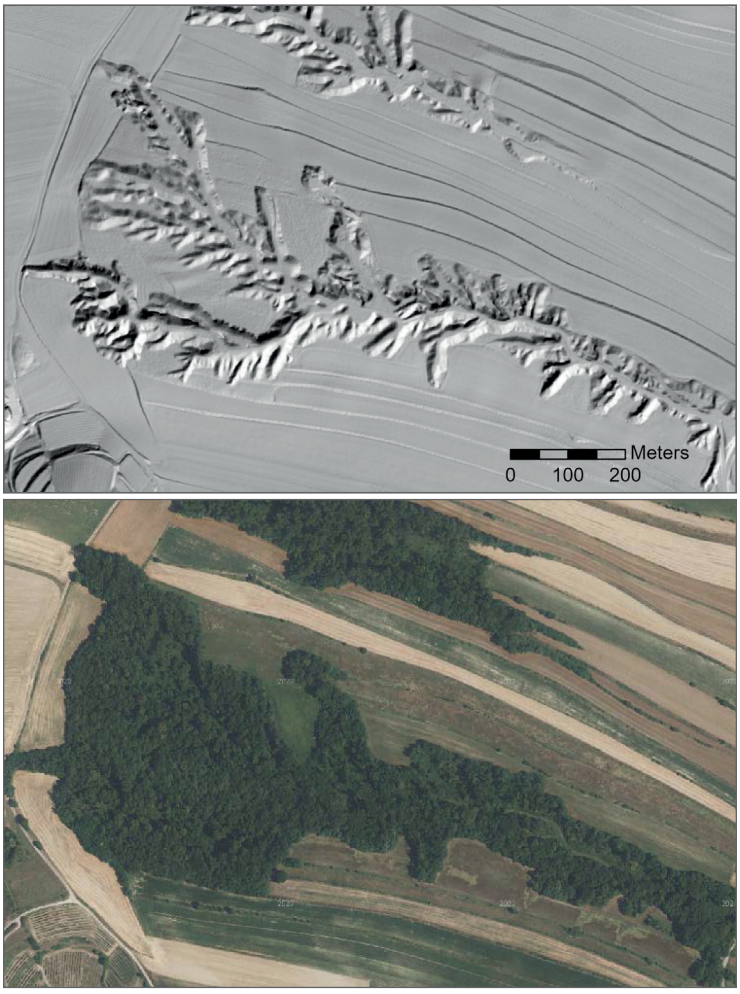


Source: DEM: Provincial Government of Lower Austria. Own design.

Figure 5: Slope gradient in an extract of the hotspot area of permanent gullies

Regarding the lithology, loess constitutes the main parent material underlying the accumulations of permanent gullies. The western clusters around the Wagram are characterised by relatively thick loess layers of up to 8 metres, in some cases even thicker (MEYER-HEINTZE et al. 2018; THIEL et al. 2011). Towards the east, however, the thickness decreases. Around the Ernstbrunn Forest, only a fragmented cover exists in some places (cf. Figure 2).

The regions in which the erosion phenomena accumulate exhibit a history of intensive agricultural usage. Historical maps reveal that, centuries ago, orchards, vineyards and arable land dominated the landscape (FUHRMANN 2007). Even the Ernstbrunn Forest was used



Source: DEM: Provincial Government of Lower Austria; Orthophoto: Geoland.at. Own design.

Figure 6: Permanent gully as represented in the DEM hillshade *(above)* and orthophoto *(below)*

for such purposes. Especially in the Middle Ages, deforestation increased to create fields for crops as well as livestock (Bidner n.d.). Viticulture remained an important economic branch throughout the centuries; nevertheless, since the mid-19th century, cultivation has diversified. Since then, various types of cereals and vegetables have also been harvested (Langthaler 2012). The hotspot regions have largely remained agricultural land to these days. Viticulture continues to predominate in the western part (Wagram), while at other hotspots of permanent gullies the fields are also used for other forms of cultivation (Provincial Government of Lower Austria n.d.).

The orthophotos highlight that the occurrence of permanent gullies has a lasting impact on the landscape. If erosion occurs on agricultural fields, this part is left fallow, and vegetation often covers the erosion features (see Figure 6). The permanent gullies that were detected in the Ernstbrunn Forest are equally identifiable on orthophotos as they appear as a clear cut through the otherwise dense canopy and leave a gap in the closed vegetation cover.

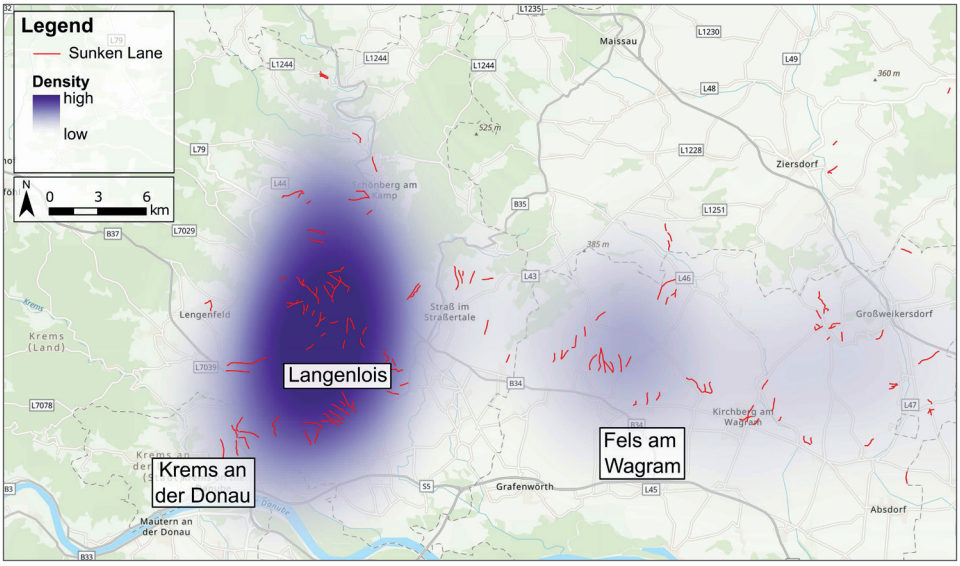
4.2 Sunken Lanes

Sunken lanes account for a much smaller proportion of the mapped gully erosion. The area around the locality Langenlois has been identified as the main hotspot for this type, although smaller accumulations also occur in the Wagram region (Figure 7). While sunken lanes clearly dominate in Langenlois, and permanent gullies are hardly detectable, the two types of erosion occur side by side in the Wagram area. While Langenlois itself is very flat (slope gradient <10 percent), the surrounding vineyards have much steeper slopes. Locally scattered, the slopes often exceed inclinations of 35 percent, and in some places even 50 percent. A few sunken lanes were identified within such steep slopes, but most of them emerged on gentler hillslopes (Figure 8).

Like the permanent gullies, the accumulations of sunken lanes are geologically dominated by loess as parent material. In Langenlois, very thick layers of loess prevail, some of which are at least 20 metres in their extent (Thiel et al. 2011).

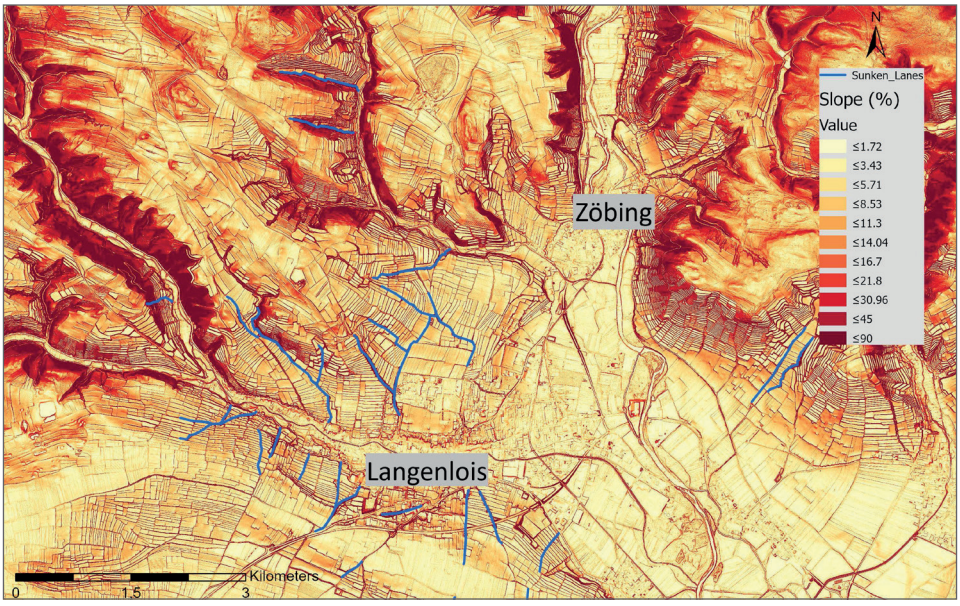
Settlements were established very early in the areas where sunken lanes cluster. During the Roman Age, viticulture was established and brought great prosperity to the settlements. The cultivation of vineyards continued in the Middle Ages, but by that time, fields were also used for the harvest of crops (Wiesbauer and Zettel 2014). Intensive land use continued, and by the 18th century, around 75 percent of the population was involved in viticulture. After the Second World War, industrialisation took hold, but viticulture remained the most important branch of agricultural use for the regions where clusters of sunken lanes are found (ÖBIG 1985). Even today, viticulture continues to dominate the landscape (Provincial Government of Lower Austria n.d.).

Many sunken lanes have been destroyed in recent decades, either through waste disposal, land consolidation, levelling, or intensive agricultural use. Those sunken lanes that still exist today continue to be used as paths, although most of them have been paved to prevent further erosion. Some of them are also used as cellar lanes (*"Kellergasse"*) to store wine in cellars built into the thick layers of loess (Petschko et al. 2022; Wiesbauer 2020).



Source: Basemap: ESRI 2024. Own design.

Figure 7: Hotspot map of sunken lanes in the study area



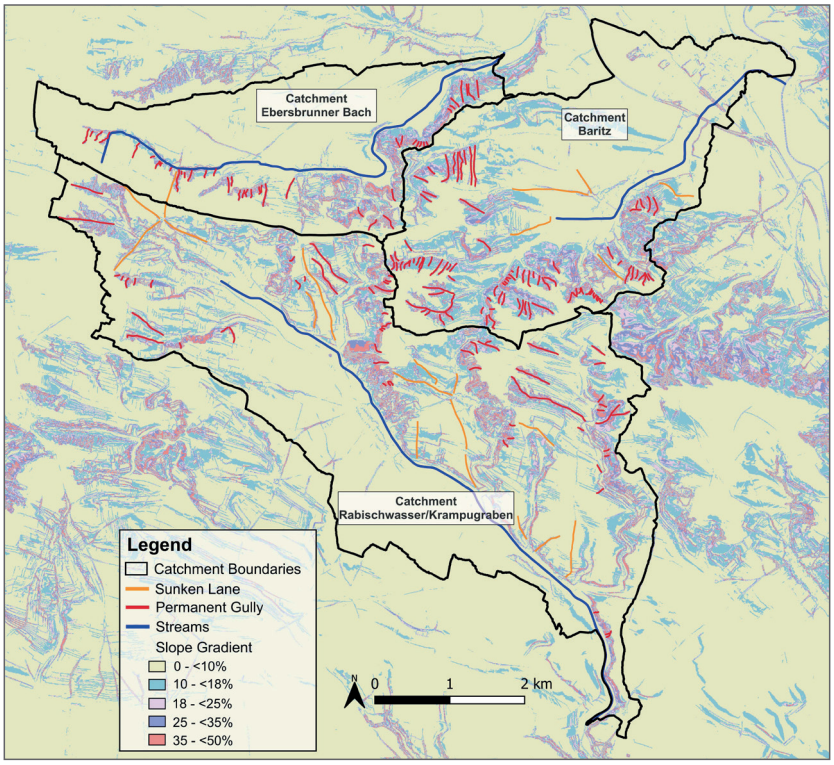
Source: DEM: Provincial Government of Lower Austria. Own design.

Figure 8: Slope gradient in Langenlois, hotspot of sunken lanes

4.3 Geomorphometric Analysis

To highlight the dimensions of the mapped erosion phenomena, which varied greatly in some cases, exemplary gullies were selected both in the catchments and in the rest of the study area; these were examined in more detail in terms of their length, width and depth. The examination of these exemplary gullies was intended to illustrate the range of the occurring geomorphometric characteristics. The smallest erosions that could be identified with the chosen methodological approach were around 20 metres in length, whereby all of these smaller examples could be designated as permanent gullies. Sunken lanes, by contrast, exhibit the smallest widths as they often only occupy the width of a single lane. Considering the depth, the smallest values are around 0.5 metres, which applies to both permanent gullies and sunken lanes. In contrast, the maximum values of the exemplary gullies amount to 1.5 km in length (both permanent gullies and sunken lanes), slightly more than 100 metres in width (permanent gullies) and over 20 metres in depth (permanent gullies).

Every erosion identified within the selected catchments (Figure 9) was likewise analysed in terms of length, width and depth, but the main focus was the eroded volume.



Source: Basemap: Geoland.at. Own design.

Figure 9: Catchments and gully erosions included in the geomorphometric analysis

Permanent gullies were found in all three catchment areas, with the highest values of all parameters examined as follows: approximately 1.2 km in length, slightly more than 100 metres in width, around 2 metres in depth and a material loss of 147,389 m^3.

The dimensions of the permanent gullies vary greatly, as do the eroded volumes. However, considering the overall soil loss due to permanent gullies in the catchment areas, results revealed that more than 1.3 million m^3 of material were entrained. Converted to linear metres, the material loss per permanent gully is slightly more than 40 m^3/m (Table 1). Despite the general differences in the geomorphometric characteristics mentioned above, this last value applies to permanent gullies in all three catchment areas without exception.

Catchment	Cumulative volume loss (m^3)	Volume loss (m^3/ha)	Volume loss (m^3/m)
Rabischwasser/ Krampugraben	464,334	91.7	47.1
Baritz	594,613	252.3	42.5
Ebersbrunner Bach	257,924	127.1	42.6

Source: Own calculations

Table 1: Volume loss caused by permanent gullies in the selected hotspot catchments

Catchment	Cumulative volume loss (m^3)	Volume loss (m^3/ha)	Volume loss (m^3/m)
Rabischwasser/ Krampugraben	94,655.7	18.7	17.1
Baritz	6,996.8	3	4.3

Source: Own calculations

Table 2: Volume loss caused by sunken lanes in the selected hotspot catchments

Since, in general, fewer sunken lanes than permanent gullies were detected, this second type of erosion only occurs in two of the three selected catchment areas. Considering the geomorphometric parameters examined, the highest values for sunken lanes can be stated as follows: over 600 metres in length, 73 metres in width, approximately 4.5 metres in depth and around 30,000 m^3 of material loss. As with permanent gullies, the geomorphometric characteristics of this erosion type vary greatly. In contrast to the permanent gullies, however, the sunken lanes eroded significantly less material. While the soil loss for permanent gullies accumulated to 1.3 million m^3, it was just over 101,000 m^3 for the sunken lanes. Even when converted to linear metres, no similarities between the sunken lanes in the two catchment areas are detectable. While the volume loss per linear metre in one catchment area is around 17 m^3/m, in the other it is only 4.3 m^3/m (Table 2).

5 Discussion

The survey revealed that gully erosion constitutes a problem in Lower Austria and occurs frequently in certain regions. Accumulations were found in areas with a certain slope gradient, where a clear difference between the two types examined became apparent. While permanent gullies occurred mainly on slopes with a gradient of at least 10 percent (usually even steeper), sunken lanes could also be identified in flatter areas.

In general, the slope gradient is considered to be one of the most important geometric variables influencing the development of gully erosion (Vanmaercke et al. 2021; Chaplot 2013; Durán Zuazo et al. 2011; Poesen et al. 2003). Slopes with gradients of 15 percent or more are assumed to be particularly susceptible to gully erosion (Desmet et al. 1999; Vandekerckhove et al. 2000; Valentin et al. 2005; Liu et al. 2021). In this respect, the study was able to confirm this assumption, at least with regard to permanent gullies. Nevertheless, gullies can also be detected on gentler slopes, provided that other influencing factors are present, too (Descroix et al. 2008; Yibeltal et al. 2019; Liu et al. 2021). Sunken lanes, in particular, were identified in much flatter areas, with only a few emerging on slopes with a steeper gradient. This could possibly be due to the fact that sunken lanes are heavily dependent on anthropogenic influences. They are created, for example, by the use of unpaved roads where cart wheels (whether from former carriages or modern machinery) loosen the soil structure, create artificial channels and provide material, which can be easily entrained during subsequent rainfall events (Zgłobicki et al. 2021; Wiesbauer and Zettel 2014; Boardman 2013). Accordingly, in this case, the anthropogenic impact clearly outweighs the slope gradient.

Soil properties are considered to be another influencing factor in the formation of gully erosion. The investigated area is located almost exclusively in the so-called 'loess region' of Lower Austria, where different degrees of thickness prevail. Although gully erosion could be mapped across the entire study area, the phenomena accumulated predominantly in those regions characterised by thick loess layers. Permanent gullies accumulate in regions with loess layers of 8 metres in extent or even more (Meyer-Heintze et al. 2018). Only one cluster is located in an area where the parent material is considerably thinner or only present as fragmented layer (Brandtner 1954). The accumulations of sunken lanes were also concentrated in areas with thick loess layers. The cluster near Langenlois, in particular, is located in a region with layers amounting to 20 metres in extent (Thiel et al. 2011). Loess is therefore considered an important factor influencing soil erosion phenomena such as gullies since it exhibits characteristics such as high erodibility and a tendency to silt up (Castillo and Gómez 2016; Wiesbauer and Zettel 2014). Accordingly, soil particles are rapidly degraded during intense precipitation events, and siltation leads to increased surface runoff, which might gather in depressions and rills (Castillo and Gómez 2016; Durán Zuazo et al. 2011).

Although the study area is located in a climate zone influenced by the Continental-Pannonian climate, resulting in a rather dry region, precipitation occurs continuously throughout the year, with peak values occurring between May and September (Provincial Government of Lower Austria 2025b). Erosive precipitation occurs mainly in late spring and early summer. At this time, the soil is often uncovered, as the growing season is just beginning,

which means that the soil is more exposed to the erosive forces of precipitation. In addition, thunderstorms occur repeatedly during the summer months, accompanied by heavy precipitation and higher erosive forces (Vásquez et al. 2024; Johannsen et al. 2022).

Another distinctive feature regarding the occurrence of gully erosion in Lower Austria can be attributed to the land use. Hotspots were located almost exclusively in areas that have been subject to intensive anthropogenic utilisation, both historically and in the present day. The regions were settled very early, with wine having been cultivated since Roman times. Even though land use has changed over the centuries, and other crops such as cereals and vegetables have also been harvested since the 18th century, viticulture continues to play an important role. In viticulture, in particular, plants are grown in rows with large spaces between them. If, in addition, the cultivation is carried out in the direction of the slope, soil erosion can be further exacerbated. In unplanted rows, which may serve as paths for machinery, the soil is exposed to climatic influences without protection (BAW 2020; Klik and Eitzinger 2010). All of this is consistent with the general assumption that agricultural usage constitutes an important influencing factor in gully erosion. Deforestation and the mechanical cultivation of fields (e.g., ploughing, row planting) (Zgłobicki et al. 2017; Castillo and Gómez 2016), as well as the construction of unpaved paths (Wiesbauer and Zettel 2014; Klik and Eitzinger 2010), are important factors affecting the development of gully erosion, particularly in the studied regions.

When considering the impact factors of gully erosion, the variable 'climate' is likely to change significantly in the near future. According to the status report published by the Austrian Panel on Climate Change (APCC 2025), ongoing climate change will lead to alterations in Austria's water and temperature balance. Convective events and extreme precipitation will likely increase in the future, causing more severe soil erosion. The expected precipitation events, in combination with other influencing factors such as slope gradient and land use, could lead to much more frequent and severe erosion events if no countermeasures are taken (APCC 2025). These assumptions are consistent with various studies conducted on the impact of climate change on soil erosion, which also indicate that increasing extreme precipitation events lead to higher rates of soil erosion (cf. Borrelli et al. 2020; Luetzenburg et al. 2020; Li and Fang 2016).

As the geomorphometric analysis revealed, gully erosion in Lower Austria contributes to major soil loss. In this respect, permanent gullies tend to erode more material than sunken lanes. One possible reason for this is that permanent gullies tend to be larger and much more branched than sunken lanes, which were often paved in the past for anthropogenic purposes, inhibiting further downcutting. Overall, permanent gullies located in the exemplary catchment areas led to the erosion of more than 1.3 million m^3 of material, while sunken lanes removed slightly more than 100,000 m^3. These results support the assumption that gully erosion can lead to serious land degradation and is associated with large amounts of soil loss (Vanmaercke et al. 2016; Poesen et al. 2003).

Regarding the applied methods, the presented research was able to reveal that working with a Digital Elevation Model (DEM) is well suited for gaining a general overview of gully erosion in a larger study area. Nevertheless, it must be noted that this methodical ap-

proach also comes with certain limitations. Permanent gully types are convenient to search for, mainly because they are irreversible and therefore persistently present in a landscape. However, to identify and map other gully types, such as the smaller and usually only temporary ephemeral gullies, other approaches are needed. In this respect, field studies are better suited than working with a DEM, as aerial laser scanning data is usually not updated at short intervals (Vanmaercke et al. 2021). Moreover, a DEM only provides insights into the actual state of a gully at a certain point in time. This makes it much more difficult to differentiate between gullies other than permanent ones, as well as to make statements about their emergence and long-term development.

6 Conclusion and Outlook

Gully erosion is a serious issue in the investigated areas in Lower Austria. 2,065 permanent gullies and 289 sunken lanes were mapped, with hotspots concentrated in regions with thick layers of loess. The identified erosion features contribute to major soil loss. Exemplary calculations revealed that permanent gullies eroded more than 1.3 million m^3 of soil, whereas sunken lanes led to the loss of more than 100,000 m^3 of material. In general, permanent gullies exhibit a greater extent than sunken lanes, especially in width, depth and soil loss. However, both erosion phenomena can occupy remarkable lengths of more than 1,5 km.

Among other factors, the slope gradient was identified as an important influence on the formation of gully erosion, especially for permanent gullies. Sunken lanes, by contrast, do not seem to depend as much on the slope gradient as they do on anthropogenic influences. Soil properties, however, influenced both erosion types equally. Hotspots were concentrated in areas where thick layers of loess constitute the parent material. Land use also plays an important role, as erosion accumulated primarily in regions that have been subject to intensive agricultural use for centuries. Since gully erosion is a water-induced form of erosion, precipitation is of great importance, too. In the study area, erosive precipitation occurs especially in late spring, during the summer months and in early autumn in the form of convective rainfall and thunderstorms. If the vegetation cover is still low during these events or is already absent due to harvesting, the risk of erosion increases significantly (Johannsen et al. 2022).

In view of the climate crisis, it is therefore all the more urgent that further studies are conducted on the subject of soil erosion in general and gully erosion specifically. In Austria, extreme precipitation events and soil erosion are expected to increase (APCC 2025). However, once the problem of soil erosion in certain areas, such as Lower Austria, is apparent, targeted countermeasures can be taken. To this end, it is vital to know where erosion occurs and what specific forms and extents it entails (as this study has attempted to show). Moreover, it is important to conduct more research concerning the factors that influence erosion phenomena, to investigate their exact development and to explore the alteration of already existing types. Once it is understood how all these factors influence soil erosion and interact with each other, research on measures should be continued in order to better prevent future erosion events and protect soils from further degradation.

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Räumliche Planung

Spatial Planning

Conceptualising and Operationalising Green Infrastructure in Spatial Planning: Selective Embedding in Transitional Governance Contexts (Struga and Vevchani, North Macedonia)

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Summary

Over the past two decades, Green Infrastructure (GI) has gained prominence as a strategic spatial planning concept aimed at integrating ecological connectivity, ecosystem services, and socio-spatial objectives within coherent territorial frameworks. Yet empirical

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evidence indicates that its operationalisation remains uneven, particularly in small municipalities and transitional governance contexts that are underrepresented in mainstream GI scholarship. This study examines how GI is conceptualised, operationalised, and implemented within the spatial planning system of North Macedonia, with a specific focus on the municipalities of Struga and Vevchani. Adopting a qualitative multiple-method design, the research combines Critical Discourse Analysis of national, regional, and municipal planning documents with a structured practitioner workshop aimed at examining institutional interpretations, implementation constraints, and cross-sectoral coordination dynamics. This triangulated approach enables a systematic assessment of how GI is framed, codified, and enacted in practice, while also capturing how practitioners negotiate its integration within existing regulatory mandates.

The findings reveal a persistent communicative-operative gap. Although Green Infrastructure (GI) is discursively endorsed and aligned with European environmental agendas, its operational embedding occurs primarily through pre-existing sectoral and land-use categories. Policy provisions remain predominantly aspirational, regulatory language is weak, cross-sectoral coordination limited, and monitoring mechanisms largely absent. GI is selectively embedded within protection-oriented domains, while multifunctionality, spatial connectivity, and equity dimensions are weakly codified in binding instruments. Rather than constituting an implementation failure, this configuration reflects a process of institutional adaptation, whereby GI stabilises in forms compatible with entrenched regulatory cultures and administrative mandates.

The study reconceptualises Green Infrastructure (GI) mainstreaming as a process of institutional translation rather than linear policy diffusion. It advances a configurational lens for analysing multifunctional infrastructure within hybrid governance regimes and demonstrates that conceptual adoption without regulatory specificity may produce discursive convergence while leaving spatial allocation logics structurally unchanged. These insights contribute to ongoing debates on GI governance, planning reform, and EU policy alignment in peripheral and institutionally fluid contexts.

Keywords: Green infrastructure, spatial planning, institutional translation, governance fragmentation, multifunctionality, transitional planning systems, North Macedonia

Zusammenfassung

Konzeptualisierung und Operationalisierung von Grüner Infrastruktur in der Raumplanung: Selektive Einbettung in transformative Governance-Kontexte am Beispiel von Struga und Vevchani, Nordmazedonien

In den vergangenen zwei Jahrzehnten hat die Grüne Infrastruktur (GI) als strategisches Konzept der Raumplanung an Bedeutung gewonnen, das darauf abzielt, ökologische Konnektivität, Ökosystemdienstleistungen und sozialräumliche Zielsetzungen in kohärente territoriale Rahmenbedingungen zu integrieren. Empirische Befunde weisen jedoch da-

rauf hin, dass ihre Operationalisierung weiterhin uneinheitlich bleibt, insbesondere in kleinen Gemeinden und in transitorischen Governance-Kontexten, die in der etablierten GI-Forschung unterrepräsentiert sind. In der vorliegenden Studie wird untersucht, wie GI im räumlichen Planungssystem Nordmazedoniens konzeptualisiert, operationalisiert und implementiert wird, mit besonderem Fokus auf die Gemeinden Struga und Vevchani. Auf der Grundlage eines qualitativen Multi-Methoden-Designs wird in der Untersuchung eine Kritische Diskursanalyse nationaler, regionaler und kommunaler Planungsdokumente mit einem strukturierten Praxis-Workshop kombiniert, der darauf abzielt, institutionelle Interpretationen, Umsetzungshemmnisse sowie Dynamiken sektorübergreifender Koordination zu untersuchen. Dieser triangulative Ansatz ermöglicht eine systematische Bewertung dessen, wie GI gerahmt, kodifiziert und in der Praxis umgesetzt wird, und erfasst zugleich, wie Planerinnen und Planer sowie lokale Amtsträgerinnen und Amtsträger ihre Integration innerhalb bestehender regulatorischer Vorgaben verhandeln.

Die Ergebnisse zeigen eine persistente kommunikativ-operative Lücke. Obwohl Grüne Infrastruktur (GI) diskursiv befürwortet und mit europäischen Umweltagenden in Einklang gebracht wird, erfolgt ihre operative Einbettung primär über bereits bestehende sektorale und flächennutzungsbezogene Kategorien. Politische Bestimmungen bleiben überwiegend aspirativ, die regulatorische Sprache ist schwach, die sektorübergreifende Koordination begrenzt, und Monitoringmechanismen sind weitgehend nicht vorhanden. GI wird selektiv in schutzorientierten Bereichen verankert, während Multifunktionalität, räumliche Konnektivität und Gerechtigkeitsdimensionen in verbindlichen Instrumenten nur schwach kodifiziert sind. Anstatt ein Umsetzungsversagen darzustellen, spiegelt diese Konfiguration einen Prozess institutioneller Anpassung wider, in dessen Rahmen sich GI in Formen stabilisiert, die mit verfestigten regulatorischen Kulturen und administrativen Zuständigkeiten kompatibel sind.

In der vorliegenden Studie wird das Mainstreaming von Grüner Infrastruktur (GI) neu als Prozess institutioneller Übersetzung statt als lineare Politikdiffusion konzeptualisiert. Sie entwickelt eine konfigurationale Perspektive zur Analyse multifunktionaler Infrastrukturen in hybriden Governance-Regimen und zeigt, dass eine konzeptionelle Übernahme ohne regulatorische Spezifizierung zu diskursiver Konvergenz führen kann, während die Logiken räumlicher Allokation strukturell unverändert bleiben. Diese Erkenntnisse tragen zu aktuellen Debatten über GI-Governance, Planungsreformen und die Angleichung an EU-Politiken in peripheren und institutionell fluiden Kontexten bei.

Schlagwörter: Grüne Infrastruktur, Raumplanung, institutionelle Übersetzung, Governance-Fragmentierung, Multifunktionalität, transitorische Planungssysteme, Nordmazedonien

1 Introduction

Over the past two decades, Green Infrastructure (GI) has emerged as a pivotal concept in spatial planning, environmental governance, and landscape management, reflecting a growing recognition of the imperative to integrate ecological, social, and economic

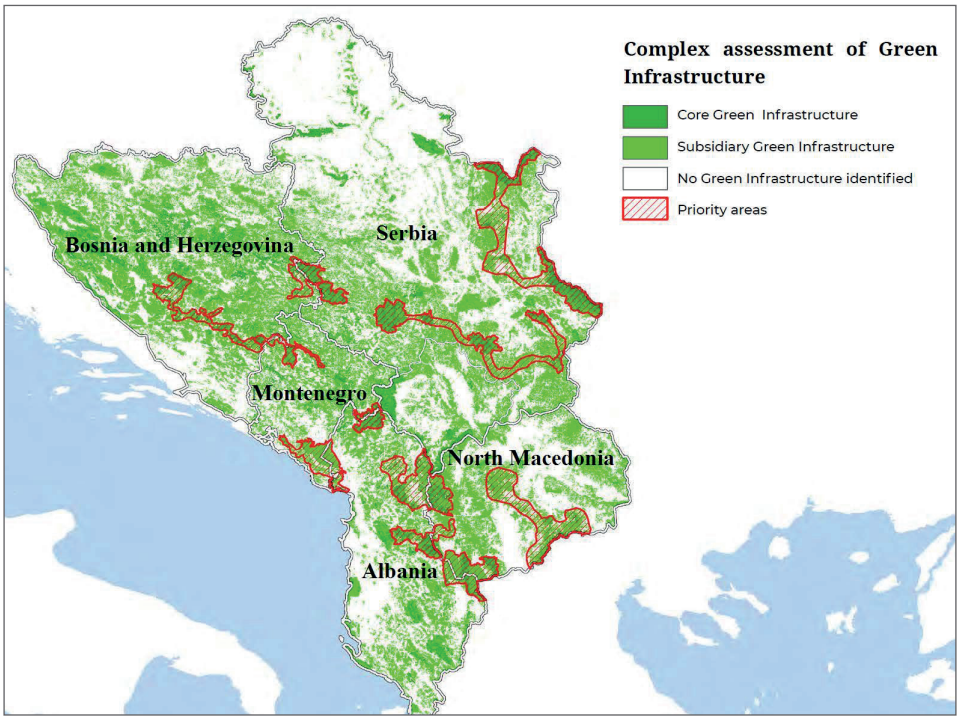
objectives within territorial planning. GI has been defined as "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings" (European Commission 2013, p. 3).

GI has been explored across a wide range of academic disciplines, including landscape architecture (e.g., PANAGOPOULOS 2019), landscape ecology (e.g., GRAFIUS et al. 2018; LOVELL and TAYLOR 2013), environmental sciences (e.g., MCFARLAND et al. 2019), geography (e.g., BENTON-SHORT et al. 2019), economics (e.g., JAFFE 2010), and urban and regional planning (e.g., BUSH et al. 2021; MELL 2020), among others. However, as MELL and SCOTT (2023) convincingly argue, the expansion of GI across disciplines has generated not conceptual coherence but rather a proliferation of fragmented and discipline-specific interpretations that shape how GI is defined, valued, and operationalised in practice. They suggest that GI functions less as a stable planning concept and more as a flexible umbrella term, strategically rearticulated to align with sectoral priorities, professional norms, and policy agendas.

While this interpretative openness has facilitated its rapid uptake, it has simultaneously attenuated GI's integrative capacity within spatial planning, obscuring underlying trade-offs, power relations, and questions of scale, governance, and equity. Consequently, MELL and SCOTT (2023) emphasise the need to move beyond siloed and instrumental readings of GI and to reframe it as a contested, place-specific, and inherently political construct – one that requires reflexive, transdisciplinary engagement if it is to function as genuinely integrative infrastructure rather than a depoliticised planning label.

Over the last decade, there has been growing interest among academics, practitioners and policymakers in research on Green Infrastructure (GI) and its integration into national and regional planning systems, strategies and practices. Numerous international studies have examined the ways in which GI is incorporated into spatial and land-use planning (see, for example, DE MONTIS et al. 2022; DI MARINO et al. 2019; DI MARINO and LAPINTIE 2018; DUPRAS et al. 2015; GRĂDINARU and HERSPERGER 2019; LAFORTEZZA et al. 2013; REINWALD et al. 2024; RONCHI et al. 2020; SLÄTMO et al. 2019; SZULCZEWSKA et al. 2017). Nevertheless, significant challenges persist in both understanding and implementing GI within planning systems.

A limited appreciation of the potential benefits of GI represents one of the key factors contributing to under-investment, particularly in South-East Europe (ESTREGUIL et al. 2019), including North Macedonia. In the context of North Macedonia, GI remains underdeveloped as a formal planning concept, with limited incorporation into spatial plans and weak conceptual visibility among key stakeholders, including planners and policymakers. Although environmental professionals increasingly refer to GI, its broader recognition across the built environment sector remains nascent, thereby constraining its integration into regulatory frameworks and planning practice. This limited uptake is further compounded by the absence of a shared understanding of GI definitions and implementation approaches, which complicates its operationalisation within policy and planning instruments (BOGDANOVA AJCEVA 2022; ILIEV and GADJOVSKI 2024).



Source: Adapted from Figure 20, p. 61 in: European Commission (2022): Study on Green Infrastructure Deployment and Ecological Connectivity Status in Albania, Bosnia and Herzegovina, Montenegro, Serbia and North Macedonia. Luxembourg: Publications Office of the European Union. – *https://doi.org/10.2779/495605*.

Figure 1: Green Infrastructure (GI) in the Western Balkans region and proposed priority areas for conservation based on biodiversity value and ecosystem services importance

The Western Balkans (including North Macedonia) are regions of high biodiversity and endemism within Europe and are ecologically linked through the "Balkan Green Belt" (BGB) (Figure 1). The BGB represents the south-eastern segment of the European Green Belt, forming a transboundary ecological network along formerly restricted border areas shaped by the legacy of the Iron Curtain. Owing to decades of minimal human intervention, these border landscapes encompass river corridors, wetlands, and mountain ecosystems of exceptional conservation value. Conceptually, the BGB functions as a connected system of protected areas and surrounding landscapes, linking biodiversity conservation with transboundary cooperation and sustainable regional development in historically sensitive border regions (Schneider-Jacoby et al. 2006). While Schneider-Jacoby et al. (2006) provide a foundational overview of the BGB, more recent documents emphasise its ecological significance and the ongoing challenges posed by land-use pressures and cross-border governance (German Environment Agency [Umweltbundesamt] 2024).

The ecological integrity and connectivity of the BGB are increasingly undermined by land-use intensification and infrastructure expansion. Consequently, spatial planning is essential for safeguarding ecological connectivity and managing land-use pressures across these landscapes and regions. Spatial planning refers to the discipline and practice of organising land uses and built environments to achieve sustainable development objectives through statutory instruments, policy frameworks, and participatory processes. It is particularly critical for Green Infrastructure (GI), as it provides the governance and regulatory framework necessary for its implementation across multiple scales, from national to local levels (Slätmo et al. 2019). For the purposes of this study, this definition is applied as a conceptual framework to examine the operationalisation of GI at the municipal level, ensuring consistency between planning theory and practice. Terms such as land-use planning and statutory instruments are widely recognised in both European and global spatial planning literature (e.g., Faludi 2010; Healey 2006).

The integration of GI into spatial planning requires both commitment and time, as well as a thorough understanding of how the concept can be incorporated into planning documents. Introducing the GI into planning is not straightforward, occurring within complex socio-political contexts where existing knowledge is constrained by the regulatory status quo and entrenched planning practices (Lähde and di Marino 2019).

Against this background, this study examines the conceptualisation and operationalisation of Green Infrastructure (GI) within local spatial planning in North Macedonia, focusing on the municipalities of Struga and Vevchani, which are situated within the "Balkan Green Belt". The study adopts a qualitative research design that combines Critical Discourse Analysis (CDA) of spatial planning and management documents with an exploratory analysis of practitioners' perspectives, obtained via a structured workshop. This dual approach enables an examination of how GI is framed in policy and practice, providing both empirical insights and practical implications.

This paper is structured as follows. Following the introduction, which situates the study within its broader theoretical and regional context and defines its research objectives, the relevant literature and conceptual framework are examined. The subsequent section outlines the case study context and methodological positioning, detailing the study area and research design. The results are then presented and discussed in light of their implications. The paper concludes by synthesising the principal findings, outlining planning-relevant recommendations, and delineating avenues for future research.

2 Literature Review

2.1 Conceptual Foundations and Definitional Plurality of Green Infrastructure

Since the early 2000s, the concept of Green Infrastructure (GI) has been the subject of sustained research and debate (Benedict and McMahon 2002, 2006). Although the concept has been increasingly examined in the literature (see, for example, Allen 2012; Roe and Mell 2013; Rouse and Bunster-Ossa 2013), and interpreted in diverse ways (Burgess

2015; Matthews et al. 2015), most understandings converge around the frequently cited definition proposed by Benedict and McMahon (2002, p. 12), which conceptualises GI as " […] an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations". In this sense, GI provides a strategic framework to guide future growth and development while conserving land and natural resources (Benedict and McMahon 2006). However, reducing GI to a single, universally accepted definition remains challenging (Seiwert and Rössler 2020). Difficulties persist in defining and operationalising the term; as Matthews et al. (2015, pp. 156–157) observe, " [...] the term has tended to be conflated with 'green-space' generally, weakening its conceptual strength".

Numerous scholars, practitioners, and policymakers have sought to define GI. Across different planning traditions, GI is commonly framed as an approach that integrates biodiversity conservation, ecosystem services provision, climate adaptation, and human well-being within a single spatial logic (Matthews et al. 2015; Mell and Clement 2020; Thomas and Littlewood 2010). While definitions of GI are numerous and varied (Benedict and McMahon 2006), there is no universally accepted definition among scholars, nor in European or North American policy frameworks (di Marino and Lapintie 2018). Mell and Scott (2023, p. 5) note that " [...] to date, there is no gold standard definition that is widely accepted or used consistently in research and practice [...] reflecting the disciplinary and geographical biases".

Nevertheless, two definitions provide a useful entry point into discussions of Green Infrastructure (GI). Benedict and McMahon (2006, p. 1) conceptualise GI as " [...] an interconnected network of natural areas and other open spaces that conserves natural ecosystem values and functions, sustains clean air and water, and provides a wide array of benefits to people and wildlife". The European Commission (2013, p. 3) defines GI as "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings". Mell and Scott (2023) consider these definitions complementary, integrating socio-economic and ecological perspectives that facilitate GI adoption by stakeholders globally.

Despite these widely accepted definitions, considerable debate persists. Scholars caution against imposing a single, universal definition. Wright (2011, p. 1004) argues that " [...] searching for a single fixed definition of 'GI' is problematic because the concept is evolving, divided and gravitating toward socio-economic centres". Similarly, Mell and Clement (2020) note that excessive standardisation may undermine GI's responsiveness to local socio-spatial conditions. Consequently, there remains limited consensus regarding how GI should be defined and operationalised in research and practice. As Wright (2011, p. 1003) states, " [...] a single precise meaning of 'GI' is problematic because the concept is evolving and divided between environmental theory and socio-economic policy".

This divergence arises because Green Infrastructure (GI) has been adopted by multiple disciplines, resulting in variations in its conceptual meaning (Mell and Scott 2023). Some scholars also note growing confusion among planners and policymakers regarding what

constitutes GI (Matthews et al. 2015). Understanding GI is inherently complex, reflecting a deeply intricate interaction of people, place, and politics, as well as the wide range of issues for which GI is applied (Matthews et al. 2015; Mell 2017). In this context, Wright (2011, p. 1004) argues that "GI is ambiguous and essentially 'a contested concept' ".

This tension between harmonisation and contextualisation remains unresolved, representing one of the core conceptual challenges in contemporary GI research. To provide a clear analytical basis for this study, an operational understanding of GI is adopted, integrating ecological, social, and economic dimensions. For the purposes of this study, GI is operationalised as a multi-functional network of natural and semi-natural areas that supports biodiversity, ecosystem services, and human well-being. This working definition provides a framework for analysis and interpretation throughout the manuscript, while acknowledging the ongoing conceptual plurality in the literature.

Despite the absence of a universally agreed definition, the GI approach consistently converges around a shared set of planning principles. Across the literature, GI is conceptualised in terms of key principles, with GI assets emphasised as fundamental infrastructure, alongside principles such as spatial connectivity, multifunctionality, and interdisciplinary collaboration, which together operate across multiple scales and necessitate integrated and cross-disciplinary modes of planning. These recurring principles – connectivity, multifunctionality, multiscalarity, integration and governance – constitute the common ground that enables GI to be flexibly applied across diverse planning contexts, despite conceptual and disciplinary differences (Lennon et al. 2016; Monteiro et al. 2020; Seiwert and Rössler 2020).

2.2 Integrating Green Infrastructure into Spatial Planning: Concepts, Governance and Persistent Gaps

Green Infrastructure (GI) is widely framed as a strategic spatial planning instrument that integrates ecological processes, ecosystem services and socio-spatial objectives into coherent planning frameworks. Most studies concur that GI's defining contribution lies in its capacity to function as a multiscale and multifunctional spatial network that mediates between environmental protection and development pressures, rather than as a residual category of green space (di Marino and Lapintie 2018; Lafortezza et al. 2013; Lennon and Scott 2014; Pozoukidou 2020). There is broad agreement that GI can support the operationalisation of ecosystem services within spatial planning by translating ecological functions into spatial structures that influence land-use organisation and development trajectories (Lafortezza et al. 2013; Lennon and Scott 2014; Monteiro et al. 2020).

This conceptualisation is reinforced by international planning frameworks, most notably the European Union's Green Infrastructure Strategy and associated guidance documents, which explicitly promote the integration of GI into land-use planning, urban design, ecosystem restoration and climate adaptation policies, thereby framing GI as a cross-sectoral spatial planning principle rather than a standalone environmental measure (European Commission n.d.). Complementary project-based guidance, such as Interreg handbooks and manuals, further provides practical tools for linking GI networks with spatial development strategies and planning processes across diverse European contexts

(John et al. 2019). Nevertheless, debate persists regarding the extent to which these normative and practice-oriented frameworks are translated into binding statutory planning instruments, as their implementation remains uneven and highly context-dependent, particularly outside metropolitan and well-resourced planning systems (di Marino and Lapintie 2018; Monteiro et al. 2020; Pozoukidou 2020).

Governance is consistently identified as a central determinant of whether Green Infrastructure (GI) can be meaningfully integrated into spatial planning practice. There is broad agreement that GI outcomes depend less on the rhetorical inclusion of GI in planning documents and more on the capacity of governance systems to coordinate actors, sectors, and policy levels (Dupras et al. 2015; Reinwald et al. 2024; Slätmo et al. 2019; Szulczewska et al. 2017). Policy integration deficits are widely recognised as a major barrier, as GI-related objectives are frequently distributed across sectoral policies without effective mechanisms to ensure coherence and alignment (Dupras et al. 2015; Reinwald et al. 2024; Szulczewska et al. 2017). Institutional fragmentation, overlapping mandates, and unclear responsibilities further undermine implementation, reinforcing the gap between strategic intent and on-the-ground delivery (Reinwald et al. 2024; Slätmo et al. 2019; Zabel and Häusler 2024). However, there is debate regarding whether governance barriers are primarily structural or procedural, with some authors emphasising rigid institutional arrangements and path dependencies (Szulczewska et al. 2017) and others highlighting procedural shortcomings such as weak inter-departmental coordination and limited shared evaluation frameworks (Dupras et al. 2015; Zabel and Häusler 2024).

GI performance is increasingly conceptualised in terms of its capacity to deliver multiple ecosystem services and to manage synergies and trade-offs across spatial contexts. There is broad agreement that single-function indicators are inadequate for assessing GI performance, necessitating integrated, multi-criteria, and spatially explicit evaluation approaches (García et al. 2020; Meerow and Newell 2017; Vallecillo et al. 2018). High-performing GI systems are widely recognised as being characterised by the provision of ecosystem service bundles rather than the optimisation of isolated functions (García et al. 2020; Meerow and Newell 2017; Vallecillo et al. 2018). However, debate persists regarding how multifunctionality should be operationalised in practice, as optimisation-based approaches may prioritise aggregate performance (García et al. 2020; Ronchi et al. 2020), while obscuring spatial inequalities and normative assumptions embedded in weighting schemes (Meerow and Newell 2017; Vallecillo et al. 2018). This tension reflects a broader challenge in aligning technically robust evaluation methods with context-sensitive and socially responsive planning objectives (Hoover et al. 2023; Vallecillo et al. 2018).

GI is consistently framed as a strategic planning concept whose effectiveness derives from its ability to operate across multiple spatial scales and to align policies horizontally and vertically. There is broad agreement that strategic planning instruments provide the primary arena for embedding GI principles such as connectivity, multifunctionality, and spatial coherence over the long term (Davies and Lafortezza 2017; De Montis et al. 2022; Grădinaru and Hersperger 2019). GI is expected to function simultaneously at site, municipal, regional and landscape scales, enabling ecological flows beyond administrative boundaries (Davies and Lafortezza 2017; Grădinaru and Hersperger 2019).

However, there is debate regarding how effectively this multi-scale logic is operationalised within existing planning systems. Empirical evidence suggests that while GI is frequently addressed at the municipal level, vertical integration across planning tiers remains weak, resulting in fragmented and discontinuous GI networks (Davies and Lafortezza 2017; De Montis et al. 2022; Slave et al. 2025). Some authors interpret these limitations as evidence of institutional inertia and sectoral silos constraining cross-scale coordination (Grădinaru and Hersperger 2019; Slave et al. 2025), while others argue that GI itself remains insufficiently embedded as a spatial structure within statutory planning instruments (Davies and Lafortezza 2017; De Montis et al. 2022).

Despite its growing prominence, Green Infrastructure (GI) research remains uneven with respect to geographical coverage, governance capacity and social outcomes. Much of the literature focuses on large metropolitan areas and well-resourced planning systems (e.g., Benton-Short et al. 2019; Bush et al. 2021; Dupras et al. 2015; Grabowski et al. 2023; Meerow and Newell 2017), leaving smaller municipalities, peripheral regions and transitional governance contexts under-represented. This spatial and institutional concentration also intersects with a broader concern regarding the limited integration of social equity within mainstream GI planning. Equity considerations are often described as weakly integrated into mainstream GI planning, as GI is frequently framed as a technical or ecological solution rather than a socially distributive planning instrument (di Marino et al. 2019; Grabowski et al. 2023).

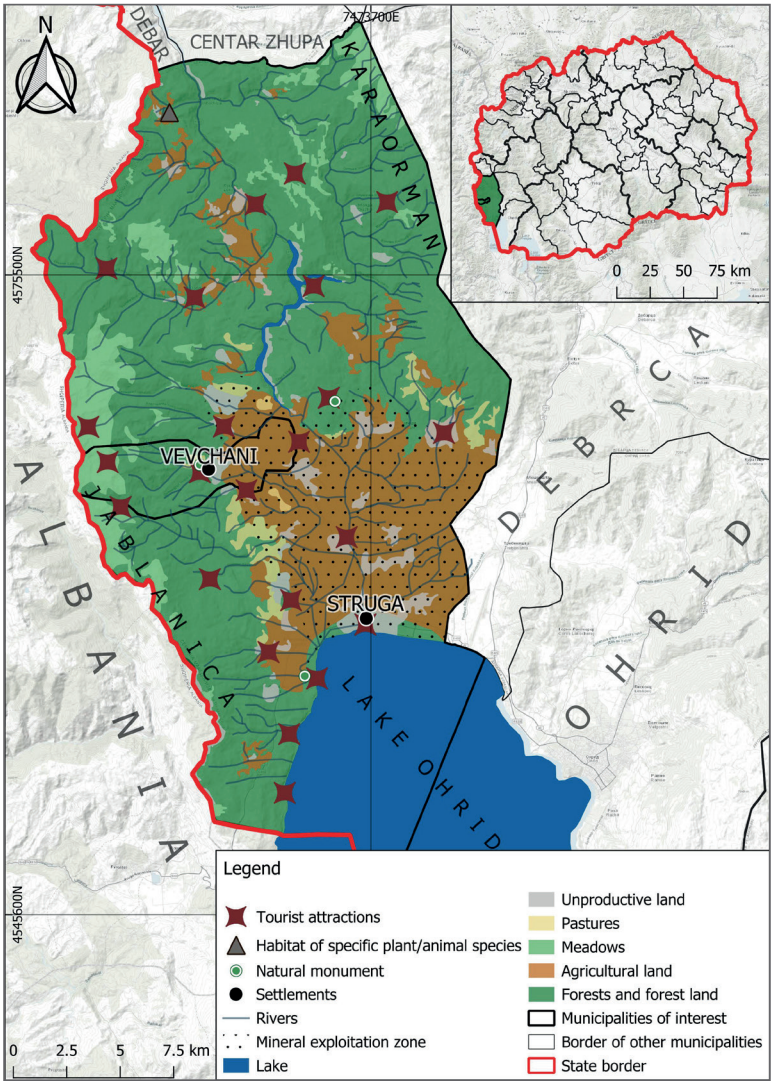
The literature identifies challenges regarding whether equity deficits arise from conceptual limitations of the GI framework or from governance and implementation failures. While some authors emphasise the technocratic framing of GI as a constraint on addressing social justice concerns (di Marino et al. 2019), others argue that inequities primarily emerge during implementation due to fragmented governance and limited monitoring of social outcomes (Grabowski et al. 2023). Overall, the evidence suggests that without explicit attention to context, equity, and governance capacity, GI risks remaining a normative and unevenly operationalised concept rather than a fully embedded spatial planning instrument (di Marino et al. 2019; Grabowski et al. 2023).

In this context, the municipalities of Struga and Vevchani provide a critical empirical setting to investigate the translation of GI from strategic planning discourse into local statutory practice within a small-scale and under-researched governance environment, thereby responding to identified tensions between conceptual ambition, institutional capacity, and spatial implementation.

3 Case Study Context and Methodological Positioning

3.1 Study Area and Spatial-Environmental Context

The municipality of Struga, with an area of 483 km^2, has a population of 50,980 inhabitants (State Statistical Office 2022) and is located in the southwestern part of North Macedonia (Figure 2). The administrative centre of the municipality is the city of Struga. In addition to the city of Struga, there are 50 rural settlements within the municipality.



Source: Author's own compilation.

Figure 2: The municipalities of Struga and Vevcani: geographical location, administrative boundaries and land use

The territory of the municipality includes both valley and mountain areas. Forests, rivers, coastlines, and lakes dominate the landscape. Agricultural and arable land accounts for 16.74 percent of the Ohrid-Prespa region (Spatial Planning Agency 2010). Within the Struga municipality, forests cover relatively large areas. Of the total wood/forest mass in the Ohrid-Prespa region (9,762,005 m^3), the municipality of Struga owns 3,193,571 m^3,

or 32.35 percent (Spatial Planning Agency 2010). Forests are dominant on the Jablanica Mountain. From 600 to 1,300 metres above sea level, oak forests occur, while between 1,300 and 1,800 metres, beech forests prevail. Above them, subalpine and alpine grasslands stretch across the landscape, mainly used as high-mountain pastures.

Historically, the forest ecosystems of Jablanica have persisted despite human influence, resulting in the preservation of some of the largest populations of large mammals in Europe, including bear, wolf, and lynx. The presence of the Balkan lynx (Lynx lynx martinoi), a subspecies of the Eurasian lynx (Lynx lynx), adds significant ecological value to Jablanica. The Balkan lynx is considered the most endangered native lynx population in Europe. Due to these characteristics, Jablanica, along with the mountainous border area between Albania, Kosovo, and North Macedonia, forms part of the European Green Belt (Vasilijević and Pezold 2011). Jablanica remains largely unprotected. To date, the following sites within the Struga municipality have legal protection: Drenachka River (notable plant and animal species), Ohrid Lake (natural monument), Platanus – v. Kalishta (natural monument), and Mlechnik Cave (natural monument) (Spatial Planning Agency 2010).

The municipality of Vevchani was established in 1996, following its separation from the municipality of Struga. It is located in the southwestern part of North Macedonia, 14 km northwest of the city of Struga and Lake Ohrid (Figure 2). The municipality extends from 700 to 2,200 metres above sea level. To the west, it borders the Jablanica Mountain and the Republic of Albania, while to the east it descends towards the valley of the Crn Drim River. The municipality includes both lowland and hilly-mountainous areas. Covering an area of 35.68 km² (A.D. Urbanism and Architecture 'Plan' Ohrid 1999), it has a population of 2,359 inhabitants (State Statistical Office 2022). The municipality comprises a single settlement – the village of Vevchani, where the municipal administration is located. The village is situated at the foot of the Jablanica Mountain, at an altitude of 840–980 metres (A.D. Urbanism and Architecture 'Plan' Ohrid 1999).

Agricultural and arable land occupies only small areas in the municipality, accounting for 1.5 percent of the total arable land in the region (Spatial Planning Agency 2010). Forests and wildlife of Jablanica represent a significant natural treasure, with heterogeneous and exceptional landscapes. Jablanica is known for its variety of glacial and periglacial relief forms, natural amphitheatres, and glacial lakes. Karst features form a significant part of the mountain's composition, resulting in numerous springs, the most notable being the Vevchanski Izvori (Vasilijević and Pezold 2011). Vevchanski Izvori is a protected area – a natural monument – located on the slopes of the Jablanica Mountain, at an altitude of 940 metres and covering an area of 1,370 ha. The site was designated as a protected area for the conservation of hydrological, hydrogeological, ecological, biological, and other scientific values (Mitev et al. 2019).

3.2 Research Design and Methodological Approach

This study adopts a qualitative multiple-method research design, combining a Critical Discourse Analysis (CDA) of planning documents with an exploratory workshop involving planning practitioners. This approach enables a systematic examination of how Green Infra-

structure (GI) is conceptualised, operationalised and implemented within the spatial planning system of North Macedonia, as reflected in selected municipal case studies, while also capturing practitioners' perspectives on policy effectiveness and implementation challenges.

The municipalities of Struga and Vevchani were selected as case studies based on three analytical criteria. First, both municipalities are located within the "Balkan Green Belt" (BGB, see Figure 1) representing a spatial context in which biodiversity conservation objectives intersect with development pressures. Second, they are embedded within an evolving policy environment characterised by increasing engagement among non-governmental organisations (Vasilijević and Pezold 2011), as well as academic actors and public authorities in promoting GI integration. Third, these cases offer analytically relevant instances of institutional experimentation, including recent initiatives aimed at incorporating GI principles into national spatial planning legislation. The selection of these cases thus prioritises analytical relevance over representativeness, enabling an in-depth exploration of policy discourses and practices within a transitional planning context.

The policy analysis focuses on a purposive sample of planning documents operating at national, regional, and local scales, selected for their role in articulating long-term development visions, spatial strategies, and regulatory frameworks that directly shape spatial-use decision-making. The analysed corpus comprises the Spatial Plan of the Republic of Macedonia, the Spatial Plan of the Ohrid-Prespa Region, and local-level plans for Struga and Vevchani, including the General Urban Plans of Struga and Vevchani, the Integral Plan for Local Development of Vevchani Municipality, and the Management Plan for the Nature Monument Vevchanski Izvori (Table 1). This selection reflects the planning reality of small municipalities, where cross-sectoral policy goals, such as local economic development, tourism, public health, recreation, and quality of life, are frequently embedded within existing spatial and environmental planning instruments rather than articulated through separate, stand-alone sectoral strategies. Furthermore, incorporating documents from various time periods allows the analysis to capture shifts and continuities in policy discourse, facilitating institutional learning in relation to the integration of green spaces and associated GI concepts (as demonstrated in comparative studies, Slave et al. 2025).

A qualitative Critical Discourse Analysis (CDA) was conducted following van Dijk (2011) to examine how Green Infrastructure (GI) and related proxy concepts are framed, prioritised, and translated into planning policy. The analysis was problem-oriented, proceeding in three stages. First, terminology related to GI, including associated concepts, was systematically identified across the documents. Second, thematic coding was applied to policy objectives, planning instruments, and implementation mechanisms. Third, policies were evaluated using a qualitative policy assessment framework adapted from GI policy literature (Hislop et al. 2019; Scott and Hislop 2019) and conceptually informed by broader studies on multifunctional GI planning, cross-sectoral integration, and cross-scale implementation (e.g., Ronchi et al. 2020; Vallecillo et al. 2018).

The framework assessed: (i) the explicitness of GI objectives; (ii) cross-sectoral integration with economic development, environmental protection, and health and wellbeing policies; (iii) the strength of policy wording (e.g., mandatory versus aspirational formulations); and (iv) provisions for implementation, coordination, and monitoring (Table 2).

Planning document	Document purpose	Adopting institution	Planning horizon	Implementing institution	Implementation monitoring
Spatial Plan of the Republic of Macedonia	Integral planning of the space of the whole country, which provides guidelines for the usage and organisation of the entire space of the country	The Assembly of the Republic of North Macedonia	2004–2020	Ministry of Environment and Physical Planning and Spatial Planning Agency	Ministry of Environment and Physical Planning and Spatial Planning Agency
Spatial Plan of the Ohrid-Prespa Region	Work-out of the Spatial Plan of the country, which refers to the spatial planning of the region	The Assembly of the Republic of North Macedonia	2005–2020	Ministry of Environment and Physical Planning and Spatial Planning Agency	Ministry of Environment and Physical Planning and Spatial Planning Agency
General Urban Plan of the City of Struga	Plan for arranging the space within the boundaries of the city of Struga (Zoning of the types of buildings and the basis for the development of detailed urban plans)	Council of Struga Municipality	2006–2016	Struga Municipality	Struga Municipality
General Urban Plan – Vevchani	Plan for arranging the space within the boundaries of the village of Vevcani (Zoning of types of buildings and basis for detailed planning of the blocks)	Council of Vevchani Municipality	1997–2007	Vevchani Municipality	Vevchani Municipality
Integral Plan for Local Development of Vevchani Municipality	Gives directions for the economic development of the Municipality and for improving the quality of life of its inhabitants	Council of Vevchani Municipality	2019–2022	Vevchani Municipality	Vevchani Municipality
Management Plan for the Nature Monument Vevchanski Izvori	To provide protection and conservation of the natural heritage, through proper management of natural values, respecting the established regime of protection (zoning) of the protected area	Council of Vevchani Municipality	2019–2029	Vevchani Municipality	Vevchani Municipality and Environmental Administration – the constituent body of the Ministry of Environment and Spatial Planning

Source: Author's own compilation

Table 1: Planning and management documents relevant to spatial governance in Struga and Vevchani

This criterion-based approach moves beyond descriptive analysis, enabling an assessment of the relative effectiveness and transferability of GI-related planning policies.

To complement the policy analysis and explore practitioner perspectives, an exploratory workshop was organised in the municipality of Vevchani on 7 June 2023. The workshop lasted approximately five hours and involved eight participants representing diverse professional backgrounds, including environmental protection (N=2), nature conservation (N=2), forestry (N=1), ecology (N=1), architecture (N=1), and local economic development (N=1). Participants were invited by municipal authorities to ensure institutional relevance. The diversity of professional profiles facilitated interdisciplinary exchange. The workshop was structured around moderated thematic sessions focusing on participants' understanding of the GI concept, experiences with GI integration in spatial planning, and perceived barriers and opportunities for implementation. The workshop therefore served as both a data collection tool and an informal learning environment (Lennon et al. 2016).

The workshop was audio-recorded with participants' consent and transcribed verbatim. All data collection was conducted in accordance with institutional ethical guidelines: participation was voluntary, informed consent was obtained, and anonymity and confidentiality were ensured during transcription, analysis, and reporting. Audio recordings and transcripts were securely stored and used exclusively for research purposes. As this study involved minimal risk and complied fully with institutional guidelines, a formal ethics approval number was not required. The resulting transcripts were analysed using qualitative thematic content analysis. Manual inductive coding was applied to identify recurring themes and sectoral problem areas emerging from the discussions.

Qualitative triangulation is employed as a strategic analytical approach to strengthen interpretive depth when examining GI in spatial planning. Through joint analysis of planning documents and practitioner perspectives, the study captures the interaction between formal policy framings and their interpretation in professional practice. This triangulated approach allows policy framings to be interrogated through experiential knowledge, while practitioner accounts are situated within the institutional and regulatory contexts that shape them. Rather than merely seeking corroboration, triangulation is used to reveal interpretive gaps, tensions, and complementary insights between plans and practice, thereby providing a robust methodological foundation for the results that follow.

4 Results

4.1 Critical Discourse Analysis of Planning Documents

This section presents the results of the qualitative critical discourse and policy analysis of six strategic, urban, and sectoral planning documents. The findings are structured thematically, reflecting the methodological stages and criteria, and provide a comparative assessment of how Green Infrastructure (GI) is conceptualised, embedded, and operationalised across different planning levels and policy domains.

Framing and Conceptualisation of Green Infrastucture

Across the analysed documents, Green Infrastructure (GI) is characterised by a high degree of conceptual inconsistency and terminological fragmentation. Explicit references to GI are largely absent from the older spatial and urban plans, where environmentally related objectives are framed using proxy concepts such as green systems, protected natural areas, ecological corridors, and landscape values (IN-PUMA – Institute of Urban Planning, Transport and Environment 2007; Public Enterprise for Spatial and Urban Planning 2004).

At the national and regional levels, environmental considerations are primarily articulated through a sectoral protection discourse, emphasising biodiversity conservation, water protection and landscape preservation rather than the development of multifunctional GI networks (Public Enterprise for Spatial and Urban Planning 2004; Spatial Planning Agency 2010). These documents do not employ GI as an integrated planning concept; instead, green and natural areas are treated as static spatial categories.

At the local level, particularly in the General Urban Plans of Struga and Vevchani, green spaces are predominantly framed as urban amenities or land-use categories, such as parks, recreational areas and buffer zones, with limited reference to ecological connectivity or the provision of ecosystem services (A.D. Urbanism and Architecture 'Plan' Ohrid 1999; IN-PUMA – Institute of Urban Planning, Transport and Environment 2007).

More recent sectoral and implementation-oriented documents indicate a partial conceptual shift, with indirect references to ecosystem services, sustainable tourism and nature-based assets, particularly in relation to protected areas (KUKOSKA et al. 2019; MITEV et al. 2019). However, even in these cases, GI is not articulated as a coherent spatial network spanning administrative and sectoral boundaries.

Policy Objectives and Cross-Sectoral Integration

The analysis reveals limited cross-sectoral integration of GI-related objectives across the planning documents. Environmental goals are typically articulated in isolation from economic development, public health and social wellbeing policies.

At the national and regional levels, GI-related objectives are embedded within environmental protection chapters, with weak horizontal linkages to spatial development, infrastructure provision or economic strategies (Public Enterprise for Spatial and Urban Planning 2004; Spatial Planning Agency 2010). Environmental assets are positioned primarily as constraints on development rather than as enabling forms of infrastructure.

In the General Urban Plans, green areas are acknowledged as contributing to urban quality of life; however, explicit links to health outcomes, climate adaptation or local economic development are largely absent (A.D. Urbanism and Architecture 'Plan' Ohrid 1999; IN-PUMA – Institute of Urban Planning, Transport and Environment 2007). This reflects a predominantly land-use-oriented planning logic in which GI functions remain implicit rather than being strategically articulated.

Stronger, albeit still partial, cross-sectoral integration is evident in the sectoral plans. The Management Plan for the Nature Monument Vevchanski Izvori explicitly links environmental protection with sustainable tourism and local economic development,

positioning natural assets as a foundation for place-based development (Mitev et al. 2019). Similarly, the Integral Plan for Local Development recognises green and natural assets as contributing to municipal development priorities; however, these linkages remain largely programmatic rather than spatially operationalised (Kukoska et al. 2019).

Strength of Policy Wording and Regulatory Intent

A criteria-based assessment of policy wording reveals that GI-related provisions are predominantly aspirational, exhibiting limited regulatory force across all analysed documents. Binding formulations ('shall', 'must') are rare, whereas objectives are typically expressed through non-mandatory terms such as 'encourage', 'promote' or 'support'.

At the strategic planning level, environmental and green-space objectives are framed as long-term aspirations, lacking clearly defined implementation obligations (Public Enterprise for Spatial and Urban Planning 2004). Similarly, the regional spatial plan employs broad strategic language, emphasising protection and sustainable use without specifying enforceable mechanisms (Spatial Planning Agency 2010).

Urban plans contain zoning provisions for green areas; however, these are predominantly descriptive and do not specify requirements regarding ecological connectivity, multifunctionality, or maintenance standards (A.D. Urbanism and Architecture 'Plan' Ohrid 1999; IN-PUMA – Institute of Urban Planning, Transport and Environment 2007).

In contrast, sectoral plans exhibit comparatively stronger policy wording (Table 2). The Management Plan for Vevchanski Izvori includes more explicit prescriptions

Planning document	Explicit GI objectives	Cross-sectoral integration	Strength of wording	Implementation provisions
Spatial Plan of the Republic of Macedonia	Low	Low	Aspirational	Weak
Spatial Plan of the Ohrid-Prespa Region	Low	Low – Medium	Aspirational	Weak
General Urban Plan of the City of Struga	Low	Low	Descriptive	Weak
General Urban Plan – Vevchani	Low	Low	Descriptive	Weak
Integral Plan for Local Development of Vevchani Municipality	Medium (implicit)	Medium	Programmatic	Medium
Management Plan for the Nature Monument Vevchanski Izvori	Medium	Medium	Semi-binding	Medium

Source: Author's own compilation

Table 2: Qualitative assessment of Green Infrastructure (GI) policy strength

regarding protection regimes, permitted activities, and management responsibilities, reflecting its statutory basis within nature conservation legislation (MITEV et al. 2019). Nevertheless, even here, monitoring indicators and enforcement mechanisms remain underdeveloped.

Implementation Instruments, Coordination and Monitoring

Implementation mechanisms related to Green Infrastructure are unevenly developed and weakly institutionalised across the planning system. Strategic and urban plans largely defer implementation to lower-level instruments without specifying concrete tools, responsible actors, or timelines (IN-PUMA – Institute of Urban Planning, Transport and Environment 2007; Public Enterprise for Spatial and Urban Planning 2004).

Coordination mechanisms between sectors and administrative levels are rarely articulated. Where institutional responsibilities are mentioned, they are typically fragmented across multiple authorities, with limited guidance on inter-institutional cooperation (Spatial Planning Agency 2010).

Monitoring provisions are notably absent from most documents. None of the spatial or urban plans include measurable indicators related to green space performance, ecological connectivity or ecosystem services. More advanced monitoring considerations are found only in the Management Plan for Vevchanski Izvori, which outlines basic reporting and supervision arrangements, although without a comprehensive indicator framework (MITEV et al. 2019).

Areas of Convergence and Divergence across Documents

Despite differences in scale and scope, several areas of convergence can be identified (Table 3). All documents acknowledge the importance of protecting natural and green areas, and all incorporate some form of spatial designation for green or protected spaces.

Aspect	Convergence	Divergence
Recognition of green areas	Universally acknowledged	Varying functional interpretations
Policy framing	Environmental protection focus	Limited multifunctional GI logic
Policy strength	Generally weak	Stronger in sectoral plans
Implementation	Broad intentions	Fragmented instruments
Monitoring	Largely absent	Partial only in the management plan

Source: Author's own compilation

Table 3: Convergence and divergence in GI-related policies

However, significant divergences are evident in how these spaces are conceptualised and operationalised. Strategic and urban plans prioritise spatial allocation and protection, while sectoral documents emphasise management and use. The absence of a shared GI framework results in limited vertical and horizontal policy coherence, constraining the transferability and cumulative effectiveness of GI-related measures.

4.2 Planning Practice and Perceptions of Green Infrastructure: Evidence from a Participatory Workshop

This section presents an analytical synthesis of practitioner perspectives emerging from the participatory workshop conducted in Vevchani. The analysis examines how Green Infrastructure (GI) is conceptualised, selectively operationalised, and unevenly embedded within local planning practice. The findings highlight two cross-cutting patterns: a persistent gap between policy intentions and planning practice, and the absence of equity-oriented considerations in how GI is framed and mobilised by practitioners.

Conceptual Understanding of Green Infrastructure: Operational Ambiguity and the Absence of Equity Framing

Practitioner understandings of Green Infrastructure (GI) were characterised by conceptual plurality; however, this plurality did not translate into operational clarity. GI was predominantly framed through existing planning categories rather than as an integrative spatial instrument capable of guiding land-use decisions. Several participants implicitly equated GI with conventional green areas, reflecting the continued dominance of static land-use classifications in statutory planning. As one participant noted, *"We may not call it the GI concept, but in the planning documents there are terms such as green areas, green spaces"* [Ecologist]. A similar understanding was expressed by a local development actor, who associated GI primarily with green spaces around buildings [Local economic development advisor].

While participants also referred to GI as a connected system, this understanding remained largely abstract and weakly spatialised. GI was discussed as a network of existing elements rather than as a spatial structure capable of reshaping planning priorities. *"GI includes the green areas and green networks that we already have in the settlements"* [Local economic development advisor]. Even when connectivity was extended beyond green spaces – *"GI can also be networked with traffic infrastructure"* [Environmental Protection Engineer (Participant 1)] – such interpretations were not accompanied by references to binding planning instruments or regulatory mechanisms.

Multifunctionality was widely acknowledged, yet selectively articulated. Ecological protection and recreation dominated practitioner narratives, while social dimensions were notably absent. Statements emphasising the protection of forests and waterways – *"I would definitely protect the forests"* [Nature Conservation Expert (Participant 1)]; *"In addition to forests, I would also protect waterways"* [Nature Conservation Expert (Participant 2)] – illustrate a protection-oriented framing. Notably, considerations related

to social equity, accessibility, or the uneven distribution of GI benefits across different social groups were absent from practitioners' conceptualisations. This suggests that GI is primarily framed as an environmental and spatial concern, rather than as a social planning instrument, thereby prefiguring its limited role in addressing distributive or justice-related planning objectives.

Institutional Fragmentation and the Selective Embedding of Green Infrastructure in Planning Practice

Institutional fragmentation emerged as a structural condition shaping how Green Infrastructure (GI) is positioned within local planning systems. Rather than being anchored within a single institutional mandate, GI-related elements are addressed through parallel sectoral frameworks, resulting in fragmented and uneven spatial outcomes. Participants implicitly acknowledged that responsibility for GI is dispersed across forestry, environmental protection, and urban planning, without an integrative governance arrangement. As one practitioner stated, *"Green areas at the local level are regulated by the Law on Urban Greenery, but that law applies exclusively to urban areas"* [Architect].

This institutional configuration produces a selective embedding of GI, whereby certain elements are regulated within specific territorial or sectoral boundaries, while others remain outside formal planning control. *"In this way, we cannot obtain a comprehensive picture of GI outside the urban area"* [Forestry engineer], highlighting how GI's landscape-scale logic is constrained by institutional demarcations. Fragmentation thus does not merely hinder coordination; it actively shapes which GI elements are considered planning-relevant and which remain peripheral.

Rather than generating conflict, fragmentation appears normalised within everyday planning practice. GI is accommodated insofar as it aligns with existing sectoral competencies, but rarely challenges institutional boundaries. This selective positioning limits GI's potential to function as a coordinating spatial framework and reinforces its treatment as an auxiliary rather than structuring planning concept.

Limited Cross-Sectoral Coordination: Green Infrastructure as a Communicative rather than Operative Framework

Although practitioners consistently emphasised the importance of coordination, Green Infrastructure (GI) appeared to function primarily as a communicative concept rather than as an operative planning framework. Calls for integrative approaches reflected an awareness of systemic limitations, rather than evidence of established coordination mechanisms. One participant argued that *"a different methodological matrix is needed for more flexible planning and implementation"* [Architect], thereby implicitly acknowledging that existing planning routines do not accommodate cross-sectoral GI integration.

Environmental and ecological practitioners articulated GI as a multiscale network requiring alignment across sectors and planning levels. *"Connectivity needs to be considered at all spatial scales, as GI is essentially a connected multiscale network of assets"* [Environmental Protection Engineer (Participant 1)]. However, such perspectives

remained weakly institutionalised, with no corresponding mechanisms in place to translate cross-sectoral recognition into coordinated planning action.

As a result, GI tends to facilitate dialogue across professional domains, yet it rarely restructures decision-making processes. Cross-sectoral coordination appears to emerge primarily within informal or project-based contexts, thereby reinforcing a policy-practice implementation gap, whereby GI supports shared narratives without acquiring substantive regulatory or procedural force.

Ambiguities in Policy Interpretation and Discretionary Implementation

Policy ambiguity emerged as a central factor enabling the discretionary application of Green Infrastructure (GI) within planning practice. Practitioners repeatedly referred to GI-related provisions as non-mandatory, allowing them to be invoked selectively depending on institutional priorities and resource availability. This was particularly evident in discussions of ecological connectivity, where proposed measures lacked binding status. *"Biocorridors may be proposed in the study, but they are not mandatory"* [Environmental Protection Engineer (Participant 2)].

Such ambiguity enables flexibility, yet it simultaneously weakens GI's operational relevance. When GI-related measures entail additional financial or administrative obligations, their implementation becomes negotiable rather than obligatory. This discretionary logic sustains a persistent policy-practice gap, whereby GI is embedded in strategic visions and planning narratives but remains weakly translated into enforceable land-use regulations.

Rather than representing an unintended shortcoming, ambiguity appears to function as a systemic feature, enabling GI to coexist with established planning practices without fundamentally challenging prevailing regulatory arrangements.

Spatial Scale Mismatch and Uneven Implementation Outcomes

Scale-related challenges were consistently identified as a key constraint on Green Infrastructure (GI) implementation. Practitioners recognised GI as inherently multiscalar, yet highlighted the difficulty of aligning ecological processes with administratively bounded planning instruments. According to a Nature Conservation Expert (Participant 1), *"The current situation in the Municipality of Struga indicates incoherence and discontinuity of green areas"*, thereby pointing to fragmented spatial outcomes shaped by jurisdictional boundaries.

Efforts to address GI across scales often involved adapting existing planning instruments rather than reconfiguring planning logic to accommodate GI's spatial requirements. Proposals to plan GI outside urban areas through village or non-inhabited area plans [Architect] illustrate attempts to retrofit GI into established planning hierarchies. Nevertheless, such interventions tend to be overshadowed by the prioritisation of GI in visible or strategically valued urban areas, meaning that less advantaged, peripheral, or rural spaces remain under-addressed in practice.

Beyond these spatial disparities, discussions of scale rarely engaged with questions of social distribution or differential access to GI benefits, thereby further emphasising the limited consideration given to equity within multiscale planning practice.

Opportunities and Enabling Conditions: Conditional Pathways towards Operational and Equitable Green Infrastructure

Despite these constraints, practitioners articulated conditions under which Green Infrastructure (GI) could become more operationally effective. Importantly, these conditions were framed as contingent on regulatory clarity and institutional alignment, rather than relying solely on voluntary coordination. Urban practitioners highlighted the potential of Urban Green Infrastructure (UGI) elements to reconcile development pressures with environmental objectives, noting that *"UGI elements such as street trees, green roofs and green facades should be implemented because they improve both spatial and ecological connectivity"* [Architect].

At the same time, participants emphasised the need for stronger regulatory frameworks, noting that *"UGI elements should be mandatorily applied in urban planning"* [Architect], which indicates recognition that flexibility without enforceability limits implementation. Similarly, forestry and conservation practitioners identified protected area designation as an enabling condition for GI delivery, with one noting that *"If Jablanica were declared a national park, the GI concept would be better implemented"* [Forestry Engineer].

Building on these insights, these perspectives suggest that GI's potential to address broader societal objectives – including the more equitable and consistent provision of benefits – depends on its integration into binding planning instruments. Without such institutional embedding, GI risks remaining a selective and unevenly applied concept, thereby reinforcing existing spatial and social disparities rather than mitigating them.

4.3 Qualitative Triangulation: Interpreting Alignments, Tensions and Persistent Gaps between Policy and Practice

The triangulated analysis of planning documents and practitioner perspectives reveals a pattern of partial discursive convergence combined with pronounced operational divergence in the treatment of Green Infrastructure (GI). While both policy texts and planning practice increasingly acknowledge the relevance of green and natural assets, they do so according to fundamentally different logics, temporalities and institutional priorities. Rather than reinforcing one another, these framings interact in ways that reproduce ambiguity, selectively enable implementation and ultimately constrain GI's capacity to function as a transformative spatial planning framework.

At the level of discourse, a broad alignment becomes evident. Planning documents consistently recognise the importance of protecting green and natural areas, and practitioners similarly articulate GI as a connected system of ecological and spatial assets. However, triangulation demonstrates that this shared vocabulary masks fundamentally different logics of action. In planning documents, GI-related elements are embedded within protection-oriented and land-use-based framings that treat green spaces as static spatial categories or regulatory constraints. In practice, practitioners draw on similar conceptual vocabularies but mobilise them pragmatically, aligning GI with existing planning routines

rather than allowing it to reconfigure planning priorities. This produces a situation in which conceptual recognition fails to translate into operational coherence.

A central finding emerging from the triangulated analysis concerns the mismatch between the integrative potential attributed to GI in abstract terms and its sectoral positioning in both policy and practice. Planning documents rarely articulate GI as a cross-sectoral spatial infrastructure, instead situating it within environmental chapters or sector-specific management plans. Practitioner accounts mirror this fragmentation, acknowledging GI's multifunctionality while simultaneously locating responsibility within discrete institutional domains such as forestry, nature protection or urban greenery. Triangulation thus reveals that fragmentation is not merely an implementation failure but a mutually reinforcing feature of policy design and professional practice, institutionalised and normalised across governance levels.

Regulatory ambiguity plays a pivotal mediating role between policy and practice. The predominance of aspirational and non-binding language in strategic and urban plans creates interpretive flexibility that practitioners actively navigate. From a triangulated perspective, ambiguity does not simply hinder implementation; rather, it enables discretionary engagement with GI, allowing actors to invoke GI selectively when it aligns with existing mandates, resources, or project-based opportunities. This finding complicates linear policy-practice narratives by demonstrating how weak regulatory intent is reproduced, rather than contested, within everyday planning practice.

Triangulation further exposes scale as a persistent point of tension. Planning documents acknowledge green and protected areas across multiple territorial levels, yet fail to articulate mechanisms for spatial or institutional alignment. Practitioners similarly recognise Green Infrastructure (GI) as inherently multiscalar but remain constrained by administratively bounded planning instruments. The result is a patterned form of spatial selectivity in which GI is more readily operationalised in visible, protected, or development-sensitive areas, while peripheral or less regulated spaces remain weakly addressed. This scale mismatch is not accidental; it reflects the absence of a shared spatial logic capable of coordinating ecological processes with statutory planning hierarchies.

Notably, the triangulated analysis reveals a shared omission of social equity considerations across both policy and practice. While planning documents frame GI primarily in terms of environmental protection and spatial allocation, practitioner narratives similarly prioritise ecological and recreational functions. Issues of accessibility, distributive justice or differentiated social benefits are largely absent from both sources. This convergence suggests that the marginalisation of equity considerations is not a gap between policy and practice but a structural omission embedded within dominant planning rationalities.

Finally, triangulation reveals the conditional pathways through which GI could acquire greater operational and transformative capacity. Practitioners' calls for clearer regulatory frameworks, mandatory instruments, and stronger institutional alignment resonate with the relative effectiveness of sectoral plans that possess a statutory basis. Rather than relying on voluntary coordination or conceptual persuasion, both empirical strands indicate that GI's integration into binding planning instruments is a prerequisite for reducing policy-practice gaps and mitigating uneven spatial outcomes.

5 Discussion and Implications

The findings prompt a theoretically informed integration of how Green Infrastructure (GI) is conceptualised across three interconnected spheres: academic theory, statutory planning documents, and practitioner interpretation.

The literature has consistently highlighted both the definitional plurality and conceptual ambiguity of GI (di Marino and Lapintie 2018; Mell and Scott 2023; Seiwert and Rössler 2020; Wright 2011), while simultaneously framing it as a multifunctional and strategically planned network that integrates ecological, social, and economic objectives (Benedict and McMahon 2006; European Commission 2013). This plurality has been interpreted both as a conceptual strength, allowing adaptability across governance contexts, and as a source of ambiguity that may dilute operational clarity.

The empirical material from Struga and Vevchani demonstrates that this plurality does not travel intact across governance levels. Within municipal planning documents, GI is framed primarily in terms of land-use and protection categories, with selective references to connectivity and multifunctionality. In practitioner discussions, awareness of ecological integration and spatial continuity is evident; however, the concept remains operationally ambiguous and largely detached from equity considerations. The absence of distributive or justice-oriented framing is particularly notable given the integrative ambitions articulated in the academic literature.

This triangulation reveals both convergence and tension. Convergence emerges in the shared recognition of GI as an environmentally integrative approach, while tension arises in the narrowing of its conceptual scope as it moves from theory to statutory instruments and from strategic rhetoric to operational practice. The definitional plurality identified in the literature thus manifests in practice not as productive flexibility, but as selective abstraction. Multifunctionality is acknowledged discursively, yet remains largely reduced to environmentally oriented interpretations, leaving social, economic, and redistributive dimensions under-articulated.

This conceptual filtering has institutional consequences. The empirical evidence confirms that Green Infrastructure (GI) is formally acknowledged within municipal planning discourse, while only partially embedded within binding statutory instruments. While this finding resonates with the implementation gaps identified in the literature (di Marino and Lapintie 2018; Monteiro et al. 2020), the present analysis suggests that the North Macedonian case cannot be reduced to a deficit of administrative capacity or delayed policy uptake. Rather than representing a temporary misalignment between strategic ambition and operational practice, GI appears to stabilise within a pattern of selective institutional embedding, shaped by historically entrenched sectoral planning logics.

Fragmentation and coordination challenges have been frequently identified as obstacles to GI integration (Dupras et al. 2015; Slätmo et al. 2019). However, the present case demonstrates that fragmentation functions not merely as a barrier but also as a structuring condition. GI elements are incorporated where they align with established administrative competences, such as urban greenery management, landscape protection, or designated natural areas, without fundamentally reconfiguring zoning hierarchies or development

logics. In this respect, GI is accommodated rather than transformative. Thus, it becomes institutionally contained within sector-specific mandates, reinforcing earlier concerns about the difficulty of translating integrative GI visions into statutory spatial planning systems (Lafortezza et al. 2013; Lennon and Scott 2014).

The divergence between European policy framings and local statutory practice further accentuates this containment dynamic. At European Union (EU) level, Green Infrastructure (GI) is articulated as a strategically planned, multifunctional, and interconnected network capable of structuring territorial development across scales (European Commission n.d.; John et al. 2019). Such framing presupposes horizontal coordination and vertical coherence, positioning GI as infrastructure co-equal to grey systems. By contrast, the analysed municipal documents conceptualise green and natural areas primarily in terms of protection-oriented or categorical land-use classifications. Connectivity and ecosystem service provision are referenced, but rarely operationalised through binding instruments. This divergence reflects not merely incomplete policy transfer, but a conceptual-institutional misalignment between multifunctional infrastructure narratives and land-use-centred regulatory systems. As noted by Bogdanova Ajceva (2022), GI discourse is increasingly present in the North Macedonian context; yet the present findings demonstrate that discursive convergence does not automatically translate into regulatory transformation.

This misalignment becomes particularly visible in the relationship between communication and regulation. Practitioners demonstrate awareness of multifunctionality and connectivity, aligning rhetorically with principles identified in the literature (Davies and Lafortezza 2017; De Montis et al. 2022; Grădinaru and Hersperger 2019). Nevertheless, statutory provisions rely largely on generalised, non-binding formulations. Consistent with observations by Slätmo et al. (2019), as well as with recent analyses of GI policy instruments (Zabel and Häusler 2024), GI tends to operate predominantly through soft and coordinative governance arrangements rather than binding regulatory mechanisms. Moreover, the present case extends these insights by demonstrating that regulatory ambiguity performs a stabilising institutional function. It allows GI to be referenced across planning documents while avoiding structural adjustments to development rights or zoning hierarchies. The resulting communicative-operative gap is therefore not merely a weakness; rather, it represents an institutional compromise that preserves established planning ontologies while accommodating emerging sustainability narratives.

Spatial consequences of this compromise are patterned rather than incidental. GI-related measures are more clearly articulated in protected or symbolically significant areas, whereas everyday urban and peri-urban development zones exhibit limited integrative requirements. This uneven operationalisation reinforces arguments regarding the institutional structuring of spatial outcomes (Grădinaru and Hersperger 2019) and highlights concerns about technocratic and equity-blind interpretations of GI (di Marino et al. 2019; Grabowski et al. 2023). The absence of explicit social equity references across both policy texts and practitioner narratives suggests that multifunctionality is interpreted largely through environmental performance rather than territorial justice. Consequently, GI risks consolidating environmental assets in already regulated spaces while remaining peripheral to growth-oriented areas where integrative planning would arguably have the greatest impact.

Synthesising these dynamics, the study advances a configurational understanding of fragmented and selective Green Infrastrucure (GI) operationalisation in transitional spatial planning systems. This configuration is characterised by discursive endorsement at the strategic level, sectoral embedding within established administrative mandates, regulatory ambiguity in statutory instruments, and weak vertical integration across governance scales. Together, these dimensions produce a stable equilibrium in which GI is neither absent nor transformative. By conceptualising this condition as an institutional adaptation rather than an implementation failure, the analysis refines prevailing narratives in GI governance scholarship. It suggests that the effectiveness of multifunctional infrastructure concepts depends not only on coordination mechanisms but also on their compatibility with dominant land-use ontologies and regulatory cultures.

For spatial planning practice, the findings indicate that definitional plurality should be coupled with regulatory specificity if multifunctionality is to achieve territorial coherence. At the municipal level, embedding Green Infrastructure (GI) into binding statutory instruments – through mandatory connectivity requirements, ecosystem service-based zoning criteria, and measurable monitoring indicators – appears essential for reducing the communicative-operative gap. Flexibility alone is insufficient; regulatory clarity is a prerequisite for operational coherence. At the national level, strengthening vertical integration mechanisms between spatial, environmental, and sectoral legislation could reduce conceptual-institutional misalignment. Clear assignment of coordination responsibilities would mitigate selective embedding across fragmented mandates.

For Western Balkan contexts pursuing EU alignment, the findings suggest that rhetorical adoption of EU GI frameworks is inadequate. Effective alignment requires translating multifunctional GI principles into enforceable spatial planning instruments rather than merely incorporating them symbolically into strategic narratives. More broadly, the case cautions against assuming that EU GI frameworks diffuse linearly into diverse governance contexts. Conceptual adoption without institutional recalibration may generate discursive convergence while leaving spatial allocation logics fundamentally unchanged.

Overall, the Struga and Vevchani cases demonstrate that Green Infrastructure (GI) in transitional spatial planning systems may stabilise in a fragmented but functional configuration, marked by selective conceptual translation and operational ambiguity. By critically synthesising theoretical plurality, statutory framing, and practitioner interpretation, the study contributes to a more nuanced understanding of how multifunctional infrastructure concepts are interpreted, narrowed, and institutionalised within spatial planning practice.

6 Conclusions

This study analysed how Green Infrastructure (GI) is understood, operationalised, and enacted within North Macedonia's spatial planning framework, with particular attention to the processes and practices observed in the municipalities of Struga and Vevchani, setting

the stage for a detailed assessment of institutional translation and operational embedding. Moving beyond binary assessments of policy presence or absence, the analysis advances a configurational account of GI institutionalisation within a transitional planning system.

The findings indicate that GI integration is shaped less by policy ambition than by institutional compatibility. While GI is discursively endorsed and aligned with European environmental agendas, its operational embedding occurs primarily through pre-existing sectoral and land-use categories. Protection-oriented framings prevail, whereas multifunctionality, connectivity, and cross-sectoral integration remain weakly codified in binding instruments. Regulatory ambiguity and aspirational policy language sustain a communicative-operative gap, enabling discretionary implementation. Simultaneously, distributive and equity-oriented dimensions are marginal in both policy texts and practitioner narratives, positioning GI as an environmental supplement rather than as a socially structuring spatial infrastructure. In transitional planning contexts, therefore, GI neither simply succeeds nor fails; it stabilises in forms compatible with entrenched regulatory cultures and administrative competences.

Theoretically, this study contributes by reconceptualising GI mainstreaming as a form of institutional translation rather than a linear process of policy diffusion. It introduces a configurational lens for analysing multifunctional infrastructure within hybrid governance regimes, illustrating how selective embedding can generate stability without structural transformation. By foregrounding small municipalities within an evolving European planning context, the study empirically extends debates that are often dominated by metropolitan and Western cases, thereby grounding the infrastructure turn in spatial planning within peripheral and institutionally fluid settings.

Several recommendations emerge for planning reform:

- *First*, Green Infrastructure (GI) should be explicitly codified within spatial planning legislation as a cross-sectoral infrastructure category, accompanied by mandatory provisions for connectivity and multifunctionality, thereby shifting it from rhetorical endorsement to binding spatial logic.
- *Second*, municipal statutory plans should incorporate ecosystem service-informed zoning criteria alongside measurable performance indicators in order to reduce interpretive discretion and strengthen enforceability.
- *Third*, clearer vertical and horizontal coordination mechanisms are required to mitigate institutional fragmentation across planning tiers.
- *Fourth*, monitoring frameworks should integrate spatially explicit and socially disaggregated indicators, ensuring that equity becomes an integral component of GI implementation.
- *Fifth*, interdisciplinary capacity-building is necessary to embed GI within operative planning routines rather than confining it to environmental chapters.

Without regulatory specificity and institutional alignment, GI is likely to remain communicatively legitimised yet structurally peripheral.

The scope of inference is shaped by several limitations. The qualitative multiple-method design – combining Critical Discourse Analysis (CDA) of planning documents with a

single exploratory practitioner workshop – prioritises analytical depth over generalisability. The purposive focus on two municipalities enhances contextual sensitivity but limits representativeness and does not provide a comparative baseline. The document corpus, while systematically defined, cannot exhaust all sectoral regulations, informal governance practices, fiscal instruments, or political-economic dynamics influencing Green Infrastructure (GI) implementation. As an interpretative approach, CDA necessarily entails analytical judgement, notwithstanding transparent coding procedures and triangulation, while workshop insights rely on self-reported practitioner perspectives that may reflect institutional positioning. The study does not incorporate quantitative spatial modelling, ecosystem service valuation, land-market analysis, or longitudinal tracking of implementation outcomes, nor does it systematically examine power asymmetries shaping infrastructure prioritisation. The findings further reflect a specific temporal planning cycle subject to legislative evolution. These constraints delimit transferability while clarifying the contextual boundaries of the configurational interpretation advanced here.

Future research should test the robustness of this interpretation through comparative analyses across transitional, post-socialist, and peripheral planning systems, examining whether selective accommodation constitutes a broader institutional pattern. Longitudinal studies are needed to assess how legislative reform, European integration processes, and climate adaptation imperatives recalibrate the communicative-operative gap identified in this study. Integrating institutional analysis with geospatial ecosystem service modelling would enable evaluation of whether multifunctional aspirations translate into measurable territorial coherence. Dedicated inquiry into the distributive and justice implications of Green Infrastructure (GI) – particularly in smaller municipalities – remains essential to address its persistent framing as environmentally technical rather than socially transformative. By situating GI within broader debates on institutional change, regulatory cultures, and the infrastructure turn in spatial planning theory, this study encourages a shift from normative advocacy towards a more precise understanding of how multifunctional infrastructure concepts are translated, stabilised, and potentially reconfigured across diverse governance regimes.

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Ausbildung

Education

Shape2Gether – Joint Education for Sustainable Development with Geotechnologies and Serious Games

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Summary

Despite growing recognition of the importance to foster students' agency in climate change education, approaches that are both integrated and interdisciplinary remain limited. This paper addresses this gap by examining an interdisciplinary approach, developed within the "Shape2Gether" project, that combines geotechnologies, education for sustainable development (ESD), experiential learning, and game-based methods within a coherent pedagogical framework for sustainability and climate-change education. It examines how this approach can help students develop knowledge, confidence, and action competence in communicating complex sustainability issues.

Shape2Gether (S2G) is a three-year Erasmus+ project uniting seven European universities. The project aims to support students in becoming "agents of change" capable of critically engaging with, communicating, and addressing complex socio-environmental challenges. Across three international summer schools (held in Norway, Malta, and Germany), students participated in a cumulative learning trajectory supported by online preparation and inter-summer-school assignments. They worked with advanced geotechnologies, engaged in place-based fieldwork, collaborated in interdisciplinary teams, and used discursive game design to communicate sustainability issues through virtual reality tours, multimedia products, and playable game prototypes.

Student evaluations indicate strong gains in sustainability literacy, technological skills, intercultural competence, and confidence in communicating climate-change topics. Participants particularly valued experiential learning, international collaboration, and creative communication methods, which together fostered action competence and personal growth.

A systematic review of European study programmes revealed that although geotechnologies, sustainability education, and game-based learning are each well represented individually, no existing long-term higher-education programme integrates all three domains. This highlights a structural educational gap and further supports the relevance of the Shape2Gether pedagogical model.

The findings provide both empirical evidence and conceptual guidance for designing a joint international curriculum that combines geotechnologies, education for sustainable development, experiential methods, and discursive game design. The paper contributes to the conceptualisation of students as "agents of change", provides empirical insights into the implementation of an interdisciplinary curriculum prototype, and lays the groundwork for the development of a joint international higher-education programme.

Keywords: Shape2Gether, geotechnologies, experiental learning, climate change communication, interdisciplinary collaboration, place-based education, gamified education, curriculum prototype

Zusammenfassung

"Shape2Gether" – Integrierte und Interdisziplinäre Bildung für nachhaltige Entwicklung mit Geotechnologien und spielbasierten Methoden

Trotz der zunehmenden Erkenntnis, wie wichtig es ist, die Eigeninitiative der Studierenden in der Klimabildung zu fördern, gibt es nach wie vor nur wenige Ansätze, die sowohl integriert als auch interdisziplinär sind. Dieser Beitrag befasst sich mit dieser Lücke, indem er einen im Rahmen des „Shape2Gether"-Projekts entwickelten interdisziplinären Ansatz untersucht, der Geotechnologien, Bildung für nachhaltige Entwicklung (BNE), erfahrungsorientiertes Lernen und spielbasierte Methoden in einem kohärenten pädagogischen Rahmen vereint. Es wird untersucht, wie dieser Ansatz den Studierenden helfen kann, Wissen, Selbstvertrauen und Handlungskompetenz bei der Vermittlung komplexer Nachhaltigkeitsthemen zu entwickeln.

„Shape2Gether" (S2G) ist ein dreijähriges Erasmus+-Projekt, an dem sieben europäische Hochschulen zusammenarbeiten. Ziel ist es, Studierende dabei zu unterstützen, zu „Agent/innen des Wandels" zu werden. Diese sollen in der Lage sein, sich kritisch mit komplexen sozio-ökologischen Herausforderungen auseinanderzusetzen, darüber zu kommunizieren und zu deren Bewältigung aktiv beizutragen. Im Rahmen von drei internationalen Sommerschulen (in Norwegen, Malta und Deutschland) nahmen Studierende an einem aufeinander aufbauenden Lernprogramm teil, das durch Online-Vorbereitung und Aufgaben zwischen den Sommerschulen ergänzt wurde. Sie arbeiteten mit fortschrittlichen Geotechnologien, führten ortsbezogene Feldforschung durch, kooperierten in interdisziplinären Teams und nutzten diskursives Spieldesign, um Nachhaltigkeitsthemen mithilfe von Virtual-Reality-Touren, multimedialen Produkten und spielbaren Prototypen zu vermitteln.

Die Bewertungen der Studierenden zeigen deutliche Fortschritte in den Bereichen Nachhaltigkeitskompetenz, technologische Fähigkeiten, interkulturelle Kompetenz und Selbstvertrauen bei der Vermittlung von Themen rund um den Klimawandel. Die Teilnehmenden schätzten insbesondere erfahrungsorientiertes Lernen, internationale Zusammenarbeit und kreative Kommunikationsmethoden, die gemeinsam Handlungskompetenz und persönliche Entwicklung förderten.

Eine systematische Analyse europäischer Studienprogramme zeigte, dass Geotechnologien, Nachhaltigkeitsbildung und spielbasiertes Lernen zwar jeweils gut vertreten sind, es jedoch kein bestehendes langfristiges Hochschulprogramm gibt, das alle drei Bereiche integriert. Dies verdeutlicht eine strukturelle Bildungslücke und unterstreicht die Relevanz des pädagogischen Modells des Projektes „Shape2Gether".

Die Ergebnisse liefern sowohl empirische Evidenz als auch konzeptionelle Leitlinien für die Entwicklung eines gemeinsamen internationalen Curriculums, das Geotechnologien, BNE, erfahrungsorientierte Methoden und diskursives Spieldesign integriert. Der vorliegende Beitrag soll zur Konzeptualisierung von Studierenden als „Agenten des Wandels" beitragen, liefert empirische Einblicke in die Umsetzung eines interdisziplinären Lehrplanprototyps und legt den Grundstein für die Entwicklung eines gemeinsamen internationalen Hochschulprogramms.

Schlagwörter: „Shape2Gether“, Geotechnologien, erfahrungsorientiertes Lernen, Klimawandelkommunikation, interdisziplinäre Zusammenarbeit, ortsbezogene Bildung, spielbasiertes Lernen, Curriculumkonzept

1 Introduction

Making young people aware of and actively involved in the transition to sustainable living is important, because climate change demands action in the form of both mitigation and adaptation. Meanwhile, young people experience feelings of resignation, which are implicitly or unknowingly reinforced by media representations of climate change (BOSSCHAART 2019) and by textbooks that often present a fixed future (PAUW 2015). Both give students a feeling that they have no or little influence on "what is to come". This lack of agency that young people may feel is reinforced by the alarming stage climate change is reaching and which coincides with other global crises such as the global decline in natural spaces, Covid-19 pandemic and various armed conflicts.

Education for Sustainable Development (ESD) provides a framework to address this perceived lack of agency. In this context, ESD is closely aligned with the United Nations Sustainable Development Goals (SDG), particularly SDG 4 (Quality Education) and SDG 13 (Climate Action). SDG 4.7 explicitly highlights the role of education in equipping learners with the knowledge, skills, values, and attitudes needed to promote sustainable development, while SDG 13 emphasises the importance of improving education, awareness-raising, and human and institutional capacity on climate change mitigation and adaptation. These particular goals underscore the importance of educational approaches that not only inform but also empower learners to act. Thus, central to ESD is enabling learners to act on sustainability challenges, particularly climate change, through mitigation, adaptation, and resilience (UNESCO 2020).

It emphasises that knowledge alone is insufficient to drive meaningful action toward sustainability; instead, it must be integrated with values, attitudes, and skills that foster agency and transformation. A useful model for ESD is found in the work of JEGSTAD et al. (2018), where they visualise the different layers of knowledge and skills, from "scientific knowledge, via science in context, science distinctiveness and methodological character, ESD competences, and to lived ESD". This model describes the progression from knowledge acquisition to action competence as a core element of holistic sustainability and climate-change education. ESD thus combines cognitive, affective, and psycho-motor learning objectives to nurture not only intellectual understanding but also emotional engagement and embodied practice.

Wellbeing is a fourth dimension of the sustainability compass, introduced in 1999 by Atkisson (cf. LOGAN and CUTTER-MACKENZIE 2015). It outlines that teaching natural, social and economic content needs to be taught in parallel with improving knowledge and attitudes on wellbeing. It is important for the future generation to give them hope for the future. When complemented by scientifically grounded information about the issues at hand, this encourages learners to critically reflect on their own role within the realities

that surround them. This is what Orr (2009) means when referring to "realistic hope": hope as a productive starting point – an entry to engagement – rather than a naive reassurance. Recent work further highlights the growing role of ESD in supporting sustainability transitions and higher education curricula (e.g. Leal Filho et al. 2019; Alimehmeti et al. 2024). In this sense, climate change education can be understood as a key domain within ESD, where the development of competencies such as systems thinking, critical reflection, and action-oriented engagement becomes particularly relevant.

Such pedagogical strategies reflect a shift from transmissive to transformative education, in which learners are positioned as active participants capable of envisioning and enacting change. Through participatory learning (Wals 2007) and values education (Tilbury 2011), action competence is cultivated (Mogensen and Schnack 2010), empowering students to reflect critically and engage constructively with complex sustainability issues. This holistic approach recognises that transformative learning emerges not just through content, but through situated, relational, and interdisciplinary practices, anchored in the ethical imperative of sustainability.

Taken above mentioned in consideration, it is suggested that teachers support learners in developing critical thinking skills, working with scientifically verified or verifiable information, and analysing and interpreting data as objectively as possible. It also requires guiding students to critically assess the reliability of information sources and to cultivate an openness to rational, evidence-based discussion. However, climate change learning is not purely cognitive; emotional responses shape how learners engage with and understand climate change (Deisenrieder et al. 2025) and require a highly experienced and sensitive pedagogical approach (Bryan 2020). If left unaddressed, these responses may lead to maladaptive coping strategies such as denial or disengagement (Ojala 2012). In this context, a constructive form of hope becomes crucial, as it supports sustained engagement and is grounded in knowledge, reflection, and agency. At the same time, we need to take into account that we ask students to be informed researchers or citizens in a mediatised culture in which civic engagement develops in increasingly complex, playful ways (Glas et al. 2019). This requires not only a critical understanding of the empirical reality of climate change but also the ways in which this reality is framed and shaped through media and culture.

In the context of students' emotional engagement with complex topics, such as climate change and sustainable development, games and gamification design-based methods have been recognised as effective strategies for strengthening learners' motivation and involvement. Such playful approaches can help introduce complex topics and can provide different perspectives through games' medium-specific procedural and participatory nature (Bogost 2007). In the form of playing serious games, i.e. games used for purposes other than entertainment (e.g. Flood et al. 2018) or through dedicated discursive game design practices (Glas et al. 2021; Werning and van Vught 2021; van Vught and Werning 2024) students can actively simulate, and experiment with, complex real-life situations.

Fieldwork and place-based education emphasise learning through direct engagement with specific local environments, enabling students to situate abstract concepts within real-world geographical, social, and ecological contexts (Gruenewald 2003; Beames et al. 2012). And in this sense, geotechnologies (GIS, online mapping and visualisation tools,

drones) may play a central role, as they enable learners to analyse, visualise, and communicate various geographical aspects, processes, and relationships of climate change, thereby linking abstract global processes to concrete local contexts. When serious-game or discursive game-design activities are connected to such field-based and place-responsive learning settings, they draw on established traditions in geography education and further enhance experiential learning outcomes.

Building on these aforementioned pedagogical foundations, the Shape2Gether (S2G) Erasmus+ project was designed to operationalise these principles within an international and interdisciplinary higher-education context. The Shape2Gether, a unique cooperation of seven universities and a private company, integrates geospatial sciences – such as geography, geoinformatics, and emerging geotechnologies – and adopts a multidisciplinary and holistic perspective to explore the design of an integrated curriculum aiming at the higher education (i.e. university level). This curriculum encompasses not only the scientific understanding of climate processes but also emphasises the development of skills for communicating climate-related knowledge (via game elements and soft skills) to diverse learner groups and the wider public, as climate change is widely recognised as the archetypal "wicked problem," lacking a single, defined solution (CROSS and CONGREVE 2021).

By examining how geospatial sciences, sustainability education, and humanities-based practice-as-research approaches in the form of discursive game design can be meaningfully combined, the project aimed to explore what an interdisciplinary and future-oriented learning framework for climate change education might require in practice. It should be noted that a key outcome of the project will be well-developed learning framework (curriculum), which will serve as preparation for future Erasmus Mundus Joint Master's programmes – though that is not the main focus of this article.

Nevertheless, this newly designed curriculum is geared towards students with a foundational background in geography, geoinformatics, environmental or sustainability studies, education, or related interdisciplinary fields, who are motivated to engage with climate change beyond a single disciplinary perspective. In terms of outcomes, the curriculum aims to develop graduates capable of critically understanding climate-change challenges, applying geotechnological and pedagogical tools, and communicating sustainability issues to diverse audiences. While allowing for individual specialisation, the programme seeks to cultivate active actors operating across science, education, and society.

Thus, the essential learning outcomes of the proposed curriculum is agency. Participants will be supported to take the role of "agents of change": people who work at the intersections of science and society and who are driven to stimulate agency of change in the groups they work with by designing educational activities, engaging in citizen science projects or communicating to general audiences in accessible ways.

This paper gives testimony to how the project integrated and applied these pedagogical strategies to form a curriculum that would transform participants into agents of change, and it is positioned as a conceptually grounded design and implementation study, supported by empirical insights from the project evaluation. The paper thus addresses two interconnected research questions:

- How can ESD-informed pedagogical approaches – integrating discursive game design, place-based teaching, and geotechnology – foster student agency in communicating and addressing climate change and sustainable development?
- What collaborative processes and shared pedagogical practices emerge within a diverse international consortium working towards climate change education, and how these processes can contribute to the design of a joint curriculum?

2 Shape2Gether Narrative

Overview of the Concept and Participants

Shape2Gether is a European Erasmus+ project (from 2023 to 2026) which aims to design a coherent curriculum for future agents of (climate) change using innovative approaches in education for sustainable development. It investigates how these approaches can enhance students' learning and engagement with climate change and sustainable development and support the development of skills associated with becoming agents of change. The project ultimately aims to translate these insights into an international and interdisciplinary educational framework that can guide future curriculum development. To this end, the project to co-create, test, and evaluate pedagogical strategies. Central to this effort is a series of three international summer schools (Norway in May 2024, Malta in October 2024, and Germany in March 2025) that operationalise the project's pedagogical framework in practice.

Shape2Gether brings together is a unique consortium of seven universities – Palacký University Olomouc (Czechia), Ruhr-Universität Bochum (Germany), Utrecht University (The Netherlands), Universita ta Malta (Malta), University of Turku (Finland), Vienna University of Technology (TU Wien) (Austria), Norwegian University of Science and Technology (NTNU, Norway) – and one Finnish private company that works with and develops educational games (Lentävä Liitutaulu – Seppo).The project builds upon existing expertise in geoscience education, ESD, and educational technologies, drawing particularly on experiences gained through earlier international collaborations, in the form of previously funded Erasmus + projects, "EduChange" (Favier et al. 2021; Pánek et al. 2022) and "EduChange 2.0", "Spationomy" (Pászto et al. 2020; Pászto et al. 2021) and "Spationomy" 2.0, and "DigiGeo"). The lessons learned from these projects informed the Shape2Gether summer school curriculum.

Each of the summer schools had their own focus with the collective goal of building the knowledge, attitude and skills of students to become agents of change. Meanwhile, the series of three summer schools allowed students and staff to build meaningful connections and form a community of change agents that would inspire each other and encourage learning together. From each of the participating universities, a minimum of four students could take part, leading to an almost consistent group in all three summer schools (some partners were able to accommodate five students). Participating students had a broad academic background, most of them were enrolled in geography or geoinformatics programs, while others combined subjects from one of the natural science disciplines (physics, chemistry,

biology or integrated natural science) or from pedagogy, social science disciplines or the humanities. Around ten students had backgrounds from more than one discipline.

Pedagogical Approaches

The pedagogical design of Shape2Gether is thus grounded in education for sustainable development (ESD) with additional accents on (1) place-based learning, (2) gamification and discursive game design, (3) challenge-based and active learning, and (4) structured reflection. Together these pedagogical strategies should empower students to become agents of change capable of critically engaging with, responding to, and communicating sustainability and climate-change challenges. While these pedagogical approaches are diverse, they share important common goals. First, they aim to support both cognitive and affective learning and to develop a combination of technical (tool-related) and soft skills. Second, they foster critical thinking and help contextualise sustainability and climate change by linking global challenges to specific local places and by encouraging comparisons across different socio-environmental contexts.

(1) Place-based Learning

Ideas and theory about the value of **fieldwork** and **place-based education** for both ESD and CCE (see e.g. Azevedo et al. 2025) were brought into the programme on two levels: firstly, by bringing all participants together in three different locations for the summer schools and secondly by using various fieldwork pedagogies during those summer schools. Although all this traveling seems counter-intuitive from a sustainability perspective, because of all the carbon emission (e.g. Woodley et al. 2024), the value of being in the field was essential for the development of students in the cognitive, affective and skill domain.

According to France and Haigh (2018) fieldwork offers the opportunities for holistic education and can lead to transformative learning or deep learning (Boyle et al. 2007; Oost et al. 2011, Mercer et al. 2022). Moreover, Israel (2012) demonstrates how fieldwork and place-based education can combine strengths for teaching about pressing social issues. For example, field-based learning in Trondheim summer school (May 2024) enabled experiential connections with ecological systems, while the sessions during the summer school in Malta (October 2024) embedded reflection on sustainability values into real-world socio-environmental tensions. This is attained by:

- **Immersion:** an important element of the programme is direct experience of places and people affected through field work, visiting and exploring sites, interviewing local stakeholders.
- **Hands-on experience:** a second important element of the programme is the learning by doing, students will have to immediately apply their new knowledge on geotechnologies, multimedia and game design, and thus develop skills along the way.
- **Contextualising** climate change and sustainability: visiting different places, and places different from their home, students will experience how climate change has

different impacts on different places, and how local communities respond differently to the challenges.

Fieldwork at these three different locations also allowed for cultural exchange, i.e. visiting different places may spark dialogue and comparison. Where local students and staff act as "interpreters", allowing visiting students to gain a better understanding of local experiences and move beyond stereotyped notions of the place they visit. The exchange of ideas and the mixed background also allow students to discuss and compare their perspectives, notions, and values related to sustainability and climate change. These characteristics illustrate how fieldwork and place-based learning shaped the educational dynamics across the three summer schools. With a strong focus on immersion and hands-on experience, the summer schools also tied in with important dimensions of experiential learning.

(2) Gamification and Discursive Game Design

Game-based learning, gamification, and **discursive game design** were used to engage students in creative, data-informed, and critically reflective learning processes. Gamification refers to the application of game-like elements – such as points, challenges, and feedback loops – into non-game contexts to enhance user engagement, motivation, or learning (Deterding et al. 2011). Discursive Game Design (DGD) treats game-making as a form of critical dialogue, where each prototype is seen as a discursive utterance capable of expressing arguments and perspectives through procedural rhetoric.

In educational contexts, DGD encourages learners to iterate, reframe, and contest meanings through collaborative game creation, promoting reflection on social, historical, or environmental issues. As a form of practice-as-research, it has also been employed in relation to climate change-related projects elsewhere to create so-called "ecogames" (op de Beke et al. 2024; Frelik et al. 2025). A key component of the learning process is understanding that making and playing ecogames requires a critical understanding of how (serious) games themselves function as a media form. Design sessions were therefore bookended by lectures on the topic introducing students to the field of game studies from a humanities perspective.

During the summer school in Bochum (March 2025), the game design process itself became a vehicle for integrating critical thinking, systems thinking, and future-oriented learning – key competencies for sustainable development (Rieckmann 2012; UNESCO 2020). Most of the students had no previous knowledge of how to use game design or game elements within an educational context. DGD as a practice-as-research approach is, however, enables learners with diverse backgrounds and game design literacy to cooperate via a series of exercises (Glas et al. 2021, Werning and van Vught 2021; van Vught and Werning 2024). These exercises, often making use of data gained through fieldwork, were always done in small, interdisciplinary groups, to spark the exchange of experience and ideas among students.

The exercises followed an iterative process of generating, specifying, testing, and evaluating ideas into a playable game. This game would develop through either paper

prototyping making use of a variety of board game components and other materials, or by making use of the digital platform provided by consortium partner Seppo. The use of game design elements in reflection and debriefing allowed for creative and emotional engagement, critical thinking, and embodied understanding of complex sustainability issues through simulated, interactive experiences. By working on a game design, students collaboratively reinterpreted local environmental and societal challenges, transforming them into structured narratives and decision-making frameworks that made abstract sustainability concepts more tangible and personally relevant.

(3) Challenge-Based and Active Learning

A next methodological pillar in the programme is **challenge-based** (see e.g. LEIJON et al. 2021) and **active learning**, which requires students to apply knowledge immediately, solve complex problems collaboratively, and engage with open-ended tasks. Students are provided with challenging and rather open-ended assignments which they cannot solve individually – they thus need to cooperate in multidisciplinary, international teams. These multidisciplinary groups offer plenty of opportunity for peer learning, both in the context of skills (geotechnology, mapping, gamification), education and communication (how to teach about these topics) and content (understanding of climate change, of local landscapes, local sustainability issues).

(4) Structured Reflection

All these pedagogical strategies can contribute to deep learning when **structured reflection** is embedded in the programme to support students in making sense of their experiences, emotions, and learning processes throughout the summer schools (MOON 2013). Elements of the summer schools such as fieldwork, intercultural exchange, and working in interdisciplinary groups can be emotional work for students and moments of reflection are important to make sense of such experiences (BOUD et al. 2013). The programme contained moments of reflection, both on the places and people visited, sustainability, the development of the projects, educational design, and the learning trajectory of each summer school as a whole. This approach helped students to develop important soft skills which they will need to tackle today's wicked problems (SCHÖN 2017). Gamification was used to set reflection in motion too.

In addition to the core methodological pillars described above, the programme also used supporting pedagogical approaches to create a coherent and scaffolded learning trajectory across the three summer schools. The summer schools provided an opportunity for an in-depth exploration of local sustainability issues via flipped-classroom and blended-learning approaches. Prior to each summer school, students were given access to an online lecture and supplementary background materials, ensuring a shared foundational understanding of the key concepts, methodological tools, and characteristics of the host location.

This preparatory phase enabled the on-site programme to begin immediately and proceed at a more advanced level. Moreover, the online pre-meeting served to re-establish

the learning community by bringing participants together several weeks before the start of the summer school. Together, these preparatory components supported the other methodological pillars, enabling students to arrive well-prepared, engage more deeply in on-site activities, and build continuity across the three summer schools.

3 Agents of Change in Shape2Gether

Shape2Gether sees the wicked problems we are currently facing as a collective, collaborative challenge, where international and interdisciplinary teams are essential to move forward and make the changes needed. Agents of change are central to our Shape2Gether approach, as is visualised in the model presented in this chapter (Figure 1). We conceptualise a model for agents of change that touches on all the aspects from the Jegstad et al. (2018) model, and represents an attempt both to adapt these layers to a specific context (climate change) and to build on the strengths of the educational workforce (Hopkins and McKeown 2002), in our case through a broad cross-disciplinary group of teachers and researchers with technological, pedagogical and education for sustainability background.

We understand the agency of change as synonymous with the ability to choose which action to take to make a difference in the world. In other words, agency is seen as the capacity of individuals to act purposefully within specific contexts, shaped by their knowledge, skills, values, and structural conditions (e.g. Biesta and Tedder 2007; Cathcart et al. 2026). At the same time, educators (both teachers and students) position themselves as proactive actors in shaping the design of sustainable development and climate-change adaptation solutions. They also act as promoters of citizen science and cultivate active, responsible citizenship, while ensuring that related scientific knowledge is communicated to the public in an accessible and evidence-based way.

This understanding aligns with ecological perspectives on agency, which conceptualise action as emerging from the dynamic interplay between individuals, available resources, and the social and material contexts in which they operate (Biesta and Tedder 2007). In educational settings, agency is often defined as the capacity to act purposefully and constructively within such conditions (Priestley et al. 2015). Within climate change education specifically, agency has further been linked to empowerment, constructive engagement, and students' ability to respond meaningfully to uncertainty (Ojala 2012). Agents of change facilitating agencies can either be human or things, producing a particular, desired effect on people and the environment. Within this conceptual framing, Shape2Gether distinguishes three interconnected domains of agency that together form the basis of the model presented (Figure 1).

(1) Conceptual Model

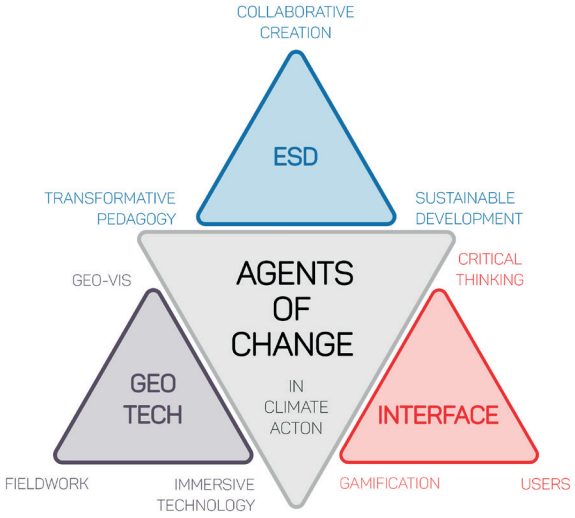
The visual model presented in Figure 1 serves as a conceptual synthesis of the Shape2Gether pedagogical framework, which integrates three primary domains – Education for Sustainable Development (ESD), Geotechnologies (Geo-Tech), and Interface Design – to

cultivate "agents of change" for climate action. At the core of the diagramme lies the notion of agency, which is framed as a dynamic interplay between epistemological, technological, and experiential domains that enable learners to engage critically with sustainability issues.

The tripartite triangular structure reflects a deliberate methodological convergence: (1) ESD emphasises collaborative creation, transformative pedagogy, and sustainable development (UNESCO 2020), (2) Geo-Tech foregrounds fieldwork, immersive technologies, and geo-visualisation as tools for contextual learning (e.g. GERBER and CHUAN 2000; FAVIER and CYVIN 2022; BOS et al. 2022), and (3) Interface components, such as gamification, user interaction, and critical thinking, highlight learner engagement and reflective practice (GEE 2025; ARNAB et al. 2015).

These components build on the methodological pillars introduced earlier, including geotechnologies and geovisualisation (as part of skills development), critical thinking (strengthened through discursive game design), and transformative pedagogical orientations embedded throughout the programme.

The structure aligns with Shape2Gether's mission to address "wicked problems" like climate change through holistic education that cultivates systemic thinking, empathy, and transdisciplinary collaboration (RITTEL and WEBBER 1973; STERLING 2011). Each vertex of the outer triangles encapsulates a domain-specific pedagogical focus that, when enacted through immersive summer school experiences, converges toward the central objective: Shaping empowered learners capable of initiating and supporting sustainable transformations in their communities. The "Agents of Change" positioned in the centre serve both as a goal and a process – emphasising the evolving identity of



Source: Authors. Own Design.

Figure 1: Visual representation of an agency of change

learners as proactive, reflective, and networked contributors to climate resilience and sustainability education.

(2) Actors of Agency in Shape2Gether

Based on this model, three interrelated domains of agency were identified in Shape2Gether: student agency, teacher agency, and technological agency. These categories are not intended as separate elements, but rather as interacting dimensions that jointly support the development and enactment of agency within the learning process.

1 – **Students** becoming active agents of change. The project's aim is to create responsible agents of change that can act as multipliers regarding the transfer of knowledge and reflection on values according to education for sustainable development, be a role model by acting sustainably in everyday life, and foster agency in future generations. Shape2Gether promotes environmental literacy, thus enabling the students to contextualise sustainability and identify local and global challenges and opportunities.
2 – **Teachers** acting as agents of change and broadening their own concept of agency. Teachers in Shape2Gether act as enablers of new ideas and viewpoints, combining knowledge and skill transfer with emotional investment of both students and teachers, thus providing a platform for development and individual growth and group identification.
3 – **Resources and new technologies** acting as agents of change. Through combining climate change topics with geotechnology and serious game design, innovative learning and teaching resources contribute to enhanced systems thinking. Developing and using these resources encourage users to re-think traditional teaching/learning methods, relationships, and concepts. The resources aim at promoting active engagement beyond factual knowledge transfer and include target groups outside usual contexts to raise awareness and facilitate empowerment of a wider audience.

(3) Strengthening Agency through the Summer Schools

During a series of three summer schools, the students' self-perceived ability to act as an agent of change was strengthened by most of the participants, as reflected in the evaluation results, including increased confidence in communication, knowledge gains, and engagement in dissemination activities (Section 4.3). To this end, drawing on both quantitative and qualitative evaluation data (Section 4.3), participants gained content knowledge on sustainability, climate change and related communication; reflected on values; were encouraged to apply critical thinking skills; received training in key technological competencies; and developed various transferable soft skills (such as planning, teamwork, and intercultural communication). Moreover, they formed an interdisciplinary, international supporting network that invites agents of change to find their own voice and discover ways to make changes – using the experiences and new skills learned during the summer schools.

The conceptual model and its three domains of agency also serve as analytical lenses for interpreting the student evaluations presented in the following section. They are also

reflected in the programme design and are further evidenced in the evaluation results, particularly in relation to students' confidence, skills development, and engagement in dissemination activities.

4 Practical Implementation

The methodology and the theoretical framework explained above were elaborated into a 12-month programme which consisted of online preparatory meetings and three international field weeks where students and staff members from each participating university gathered. This chapter provides a concise overview of this practical implementation as it was carried out within the Shape2Gether project. The choice of summer schools' locations reflected the intention to expose participants to a diverse range of natural and socio-economic contexts in which different local manifestations of climate change (e.g. heat-stress and water-management challenges in Malta) and sustainable-development issues (e.g. the transformation of post-mining and industrial landscapes in Germany) could be observed and studied.

From the beginning of the project, the aim was to make deliberate use of the time spent together on site, with a focus on developing practical competencies and employing experiential and place-based learning approaches. Theoretical knowledge and thematic content – both at the overall project level and for each individual summer school – were provided to students through multiple formats: live online preparatory lectures, asynchronous online materials (including recorded sessions available throughout the project), and traditional instructional resources (presentation slides, step-by-step guides, glossaries, recommended literature and others).

To ensure continued engagement after the conclusion of each summer school, students were assigned follow-up tasks depending on the requirements of their home institutions. These included essays or written assignments (e.g. short reflections in case of Utrecht University or diaries in case of University in Turku), and in several cases, ongoing work on bachelor's or master's theses related to the Shape2Gether themes (e.g. in case of Palacký University Olomouc, or NTNU Trondheim). Most importantly, students collaborated remotely in their teams to complete practical project outputs initiated during the summer schools. Each summer school thus resulted in collaborative thematic products (presented further in the text). These three major assignments fostered critical thinking, encouraged students to apply newly acquired skills, work in interdisciplinary and international groups, and improve their time and team management, among other competencies.

4.1 Building Up on Knowledge and Skills and Experiences

All activities designed for students within the project were conceived from the outset to form a coherent sequence and, above all, to cumulatively build on each preceding component (i.e. summer school and its content). What made the project distinctive, particularly from the perspective of the participating students, was that the same cohort from each

institution took part in all teaching and learning activities. Over time, this continuity fostered strong group dynamics and close interpersonal bonds, which proved beneficial for the students' learning processes.

From a pedagogical perspective, the project was intentionally designed to create a cumulative learning trajectory. Each summer school deepened the students' knowledge of the specific thematic focus of that particular event, while simultaneously building on the conceptual and practical competencies developed in the previous stages. Through inter-summer-school assignments and the continuity of the student group, learning appears to have become a gradual, iterative process, in which newly acquired skills were transferred to subsequent tasks, as reflected in the evaluation results and student outputs (see Section 4.3). This enabled students to consolidate their knowledge and apply it in more advanced and thematically demanding contexts during the later summer schools.

The structure of the project embodied a constructed and cumulative learning trajectory, i.e. students moved from acquiring theoretical knowledge, through developing practical skills, to gaining situated experiences in real-world contexts. This approach is generally supported by the concept of scaffolding, where learners' prior knowledge is supported and gradually expanded, providing a suitable lens for understanding this progression (Rojas-Drummond and Mercer 2003). At each summer school and during the preparatory online phase, students engaged with conceptual foundations and deepened their knowledge of the specific thematic focus. The on-site components of the programme then emphasised primarily practical skill development, for example, usage of advanced geotechnologies, fieldwork in sustainability contexts, qualitative research methods, and game design.

Alongside these cognitive and practical dimensions, students also gained situated experiences linked to the specific localities, particularly regarding local manifestations of climate change, and benefited from collaborating in interdisciplinary and international teams. In this sense, students accumulated experiential knowledge – enhancing their understanding of local climate-change issues and their abilities to communicate across cultural and disciplinary divides. These phases reflect the learning cycle of experiential learning (e.g. Kolb 1984) and align with the educational goal of developing knowledge, skills and attitudes for sustainability (Brassler and Sprenger 2021).

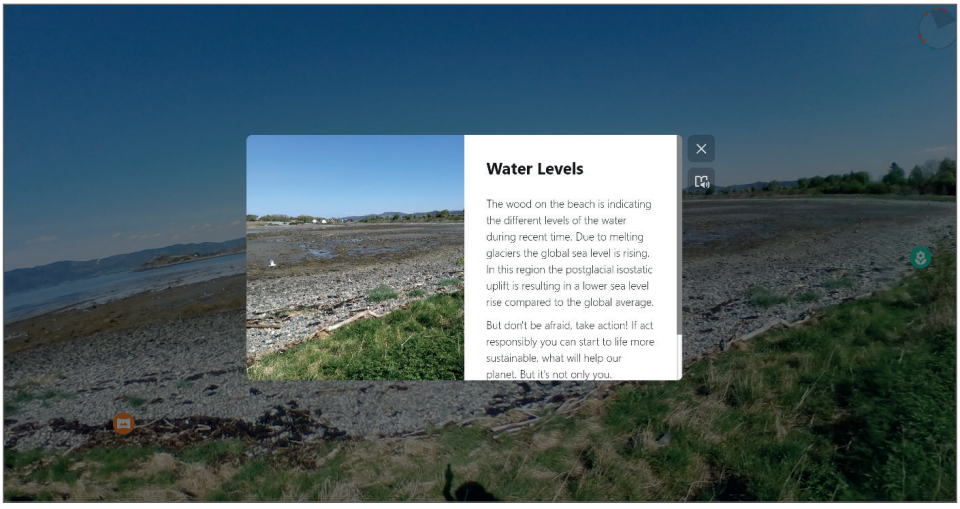
4.2 The Core – Summer Schools

In preparation for each summer school, members of the teaching team developed a range of innovative instructional materials. The creation of these materials was guided by the pedagogical principles underpinning Shape2Gether and included the design of learning activities, assignments, reflection exercises, games, and local fieldwork tasks. In line with the project's commitment to the principles of Open Education, all materials were openly available and organised into structured work packages corresponding to each summer school. Each package was accompanied by a user manual comprising an introduction to the pedagogical approach, a concise literature overview, an explanation of the applied methodology, a description of the teaching and learning techniques, and a brief discussion of the outcomes, including final student outputs and evaluation results.

Besides a day-to-day programme of the summer schools, students engaged in a sequence of team-based assignments, each requiring them to investigate a local sustainability or climate-change issue and communicate it through a concrete output – such as a virtual tour, a multimedia presentation, or a portable game prototype. These assignment types are briefly outlined below to illustrate the practical nature of the project work.

Trondheim Summer School (Norway, May 2024), the first summer school, focused on the "Geo-Tech" vertex of the Shape2Gether triangle, emphasising geosciences, field-based learning, and immersive technologies. Taking place in Tautra and Trondheim, students engaged in place-based education through extensive fieldwork looking at local examples of global climate change, complemented by training in virtual reality (VR) applications for sustainability communication.

Through the use of tools such as "Thinglink" and an ad hoc developed Seppo game, students explored how geotechnology can facilitate deeper engagement with climate change issues in local contexts. Students created a VR-based virtual tour in groups where they were challenged to communicate "the global in the local" and thereby photograph and create a 360-picture photo-story, including elements like interviews, photos, sound recordings, text, links and academic literature tailored towards specific users (Figure 2).



Source: Authors

Figure 2: Preview of the virtual tour (screenshot of a spherical photo-tour with embedded points of interest) of Tautra Island (VR Tour no. 7)

The focus of the "tours" was "the global in the local" at the island Tautra, in Norway, targeted against different audiences: local administrators, master students, elderly tourists, high school students or a delegation of the United Nations Environment Programme (UNEP). The tours were enabling participants to apply immersive and spatial storytelling techniques

in a collaborative environment. Methodologically, the school embraced experiential and constructivist learning, where direct interaction with the environment fostered contextual understanding. Pedagogically, the school incorporated pre- and post-reflection practices and intercultural exchange activities to deepen students' critical awareness. The integration of new technologies also allowed for the development of digital literacies essential for environmental education. As such, Trondheim summer school embodied the Geo-Tech pedagogical strategy within the broader aim of cultivating environmentally literate agents of change.

The second summer school, held in **Gozo and Malta (Malta, October 2024)**, was grounded in the ESD (Education for Sustainable Development) pillar of the Shape2Gether framework. With an emphasis on sustainability literacy, systems thinking, and values education, the programme introduced students to tangible sustainability challenges such as waste management, local food systems, and cultural heritage under climate stress. Activities included site visits, community engagement with local farmers, and a personal sustainability audit, all framed by key ESD concepts.

Students worked in international teams to design educational multimedia projects aimed at raising awareness of sustainability issues with an extensive use of ESRI StoryMaps (Figure 3). In total, students created four products following the logic of the main pillars of sustainability – environmental, social, cultural, and economic. The pedagogical design relied on critical pedagogy, participatory learning, and real-world problem solving, encouraging reflection on the socio-political dimensions of sustainability. Blending cognitive, affective, and behavioural objectives, the Malta school emphasised education as a vehicle for transformation, linking individual agency with collective environmental responsibility.



Source: Authors

Figure 3: Cultural sustainability multi-media project, made by the software StoryMaps (by ESRI) (Group 3)

The **final summer school in Bochum (Germany, March 2025)** centred on the "Interface" aspect of the model, operationalised through the use of gamification and discursive game design. Students were introduced to theoretical and practical elements of serious games and tasked with designing game prototypes addressing regional post-coal transition challenges, defined as the primary thematic focus respectively as the main umbrella theme of the entire summer school.

The programme also included thematic field visits and fieldwork (e.g., to "Zollverein" and "Emschergenossenschaft"), which served as inspiration and research bases for the game concepts. The learning approach combined design thinking, experiential learning, and collaborative prototyping. Methodologically, the summer school encouraged systems thinking and storytelling within the framework of educational games, allowing students to critically reflect on sustainability narratives and power dynamics. Through iterative creation, testing, and reflection phases, the students developed games (Figure 4) that were not only educational but also fostered emotional and social engagement. Thus, Bochum embodied the Interface dimension of the Shape2Gether model, reinforcing how interactive media, game prototypes in particular, can be leveraged for sustainability education.



Source: Authors

Figure 4: Demonstration of game prototype testing (various groups)

During each summer school, students worked in mixed teams to develop a specific product aimed at communicating sustainability issues to a selected target audience through various technological means. The outputs of the project work across the three summer schools were a virtual tour created in "Thinglink" addressing local climate-change impacts on Tautra Island (Norway), a multimedia presentation on local sustainability challenges in Gozo (Malta), and game designs or portable, playable prototypes (card and board games) focusing on local sustainability issues in Bochum (Germany). These group assignments were intentionally open-ended, making them intellectually demanding and design-oriented projects.

The project website provides an overview of these outputs, including virtual field trips, multimedia presentations, and game prototypes, which illustrate the diversity of approaches

developed by student teams. Selected examples are available in the News section of the project website; the direct link is here[1)] (except physical portable game prototypes from Bochum summer school).

To support students throughout the process, several feedback and consultation sessions were integrated into the programme, helping teams refine their design choices and communication strategies. At the end of each summer school, groups presented their final outputs to one another, allowing them to compare different interpretative and communicative approaches to the same overarching challenge. These presentations also opened space for broader discussions, during which the teaching staff reflected on how the students' design decisions aligned with the wider principles of education for sustainable development and climate change education.

4.3 Students' Feedback

At the end of each summer school, students were asked to complete an online evaluation using the "Nettskjema survey tool" provided by NTNU Trondheim (GDPR-compliant). The evaluation followed a mixed–methods approach, combining quantitative Likert-scale items with qualitative responses from open-ended questions. The Likert-scale items focused on the overall organisation of the summer school (with statements about the summer school such as:

> *"* […] *was well organised, provided a coherent structure),"* on core characteristics of the programme *("being in an international group added value",* or *"Tautra was an interesting place to visit"),* and on learning *("my knowledge in local climate change issues increased", "learning to work with Thinglink and 360 images was useful)"*. The open-ended questions focused on overall experiences such as: *"Visiting Tautra was ….", "What were the top three things that you learned during the summer school that inspired you most" or "Which ideas are you going to take home from this summer school to use in your studies, research, and/or teaching?"*

This was complemented by a joint wrap-up session and a weekly evaluation in which students and staff reflected collectively on their experiences. The analysis of these evaluations provided valuable descriptive and exploratory insights into how students perceived and valued key aspects of the project, such as the benefits of working in international and interdisciplinary teams or the experience of being immersed in host locations. The following section is based on the online evaluation.

Overall, students were satisfied with their experience during the three summer schools. On a scale of 1 to 10 they rated the summer schools with an average of 8.6 for Trondheim, 7.6 for Malta and 8.1 for Bochum. Students valued core characteristics of the Erasmus+ programme (see Table 1): its international and interdisciplinary nature. This is reflected

1) *https://storymaps.arcgis.com/stories/3be8795551f74f868e5e0ebd5bd3d40e.*

both in response to the open question where students could rate the top three things they had learned and to two statements on a five-point Likert scale.

As in predecessors of the programme (see e.g. VAN GORP 2022) Shape2Gether students highly valued being in an international group. In the open questions of all three summer schools, students referred to intercultural exchange and community building as important elements of the programme. Participants repeatedly described friendships, cultural immersion, and international collaboration as the most memorable and impactful aspects. In the Trondheim evaluation some even stated they have improved their English language skills.

Their appreciation for the international character is thus very high (4,8 on a Likert scale where 5 equals strongly agree). Students also acknowledged the value of being in an interdisciplinary group (see Table 1). In the Trondheim survey, a student mentioned working in interdisciplinary teams as a benefit, acknowledging *"from how many different fields we can approach the same things."* A student in the Bochum evaluation stated that *"an international and interdisciplinary group can achieve really good things when they can work together"*. However, some answers also indicate that working in such international interdisciplinary groups is not necessarily easy.

	overall	**Trondheim**	**Malta**	**Bochum**
Being in an international group added value	4,8	4,8	4,7	4,8
Being in an interdisciplinary group added value	4,6	4,7	4,6	4,5

Table 1: Students value being in an international and interdisciplinary group (statement on Likert scale from 1 to 5 where 5 represents fully agree).

Students consistently reported knowledge gains across all three summer schools in relation to sustainability, climate change, geotechnologies, and pedagogical approaches introduced throughout the programme. Table 2 shows how students rated the knowledge they acquired during the summer schools. Overall students agree that their knowledge increased – with an overall score of 4 on a 1 to 5 Likert scale. Since the focus of each summer school differed, the exact wording of the evaluation questions varied.

For the sake of comparison over the three summer schools, we have grouped the questions on knowledge gains in three categories. These categories align with the Technological Pedagogical Content Knowledge (TPACK) model by (MISHRA and KOEHLER 2006) and differentiate between content knowledge – which in this case relates to climate change and sustainable development –, knowledge of working with specific technology to create educational / communication products, and knowledge of education for sustainable development – which equals pedagogical content knowledge in the TPACK model.

These three categories were core elements of the Shape2Gether approach and should support the transformation of participants into agents of change. On the part of technological content knowledge, the multimedia presentation offered the least novelty value or new

skillset to the group as a whole and the discursive game design the most. Meanwhile, the presence of a few students with a GIS background amongst the participants may explain why not all students (fully) agreed with the statement that their knowledge about geotechnologies increased even though the "Thinglink" application was new for all of them.

Categories	Statements	Summer school *			
		Trondheim / Taura	Malta	Bochum	Average values
Technological content knowledge	My knowledge in geoscience technology increased	4.13			**4.04**
	My knowledge in designing multimedia resources increased		3.53		
	Ma knowledge in game design for educational purposes increased			4.47	
Content knowledge	My knowledge in local climate change issues increased	3.94			**4.06**
	My understanding of sustainability increased		4.00	3.66	
	My knowledge of local sustainability issues increased		4.40	4.22	
	My knowledge in transformation processes (industrial-natural landscapes) increased			4.13	
Pedagogical content knowledge	My knowledge in education for sustainable development (ESD) increased		3.73		**3.73**
Averaged acquired knowledge		**4.03**	**4.04**	**4.00**	

* Total respondents: Trondheim / Taura: 31; Malta: 31; Bochum: 32

Table 2: Acquired knowledge measured on 1 to 5 Likert scale (value of 5 means that students fully agree with the statement)

In the open questions about the top three things students had learned, the digital tools and technological platforms were also frequently mentioned by students – both in terms of learning new functionalities and understanding how these tools can be applied in educational settings. Regarding the technological skills they for example mentioned:

> *"how to work with Thinglink",* or *"I think it's supercool that I now know the basics of how to create a virtual fieldtrip!",* or *"some new technologies, which were unknown to me but have been developed over the years to become easily accessible*

> *and available to everyone to use (creating and consuming) was great",* and *"how mapping can be used in games".*

Students not only felt they learned to use a new tool, but also how to apply such tools for educational purposes. They for example state that they learned:

> *"how to make games suitable for education (specifically on the Seppo platform). And what elements should those types of games include", "how to work with different kinds of creative technology to present a story",* or *"working on Thinglink and see what is possible to do to avoid 'boring' learning methods and to do it more interactive"*, and appreciated *"tailoring a product towards a specific group and purpose (education, in this case)".*

While we should keep reminding learners that new technologies and tools are solutions in and of themselves, what we saw developing in students was a keen interest in and understanding of the potential – and limitations – of creating new and engaging experiences tailored to specific educational purposes.

Fieldwork was an important element of the Shape2Gether approach. It allowed students to experience new places or how people live in different places. Furthermore, fieldwork served to contextualise climate change. Some students explicitly refer to this in the evaluation. They explain how they have come to gain understanding of local issues

> *"more about sustainability issues in Malta, reflecting on how different aspects of sustainability interact and affect each other, and that these issues have complex solutions"* or *"history and present phenomena in the Ruhr area (regarding land use and employment)".* Some students had a comparative perspective and said, *"how extremely diverse the impacts of climate change are in different parts of the world and following that how diverse and specific the solutions have to be".*

These answers all relate to the contextualisation of climate change and sustainability. Several participants recognised the value of using local issues and creative communication for climate education and

> *"how using local issues and experiences can be very motivating and inspiring to bring the broad climate change issue down to a small and concrete topic."*

Reflection played a continuous role throughout the activities of all three summer schools. It was embedded in daily debriefings, group discussions, and the feedback moments that accompanied project work, culminating into a reflection session during the final presentations. When asked whether they were stimulated to reflect on what they learned, students strongly agreed (4.3) on this for the first summer school in Trondheim where the Seppo game platform was used throughout the week for reflection questions related to fieldwork, location and the assignments. Regarding the Malta and Bochum summer schools,

students reported lower scores (3.6 for Malta and 3.7 for Bochum), which likely reflects the absence of a dedicated digital reflection tool with daily questions. Lastly, some students reported on their personal growth and transformation in the open questions. They commented on having

> *"more faith in what I can do",* or *"don't be scared about presenting and talking to people"* or *"learn to be independent",* and *"challenge myself by doing things that I had never done before."*

The survey after the second (Malta) and third (Germany) summer school included the question whether students felt more confident at communicating climate change (Table 3). The far majority felt more confident, they answered with a clear yes, some even stated, *"definitely yes"* and *"absolutely"*. Others elaborated their answers and explained what it is that they have learned. This could relate to communication skills (presenting in front of an audience, communicating my ideas with others, or communicating it in English), to the content (in particular knowledge of local situations and issues) –

> *"yes, I have a clearer idea of what it is and how to communicate it in a way that stimulates people to do something."* One student identified almost completely with the project goals, saying that *"I gained both technical skills for communication and knowledge about communicating sustainability – and how important it is to include everyone when it comes to sustainability. I also developed the skills to help make the future a better place. That makes me an agent of change."*

Sommer school	Yes	More or less	No	Total
Malta	24	5	0	29
Bochum	24	5	1	30

Table 3: Do you feel more confident communicating climate change

Two students stating that their confidence remained more or less the same, explained how climate change communication is part of their regular curriculum; one student felt that during the summer schools they learned more about the tools to communicate than on the content and another student explained that it is such a broad topic that they only learned about some dimensions. The only participant who mentioned that their confidence did not increase explained that they were experienced: *"been doing this for quite some time already, and it does not get easier"*.

In summary, these reflections show that the programme strengthened students' confidence, communicative competence, and self-perception as emerging agents of change, even while acknowledging that prior experience and disciplinary background shape how individual learners navigate the challenges of climate-change communication. The evaluations give

evidence of how the students started taking their first steps to becoming agents of change. Many of them responded that they would use (some of) the skills learned during the summer school once they would be back home. This was confirmed by the question added to the last evaluation where not only the inclination to apply what they had learned was asked but also if they had already applied knowledge and skills they had learned.

This transfer of learning into practice also set the stage for the students' involvement in dissemination activities, where they continued to apply and expand their emerging agency. Participants had to organise a local dissemination event (workshop, lecture, lesson, game activities, etc.) for a target group of their own choosing to report on their learning outcomes and to inspire others with the prototypes of products such as their Thinglink virtual tour or their game). These ongoing events (December 2025 until May 2026) bring students in the role of agents of change within their home countries. Students have presented the project in a variety of settings: at the educational conference of the Royal Geographers' Association and during the international game research conference *Dutch DiGRA Symposium 2025* (both in The Netherlands), at a public Science Fair event (Czechia), and some are planning to organise special workshops and lectures for children (e.g. Malta).

Taken together, these findings indicate that the pedagogical design of the Shape2Gether programme supports the development of student agency, manifested through increased confidence, applied skills, and active engagement in real-world dissemination activities. These results also highlight how key elements of the programme – such as interdisciplinary collaboration, experiential learning, and structured reflection – can contribute to the development of a joint curriculum by serving as core pedagogical design principles.

5 Discussion and Conclusions

The Shape2Gether project was conceived in response to the need for educational approaches capable of preparing students to address the "wicked" and interdependent challenges of climate change and sustainable development. Such challenges require individuals who possess not only scientific and technological knowledge but also the agency, confidence, and communicative capacity to act as agents of change within their communities and professional environments.

These observations provide the overarching rationale for interpreting the Shape2Gether programme as a response to the educational challenge of preparing future agents of change. In the following sections, we discuss how the project's pedagogical design aligns with this ambition and what lessons emerge from its practical implementation.

Pedagogical Reflections and Evidence from Educational Research

From a pedagogical perspective, the structure of the project tried to embody a semi-scaffolded and cumulative learning trajectory, leading students from theoretical knowledge, through practical skills, to situated real-world experiences (Kolb 1984). Implementation of this framework in higher education – also when supported by digital tools – has been shown to enhance student engagement and deepen learning processes (e.g. Chiu 2019).

Moreover, international exchange and mobility programmes provide a powerful context for converting concrete experiences into transformative learning outcomes (Yang et al. 2021). Empirical evidence further suggests that involvement in hands-on, project-based and research-oriented activities significantly enriches students' experiential learning and their capacity to apply theory in real contexts (van de Water et al. 2024).

The conclusions drawn from our summer school surveys equally support these findings, as each summer school introduced different tools (Thinglink and Virtual Reality, StoryMaps, Seppo platform), but the common thread in students' responses was excitement about new, creative teaching methods. Participants planned and already started to integrate these tools into their own teaching and research. Secondly, each summer school used its local environment as a living classroom. This feature was highly valued, and participants connected strongly to local settings.

The pedagogical design and implementation of Shape2Gether correlates with broader developments in education for sustainable development and experiential pedagogy. Some literature on project-based learning show that engaging students in authentic, problem-oriented tasks fosters the development of their key competences, including interdisciplinary collaboration, critical thinking, and the ability to apply knowledge in real-world contexts (e.g. Bramwell-Lalor et al. 2020). Likewise, studies in environmental and sustainability education confirm that experiential learning approaches – particularly those involving fieldwork, immersion in place, and context-specific inquiry – enhance students' understanding of environmental issues and support deeper cognitive and affective engagement (e.g. Jose et al. 2017; van der Wee et al. 2024). Furthermore, recent findings suggest that combining online preparatory activities with experiential components can amplify students' pro-environmental attitudes and strengthen their capacity to translate learning into action (Douglas et al. 2024).

Having absolved a full cycle of the implemented learning trajectory of the Shape2Gether programme, participants consistently reported becoming more confident, open-minded, and motivated to act as agents of change. Taken together, these insights provide a strong theoretical foundation for the Shape2Gether approach and underscore the value of integrating project-based, experiential, and mobility-based learning to address complex challenges such as climate change and sustainable development.

Geospatial / Scientific Contributions and Identification of the Educational Gap

Looking at it through geographical (or geospatial) lenses, the Shape2Gether project shows the value of integrating spatial thinking, digital (geo)technologies, and place-based experiential learning into a coherent pedagogical framework to promote change agency. Contemporary geography-related programmes commonly address components of these domains – such as spatial analysis, environmental change, or socio-economic transformations – but they do so only partially and often in isolation rather than in an interdisciplinary and comprehensive approach. Based on our review of existing European higher-education programmes (see next section), there is limited evidence of programmes that systematically integrate geotechnologies and advanced technological solutions, sustainability

education (or sustainable development), fieldwork and place-based learning, discursive game design, and communication-oriented competencies, particularly in relation to climate-change adaptation and local sustainability challenges.

Geography and GIS programmes are, by their very nature, frequently linked to topics such as landscape processes, sustainability, and climate change. However, the integration of the third domain addressed in this project – discursive game design and serious games – is absent or not formally included. The activities developed within Shape2Gether illustrate a feasible model of such integration and highlight an educational gap: students rarely have opportunities to engage with real-world sustainability issues through a combination of GIS-based analysis, field-based inquiry, collaborative design work (either working with multimedia or game design), and evidence-based communication. This disciplinary perspective also helps clarify where current higher-education offerings fall short and why new integrated programmes are needed. Therefore, this gap provides a strong rationale for developing a new curriculum that reflects the pedagogical, technological, and thematic innovations trialled in the project.

Implications for Curriculum Development and Future Outlook

Building on the insights derived from the three summer schools, the Shape2Gether project also initiated a systematic review of existing higher-education programmes across Europe to assess the feasibility of a future joint curriculum. The review was conducted using a multi-step methodology that examined accredited programmes at leading European universities across three thematic domains central to Shape2Gether: geotechnologies, sustainability and climate education, and game-based or discursive design approaches.

The analysis revealed a clear structural gap. No existing higher-education programme was found to integrate all three pillars into a coherent curriculum, despite the growing need for interdisciplinary competencies that link spatial thinking, sustainability literacy, and creative communication. A small number of initiatives approached such integration, yet these were predominantly short-term innovation labs or non-formal education projects rather than fully accredited university degrees (e.g. another Erasmus+ project STEAM4Climate).

Programmes combining two pillars – such as geoinformation science with environmental applications, digital-media programmes incorporating gamification, or sustainability education programmes employing playful methods – were identified in greater numbers (e.g. Master in Digital Learning Games at Tallinn University, Estonia; or Master in Sustainable Digitalisation at KTH Royal Institute of Technology, Sweden). However, these dual-pillar models remain disciplinary hybrids rather than genuinely integrated frameworks. Each pillar is strongly represented individually in Europe's educational landscape (e.g. in Sustainable Development at Utrecht University, The Netherlands; Master of Science in Geospatial Technologies at Politecnico di Milano, Italy; or Master in Serious Games at University of Skövde, Sweden), yet their systematic integration remains absent, leaving a conceptual and pedagogical space that Shape2Gether has begun to address.

The competence development targeted in the programme can be understood as a combination of subject-specific and transversal competencies, including sustainability

literacy, geospatial and technological skills, as well as critical thinking, collaboration, and agency, broadly aligning with European competence frameworks. These competencies are operationalised through the integration of pedagogical approaches, learning activities, and evaluation practices described in the programme design. The curriculum development approach is grounded in the identified societal and educational challenges and follows a scaffolded and iterative learning trajectory, integrating multiple domains through a combination of sequential and reinforcing learning activities.

The empirical findings from the summer schools, together with this mapping of the European programme landscape, therefore, provide both a conceptual foundation and evidence-based justification for the development of a new joint curriculum. Such a programme would combine geotechnologies, education for sustainable development, place-based experiential learning, and discursive game design – mirroring the interdisciplinary learning trajectory tested in Shape2Gether. The consortium has now entered the preparatory phase of curriculum design, drawing directly on students' learning outcomes, staff experiences, and the demonstrated gap in current higher-education offerings. The next steps include translating the pedagogical pillars of Shape2Gether into a coherent programme structure and exploring accreditation pathways across partner institutions (e.g. by using Erasmus Mundus Joint Masters scheme).

Beyond these initial steps, several strategic directions will guide the further development of the Shape2Gether curriculum. The project outcomes already provide a strong foundation for a formal joint international programme integrating geotechnologies, sustainability education, and game-based methodologies. Scaling such a programme will require clarifying institutional structures, assessment frameworks, and accreditation pathways across participating universities. In addition, partnerships with schools, municipalities, NGOs, and industry could extend the programme's impact into real-world climate-adaptation ecosystems.

These forward-looking steps illustrate how the project moves beyond a temporary learning intervention and toward establishing a long-term institutional framework for educating future agents of change.

Key Achievements and Limitations

Shape2Gether demonstrates that an international and interdisciplinary learning trajectory can effectively build competencies for climate-change communication and sustainability action. The integration of geotechnologies, field-based learning, and game design created highly engaging learning environments that supported both cognitive and affective learning outcomes. Immersive, place-based learning across geographically diverse contexts strengthened the ability to connect global climate challenges to local socio-environmental realities, enhancing students' systems thinking.

While these achievements demonstrate the project's transformative potential, the implementation process also revealed several important limitations – they exist in respect to organising a sustainable interdisciplinary cooperation (time demanding, expectation management, teacher-to-student ratio). Travel-based programming raised tensions with sustainability principles, highlighting the need for future hybrid models without

compromising place-based pedagogy. Reflection practices varied in perceived depth depending on method and format, suggesting a need for a more consistent reflective framework across all phases. Recognising these limitations is essential not only for improving future iterations of the programme but also for informing the design of a sustainable joint curriculum.

Final Remarks

Overall, the Shape2Gether project demonstrates the potential of a joint, interdisciplinary curriculum that blends geotechnologies, field-based learning, serious games, and sustainability education. It provides a model for how higher education can prepare students to navigate the complexities of climate change with both competence and agency. The cumulative evidence from the summer schools suggests that students not only develop new knowledge and skills but also begin to internalise a mindset oriented toward critical reflection, creative problem-solving, and active contribution to societal transformation. These insights form the foundation for the next phase of the project: the design of an integrated, innovative curriculum capable of educating the next generation of agents of change.

In sum, Shape2Gether provides both a validated pedagogical model and an emerging international community that together lay the groundwork for a new generation of learners capable of acting as agents of change in the face of sustainability and climate challenges.

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Berichte und Kleine Mitteilungen

Reports and Notes

Festveranstaltung zum 150. Gründungsjubiläum der Rumänischen Geographischen Gesellschaft, Bukarest [Bucureşti], 6.–8. Juni 2025

Peter Jordan, Hermagor / Wien*

mit 3 Abbildungen im Text

Vorwort

Rumänen verstehen es, Feste zu feiern. Das habe ich schon oft erlebt, aber die Festveranstaltung aus Anlass des 150. Gründungsjubiläums der Rumänischen Geographischen Gesellschaft [Societatea de Geografie din România, kurz SGR] übertraf alles Bisherige. Zu ihr war ich in Vertretung unseres Präsidenten Helmut Wohlschlägl und als Leiter des Referats für internationale Beziehungen der ÖGG neben vielen anderen Repräsentanten vor allem europäischer geographischer Gesellschaften, aber auch darüber hinaus, eingeladen. Es waren dann auch viele europäische Länder vertreten, außerdem Georgien, die Türkei, Israel und China. Alle ausländischen Gäste logierten in einem eleganten Hotel am nördlichen Stadtrand von Bukarest [Bucureşti], das durch individuellen Transport mit dem Flughafen und den Veranstaltungsorten verbunden wurde.

Erster Tag

Die Eröffnungssitzung am Vormittag des 6. Juni fand in der voll besetzten Aula Magna der Rumänischen Akademie [Academia Română] in der Calea Victoriei im Zentrum Bukarests statt und wurde von Dan Bălteanu, dem langjährigen Direktor des Akademie-Instituts für Geographie, Mitglied der Akademie und Ehrenpräsident der SGR, geleitet. Sie bestand aus einer Folge von Darstellungen und Würdigungen der SGR durch deren Präsidenten Corneliu Iaţu, deren Ehrenpräsidenten Dan Bălteanu, die Präsidentin der Internationalen Geographischen Union (IGU) Nathalie Lemarchand und den Präsidenten des Verbandes europäischer geographischer Gesellschaften EUGEO Zoltán Kovács. Ihr schloss sich die Besichtigung einer Ausstellung über die SGR im Hauptgebäude der Akademie an.

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Am Nachmittag wurden alle Festgäste im Garten des königlichen Schlosses (Elisabeth-Palast im Norden Bukarests) von Prinz Radu empfangen. Die rumänische Königsfamilie entstammt dem Adelshaus Hohenzollern-Sigmaringen und durfte nach jahrzehntelangem Schweizer Exil im Jahr 2001 nach Rumänien zurückkehren. Sie hat zwar im heutigen republikanischen Rumänien keine formalen politischen Zuständigkeiten, spielt jedoch im öffentlichen Leben des Landes wieder eine gewisse Rolle, vor allem als Protektorin von kulturellen und wissenschaftlichen Aktivitäten – eben auch der SGR, die vom damaligen rumänischen Fürsten (ab 1881 König) Carol I. gegründet wurde.

Zweiter Tag

Der zweite Sitzungstag wurde im Parlamentspalast [Palatul Parlamentului] abgehalten, der zur Zeit des Kommunismus „Palast des Volkes“ hieß, unter dem nationalistischen und isolationistischen Diktator Nicolae CEAUCEŞCU zwischen 1983 und 1989 errichtet wurde und als voluminösestes Bauwerk der Welt nach dem Pentagon in Washington gilt (Abb. 1). Ich hatte im Jahr 1986 bei meinem ersten Besuch in Rumänien und Bukarest die Gelegenheit, dieses Gebäude zu besichtigen, als es noch im Bau war und erst bis zum ersten Stock betreten werden konnte.



Abb. 1: Der Parlamentspalast am Ende des Bulevardul Unirii (Foto: P. JORDAN 2012)

Von dort aus bot sich damals ein überwältigender Blick auf die auch im Bau befindliche neue „Prachtstraße“ [Bulevardul Unirii], für die eine Bresche in einen älteren Baubestand geschlagen worden war und die dann von Verwaltungs- und Wohnbauten im sozialistischen Stil gesäumt wurde. Ihr mussten auch etliche Kirchen und Synagogen weichen, aber doch nicht der Sitz des rumänisch-

orthodoxen Patriarchen, auf dessen Wohlwollen auch die kommunistische Führung Wert legte. Dem Betrachter bot sich damals das Bild einer Riesenbaustelle, und die Luft war voller Staub. Der fertige Palast erweist sich außen und innen als eine historisierende Imitation von Herrschaftssitzen der Gründerzeit, wobei offensichtlich Großartigkeit und Eindruck zu erwecken die Maximen waren. Er ist heute der Sitz des rumänischen Parlaments.

In einem der größten Säle dieses Palastes (Abb. 2) kamen nach einer verlesenen Grußbotschaft des neuen Staatspräsidenten Nicuşor Dan zunächst weitere Vertreter der Politik und des Militärs zu Wort, auch solche der durchaus zahlreichen kommerziellen Sponsoren der SGR (nach ihrer Gebefreudigkeit in Platin, Gold und Silber eingeteilt), dann auch wieder die Repräsentanten von IGU und EUGEO, zudem Vertreter von rumänischen Schwestergesellschaften und benachbarten Wissenschaften.

Hervorhebenswert und bezeichnend war der Vortrag des Generalsekretärs der SGR, Costin Diaconescu, über Emmanuel de Martonne und die Rumänische Geographische Gesellschaft. Der französische Geograph de Martonne (1873–1955) wird in Rumänien sehr verehrt – nicht nur, weil sich besonders das außerkarpatische Rumänien immer sehr an Frankreich orientierte, sondern auch, weil de Martonne seine Dissertation über die Walachei [Ţara Românească] verfasst, später auch über andere Gebiete Rumäniens publiziert, in der Zwischenkriegszeit an der heutigen Babeş-Bolyai-Universität in Klausenburg/Cluj-Napoca/Kolozsvár gelehrt und die Grenzen Großrumäniens nach dem Ersten Weltkrieg geographisch gerechtfertigt hat. Er gilt als wesentlicher Impulsgeber der rumänischen Geographie.



Abb. 2: Zweiter Sitzungstag der Festveranstaltung zum 150. Gründungsjubiläum der Rumänischen Geographischen Gesellschaft im Parlamentspalast in Bukarest (Foto: SGR 2025)

Das weitere Programm des Vormittags bestand aus Grußworten der Vertreter rumänischer geographischer Fakultäten (Fakultäten, nicht Institute!) – neben jener von Bukarest auch der Fakultäten in Klausenburg/Cluj-Napoca/Kolozsvár, Temeswar/Timişoara/Temesvár, Großwardein/Oradea/Nagyvarád und Iaşi.

Sehr wohltuend unterbrochen wurde die Folge von Ansprachen durch Darbietungen eines Geigers (Alexandru TOMESCU) und eines Gitarristen (Dragoș ILIE), die in dieser ungewöhnlichen Besetzung unter großem Beifall Werke von Gheorghe ENESCU und George GERSHWIN intonierten. In der Mittagspause gab es Gelegenheit, an einer Führung durch den Palast teilzunehmen.

Am Nachmittag waren schließlich die Vertreter ausländischer geographischer Gesellschaften und Institutionen mit ihren Grußworten an der Reihe – in zeitlicher Folge (und nach dem Rang innerhalb ihrer jeweiligen Organisation) Andrès RODRIGUEZ-POSE für die London School of Economics and Political Science, Shiwei SHEN für die Geographische Gesellschaft Chinas, Caroline LEININGER-FRÉZAL für das Comité National Français de Géographie, Barbaros GÖNENÇGIL für die Türkische Geographische Gesellschaft, Hans WESTLUND für die Regional Science Association International, Christian VANDERMOTTEN für die Belgische Geographische Gesellschaft, Mladen MARADIN für die Kroatische Geographische Gesellschaft, Werner GAMERITH für die deutschen geographischen Gesellschaften, Nana BOLASHVILI für die Georgische Geographische Gesellschaft, Michael SOFER für das israelische IGU-Nationalkomitee, Martin BOLTIŽIAR für die Slowakische Geographische Gesellschaft, Dénes LÓCZY für die Ungarische Geographische Gesellschaft, Ivan RATKAJ für die Serbische Geographische Gesellschaft, Stelian DIMITROV für die Bulgarische Geographische Gesellschaft, Erlend EIDSVIK für die Norwegische Geographische Gesellschaft, Peter JORDAN für die Österreichische Geographische Gesellschaft, Tomasz WITES für die Polnische Geographische Gesellschaft, Guillaume GIROIR für die Société de Géographie de Paris und Costică NEAGU für die Simion-Mehedinţi-Gesellschaft Focşani.

Der zweite Tag der Festveranstaltung klang mit einem festlichen Dinner bei Musik in einem Gartenrestaurant im Norden der Stadt aus, an welchem ein kleinerer Teil der Festgäste teilnahm und das schließlich in einen Reigentanz (Kolo) mündete, an dem sich ausnahmslos alle Gäste beteiligten.

Dritter Tag

Die Programmpunkte des dritten Tags galten nur den ausländischen Gästen und bestanden aus Führungen durch das rumänische Dorfmuseum im nördlichen Teil von Bukarest und durch die Innenstadt, die beide ausgezeichnet in englischer Sprache dargeboten wurden. Das Dorfmuseum zeigt Beispiele traditioneller ländlicher Baukultur aus allen Kulturlandschaften Rumäniens – von den Adobehäusern des Walachischen Tieflands [Câmpia Dunării] bis zu den Holzkirchen und Holztoren der Marmarosch [Maramureş].

Die Innenstadt Bukarests ist außer einem älteren Baubestand um die Leipziger Straße [Lipscani], der einstigen Hauptgeschäftsstraße und heutigen Flaniermeile, dem orthodoxen Kloster Stavropoleos und dem aus osmanischer Zeit stammenden Han [Hanul lui Manuc], der auch heute wieder ein Hotel und Gasthaus ist, vor allem von Gebäuden der Gründerzeit und der Zwischenkriegszeit geprägt, als Bukarest zunächst die Hauptstadt der vereinigten Donaufürstentümer wurde und dann (nach 1918) das blühende Zentrum Großrumäniens, das in Stadtgestaltung und Lebensstil Paris nacheiferte („Paris des Ostens“, Abb. 3).

Schluss

Das auf diese Weise festlich begangene 150. Gründungsjubiläum der Rumänischen Geographischen Gesellschaft zeugte von einer beachtlichen Reputation dieser Gesellschaft nicht nur im wissenschaftlichen Bereich, sondern auch in Gesellschaft und Politik.



Abb. 3: Die Paris und italienischen Städten nachempfundenen Einkaufspassagen („Gallerien") im Zentrum von Bukarest (Foto: P. Jordan 2025)

Wenn man auf ein Land bezogene geographische Gesellschaften als den jeweiligen staatlichen oder nationalen Rahmen der eigentlich internationalen Wissenschaft Geographie betrachtet, so ist der Gründungsreigen solcher Gesellschaften im späteren 19. Jahrhundert nicht weiter verwunderlich. Freilich war dafür in erster Linie maßgebend, dass sich die Geographie als Wissenschaft etabliert hatte. Die Gründungen hatten aber auch viel mit der nationalen Idee zu tun, die wohl schon ein Produkt der Aufklärung war, aber erst im 19. Jahrhundert politisch virulent wurde und zum Zerfall multinationaler Großreiche und zur Gründung von Nationalstaaten führte: Griechenland (1830), Italien (1860–1870), Deutschland (1871), Serbien (1878), Rumänien (1878), Bulgarien (1908). Neben der Geschichtsforschung war die Geographie dabei eine wichtige Stütze, indem sie die Bildung dieser Nationalstaaten begründete und rechtfertigte.

Rumänien ist dafür ein gutes Beispiel: Im Jahr 1859 wurden die Donaufürstentümer Walachei und Moldau [Moldova] noch als osmanische Vasallenstaaten vereinigt; bereits 1875 gründete sich die Rumänische Geographische Gesellschaft (als weltweit insgesamt 14. Geographische Gesellschaft); 1878 wurde der im selben Jahr um die Dobrudscha [Dobrogea] erweiterte Staat vom Osmanischen Reich unabhängig und 1881 in den Rang eines Königreichs erhoben.

Auch in jüngerer Zeit, nach dem Zerfall Jugoslawiens und der Sowjetunion und der Gründung von Nachfolgestaaten, spielten die Geographie und mit ihr geographische Gesellschaften als auf den jeweiligen Staat bezogene Vereinigungen eine ähnliche Rolle. Sie nehmen deshalb in ihren Ländern eine Stellung ein, die uns überraschen mag.

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4. Sitzung der (neuen) United Nations Group of Experts on Geographical Names (UNGEGN), New York, 28. April – 2. Mai 2025

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mit 2 Abbildungen im Text

Die Expertengruppe für geographische Namen ist eine von neun aktiven Expertengruppen der Vereinten Nationen, die im Jahr 1960 in New York ihre erste Sitzung abhielt und später in der Regel alle zwei Jahre tagte. Die 11. Konferenz der Vereinten Nationen zur Standardisierung Geographischer Namen im Jahr 2017 beschloss, die Funktionen der Konferenz und der Expertengruppe zusammenzulegen und nur noch Sitzungen unter dem Titel der „United Nations Group of Experts on Geographical Names" (UNGEGN) jedes zweite Jahr abzuhalten. Daraus ergibt sich die Zählweise der Sitzung des Jahres 2025 als der 4. Sitzung der in ihren Kompetenzen neu definierten UNGEGN, obwohl es eigentlich deren 34. Sitzung seit 1960 war. Über die ersten drei Sitzungen der neuen UNGEGN und auch über frühere Sitzungen und Konferenzen hat der Autor in dieser Zeitschrift berichtet (siehe Jordan 2009, 2012, 2017, 2019, 2021, 2023).

An der gegenständlichen Sitzung, die im Hauptquartier der Vereinten Nationen am East River im New Yorker Stadtteil Manhattan stattfand (Abb. 1), nahmen außer den Mitarbeitern der Vereinten Nationen insgesamt 228 Personen teil. Diese rekrutierten sich aus Vertretern von 64 Mitgliedstaaten der Vereinten Nationen und Palästinas; aus Vertretern globaler und regionaler wissenschaftlicher Dachorganisationen, nämlich der International Cartographic Association (ICA), der International Geographical Union (IGU), des International Council of Onomastic Sciences (ICOS) und des Pan-American Institute of Geography and History (PAIGH); sowie aus Beobachtern („Observers"), die sich wieder aus Repräsentanten einzelner Universitäten sowie von mit geographischen Namen befassten Firmen wie Google oder ESRI zusammensetzten.

Die größten Delegationen stellten laut Sitzungsbericht Saudi-Arabien mit 23, die Republik Korea mit 10 sowie Japan und die Türkei mit jeweils 8 Personen. Von den 228 Teilnehmern waren 148 Experten verschiedener Disziplinen mit einem großen Anteil von Geographen und Kartographen und 80 Diplomaten, die der Sitzung aber nur sehr teilweise beiwohnten, dann jedoch politische Themen aufgriffen, was oft zu heftigen Auseinandersetzungen führte. Expertengruppen der Vereinten Nationen sind eben keine rein wissenschaftlichen Gremien, sondern werden oft von politischen Einflüssen überlagert, was manchmal dazu führt, dass nach wissenschaftlichen Kriterien ausgearbeitete Vorschläge letztlich nicht durchdringen, weil sie auf politisch motivierte Widerstände stoßen.

Entgegen manchen Erwartungen war die Russische Föderation mit einer Expertin und einem Diplomaten doch vertreten, während die Vereinigten Staaten von Amerika, die sonst immer große Delegationen mit in der Sitzung maßgebenden Experten gestellt hatten, diesmal mit einem Experten

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Abb. 1: Hauptquartier der Vereinten Nationen am East River, New York (Foto: P. Jordan 2025)

und einer Diplomatin zwar auf der Teilnehmerliste aufschienen, aber nie bei der Sitzung waren. Renommierte US-Experten wie Trent Palmer, bei früheren Sitzungen einer der Rapporteure und weiterhin Convenor der Working Group on Toponymic Terminology, wirkten (als Convenor) nur aus dem Off mit (vor und nach der Sitzung per Internet).

Seit der 2. Sitzung im Jahr 2021 leitet die UNGEGN und deren Plenarsitzungen Pierre Jaillard (Frankreich), assistiert von Sungjae Choo (Republik Korea) als Vice-Chair. Wendy Shaw (Neuseeland) folgte in dieser Sitzung Susan Birtles (Australien) als zweiter Vice-Chair. Als Rapporteure fungierten Ana Cristina da Rocha Berenger Resende (Brasilien) und Majdi Hamed AlHarbi (Saudi-Arabien).

Ablauf der Sitzung

Der Kern der Tagung bestand aus neun Plenarsitzungen, in denen von den 171 eingereichten und auf der UNGEGN-Website einsehbaren Konferenzpapieren[1)] etwa ein Drittel tatsächlich vorgestellt und diskutiert wurde. Wie erstmals in der 3. Sitzung wurden aus den Länderberichten von der dazu bestellten Koordinatorin Catherine Cheetham (Vereinigtes Königreich) international besonders relevante Berichtspunkte ausgewählt und diese thematisch gruppiert von Vertretern des jeweiligen Landes in über die Plenarsitzungen verteilten Einheiten des sogenannten „National Dialogue“ vorgetragen.

[1)] Siehe: *https://unstats.un.org/unsd/ungegn/sessions/4th_session_2025/#documents*.

Herausragende Programmpunkte der Plenarsitzungen waren drei Podiumsdiskussionen. Die erste befasste sich mit der Standardisierung geographischer Namen in Situationen kultureller Diversität. Unter der Leitung von Vice-Chair Sungjae Choo (Republik Korea) diskutierten dazu Frédéric GIRAUT (Vorsitzender des UNESCO Toponymy Inclusive Teams, Schweiz), Dieter LASKOWSKI (Technischer Leiter von Google Maps, USA), Emily Diana LETHBRIDGE (Co-convenor, UNGEGN Working Group on Geographical Names as Cultural Heritage, Island), Ana Cristina DA ROCHA BERENGER RESENDE (Geographic Names Manager, Geosciences Directorate, IBGE, Brasilien), und Allison DOLLIMORE (Permanent Committee on Geographical Names, UK).

Die zweite Podiumsdiskussion über den Einsatz Künstlicher Intelligenz für Zwecke der Standardisierung geographischer Namen unter der Leitung von Pier-Giorgio ZACCHEDDU (Convenor der UNGEGN Working Group on Geographical Names Data Management, Deutschland) bestand aus einem Vortrag von Fatmah BAOTHMAN (Gründerin und Präsidentin der AI Society of Saudi Arabia, Saudi-Arabien) mit Peder GAMMELTOFT (Universität Bergen, Norwegen) und Rafe BENLI (Geographic Names Victoria, Australien) als Diskutanten.

Die dritte Podiumsdiskussion über die Zukunft toponymischer Bildung und Ausbildung wurde von Peder GAMMELTOFT als Convenor der UNGEGN Working Group on Funding and Training Courses in Topomymy geleitet und hatte Marie THÉRIAULT (Bildungswissenschaftlerin an der Universität Montreal, Kanada), den Berichterstatter Peter JORDAN als Vertreter akademischer toponymischer Lehre, Nor Zetty AKHTAR ABDUL HAMID (Deputy Surveyor General, Brunei Darussalam) und Chanda PENDA (Dissertant über ein toponymisches Thema, Zambia) als Diskutanten.

Die neun Plenarsitzungen (zumeist von 10 bis 13 Uhr und von 15 bis 18 Uhr) bildeten, wie schon bisher, den sehr formalen, am meisten von Politik überlagerten Teil der 4. UNGEGN-Sitzung. In ihnen kann mit Simultanübersetzung in einer der sechs offiziellen Sprachen der Vereinten Nationen (Englisch, Französisch, Spanisch, Chinesisch, Arabisch, Russisch) vorgetragen und diskutiert werden.

Viel lebendiger und fachlich ergiebiger verlaufen zumeist die zahlreichen Nebenveranstaltungen („Side Events"), die vor und nach den Plenarsitzungen und auch in der Mittagspause in kleineren Nebenräumen oder auch in einem Nachbargebäude des Hauptquartiers der Vereinten Nationen vor sich gehen. Von den diesmal zwölf Nebenveranstaltungen entfielen fünf auf Treffen der nach regionalen oder sprachlichen Gesichtspunkten zusammengesetzten Unterabteilungen der UNGEGN („Divisions"), weitere fünf auf Treffen thematischer Arbeitsgruppen der UNGEGN („Working Groups"), eines auf ein Treffen der ICOS Working Group on Toponymy und ein weiters auf ein Datenbankprojekt der UNGEGN („The World Geographical Names Database and a Unique Identifier for Cities"). In allen Nebenveranstaltungen ist Englisch die Arbeitssprache.

Hauptthemen

Zwei Themen bestimmten die gesamte 4. UNGEGN-Sitzung und waren auch aus österreichischer Sicht besonders wichtig: (1) die Exonymenfrage und (2) geographische Namen von Minderheiten und indigenen Gruppen.

Die Exonymenfrage

In Bezug auf die Exonymenfrage war schon bei der 3. UNGEGN-Sitzung des Jahres 2023 der Versuch unternommen worden, eine Resolution zu verabschieden, welche die frühere, sehr auf Begrenzung bedachte Haltung der Vereinten Nationen gegenüber Exonymen mit den Resolutionen der 2000er und 2010er Jahre über geographische Namen als Teile des kulturellen Erbes „versöhnt"

(„reconciles“) und im Fall von Widersprüchen erklärt, was nun wirklich gilt. Die UNESCO-Konvention zum Schutz des immateriellen Kulturerbes des Jahres 2003 hatte nämlich auch alle sprachlichen Ausdrucksformen eingeschlossen – also auch geographische Namen und mit ihnen Exonyme. Ein dazu in einer Arbeitssitzung der UNGEGN Working Group on Exonyms in Laibach [Ljubljana] ausgearbeiteter und dort einstimmig beschlossener Resolutionsentwurf wurde aber schon in einer Sitzung dieser Arbeitsgruppe während der 3. UNGEGN-Sitzung wieder abgelehnt und konnte deshalb dem Plenum nicht vorgelegt werden.

In Vorbereitung der 4. UNGEGN-Sitzung entwickelte daher diese Arbeitsgruppe bei einem Treffen in Prag [Praha] im Mai 2024 einen neuen Entwurf, der dort ganz überwiegend Zustimmung fand. Im Lauf einer virtuellen Sitzung der Arbeitsgruppe einige Monate vor der 4. UNGEGN-Sitzung reklamierte der Vertreter Griechenlands aber knapp vor Ende der Sitzung einen Passus hinein, der das Prinzip des Vorrangs des Endonyms vor dem Exonym in allen Arten von Kommunikation festschrieb. Das würde zum Beispiel bedeuten, dass auch in Schulatlanten Ländernamen stets, jedenfalls an erster Stelle, in ihrer endonymischen Form zu verwenden wären (also z.B. *Magyarország* statt *Ungarn* oder *Shqipëri* statt *Albanien*) oder zur Bezeichnung von grenzüberschreitenden geographischen Objekten wie längeren Flüssen oder Meeren alle Endonyme aufzuzählen wären, also z.B. *Mar Adriatico, Jadransko morje, Jadransko more, Deti Adriatik* allein für das Adriatische Meer – in der Praxis ein Ding der Unmöglichkeit, aber der Politik eines Landes wie Griechenland entsprechend, das allein amtliche Namenformen in der Staatssprache (auch keine Minderheitennamen) anerkennt.

Der Vorschlag des griechischen Vertreters in letzter Minute blieb in dieser virtuellen Sitzung zunächst unwidersprochen. Der Berichterstatter, der von 2006 bis 2017 Convenor der Working Group on Exonyms gewesen war, machte aber schon einen Tag später auf die vorhin genannte Unmöglichkeit einer praktischen Umsetzung aufmerksam. Diesen Einwand wiederholte er auch in der Nebenveranstaltung der Working Group on Exonyms am ersten Tag der 4. UNGEGN-Sitzung, die wegen ihrer Brisanz nicht nur von Mitgliedern der Arbeitsgruppe, sondern auch von allen maßgeblichen Funktionsträgern der UNGEGN besucht war. Er fügte hinzu, dass sich die UNGEGN und mit ihr die Vereinten Nationen diskreditierten, wenn sie Normen setzen, die nicht realisierbar sind. Obwohl niemand unterstützend das Wort ergriff, drückte er damit wohl die Meinung einer größeren Gruppe oder vielleicht sogar der Mehrheit aus. Weil der Vertreter Griechenlands auf seinem Passus beharrte, wurde beschlossen, auch diesen Resolutionsentwurf nicht dem Plenum zur Abstimmung vorzulegen.

Es soll nun ein „ganz neuer“ Anlauf unternommen werden, alte und neuere Resolutionen der Vereinten Nationen zur Exonymenfrage in Einklang zu bringen. De facto ist es aber ohnehin so, dass jüngere Resolutionen der Vereinten Nationen gegenüber älteren mehr Gewicht haben oder diese sogar außer Kraft setzen, wenn sie diesen widersprechen. Es kann daher angenommen werden, dass geographische Namen und somit auch Exonyme schützenswertes kulturelles Erbe sind und möglichst in Verwendung gehalten oder dokumentiert werden sollen.

Geographische Namen von Minderheiten und indigenen Gruppen

Das Themenfeld geographischer Namen von Minderheiten und indigenen Gruppen erfuhr in der 4. UNGEGN-Sitzung eine signifikante Belebung, weil die UNGEGN Working Group on Geographical Names as Cultural Heritage (WGGNCH) revitalisiert wurde. Sie hatte seit 2021 unter der Absenz einer Leitung gelitten und keine Aktivitäten mehr entfaltet. Unter der neu bestellten Leitung von Emily Lethbridge (Island) und Rafe Benli (Australien) organisierte sie im Rahmen dieser Sitzung gleich zwei vielbesuchte Nebenveranstaltungen, wovon in einer der Berichterstatter einen Vortrag über sein Projekt eines Handbuchs der Regelungen zu Minderheitennamen in Europa hielt (Abb. 2).



Abb. 2: Die Vorsitzenden und Vortragenden einer Nebenveranstaltung der UNGEGN Working Group on Geographical Names as Cultural Heritage. Von links nach rechts: Rafe BENLI (Australien), Nicole HALSETH (Kanada), Peter JORDAN (Österreich) und Steve WESTLEY (Kanada) (Foto: Emily LETHBRIDGE)

Die Arbeitsgruppe will die Unterstützung der UNGEGN und damit der Vereinten Nationen für den Erhalt von geographischen Namen sprachlicher Minderheiten und indigener Gruppen und deren Standardisierung und Sichtbarkeit im öffentlichen Raum vorantreiben und sieht dabei in etlichen Teilen der Welt Nachholbedarf. Sie führt damit ein Anliegen weiter, das in den 1980er Jahren erstmals vom jüngst verstorbenen Ferjan ORMELING aufgegriffen und von ihm auch in der UNGEGN in den Vordergrund gestellt wurde.

Es ist bezeichnend, dass Island und Australien die Führung dieser Arbeitsgruppe übernommen haben, denn es sind Australien und die nordischen Länder, die neben Kanada und Neuseeland in dieser Hinsicht selbst vorbildliche Regelungen getroffen haben und daher mit großer Autorität Verbesserungen im Rest der Welt einfordern können. Ihnen stehen allerdings selbst in Europa und sogar in der Europäischen Union Länder wie Albanien und Griechenland gegenüber, die nicht nur bei geographischen Namen von Minderheiten keine Standardisierung zulassen, sondern auch alteingesessene kulturelle Minderheiten prinzipiell nicht anerkennen.

Noch spezieller mit geographischen Namen von Minderheiten und indigenen Gruppen befasst sich die in der 3. UNGEGN-Sitzung 2023 als eine Untereinheit der Working Group on Geographical Names as Cultural Heritage neu gegründete Focus Group on Indigenous and Minority Names. Sie steht unter kanadischer Leitung (Nicole HALSETH und Steve WESTLEY) und legt besonderes Augenmerk auf die Namen indigener Gruppen im Sinn altansässiger, vor den Kolonisatoren schon anwesender Bevölkerungen in den früheren außereuropäischen Kolonialländern.

Die Präsenz Österreichs

Österreich war im Plenum und in den Nebenveranstaltungen der 4. UNGEGN-Sitzung durch den Vorsitzenden der Arbeitsgemeinschaft für Kartographische Ortsnamenkunde (AKO), Roman Stani-Fertl, als Delegationsleiter und Peter Jordan als Berater („Advisor") vertreten. Peter Jordan vertrat außerdem den International Council of Onomastic Sciences (ICOS) als dessen Liaison Officer zur UNGEGN. Die österreichische Delegation und Jordan in seiner Funktion als ICOS Liaison Officer hatten schon vor der Sitzung die folgenden, dann auf der UNGEGN-Website veröffentlichten[2)] Konferenzpapiere (CRP) eingereicht:

- Falkensteiner Regina: 100th Anniversary at the Federal Office of Metrology and Surveying (BEV) and Cartographic Activities – CRP 149 im Namen Österreichs.
- Jordan Peter: Excessive Use of Exonyms by Google – CRP 17 im Namen Österreichs.
- Jordan Peter: Report of the Liaison Officer with the International Council of Onomastic Sciences – CRP 18 im Namen des ICOS
- Jordan, Peter: Visualizing Place-name Qualities on Maps and in Texts – CRP 19 im Namen Österreichs.
- Piko-Rustia Martina: Notation and Standardization of Slovenian Geographical Names in Carinthia and Styria – Methods and Informal Expert Groups Engaging Themselves – CRP 147 im Namen Österreichs.
- Stani-Fertl Roman: Eighth Edition of the Toponymic Guidelines of Austria – CRP 155 im Namen Österreichs.
- Stani-Fertl Roman: German Exonyms for Geographical Features in Slovakia – CRP 148 im Namen Österreichs.
- Stani-Fertl Roman: Report of Austria for the Period 2023 to 2025 – CRP 145 im Namen Österreichs.
- Stani-Fertl Roman: Romanization of Ukrainian Cyrillic for German-speaking areas – CRP 146 im Namen Österreichs.

Davon wurden die Konferenzpapiere (CRP) Nr. 17, 18, 19 und 147 tatsächlich im Plenum präsentiert – alle von Jordan (Paper 147 in Vertretung von M. Piko-Rustia, die nicht anwesend war). Aus dem „Report of Austria" wurde der Berichtspunkt der österreichischen Mitwirkung an einer Wanderkarte des Slowenischen Alpenvereins vom Gebiet des Bacher [Pohorje] und angrenzender Gebiete der österreichischen Steiermark (Planinska zveza Slovenije 2024) ausgewählt und von Jordan, der an dieser Karte auch mitgearbeitet hatte, in einer Paneldiskussion präsentiert. Jordan fungierte außerdem – wie schon erwähnt – als Diskutant einer Podiumsdiskussion, hielt in der Sitzung der UNGEGN Working Group on Geographical Names as Cultural Heritage einen Vortrag und leitete die Nebenveranstaltung des Treffens der Working Group on Toponymy des International Council of Onomastic Sciences (ICOS) als deren Vorsitzender.

Mit dieser 4. UNGEGN-Sitzung ging der Vorsitz der Dutch- and German-speaking Division (DGSD) auch wieder an Österreich über. Regionalen Untereinheiten der UNGEGN wie dieser ist die Aufgabe zugedacht, auf einer ersten supranationalen Ebene die Standardisierung geographischer Namen voranzutreiben, indem sie Themen aufgreifen, die ihnen nahestehen oder an denen sie besonders interessiert sind und für die eventuell in ihren Ländern auch bereits Vorarbeiten existieren. Divisions könnten mit ihren gemeinsam erarbeiteten Vorschlägen auch eine Vorreiterrolle für die UNGEGN

2) Siehe: *https://unstats.un.org/unsd/ungegn/sessions/4th_session_2025/#documents*.

als Ganzes spielen, indem sie ihre Vorschläge in das Plenum einbringen und zu diesbezüglichen Empfehlungen der Vereinten Nationen anregen.

Eine spezielle Tradition der DGSD sind die GeoNames-Symposien, die zwar von ihr veranstaltet werden, aber in die ganze UNGEGN und auch weit darüber hinaus wirken. Das letzte dieser Art fand allerdings bereits vor 17 Jahren im Jahr 2008 statt, damals veranstaltet vom österreichischen Vorsitz in Wien zum Thema „Geographical Names as a Part of the Cultural Heritage", das in der Konferenz der Vereinten Nationen zur Standardisierung geographischer Namen des Jahres 2007 erstmals in den Blickpunkt gerückt war (siehe dazu JORDAN et al. 2009). Der nun wieder österreichische Vorsitz möchte diese Tradition aufleben lassen. Vom Vorsitzenden der AKO, Roman STANI-FERTL wurde der Verfasser dieses Berichts gebeten, die Leitung der österreichischen Vorsitzführung zu übernehmen.

Schluss

Sitzungen eines Expertengremiums der Vereinten Nationen wie diese spiegeln wohl zum Teil auch die globalen gesellschaftlichen Verhältnisse, Beziehungen und Strukturen wider. Wie auch in früheren UNGEGN-Sitzungen und UN-Konferenzen dominierte in der Themensetzung und in der Beteiligung an den Diskussionen sehr deutlich der Globale Norden – mit Kanada, dem Vereinigten Königreich, dem Norden Europas, Ostasien („East Asia other than China") und den wohl im Süden gelegenen, aber nicht zum Globalen Süden zählenden Ländern Australien und Neuseeland an der Spitze. Relativ stark bemerkbar machten sich diesmal auch die arabischen Länder, besonders das mit einer großen Delegation vertretene Saudi-Arabien. Dagegen verhielten sich diesmal mit wenigen Ausnahmen das mittlere und das östliche Europa relativ ruhig. Von Afrika südlich der arabischen Welt und Südamerika war wie zumeist wenig zu vernehmen.

Als sehr vorteilhaft erweist sich auf längere Sicht – wie von Österreich schon seit der Ära von Josef BREU praktiziert – eine möglichst große personelle Kontinuität bei der Entsendung von Experten gegenüber einer häufigen oder sogar ständigen Rotation. Sie sammeln Erfahrung, kennen die Abläufe und bilden mit der Zeit Fixpunkte im Sitzungsgeschehen. Es fällt ihnen auch leichter, Allianzen zu schmieden und Anliegen durchzusetzen.

Mit großer Dankbarkeit und wohl auch mit Wehmut wurden zwei langjährige Mitwirkende der Vereinten Nationen an den UNGEGN-Sitzungen und den früheren Konferenzen verabschiedet: Cecille BLAKE, die stets aufmerksame und hilfreiche Sekretärin der UNGEGN aus Jamaika; und Stefan SCHWEINFEST aus Deutschland, der bestens mit der Geschäftsordnung vertraute und immer auf Ausgleich bedachte Direktor der UN Statistics Division, welcher die UNGEGN zugeordnet ist. Als Nachfolger von Cecille BLAKE führte sich aber auch schon der Brite Mark ILIFFE bestens ein.

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Grenzen im Kopf und auf der Karte. Die Brennergrenze als geographische Konstruktion und politische Realität

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mit 9 Abbildungen als Bildanhang

Die umstrittene Grenzziehung zwischen Österreich und Italien, die im Friedensvertrag von Saint-Germain im Jahr 1919 festgelegt wurde, ist ein eindrückliches Beispiel für die komplexen und oft problematischen Auswirkungen geopolitischer Entscheidungen auf lokale Gemeinschaften. Die so genannte „Brennergrenze", benannt nach dem historischen Alpenübergang, steht exemplarisch für die Rolle der Wissenschaft – insbesondere der Geographie – bei der Konstruktion und Legitimation politischer Grenzen. Die folgenden Ausführungen analysieren, wie wissenschaftliche Narrative in einen nationalstaatlichen Diskurs eingebettet wurden und wie sich die Geographie dabei von einer beschreibenden und analytischen Disziplin zu einer ideologisch aufgeladenen Akteurin entwickelte.

Die Geographie als politische Wissenschaft

Die Geographie, lange Zeit als deskriptive Raumwissenschaft verstanden, erhielt im Zuge der nationalstaatlichen Expansionen eine neue Rolle: Sie wurde zum epistemischen Instrument staatlicher Grenzpolitik. Vor allem im 19. und frühen 20. Jahrhundert erfuhr sie eine Politisierung, die weit über das hinausging, was man unter neutraler Wissenschaft verstehen würde.

Politische Geographie und Geopolitik zwischen Analyse und Ideologie

Unter politischer Geographie verstand man ursprünglich ein analytisches Teilgebiet, das sich mit der räumlichen Struktur politischer Systeme befasste. Otto Maull forderte bereits 1928, dass sich die politische Geographie zu einer „Kunstlehre des politischen Raumes" entwickeln solle, die in der Lage sei, die Grenzansprüche von Staaten kritisch zu hinterfragen, aber auch zu begründen.

Demgegenüber etablierte sich die Geopolitik – vor allem in der Zwischenkriegszeit – als explizit zweckorientierte Wissenschaft. Sie verstand sich als Hilfswissenschaft der Politik und wurde insbesondere im Nationalsozialismus zur ideologischen Stütze territorialer Expansion. In Deutschland blieb die Geopolitik stets eine politisch instrumentalisierte Zweckwissenschaft, deren Kategorien wie „Lebensraum" oder „geopolitisches Schicksal" die analytische Neutralität systematisch unterliefen. Im Zuge der Deutschen Einheit warnte man vor einer unreflektierten Rückkehr solcher Denkmodelle: Es gelte, „dem Tor zu einer unreflektierten Wiederbelebung

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scheinbar interessenneutraler Kategorien“ Einheit zu gebieten, da diese einst als „Schlüssel zur Weltgeschichte“ gedient hätten, um „politischen Machtvisionen das Gewicht geographischer Notwendigkeit zu verleihen.“

Der Geodeterminismus als Grenzargument und die „natürliche“ Grenze

Geodeterministische Konzepte – also die Annahme, dass natürliche Gegebenheiten wie Berge, Flüsse oder Klimazonen das menschliche Handeln bestimmen – spielten bei der theoretischen Fundierung von Grenzziehungen oftmals eine zentrale Rolle. Gerade im österreichisch-italienischen Grenzraum wurde der Alpenhauptkamm häufig als „natürliche“ Trennlinie interpretiert – eine Sichtweise, die historische und kulturelle Verflechtungen geflissentlich ignorierte.

Der Begriff der „natürlichen Grenze“ war nie rein deskriptiv. Vielmehr handelte es sich um kulturelle Konstruktionen, die durch die Wissenschaft erst hervorgebracht wurden. Italienische Geographen interpretierten die Alpen als schützende Nordgrenze des italienischen Kulturraums – nicht zuletzt, um politische Besitzansprüche auf Südtirol zu rechtfertigen. Im Hintergrund stand dabei eine ideologische Vorstellung von geographischer Geschlossenheit und nationaler Einheit.

Die moderne geographische Kritik – vor allem aus der Neuen Kultur- und Sozialgeographie – hat deutlich gemacht, dass es sich bei „natürlichen Grenzen“ um politisch motivierte Diskurse handelt. Diese erzeugen erst das, was sie zu beschreiben vorgeben. Der kritische Rückgriff auf Diskursanalyse hat gezeigt, dass solche Begriffe Machtverhältnisse stabilisieren, indem sie Alternativen (z. B. historische Koexistenz oder kulturelle Überlappungen) ausblenden.

Karten als Medien der Macht

Kartographische Darstellungen waren nicht nur Visualisierungen wissenschaftlichen Wissens – sie waren politische Instrumente. Karten reduzierten komplexe Räume auf Linien und Flächen, die als Besitz markiert werden konnten. Im Fall der Brennergrenze dienten Karten der Visualisierung historischer, ethnischer und geodeterministischer Argumente – zugunsten jener, welche die Definitionsmacht über die selektiv interpretierten oder politisch instrumentalisierten Karten besaßen.

Die Brennergrenze als Produkt politischer, geographischer und diskursiver Kräfte

Der Begriff „Brennergrenze“ ist eine nachträglich eingeführte Bezeichnung für die im Jahr 1919 festgelegte neue Staatsgrenze zwischen Österreich und Italien. Sie verläuft entlang der Wasserscheide des Alpenhauptkammes – also entlang der Linie, die die Flusssysteme zur Adria und zum Schwarzen Meer (Donauraum) trennt. Vor diesem Jahr gab es weder eine administrative noch eine kulturelle Grenze – es handelte sich um einen zusammenhängenden Alpenraum mit vielfältigen Verflechtungen.

Die Forschungsstand zeigt, dass die Brennergrenze in der politischen Geographie, der Geschichte und in den internationalen Beziehungen eine breitgefächerte Rezeption erfuhr. Während ältere Arbeiten häufig von einer natürlichen Grenze ausgingen, betonen neuere Studien den konstruierten Charakter der Grenze. Diskursive Ansätze analysieren die wissenschaftliche Rhetorik, mit der Grenzen behauptet, begründet und verteidigt wurden.

Die Alpen wurden im Laufe der Geschichte unterschiedlich interpretiert: Sie wurden teilweise als Barriere und teilweise als Brücke der Kulturen wahrgenommen, waren aber zugleich ein bedeutender Verkehrs- und Transitraum. Erst im Zuge des aufkommenden Nationalismus wurden sie zunehmend zur symbolischen Grenze stilisiert.

Der italienische Nationalstaat und das Programm der „Irredenta“

Im Kontext des italienischen Nationalismus wurde das Konzept des Irredentismus zur ideologischen Grundlage territorialer Ansprüche. Gebiete mit (vermeintlich) italienischem Kulturerbe sollten in den Nationalstaat integriert werden. Der Brenner wurde als „natürliche Grenze“ Italiens beansprucht – auch wenn diese „neue“ Grenzziehung durch ethnische und historische Argumente kaum begründet werden konnte. Ettore Tolomei, der Gründer des „Archivio per l'Alto Adige“, lieferte die scheinbar wissenschaftliche Grundlage für diese territorialen Ansprüche. Durch sprachliche, topographische und kartographische Manipulationen konstruierte er eine italienische Realität für Südtirol.

Im Londoner Geheimvertrag vom April 1915 wurde Italien – als Gegenleistung für den Kriegseintritt gegen die Mittelmächte während des Ersten Weltkriegs – der Erwerb Südtirols zugesichert. Der Friedensvertrag von Saint-Germain im September 1919 bestätigte dies völkerrechtlich. Die Grenzziehung beruhte also nicht auf demokratischer Willensbildung, sondern auf geopolitischem Kalkül. Spätere Verträge – wie der Pariser Vertrag von 1946 (Gruber-De Gasperi-Abkommen), der die Grundlage für die heutige Autonomie Südtirols bildet – zementierten diese Grenzziehung.

Der Brenner verbindet? Geographie im Spiegel nationaler Diskurse

Zur Grenzziehung gab und gibt es zahlreiche wissenschaftliche Reaktionen auf beiden Seiten. Italienische Geographen lieferten ex post Argumente für die Grenzziehung, während deutsche und österreichische Geographen mit eigenen Narrativen dagegenhielten. Begriffe wie das „Passland Tirol“ oder die „geographische Einheit“ dienten der Delegitimierung der Brennergrenze. Aber auch diese Gegenargumente waren jedoch oft diskursiv aufgeladen – sie ersetzten die ideologische Konstruktion nicht, sondern antworteten mit einer eigenen.

Die politische und wissenschaftliche Auseinandersetzung um die Brennergrenze war nicht nur ein Phänomen der unmittelbaren Nachkriegszeit, sondern ein diskursiver Prozess, der sich über Jahrzehnte hinzog. Diese Debatte wurde sowohl auf der Ebene der politischen Öffentlichkeit als auch innerhalb der geographischen Fachwelt geführt. Im Dreh- und Angelpunkt stand dabei die Frage, ob die Brennergrenze eine gerechtfertigte, „natürliche“ Trennung darstellt – oder ob es sich vielmehr um ein ideologisches Konstrukt handelt, das historische und kulturelle Realitäten ausblendet.

Diskursanalyse als Methode: Geographie als Produzentin von Wirklichkeit

Die Diskursanalyse versteht Wissenschaft nicht als neutrale Beschreibung der Welt, sondern als Ko-Produzentin gesellschaftlicher Wirklichkeiten. Geographische Argumentationen über Grenzen sind daher nicht nur analytische Reflexionen über Raum, sondern normative Setzungen, die politische Konsequenzen haben. Die Brennergrenze wurde in wissenschaftlichen Texten nicht nur beschrieben, sondern erst durch sie legitimiert und verteidigt – oder eben in Frage gestellt. Die hier durchgeführte Analyse zielt daher darauf ab, die Funktionsweise dieser Diskurse offen zu legen: Welche Begriffe wurden verwendet? Welche Naturalisierungen wurden vorgenommen? Welche politischen Kontexte spiegeln sich in den wissenschaftlichen Texten wider?

Kreiskys Kritik an der Grenzpolitik: Wissenschaft als Mitverantwortliche

Der ehemalige österreichische Bundeskanzler Bruno KREISKY hat in seinen Memoiren eine der eindringlichsten politischen Reflexionen über die Folgen nationalstaatliche Grenzpolitik im letzten Jahrhundert geäußert. In einer viel zitierten Textpassage formuliert er:

„Die Entstehung der Nationalstaaten, die noch immer positiv bewertet wird, hat in Wirklichkeit das persönliche Unglück vieler Millionen Menschen innerhalb und außerhalb Europas bedeutet. […] Die Nationalitätenfrage nur innerhalb Europas einigermaßen befriedigend lösen zu wollen, würde zu einer solchen Verschiebung der Grenzen führen, dass die Großmächte mit Recht besorgt sein müssten."

Diese Aussage enthält nicht nur eine politische, sondern auch eine wissenschaftskritische Dimension. Kreisky deutet an, dass die unkritische Übernahme nationalstaatlicher Kategorien – auch durch wissenschaftliche Akteure – zur ideologischen Verfestigung von Grenzregimen beigetragen hat. Gerade die Geographie, mit ihrer Definitionsmacht über Raum habe hier– ob gewollt oder ungewollt – Verantwortung übernommen. Seine Worte können als Appell verstanden werden: Wissenschaft muss sich ihrer gesellschaftlichen Wirkungsmacht bewusst sein und darf sich nicht zum Instrument politischer Vereinnahmung machen lassen.

Geographische Akteure im Diskurs – Positionen im Vergleich

- *Friedrich Ratzel – Grenzsaum statt Grenzlinie*
  Ratzel verstand Grenzen als dynamische Zonen – als „Grenzsäume", nicht als starre Linien. Seine Vorstellung war geprägt von einem organischen Staatsmodell, das die Grenze als Ergebnis von Ausdehnung und Bewegung begreift. Eine permanente und „natürliche" Grenze im Sinne der späteren Brennerlinie hätte seinem Konzept widersprochen.
- *Ettore Tolomei – Der Grenzideologe*
  Tolomei war wohl der einflussreichste Akteur auf italienischer Seite. Sein Werk war durchzogen von nationalistischen Zielen, die er mit (pseudo)wissenschaftlich anmutenden Argumenten zu legitimieren versuchte. Seine Kartierungen, Umbenennungen und „Beweise" für eine italienische Identität Südtirols zeigen exemplarisch, wie Wissenschaft in den Dienst ideologischer Programme gestellt werden konnte.
- *Die Tiroler Gegenerzählung*
  Auf österreichischer Seite versuchten Geographen wie Albrecht Penck oder Johann Sölch ein alternatives Raumverständnis zu etablieren. Das Konzept des „Passlandes" etwa betonte die verbindende Funktion der Gebirge. Tirol wurde nicht als geteilter, sondern als funktional integrierter Kultur- und Wirtschaftsraum beschrieben. Auch hier zeigt sich: Wissenschaft produziert nicht „die Wahrheit", sondern konkurrierende Narrative.
- *Zeitschriften als Diskursräume*
  Fachzeitschriften wie beispielsweise die „Zeitschrift des Deutschen und Österreichischen Alpenvereins", das „Geographical Journal" oder die „Mitteilungen der Geographischen Gesellschaft in Wien" fungierten als Plattformen für diese Auseinandersetzungen. In ihnen wurden Grenztheorien popularisiert, geopolitische Strategien verhandelt und wissenschaftliche Argumente einem breiteren Publikum zugänglich gemacht. Sie waren damit weit mehr als bloße Fachorgane – sie waren Resonanzräume nationaler Selbstverständnisse.

Fazit: Die Brennergrenze als Spiegel einer politisierten Wissenschaft

Die Analyse der Brennergrenze offenbart ein zentrales Spannungsfeld moderner Wissenschaft: ihre gleichzeitige Rolle als analytische Disziplin und als politisches Instrument. Die Grenze zwischen Österreich und Italien wurde nicht nur auf diplomatischer Ebene verhandelt, sondern in geographischen Theorien vorbereitet, legitimiert und interpretiert.

Geographen auf beiden Seiten der Grenze versuchten, ihre jeweiligen nationalen Positionen mit wissenschaftlicher Autorität zu untermauern. Dabei griffen sie auf naturdeterministische Konzepte, historische Argumente und kartographische Visualisierungen zurück. Besonders wirkmächtig war das Konzept der „natürlichen Grenze" – nicht, weil es zutreffend war, sondern weil es intuitiv überzeugte.

Die Diskursanalyse hat gezeigt, dass wissenschaftliche Texte keine neutralen Beobachtungen darstellen, sondern in gesellschaftliche Machtverhältnisse eingebettet sind. Die Brennergrenze entstand also nicht nur aus politischen Interessen, sondern auch aus dem Zusammenspiel ideologisch aufgeladener wissenschaftlicher Narrative.

Bruno Kreiskys Kritik ist daher nicht nur als politische Mahnung zu lesen, sondern auch als Aufruf zur Selbstreflexion der Wissenschaft. Wenn die Geographie Räume beschreibt, darf sie nicht vergessen, dass sie diese zugleich mitgestaltet. Wenn sie Grenzen analysiert, darf sie nicht übersehen, dass sie damit auch Grenzen zieht.

Die Brennergrenze steht damit exemplarisch für eine disziplinäre Herausforderung, die bis heute aktuell ist: Wie kann Geographie kritisch bleiben – in einer Welt, in der Räume immer auch umkämpft sind?

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Bildanhang: Die Brennergrenze im Wandel der Zeit [1)]

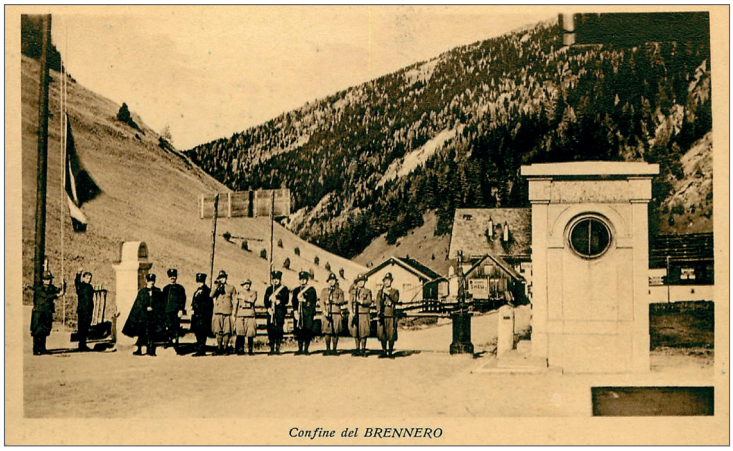


Bild 1: Die Brennergrenze kurz nach 1921. Blick von Süden nach Norden, von Italien (Südtirol) nach Österreich (Nordtirol). Vor dem eher provisorischen Grenzbalken sieht man eine Formation von italienischen Grenzbeamten beim Hissen der italienischen Flagge. Im Hintergrund die Gebäude des Weilers Brenner. Die Straße ist noch unbefestigt.



Bild 2: Die Grenze in der zweiten Hälfte der 1920er Jahre. Blick von Süden nach Norden, von Italien (Südtirol) nach Österreich (Nordtirol). Links der im Oktober 1921 errichtete Grenzstein zwischen Italien und Österreich mit den Beschriftungen „Austria“ und „Italia“ auf den beiden Schmalseiten. Entlang des Grenzbalkens hat eine gemischte Einheit von Alpinpolizisten (Alpini, mit charakteristischen Federhüten) und Beamten der Finanzwache Aufstellung genommen. Im Vordergrund die damals noch unbefestigte Straße, im Hintergrund der Weiler Brenner.

[1)] Quellenhinweis: Bild 1 bis 8: Postkartensammlung Andreas Raffeiner. – Bild 9: Haneburger 2011, Wikimedia Commons, Public Domain.



Bild 3: Der damals aus wenigen Gebäuden bestehende Weiler Brenner auf der österreichischen Seite der Grenze (zwischen 1925 und 1930). Im Vordergrund der österreichische hölzerne Grenzbalken mit einem österreichischen Grenzbeamten, links das österreichische Zollhaus, im Hintergrund das Gasthaus Kerschbaumer. In Österreich herrschte damals (bis 1938) Linksverkehr.



Bild 4: Kolorierte Postkarte aus dem Jahr 1937. Blick nach Süden, von der österreichischen Seite nach Italien (Südtirol). Die Gebäude an der Grenze sind bereits deutlich ausgebaut und erweitert. Das Bild zeigt italienische Grenzbeamte und Soldaten hinter dem Grenzbalken, links ein Militärfahrzeug, charakteristisch für die damals angespannte und militärisch geprägte Phase, die auf italienischer Seite wegen der Furcht vor dem Anschluss Südtirols an das Deutsche Reich bis 1942 auch durch den Bau von Militärstraßen und Befestigungsanlagen gekennzeichnet war.



Bild 5: Fotopostkarte aus den Jahren 1954–1957, zeigt das italienische Zollamt am Brennerpass in den 1950er Jahren. Der Grenzbalken ist geöffnet, links davon der Grenzstein aus dem Jahr 1921 und der Fahnenmast. Im Hintergrund das österreichische Grenzgebäude. Der Reiseverkehr nahm zu dieser Zeit langsam, aber kontinuierlich zu.



Bild 6: Farbige Postkarte aus dem Jahr 1965. Das Bild zeigt das geschäftige Treiben an der österreichischen Grenzstation zur Zeit des beginnenden Massentourismus vor dem Bau der Autobahn bei der Einreise nach Österreich. Links das österreichische Zollabfertigungsgebäude, im Vordergrund zwei italienische Grenzbeamte. Im Hintergrund die Serlesgruppe zwischen Wipptal und Stubaital.



Bild 7: Das italienische Zollamt an der mittlerweile ausgebauten und verbreiterten Brennerstraße vor dem Bau der Autobahn in den frühen 1960er Jahren. Blick nach Norden Richtung Österreich. Strenge Kontrollen auf italienscher Seite sorgten für Staus im immer stärker zunehmenden Reiseverkehr, vor allem durch deutsche Urlauber in der Wirtschaftswunderzeit.



Bild 8: Blick auf die österreichische Grenzstation an der alten Brennerstraße in den frühen 1960er Jahren vor Inbetriebnahme der Brenner Autobahn. Deutlich sichtbar ist der starke Lkw-Verkehr, für den der Brennerpass wegen der starken Steigungen und vielen Kurven ein deutliches Hindernis war.



Bild 9: Blick auf den Brennerpass, von Norden (Nordtitol) aus gesehen nach Süden. Foto aus dem Jahr 2011 vom Padauner Kogel (2066 m) auf den Brennerpass (1370 m). Im Zentrum des Passes befindet sich nun die Autobahn (Eröffnung 1971), deren Ausbau das Bild des Passes total verändert hat. Daneben sieht man auch die alte Brenner-Bundesstraße auf einer neuen Trasse und die Eisenbahnlinie.

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Wien (Vienna) 2025, https://doi.org/10.1553/moegg167-b04

The Monograph "Glacial Lakes of Albania": A Scientific, Environmental, and Cultural Testament for Future Generations

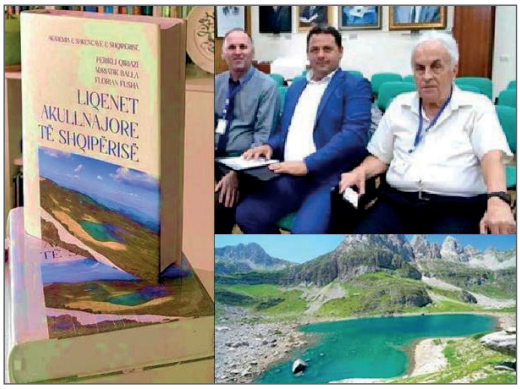
Book Review Essay

Pal Nikolli, Skënder Sala, Dhimitër Doka, and Bilal Draçi,
all: Tirana [Tiranë]*

with 1 figure in the text

Book Review

"The Glacial Lakes of Albania" ("Liqenet akullnajore të Shqipërisë") by Prof. Dr. Perikli Qiriazi, Dr. Adriatik Balla, and Dr. Florian Fusha (2025), Tirana, published by the Academy of Sciences of Albania. 629 pages, 194 photos, 164 satellite images, 133 pictures, 19 tables, bibliography comprising 250 titles (in Albanian language, with an introduction in English). ISBN: 9789928809933.



1 Introduction

Glacial lakes – geomorphological relics originating from the Late Pleistocene glaciation – constitute some of the most fragile, scientifically significant, and culturally meaningful elements of Albania's high-mountain landscapes. Their formation is directly linked to the major climatic cooling events of the Quaternary period, particularly the Würm glaciation, during which cirques, trough valleys, and moraine systems accumulated and later became basins for present-day lakes once the glaciers melted. As the monograph emphasises, these lakes represent "geographic relic objects" embedded within the wider mosaic of Albania's exceptional natural diversity, which scholars frequently describe as a "giant natural museum" and a natural laboratory for the study of landscape evolution.

Despite their scientific and cultural prominence, the study of Albanian glacial lakes has historically remained fragmented – sporadic descriptions, limited field measurements, and the absence

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of a unified methodological framework. Previous assessments were often secondary to broader geomorphological or physio-geographical surveys, leaving significant gaps in understanding their genesis, evolution, hydrological regimes, ecological dynamics, and conservation status. The monograph *“Glacial Lakes of Albania”* addresses precisely this gap, emerging as the first comprehensive, systematically structured, and research-integrated inventory of Albania’s glacial lake systems.

Produced under the scientific auspices of the Albanian Academy of Sciences, the work distinguishes itself through its encyclopaedic scope and methodological rigor. For the first time, nearly all of Albania’s more than 200 glacial lakes are identified, documented, and analysed in detail, including their spatial distribution, morphometry, hydrochemistry, level regimes, ecological characteristics, and evolutionary trajectories. The study also establishes a consolidated database and employs modern approaches to classification, grouping the lakes according to internationally recognised scientific criteria – such as cirque, moraine, and karst-glacial origins, permanence, seasonal variability, and geomorphological settings.

Beyond providing a scientific inventory, the monograph offers an interdisciplinary interpretative framework that integrates geomorphology, limnology, ecology, climatology, cultural geography, and environmental management. It highlights the lakes’ rich ecological, aesthetic, and inspirational values, which are deeply embedded in Albanian folklore, mythology, oral traditions, and artistic expressions. Their unique alpine ecosystems – shaped by snowmelt-fed hydrology, cold climates, and highly specific geological environments – host rare, relic, and endemic species, further underscoring their ecological and conservation importance.

Equally significant is the monograph’s contribution to environmental awareness and heritage protection. Many glacial lakes are currently endangered: some are shrinking, others have disappeared, and many face pollution, mismanagement, or the impacts of unregulated human activity. Nearly half of the lakes are considered at risk to varying degrees, a reality the authors underscore while making comparisons to best practices in countries with advanced strategies for the preservation and sustainable management of natural alpine heritage.

Thus, *Glacial Lakes of Albania* serves not only as an authoritative scientific reference, but also as an ethical and cultural appeal for the preservation of Albania’s alpine environments. Its extensive tables, maps, graphics, and field-based photographic documentation make the work accessible and valuable for researchers, policymakers, educators, environmental specialists, tourism operators, and the wider public. As the authors state, the monograph aims to encourage a deeper understanding of these “temples of nature” and to promote their protection, scientific study, didactic use, and inclusion in sustainable tourism development strategies.

By integrating modern theoretical concepts with comprehensive analyses of the lakes’ current status, the monograph brings Albanian geographical science closer to European standards in limnology and geomorphology. It stands as a foundational contribution to the study, conservation, and responsible management of one of the country’s most remarkable natural heritages.

2 Methodological Framework

One of the principal strengths of the monograph lies in its carefully articulated multidisciplinary methodological framework, which brings together a wide range of scientific fields to ensure both analytical depth and descriptive accuracy. The study integrates perspectives and approaches from:

- Physical geography and geomorphology, for understanding landform evolution, glacial modelling processes, and the spatial organisation of mountain landscapes.
- Limnology and hydrology, which provide insights into the physical, chemical, and hydrological characteristics of glacial lakes, including water balance, thermal regimes, and trophic status.

- Paleogeography and climate history, enabling reconstruction of past environmental conditions, Quaternary glaciations, and long-term climatic fluctuations that shaped the genesis and transformation of these lakes.
- Mountain ecology, focusing on high-altitude habitats, plant and animal communities, and the ecological services associated with alpine lake systems.
- Cultural geography and intangible heritage, illuminating the symbolic, mythological, and socio-cultural dimensions that glacial lakes hold within local traditions, collective memory, and community practices.

Empirical Foundation

The empirical basis of the research is built on an extensive and rigorously collected dataset, relying on both modern scientific techniques and historical sources. The main components include:

- Comprehensive field observations, carried out over multiple seasons and across diverse alpine environments, allowing for direct assessment of geomorphological features, lake conditions, and environmental pressures.
- Morphometric measurements – including depth, area, volume, shoreline development, and spatial distribution – obtained through combined in-situ surveying and digital analysis.
- Physical and hydrological assessments of lake waters, covering parameters such as transparency, temperature layers, mineralization, and seasonal fluctuations.
- High-resolution satellite imagery and digital morphometric models, used to map lake basins, delineate catchments, track landscape changes, and evaluate long-term dynamics of glacial relief.
- A systematic review of historical documents, archival expeditions, and topographic maps, which situates present-day observations within a broader temporal framework and enables comparison with earlier geographic surveys and cartographic records.

Methodological Integration

By interweaving these diverse methodological components, the authors achieve a research approach that is at once descriptively precise, analytically robust, and normatively oriented. Multidisciplinary integration allows the study to:

- Provide detailed empirical descriptions of each glacial lake and its geomorphological context.
- Generate analytical interpretations regarding lake evolution, environmental trajectories, and current ecological status.
- Formulate informed recommendations for policymaking, conservation planning, and sustainable management, grounded in scientific evidence and sensitive to both natural and cultural dimensions of the high-mountain landscape.

3 Organisation and Structure of the Monograph

The monograph is organised according to a clearly articulated and logically progressive structure, guiding the reader from fundamental theoretical concepts to detailed empirical analyses and finally to applied recommendations of national relevance. This sequential design ensures both scientific rigor and practical usability. The principal components of the work are as follows:

1. A Conceptual Introduction to Glacial Lake Typology within the Broader Framework of Glacial Landforms. The opening chapter establishes the theoretical foundations necessary for under-

standing glacial lakes as geomorphological and limnological entities. It discusses their genetic types, formative processes, and distinguishing characteristics, situating them within the wider system of Quaternary glacial relief. This conceptual context prepares the reader for the methodological and analytical approaches developed in the subsequent chapters.

2. A Historiographic Survey of Foreign and Albanian Research on Alpine and Glacial Lakes. This section provides a comprehensive review of the scientific literature, tracing the evolution of glaciological and limnological studies in Albania. It highlights the contributions of international researchers – geographers, geologists, and explorers – alongside the growing body of Albanian scholarship. The historiographic overview identifies research trends, methodological advances, and persisting knowledge gaps that the present monograph seeks to address.

3. An Inventory and Systematic Classification of Glacial Lakes by Mountain Units. A core component of the monograph is the systematic inventorying of all recognised glacial lakes in Albania, arranged according to the major mountain massifs and regional groups – Lura, Korab, Jezerca, Biza, Valbona, Shebenik, and others. Each unit is analysed in terms of its morphological, geological, and climatic context, enabling the classification of lakes according to typology, genetic origin, and spatial distribution patterns.

4. Morphometric and Limnological Analyses for Each Lake Group. Detailed quantitative analyses are provided for each cluster of lakes, including measurements of surface area, depth, volume, catchment characteristics, hydrological behaviour, and other limnological parameters. These data offer insights into the physical structure, ecological functioning, and comparative morphology of the lakes across different mountain regions.

5. Assessment of Environmental Conditions, Human Impacts, and Climate-Related Changes. This section evaluates the current environmental status of glacial lake systems, examining both natural dynamic and anthropogenic pressures such as land use change, tourism activities, infrastructure development, and resource exploitation. Particular emphasis is placed on the impacts of contemporary climate change - alterations in snowpack, temperature trends, and hydrological regimes - which pose increasing risks to the stability and persistence of these high-mountain ecosystems.

6. Evaluation of Economic, Educational, and Ecotourism Potential. Recognising the multifaceted value of glacial lakes, the monograph explores their potential for sustainable economic development. This includes opportunities for ecotourism, agro-pastoral activities, scientific research, and environmental education. The assessment highlights ways in which glacial lake landscapes can support local economies while maintaining ecological integrity.

7. A Comprehensive National Catalogue: “The Glacial Lakes Cartothèque”. The work culminates with the creation of an extensive national cartographic and descriptive database – the *Glacial Lakes Cartothèque.* This catalogue compiles essential information for each lake, including geographical coordinates, morphometric parameters, environmental characteristics, and administrative classifications. It constitutes a permanent reference resource for researchers, governmental agencies, territorial planners, and environmental managers.

Overall, this structure renders the monograph simultaneously a scholarly work of significant scientific value and a practical reference tool for governmental institutions, protected-area administrations, development planners, and organizations engaged in environmental management and sustainable mountain tourism.

4 Scientific Contributions and Innovations

The monograph offers a series of substantial and original contributions to the advancement of Albanian and broader Balkan geographical science, particularly within the fields of glaciology, limnology, and physical geography. Its interdisciplinary approach, combined with updated empirical data, positions the work as a reference point for future studies of mountain landscapes and glacial heritage in Albania.

Updating and Advancing Scientific Knowledge

One of the primary merits of the monograph is the comprehensive update of scientific information related to Albania's glacial lakes and their environmental context. The authors synthesise new field measurements, cartographic analyses, and interpretations grounded in contemporary geomorphological and limnological theory. The updated data includes:

- Genesis and evolutionary trajectories of glacial lakes, with detailed explanations of the geomorphological processes - erosional, depositional, and climatic - that shaped these water bodies from the Pleistocene to the present.
- A revised geographical distribution of Pleistocene glaciation, including clearer delineation of the spatial extent and altitudinal limits of former glaciers across mountain ranges in Albania.
- Enhanced morphometric and hydrological profiles of glacial lakes, such as measurements on size, depth, basin geometry, water balance, and seasonal fluctuations.
- A refined limnological typology, classifying lakes according to their physical, chemical, and hydrological characteristics across different alpine and subalpine regions.

A particularly important scientific finding is the determination of the altitudinal belt of Pleistocene glacial activity in Albania, identified at approximately 1300–2500 metres above sea level. This refined elevation range has significant implications for understanding past climatic conditions and necessitates the revision of national morphogenetic and geomorphological maps. It also contributes to broader regional debates on Mediterranean glaciation patterns and their variations in time and space.

The "Atlas" Concept

Among the innovative contributions of the monograph is the conceptualisation of an Atlas of Glacial Lakes of Albania. This is envisioned not merely as a cartographic product but as a comprehensive scientific and informational platform, integrating:

- detailed topographic and thematic maps,
- updated geospatial datasets,
- hydrological and ecological indicators,
- photographic and satellite imagery,
- and descriptive scientific documentation.

The authors emphasize the potential for this atlas to serve as the foundation for a future digital monitoring system, which could support:

- ongoing scientific research,
- environmental assessment and conservation planning,
- climate - related monitoring of alpine ecosystems,
- educational tools for schools, universities, and visitors,
- and the sustainable management of mountain tourism.

This initiative represents a forward-looking step toward building an integrated digital infrastructure for natural heritage in Albania.

Integrating Mythology, Folklore, and Cultural Heritage

For the first time in Albanian geographical literature, the monograph introduces an interdisciplinary narrative that places glacial lakes within the cultural and mythological imagination of the Albanian people. The authors explore how natural alpine landscapes have historically inspired traditional beliefs, symbolic stories, and ritual practices. They examine mythological figures and legendary beings associated with water and highland environments, including:

- Floçka – the "Bride of the Waters," symbolising purity, mystery, and the life – giving essence of natural springs and lakes;
- Shtojzovallet – ethereal woodland and mountain entities deeply embedded in Albanian folklore;
- Zana – the mythic mountain nymph, representing beauty, protection, and the spiritual essence of the highlands;
- Vidasusi and other mythical guardians tied to the symbolic meaning of remote alpine waters.

By integrating these cultural elements, the authors enrich the strictly scientific narrative and illuminate the lakes as cultural – spiritual landscapes, not merely geomorphological features. This approach encourages readers and researchers to appreciate glacial lakes as spaces where nature, identity, history, and imagination intersect, thereby broadening the interpretative framework of Albanian physical geography.

5 Environmental and Economic Dimensions

Environmental Challenges

The monograph emphasizes that nearly half of Albania's glacial lakes are currently experiencing varying levels of environmental degradation. This deterioration stems from multiple interacting pressures, the most significant of which include:

- Pollution associated with tourism and agricultural practices, such as waste accumulation, uncontrolled pasture use, and disturbances caused by unregulated visitor activity.
- Infrastructure development, particularly the construction of roads and trails, which alters natural drainage patterns, disrupts fragile alpine habitats, and accelerates erosion processes.
- Impacts of climate change, most notably the gradual drying or seasonal reduction of water levels in several lake basins, a process linked to reduced snowfall, earlier snowmelt, and rising temperatures in high-mountain environments.

These pressures collectively threaten the ecological integrity, limnological balance, and long-term stability of many glacial lake systems. In response, the authors advocate firm legal and institutional measures aimed at safeguarding these unique natural features. They propose that Albania should grant formal Natural Monument status to the most vulnerable and significant glacial lakes, thereby integrating them into national conservation frameworks and ensuring that they benefit from monitoring, restoration, and sustainable management programs.

Economic and Developmental Potential

Despite the environmental challenges, the monograph highlights the considerable economic, educational, and developmental opportunities that glacial lakes offer to Albania. These include:

- Sustainable mountain tourism, which can draw visitors interested in alpine landscapes, hiking, photography, and pristine natural settings.

- Environmental education, providing outdoor classrooms that introduce students, researchers, and visitors to glacial geomorphology, biodiversity, and climate-change processes.
- Ecotourism and regional development, through the creation of local employment, promotion of traditional agro-pastoral activities, and encouragement of community-based tourism models that preserve cultural heritage while protecting nature.

To illustrate this potential, the authors compare Albania's situation with well-established European experiences. In countries such as Italy, Switzerland, and Austria, glacial lakes have been successfully incorporated into national park systems, eco-tourism itineraries, and long-term environmental management strategies. These examples demonstrate that, with proper planning and protection, glacial landscapes can coexist with thriving local economies.

A particular reference is made to Gran Paradiso National Park in Italy, which is presented as an exemplary model of integrated conservation, scientific monitoring, and sustainable tourism. The park demonstrates how protected high-mountain lakes can serve simultaneously as natural heritage sites, research locations, and engines of regional growth.

Drawing from these successful models, the authors argue persuasively that Albania should adopt a similar integrated approach. They envision the country's glacial lakes as potential "open-air laboratories" that can support scientific studies in climatology, ecology, hydrology, and geomorphology, while also fostering responsible tourism and contributing to the livelihoods of mountain communities. Through such strategies, glacial lakes could become key components of Albania's broader sustainable development agenda.

6 Cultural and Symbolic Dimensions

Beyond its scientific analyses and policy-oriented conclusions, the monograph conveys a deeply resonant cultural message. The glacial lakes are not treated solely as physical formations shaped by ancient ice, but as multilayered cultural artifacts that embody Albania's natural and spiritual heritage. Within this interpretive framework, the lakes emerge as:

- "Frozen memories" of Albania's natural history, silent witnesses to geological epochs, climatic shifts, and the enduring dialogue between landscape and time. They preserve, in their depths and contours, the narrative of a land shaped by ice, water, and the resilience of mountain ecosystems.
- Spiritual and symbolic landmarks woven into folklore, where local traditions, legends, and mythological figures find a setting infused with mystery and reverence. For many communities, these lakes have long been perceived as sacred spaces - thresholds between the visible and invisible worlds, resonating with stories of nymphs, guardian spirits, and ancestral presence.
- Aesthetic and philosophical sources of inspiration within mountain culture, nurturing a contemplative relationship between humans and nature. Their reflective surfaces, seasonal transformations, and serene isolation have influenced artistic expression, ethical worldviews, and the profound respect that highland societies maintain for their surrounding environment.

The treatment of the Lura lakes, in particular, introduces a reflective and almost poetic dimension to the monograph. Here, the lakes are portrayed not merely as ecological entities but as places where ecological harmony, cultural memory, and human sensibility converge. Their beauty becomes a medium for introspection, inviting the reader to consider the delicate balance between preservation and change, and the shared responsibility to protect landscapes that hold both natural and symbolic significance.

7 Conclusion

Glacial Lakes of Albania stands as a landmark contribution to Albanian geographical scholarship – a work that bridges scientific rigor, cultural insight, and forward-looking environmental policy. The monograph does far more than document a remarkable natural phenomenon; it constructs a multidimensional narrative in which physical geography, ecological concerns, traditional knowledge, and national identity intersect.

In its essence, the volume operates simultaneously as:

- a comprehensive scientific synthesis, offering the most detailed limnological, geomorphological, and environmental analysis ever conducted on Albania’s glacial lakes,
- an environmental alarm, calling attention to the fragility of these high-mountain ecosystems in the face of climate change, irresponsible land use, and anthropogenic pressures,
- a cultural testament, highlighting the symbolism, myths, traditions, and historical experiences that have grown around these lakes and shaped local memory and identity,
- and a strategic guide for sustainable development, providing evidence-based recommendations for planning, conservation, tourism management, and long-term ecosystem monitoring in Albania’s alpine regions.

By documenting and interpreting one of the country’s most distinctive natural heritages, the authors reaffirm that geography is not merely the science of landforms. It is also a discipline of memory, preserving the stories and knowledge that landscapes carry; a discipline of identity, revealing how nature helps define communities; and a discipline of responsibility, reminding us that the future of these lakes hinges on the choices we make today.

Through its meticulous research and multidisciplinary perspective, the monograph elevates the standards of Albanian scientific inquiry. It provides future generations – scholars, policymakers, local communities, and nature enthusiasts – with both a literal and symbolic map: a map for understanding the origins and dynamics of glacial lakes, a map for appreciating their ecological and cultural significance, and above all, a map for preserving and safeguarding Albania’s alpine environment for decades to come.

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Personalia

Biographical Notes

Ferjan Ormeling (1942–2025)[1)]

Peter Jordan, Hermagor / Wien*

mit 3 Abbildungen im Text



Abb. 1: Ferdinand Jan Ormeling, hauptsächlich bekannt als Ferjan Ormeling

Persönliche Erinnerungen

Als ich im Herbst 1986 unerwartet und sehr kurzfristig als Vertreter Österreichs bei der 12. Sitzung der Expertengruppe der Vereinten Nationen für Geographische Namen (United Nations Group of Experts

[1)] Geringfügig veränderte Fassung des Nachrufs in der Zeitschrift Kartographische Nachrichten, 75. Jg., 2025, Heft 3, publiziert mit freundlicher Genehmigung der Redaktion.

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on Geographical Names, UNGEGN) in Genf [Genève] einspringen musste, wurde ich von Josef BREU, dem Chefredakteur des Atlasses der Donauländer und bisherigem Vertreter Österreichs bei diesen Sitzungen, der auch mein Chef war, und dem Linguisten Otto BACK eingehend „gebrieft" und dabei besonders auf einen „jungen Mann" aufmerksam gemacht, der bei dieser Sitzung auch teilnehmen werde. Er werde erstmals als Vertreter der Niederlande fungieren, weil der bisherige niederländische Delegierte, Dirk BLOK, in der Nachfolge BREUS zum Vorsitzenden der UNGEGN gewählt worden war. Ich würde neben den sonstigen Mitgliedern der Niederländisch-Deutschsprachigen Gruppe (Dutch- and German-speaking Division, DGSD) in ihm einen guten Gesprächspartner finden.

Dem war dann auch tatsächlich so. Schon auf dem Weg zum Tagungsort im Völkerbund-Palast traf ich Ferjan ORMELING und wir waren uns von Anfang an sehr nahe. Ich hatte von BREU, der ihn bei seiner Dissertation beraten hatte, schon viel über ihn gehört und auch schon diese Dissertation über Minderheitennamen auf amtlichen Karten des im damaligen Sinn westlichen Europas, die 1983 als Buch erschienen war (ORMELING 1983), gelesen und mir – von diesem grundlegenden Werk inspiriert – vorgenommen, selbst Verbesserungsvorschläge zur Wiedergabe von Minderheitennamen in meinem Heimat-Bundesland Kärnten in amtlichen topographischen Karten zu entwickeln (JORDAN 1988).

Ferjan ORMELING wurde mit seinem Buch über Minderheitennamen aber nicht nur zu einem Wegweiser meiner wissenschaftlichen Tätigkeit. Er unterstützte später wohl auch meine Ernennung zum Vorsitzenden der ICA Commission on Atlasses im Jahr 2007 und von ICA-Seite neben dem damaligen (und heutigen) ICA-Präsidenten Georg GARTNER ganz wesentlich die Gründung einer Joint ICA/IGU Commission on Toponymy im Jahr 2011, die uns beiden ein großes Anliegen war und in deren Steering Board er bis 2024 verblieb. Im Jahr 2016 übergab er mir die Funktion des ICA Liaison Officers zur UNGEGN. Darüber hinaus waren wir durch sein Mitwirken an zahlreichen, auch kleineren kartographischen und toponymischen Symposien in aller Welt mit ihrer persönlichen und gemeinschaftsbildenden Atmosphäre in stetigem Austausch. Besonders in Erinnerung geblieben ist mir der Workshop der ICA Atlas Commission des Jahres 2010 in Yogyakarta, Indonesien, in welchem er als in diesem Land Aufgewachsener und dessen Sprache Sprechender natürlich eine zentrale Rolle spielte (Abb. 2).

Leben

Sohn eines prominenten Geographen und Kartographen, Ferdinand Jan ORMELING senior, der Generalsekretär und Präsident der ICA war, und von Ina TEN HOOPEN, auch einer Geographin, zu sein, bedeutete sicherlich einen Startvorteil, wenn man selbst eine ähnliche berufliche Laufbahn einschlägt. Es bedeutete aber auch, dass Ferjan zunächst (nur) der „junge Ormeling" war und erst schrittweise aus dem Schatten seines Vaters treten konnte – beginnend mit der Berufung zum Professor an der Universität Utrecht im Jahr 1985 und wohl endgültig, als er 1991 zum Convenor der UNGEGN Working Group on Toponymic Training bestellt wurde.

Ein zweites wesentliches Merkmal seiner Persönlichkeit war seine, sogar niederländische Maßstäbe übertreffende Welt- und Sprachgewandtheit. Im Kriegsjahr 1942 in Utrecht in den Niederlanden geboren, zog er mit den Eltern im Jahr 1948 in das damalige Niederländisch-Ostindien, das heutige Indonesien. Dort wuchs er auf Java auf und ging bis 1955 zur Schule. Er war damit auch der Sprache dieses Landes mächtig – so wie er auch etliche andere Sprachen, darunter auch das Deutsche, sehr gut beherrschte.

Mit diesen Voraussetzungen und mit dem wissenschaftlichen Ausweis zweier vielbeachteter Bücher – neben dem schon erwähnten über Minderheitennamen auch der 1985 erschienenen niederländischen Erstfassung eines gemeinsam mit Menno-Jan KRAAK verfassten Lehrbuchs der Kartographie (ORMELING et al. 1985; ORMELING und KRAAK 2020) – wurde er Professor für Kartographie an



Abb. 2: Ferjan Ormeling (rechts) und Peter Jordan (links) mit den Gastgeberinnen der Gadjah-Mada-Universität beim Atlas-Workshop in Yogyakarta im Jahr 2010.

der Universität Utrecht mit Forschungsfeldern von der Atlaskartographie über Toponymie, Datenqualität, kartographische Ausbildung, kartographische Visualisierung, kartographische Infrastruktur, Karten in den Medien bis hin zur Geschichte der Kartographie. Von seiner Lehrtätigkeit hörte man, dass er vor allem im kleineren Kreis, also etwa in Seminaren, mitreißend sein konnte.

Er leistete auch wesentliche Beiträge zum Atlas der Niederlande und engagierte sich in wissenschaftlichen Vereinigungen, indem er dort maßgebliche Positionen einnahm – so in der Internationalen Kartographischen Vereinigung (International Cartographic Association, ICA) als Vorsitzender der Kommission für allgemeine und berufliche Bildung von 1987 bis 1999 und als Generalsekretär und Schatzmeister von 1999 bis 2007 sowie in der UNGEGN als Convenor der Working Group on Toponymic Training von 1991 bis 2016, als ICA Liaison Officer von 1986 bis 2016 und schließlich als UNGEGN Vice-Chair von 2012 bis 2017.

Der Atlaskartograph

Wie schon sein Vater wirkte Ferjan auch im Verlag Wolters-Noordhoff an der Entwicklung von Atlanten mit. Seine besondere Bedeutung für die Atlaskartographie besteht aber in der Erkundung und wissenschaftlichen Beschreibung der Atlasnutzung, besonders von elektronischen Atlanten, im Ausarbeiten der theoretischen Grundlagen eines Nationalatlas-Informationssystems (NAIS) und im Betonen der Bedeutung von Nationalatlanten für die nationale Identität.

Die Summe seiner Erkenntnisse über die Atlasnutzung hat er im gemeinsam mit Corné van Elzakker verfassten entsprechenden Kapitel im Atlas Cookbook zusammengefasst, das 2023 von

der ICA Atlas Commission herausgegeben wurde (ICA Atlas Commission 2023). Gemeinsam mit Corné VAN ELZAKKER, Barend KÖBBEN, Olev KOOP und Menno-Jan KRAAK entwickelte er Überlegungen zu einem NAIS, insbesondere auch dazu, wie ein solches System in die jeweilige nationale Geodateninfrastruktur zu integrieren wäre, damit es als Portal dafür genutzt werden könne. Sie lieferten dazu frühe Definitionen statischer, interaktiver und analytischer elektronischer Atlanten sowie von Atlas-Informationssystemen (siehe u. a. ORMELING 1995).

In Nationalatlanten sah Ferjan ORMELING nicht nur Informationsmittel, sondern auch eine Art von Selbstdarstellungen eines Landes – so wie sich ein Land selbst sieht und von außen wahrgenommen werden möchte. Nationalatlanten würden daher das für einen Staat Symbolhafte, Identitätsstiftende hervorkehren und so eine Bedeutung gewinnen, die über die eigentliche Informationsweitergabe hinausgeht. Dies wäre im Laufe der jüngeren Geschichte immer wieder deutlich geworden, als Nationalatlanten besonders auch zur Festigung junger Eigenstaatlichkeit veröffentlicht wurden (siehe u. a. ORMELING 2009).

Der Toponomast

Die Aktivitäten von Ferjan ORMELING auf dem Gebiet der Toponomastik begannen mit seiner 1983 veröffentlichten Doktorarbeit über die Darstellung von Minderheitentoponymen auf amtlichen topographischen Karten im westlichen Europa (ORMELING 1983), in der er Gründe für die gleichgewichtige Berücksichtigung von Minderheitennamen nennt, diese als sehr berechtigt ansieht und dieses Ideal mit der Realität in amtlichen topographischen Karten vergleicht.

Diese Studie über ein politisch heikles Thema bestimmte auch seine frühen Jahre als UNGEGN-Experte. Er befürwortete die amtliche Verwendung von Minderheiten-Toponymen zu einer Zeit, als die Standardisierungsregel „ein Name für ein Objekt“ noch großes Gewicht hatte (obwohl schon 1967 mehrsprachigen Ländern und Gebieten zugestanden worden war, Namen in mehr als einer Sprache für amtlich zu erklären) und die Förderung von Minderheiten-Toponymen als Teil der nationalen Standardisierung Reaktionen hervorrief wie ein Beschwören der Gefahr „[durch das Streben nach diesem Ziel] das gesamte Gebäude der nationalen Standardisierung zu gefährden“ (12. UNGEGN-Sitzung 1986, siehe UNGEGN 2025). Es dürfte für ihn eine große Genugtuung gewesen sein, zu erleben, dass seine Ansichten mittlerweile zum Paradigma geworden waren, dass viele Länder Programme zur Standardisierung und Dokumentation von Minderheiten-Toponymen durchführen und dass in der 9. UN-Konferenz zur Standardisierung geographischer Namen (2007) besonders betont wurde, dass geographische Namen aller Art, eben auch Minderheitennamen, Teil des kulturellen Erbes sind und daher dokumentiert und in Gebrauch gehalten werden sollen.

So sehr wir beide in Bezug auf Minderheitennamen übereinstimmten und an einem Strang zogen, so unterschiedlich waren unsere Ansichten in der Frage der Verwendung von Exonymen. In dieser Hinsicht hielt er an den UN-Resolutionen der 1970er und 1980er Jahre fest, die eine Reduktion des Exonymengebrauchs forderten (UNGEGN 2025).

Seine Aktivitäten in der UNGEGN beschränkten sich aber nicht auf diese Themen. Ein weiteres wichtiges Anliegen war Ferjan die toponymische Bildung und Ausbildung. Als Convenor der UNGEGN Working Group on Training Courses in Toponymy von 1991 bis 2016 organisierte er fast jährlich Trainingskurse, vorwiegend im Globalen Süden, bei denen er sich selbst auch als Lehrender einbrachte. Als die Niederlande den Vorsitz der Dutch- and German-speaking Division (DGSD) der UNGEGN innehatten, organisierte er in Leeuwarden/Ljouwert, dem Zentrum der zweisprachigen niederländischen Provinz Friesland/Fryslân, das äußerst fruchtbare GeoNames-Symposium 2005, das sich den Namen von Minderheiten und indigenen Gruppen widmete.

Neben seiner Tätigkeit in der UNGEGN publizierte er weiterhin zu toponymischen Themen wie zu Exonymen in niederländischer Sprache (1996) oder wirkte am Projekt EuroGeoNames mit.

Internationale Auszeichnungen

Außer durch seinen Aufstieg zu hohen wissenschaftlichen Funktionen (UNGEGN Vice-Chair, ICA-Generalsekretär) erfuhr sein wissenschaftliches Wirken auch durch Auszeichnungen die entsprechende Anerkennung. Im Jahre 2009 wurde ihm von der ICA die Carl-Mannerfeldt-Goldmedaille verliehen, die höchste Auszeichnung, die diese Organisation zu vergeben hat. Im Jahr 2013 wurde er Ehrendoktor der Eötvös-Loránd-Universität Budapest, 2015 Ehrendoktor der Aristoteles-Universität Saloniki [Thessaloniki]. Am Ende der 11. und letzten United Nations Conference on the Standardization of Geographical Names des Jahres 2017 in New York, zu deren Präsident er gewählt worden war, erhielt er in Anerkennung seiner Verdienste um die Standardisierung geographischer Namen das Certificate of Commendation. Am 24. Juni 2022 wurde ihm in Berlin vom Vorsitzenden der Deutschen Gesellschaft für Kartographie die Mercator-Medaille in Gold für besondere Verdienste um die Kartographie verliehen.

Schluss

Als ich Ferjan Ormeling im Jahr 2022 einlud, das Kapitel über die Niederlande zum Projekt eines Handbuchs der Minderheitennamen-Regelungen in Europa beizutragen, musste er leider wegen seiner damals schon fortgeschrittenen Sehschwäche absagen. Diese hinderte ihn auch daran zu reisen



Abb. 3: Ferjan Ormeling (rechts) beim von der Joint ICA/IGU Commission on Toponymy 2019 im Bundesamt für Eich- und Vermessungswesen (BEV) veranstalten Symposion „Place Names and Migration“. Links von ihm Isolde Hausner (ÖAW), Helen Kerfoot (Kanada) und Regina Falkensteiner (Bundesamt für Eich- und Vermessungswesen), dahinter Bogusław Zagórski (Polen) und der mittlerweile ebenfalls verstorbene Ojārs Buss (Lettland).

und Konferenzen zu besuchen, sodass er auch an der Internationalen Kartographischen Konferenz des Jahres 2023 in Kapstadt [Cape Town] nicht mehr teilnahm.

An sein Wirken und Werk wird aber wohl auch noch in vielen Konferenzen und UNGEGN-Sitzungen erinnert werden, denn selten hat ein Wissenschaftler sein Fach jahrzehntelang so geprägt. Im Bereich der geographischen Namen von Minderheiten und indigenen Gruppen hat er die Toponomastik zu neuen Horizonten geführt, ebenso die Atlaskartographie in Bezug auf Atlasnutzung. Mit Österreich war er durch die Teilnahme an vielen kartographischen und toponomastischen Tagungen (Abb. 3) und gute Bekannte eng verbunden. Viele Weggefährten, darunter auch ich, werden sein einnehmendes und verständnisvolles Wesen schmerzlich vermissen.

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Bildung als Ermächtigung und gesellschaftliche Verpflichtung. Zum Vermächtnis von Christian Vielhaber (1948–2025)

Heidrun Edlinger und Karin Dobler-Kreibich, Wien*

mit 1 Abbildung im Text

Mit Christian Vielhaber (geboren am 1. Juni 1948; verstorben am 2. Mai 2025 in Wien) haben wir nicht nur einen herausragenden Fachdidaktiker, engagierten Wissenschaftler und leidenschaftlichen Lehrer verloren, sondern einen visionären Menschen, dessen pädagogisches Credo Generationen von Schülerinnen und Schülern, Studierenden, Lehrpersonen und Kolleg/inn/en geprägt hat. Christians Wirken war kein starres Lehrprogramm, sondern eine gelebte und wertschätzende Haltung, tief im Menschlichen, Gesellschaftlichen und Politischen verankert. Sein Ansatz bleibt wegweisend für alle, die Schule als Raum demokratischer Bildung und gesellschaftlicher Erneuerung verstehen.



Christian Vielhaber (Foto: © Familie Vielhaber)

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Schon früh setzte Christian darauf, das Lernen radikal vom Kind aus zu denken. Es war seine Überzeugung, dass jedem Kind und jeder/jedem Jugendlichen auf Augenhöhe begegnet werden muss – nicht als „Objekt" von Belehrung, sondern als aktive/r, ernstzunehmende/r Gestalter/in unseres Zusammenlebens. Schule, so Christian, muss Raum für Selbstwirksamkeit bieten und junge Menschen nicht anpassen, sondern stark machen.

Christian verstand Bildung immer als ein gesellschaftspolitisches Projekt. Seine zentrale Forderung: Strukturen gesellschaftlicher Ungleichheiten sowie sowie Raum- und Machtverhältnisse sichtbar, analysierbar und damit veränderbar machen. Er forderte auf, auch scheinbar Unveränderbares zu hinterfragen und zu widersprechen. „Das war schon immer so", ließ er nicht als Argument gelten. Christians Ecken und Kanten bestimmten seine Haltung und verhinderten Zugeständnisse auf Kosten der Prinzipien.

Fachdidaktik sah Christian als Sozialwissenschaft im besten Sinne. Soziologische, politikwissenschaftliche und ökonomische Perspektiven legten die Grundsteine seiner didaktischen Herangehensweise – und ermutigten zur kritischen Reflexion der eigenen Haltungen, Methoden und Ziele. Es war ihm dabei stets ein Anliegen, Theorie und Praxis konsequent zusammenzuführen: Begründete didaktische Überlegungen mussten im schulischen Alltag Bestand haben.

In der Ausbildung von Lehramtsstudierenden motivierte Christian mit teils provokanter Dialektik zu eigenständigem Nachdenken, zur Entwicklung eigener Ideen, zu Mut und Innovationsbereitschaft. Für ihn standen nicht Routinen im Mittelpunkt, sondern der Anspruch, Unterrichtshandeln stets neu zu begründen – kritisch, forschend und mit Blick auf gesellschaftliche Relevanz.

Sein Wirken war geprägt von Partizipation und Kooperation und so verstand er auch Lernen als ein gemeinsames, dialogisches Unterfangen. Christian war in seiner Rolle als Fachdidaktiker vor allem ein fordernder Impulsgeber für Schule und Gesellschaft: Mit analytischer Schärfe benannte er Missstände, machte sich für Bildungsreformen stark und begleitete nachfolgende Generationen kritisch und unterstützend. Besonders die Verbindung von Forschung und Praxis, die Einbindung junger Kolleginnen und Kollegen und die Forderung nach einer selbstbewussten, sozialwissenschaftlich fundierten Fachdidaktik bleiben sein Vermächtnis.

Erinnerungen und Reflexionen von Christians Wegbegleiterinnen und Wegbegleitern (siehe dazu GW-Unterricht, Nr. 178, Heft 2/2025) zeigen beeindruckend viele gleichgerichtete Motive:

- Lernen ist von den Kindern und Jugendlichen aus zu denken – mit Respekt, Zutrauen und dem Recht auf Partizipation.
- Gesellschaft verstehen heißt auch, sie verändern zu wollen – das Unterrichtsfach Geographie und wirtschaftliche Bildung (GWB) als emanzipatorisches Projekt für Demokratie und Gerechtigkeit.
- Kritisches Denken, forschendes Lernen und kontroverse Debatten sind Bedingungen für lebendige Bildung.
- Theorie und Praxis gehören untrennbar für begründete Lehr- und Lernprozesse zusammen.
- Die Fachdidaktik „Geographie und wirtschaftliche Bildung" versteht sich als gesellschaftlich verantwortliches, sozialwissenschaftlich fundiertes Handlungsfeld – mit Mut zu Innovation, Widerspruch und Experiment.

Mit Christians Tod verliert die deutschsprachige Bildungslandschaft einen inspirierenden Visionär für eine zukunftsfähige, demokratische und verantwortungsbewusste Fachdidaktik „Geographie und wirtschaftliche Bildung".

Was bleibt, könnte als „Vielhaber-Paradigma für die Lehrer/innen-Bildung“ definiert werden: Schüler/innenzentrierter Fokus, Mut und zugleich Verpflichtung zur Analyse gesellschaftlicher Verhältnisse, ein ständiges (In)Fragestellen – und das Vertrauen darauf, dass Lernen immer auch das Leben und die Gesellschaft gerechter machen kann.

Wir sind dir dankbar, Christian. Dein Credo bleibt unser Auftrag: Der Unterricht im Fach „Geographie und wirtschaftliche Bildung“ soll nicht nur Wissen vermitteln, sondern Menschen befähigen, Gesellschaft zu verstehen und sie aktiv mitzugestalten. Christian fehlt, doch sein pädagogischer Geist lebt fort – getragen durch die Spuren, die er bei seinen Studierenden und in seinen Publikationen hinterlassen hat – im Nachdenken, im Widerspruch, in den kleinen und großen Momenten schulischer Demokratie.

Wer Geographie und wirtschaftliche Bildung ernst nimmt, kann sich dem nicht entziehen!

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Wolfgang Sitte zum 100. Geburtstag

Wegbereiter und Initiator des Paradigmenwechsels von der Schulländerkunde zu „Geographie und Wirtschaftskunde“

Maria Hofmann-Schneller und Christian Sitte, Wien*

mit 1 Abbildung im Text

Herr Oberstudienrat Mag. Dr. h.c. Wolfgang Sitte wäre am 12. Dezember 2025 hundert Jahre alt geworden. Er war ein einflussreicher österreichischer Fachdidaktiker und Reformer des Schulfachs „Geographie und Wirtschaftskunde“ (GW) und gilt als eine der bedeutendsten Personen in der Entwicklung der modernen Geographiedidaktik in Österreich – ein wichtiger Anlass, jene Meilensteine zu betrachten, die er für den Geographie- und Wirtschaftskundeunterricht errichten konnte und die bis heute prägend sind.



Wolfgang Sitte (1925–2006) (Foto: Ch. Sitte)

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Dieser Nachruf soll keine detaillierte Schilderung seines wissenschaftlichen und fachdidaktischen Wirkens sein; dies geschah schon in vielen Würdigungen und Publikationen. Wir wollen vielmehr in Erinnerung rufen, wie es ihm gelungen ist, den Paradigmenwechsel von der „klassischen" Schulländerkunde zu einem Fach, das Geographie und Wirtschaftskunde (heute Geographie und Wirtschaftliche Bildung) integrativ verbindet und aufbauend, themenzentriert sowie ziel- und handlungsorientiert ausgerichtet ist, zu vollziehen und eventuell daraus für heutige Weiterentwicklungsprozesse Schlüsse ziehen.

Vielleicht stellen sich Leserinnen und Leser die Frage, warum die folgende kurze Darstellung der historischen Entwicklung für die aktuelle Situation des Unterrichtsfachs von Bedeutung ist. Kurz gesagt: weil diese Integration von vielen Ökonominnen und Ökonomen, politischen Parteien und Lobbyisten wieder einmal und mit Vehemenz in Frage gestellt wird.

Wie erreicht man einen Paradigmenwechsel und sichert ihn langfristig ab?

1) Ohne Lehrplanreform kein integratives Fach GW

Durch das Schulorganisationsgesetz 1962 wurde das bisherige Fach Geographie (Erdkunde) mit wirtschaftlichen Lehrinhalten ergänzt und erhielt den Namen „Geographie und Wirtschaftskunde". Der neue Name war ein Signal an die Kolleginnen und Kollegen in den Hauptschulen und allgemeinbildenden höheren Schulen, der Wirtschaft innerhalb des nun umbenannten Fachs Platz einzuräumen, allerdings unter Beibehaltung eines weiterhin länderkundlichen Unterrichts. Dies geschah oft in willkürlicher und additiver Form. Die Lehrpläne mussten also neugestaltet werden.

Im Rahmen dieser Neugestaltung der Lehrpläne, zunächst nur für die Sekundarstufe I, konnte Wolfgang Sitte – ein unermüdlicher Netzwerker – gemeinsam mit Vertretern der Ministerial- und Schulbürokratie (Sektionschef Leitner, Ministerialrat Kutschera, Stadtschulrat-Präsident Schnell u. a.), der Pädagogischen Akademien (W. Antoni, J. Leitinger) und einigen Kollegen an den Universitäten sowie Vertreter/innen der Sozialpartner (I. Geldner) seine Ideen einer inhaltlichen und didaktischen Umgestaltung des Schulfachs in ein integriertes, lernzielorientiertes und thematisch ausgerichtetes Fach, weg vom „klassischen", primär deskriptiven länderkundlichen Konzept, entwickeln.

Diese Arbeit mündete in der Lehrplanreform von 1985. Das zentrale Prinzip des neuen Lehrplans, das damals für eine tragfähigere Integration der beiden Säulen des Schulfachs, „Geographie" und „Wirtschaftskunde" entwickelt wurde und bis heute ein zentraler Bestandteil aller Lehrpläne ist, lautete: „Im Mittelpunkt des Unterrichtsfachs steht der Mensch in den beiden miteinander verflochtenen Bereichen Geographie und Wirtschaft". In diesem Sinn definierte sich das Unterrichtsfach nun im Rahmen eines grundlegenden Paradigmenwechsels als schulisches Zentrierungsfach im Beziehungsdreieck „Raum (Natur, Umwelt) – Gesellschaft – Wirtschaft".

2) Jeder Paradigmenwechsel muss publizistisch begleitet werden

Wolfgang Sitte nützte jede Gelegenheit, die Intentionen des neuen Unterrichtsfachs einer breiteren Öffentlichkeit, vor allem den Lehrerinnen und Lehrern, vorzustellen. Aus der Vielzahl der Publikationen, bei denen er mitwirkte, seien seine Beiträge in der Lehrerfortbildungszeitschrift „Wissenschaftliche Nachrichten", in den „Mitteilungen der Österreichischen Geographischen Gesellschaft", in der Zeitschrift „Erziehung und Unterricht" und seine didaktisch-methodischen Beiträge in dem von Horst Knapp verfassten „Wirtschaftstelegramm" hervorgehoben.

Im Jahr 1975 wurde mit der von Wolfgang Sitte gemeinsam mit Helmut Wohlschlägl herausgegebenen Publikation „Schulgeographie im Wandel. Beiträge zur Neugestaltung des Geographie-

unterrichts in Österreich“ der erste Etappenschritt und eine wesentliche Initialzündung auf dem Weg zu einem inhaltlich und didaktisch neu orientierten Unterrichtsfach GW, weg vom länderkundlichen Schema und hin zu einem zeitgemäßen themenorientierten Unterricht, veröffentlicht. Das Buch war das Ergebnis zweier fachdidaktischer Seminare am Geographischen Institut der Universität Wien. Viele der an diesem Vorhaben Beteiligten haben in ihrer schulischen und universitären Berufslaufbahn die Intentionen der konzeptionellen und didaktischen Neuorientierung des Schulfachs weitergetragen; auch das ein wichtiges Bestreben von Wolfgang Sitte.

Das zentrale Medium wurde jedoch die Zeitschrift „GW-Unterricht“. Gemeinsam mit dem Sponsor Zentralsparkasse der Gemeinde Wien (später Bank Austria) gelang es ab 1978, in periodisch erscheinenden Heften fachliche und fachdidaktische Beiträge für die Sekundarstufe I und II zu publizieren, die den Lehrerinnen und Lehrern bei der Gestaltung ihres Unterrichts wertvolle Hilfe leisteten. Ein Zeitschriftenspiegel ergänzte jedes Heft. In dem zu seinem 60. Geburtstag gewidmeten Sonderheft von GW-Unterricht (Nummer 23, 1986) veröffentlichten alle Kolleginnen und Kollegen, die die Reform mittrugen, ihre Beiträge. Es war eine „Bestandsaufnahme“ des Wandels. Bis zur Ausgabe 103 von „GW-Unterricht“ konnte Wolfgang Sitte auch persönlich in vielen Beiträgen seine Vorschläge für GW einbringen.

Wolfgang Sittes fachdidaktische Verlassenschaft aber ist das (2001 ebenfalls gemeinsam mit Helmut Wohlschlägl herausgegebene und in Zusammenarbeit mit vielen engagierten Mitstreiterinnen und Mitstreitern gestaltete) Handbuch „Beiträge zur Didaktik des ‚Geographie und Wirtschaftskunde‘-Unterrichts“, das zu einem Standardwerk für die GW-Didaktik in Österreich wurde. Es ist in einer virtuellen Ausgabe noch immer abrufbar. Das Handbuch wurde zu einer wichtigen Publikation für die Aus- und Fortbildung und gibt Auskunft über den einmaligen österreichischen Weg eines integrativen Faches.

3) Nur eine adäquate Aus- und Fortbildung verspricht eine lehrplangemäße Umsetzung des neuen Unterrichtsfachs

Wolfgang Sitte erkannte die Bedeutung einer entsprechenden fachdidaktische Ausbildung an Universitäten und Pädagogischen Akademien, die er ad personam und gemeinsam mit wenigen Mitstreitern sowohl an der Pädagogischen Akademie als auch an der Universität Wien in Angriff nahm. Für die Universität Wien geschah dies im Rahmen der Lehrveranstaltung „Besondere Unterrichtslehre“, deren Intention vor allem darin lag, die Studierenden mit neuen fachdidaktischen und methodischen Inhalten und Tools bekannt zu machen und sie zu befähigen, ihren Unterricht auch begründen zu können. Von dieser „Homebase Wien“ wirkte er auch bis nach Salzburg und Klagenfurt, wo er bei der Gründung der Fachdidaktik am Institut beratend tätig war.

Eine größere Breitenwirkung erreichte Wolfgang Sitte gemeinsam mit den oben bereits genannten Kollegen W. Antoni und J. Leitinger im Bereich der Ausbildung für Pflichtschullehrerinnen und Pflichtschullehrer. Die große Wirksamkeit dieser Ausbildung lag sicherlich auch in der Tatsache, dass fast alle Lehrkräfte an den Pädagogischen Akademien eigene Praxiserfahrungen in der Hauptschule (bzw. in der Sekundarstufe I der allgemeinbildenden höheren Schulen) hatten und so ihre Verbindung zwischen Theorie und Praxis für die Lehrerinnen und Lehrer authentisch war.

Eine gute Ausbildung der Studierenden war wichtig, man musste jedoch die bereits im Unterricht stehenden Kolleginnen und Kollegen für das neue Fach gewinnen. Drei Initiativen von Wolfgang Sitte sollen hier besonders hervorgehoben werden:

a) Die Etablierung der „Wirtschaftskundlichen Kompaktseminare“ ab den 1970er Jahren, gesponsert von der Zentralsparkasse (später Bank Austria), in denen bei ein- und mehrtätigen Veranstaltungen wirtschaftliche Fragestellungen mit Kolleginnen und Kollegen aus dem Bereich der Sekundarstufe 1 (jeweils Hauptschule und AHS) erörtert und methodische Umsetzungsmög-

lichkeiten erarbeitet wurden. Um die Breitenwirkung zu erhöhen, konnten diese Unterrichtsvorschläge in der Zeitschrift „GW-kompakt“ allen Lehrenden zur Verfügung gestellt werden. Vorschläge von Lehrenden für Lehrende – eine Idee Wolfgang Sittes – fanden viele, ehemals skeptische Nachahmerinnen und Nachahmer überlegenswert.

b) Die alljährliche Plenumstagung der Fachdidaktikerinnen und Fachdidaktiker am Haimingerberg in Tirol (ab 1994), die gemeinsam mit dem Innsbrucker Fachdidaktiker Andreas Erhard ausgerichtet wurde, ermöglichte einen österreichweiten Austausch von fachlichen und fachdidaktischen Ideen in Bezug auf das neue integrative Fach „Geographie und Wirtschaftskunde“ (GW). Neben der persönlichen Begegnung, die Sitte immer als besonders wichtig empfand, konnte fast ein Österreich-Konsens in Bezug auf die Umsetzung von GW in den Unterricht und die fachdidaktischen Ziele der Ausbildung erreicht werden.
c) Wolfgang Sittes Aufgeschlossenheit gegenüber neuen Strömungen zeigte sich auch, als er die bis heute wirkenden Seminare zur Einbindung der IKT und Geoinformatik in den GW-Unterricht in Salzburg gemeinsam mit dem Fachdidaktiker Alfons Koller und Prof. Josef Strobl von der Universität Salzburg initiierte.

4) Der Blick über den österreichischen „Tellerrand“

Wolfgang Sitte war es immer wichtig, die fachdidaktischen Strömungen im benachbarten Ausland (vor allem in Deutschland) zu beobachten. So wie er selbst in den 1960er Jahren und auch danach viele Anregungen aufnahm, präsentierte er in zahllosen Vorträgen im In- und Ausland (z. B. bei seiner Teilnahme bei EUROGEO, beim „Mitteleuropäischen Geographiedidaktik-Symposium“, bei deutschen und österreichischen Geographentagen) die Vorstellungen von einer theoriegestützten curricularen Weiterentwicklung des Faches „Geographie und Wirtschaftskunde“. Dem Widerstand der Vertreterinnen und Vertreter der traditionellen Geographie (dem länderkundlichen Paradigma verpflichtet) konnte er rhetorisch eindrucksvoll und mit überzeugenden Praxisbeispielen begegnen.

5) Schulbücher als „heimlicher Lehrplan“

Wolfgang Sitte war bewusst, dass viele Kolleginnen und Kollegen nicht so sehr den Lehrplan studierten, sondern sich auf dessen Umsetzung in den Lehrbüchern verließen. Er versuchte daher, auch dieses Medium für die Etablierung des neuen Unterrichtsfachs einzusetzen. Drei Initiativen für dieses Vorhaben seien hervorgehoben:

a) Die Mitarbeit an dem Schulbuch „Materialien zur Politischen Weltkunde“ für den neuen, damals in der Maturaklasse eingeführten Integrationsgegenstand „Politische Weltkunde“, bei dem er die Kapitel zur Bevölkerung und zur Dritten Welt verfasst hat. Für damalige Verhältnisse war die Idee, ein Oberstufen-Schulbuch fast ausschließlich mit Originaltexten als Arbeitsbuch zu verfassen, fast „revolutionär“ und wurde vor allem von den traditionell denkenden Geographinnen und Geographen stark abgelehnt.
b) Die Autorenschaft gemeinsam mit M. Seger und später W. Malcik für den Österreichband (7. Klasse, 11. Schulstufe) des GW-Schulbuchs „Raum – Gesellschaft – Wirtschaft“ (Sekundarstufe II). Für die 8. Klasse zeigte er eine konkrete Umsetzung des von ihm für den Lehrplan der Sekundarstufe II (1989) geforderten Lehrplanteils „Wahrnehmung von Völkern und Staaten“.
c) Eine neue Schulbuchreihe „Leben und Wirtschaften“ für die Sekundarstufe I. Dieses Vorhaben war der Versuch, eine möglichst perfekte Umsetzung all seiner fachlichen und fachdidaktischen Vorstellungen in einem integrativen, altersadäquaten und modernen GW-Buch zu veröffentlichen. Ein so radikaler Bruch mit bisher „Gewohntem“ war jedoch vielen Kolleginnen und Kollegen zu weitgehend – der Erfolg am Schulbuchmarkt blieb überschaubar.

Warum wird der Paradigmenwechsel noch immer oder schon wieder in Frage gestellt?

Mehr als 60 Jahre nach der Umbenennung des Unterrichtsfaches „Geographie" in „Geographie und Wirtschaftskunde" (ab 2023 „Geographie und Wirtschaftliche Bildung") wird dieses integrative Fach wieder von vielen in Frage gestellt. Welche Initiativen von Wolfgang Sitte wurden vernachlässigt oder haben ihre Bedeutung verloren?

Wolfgang Sitte war es immer bewusst, dass Veränderungen im gesellschaftlichen, ökonomischen, technologischen und fachdidaktischen Bereich aufgegriffen, überprüft und sinnvoll in das Fach integriert werden müssen. Viele seiner „Meilensteine" wurden fortgeführt und manchmal sogar intensiviert:

Wir denken da vor allem an die Gründung der neuen Fachgruppe für „Geographische und Sozioökonomische Bildung" (GESÖB) durch Christian Fridrich im Rahmen der Österreichischen Geographischen Gesellschaft (ÖGG), an das mit finanzieller Unterstützung der Arbeiterkammer und der Oesterreichischen Nationalbank etablierte Projekt „INSERT.schule.at", mit dem bisher über hundert Lehr- und Lern-Arrangements für die Sekundarstufe I und II entwickelt und auf einer Website veröffentlicht wurden. Durch die Weiterentwicklung in Richtung Digitalisierung im Rahmen des Projekts digiSERT und die Einbeziehung der Grundschule in die sozioökonomische Bildung soll der Adressatenkreis für Geographie und Wirtschaftliche Bildung erweitert werden.

In zahlreichen analogen und digitalen Lernkursen, im Zuge der Fortführung der Zeitschrift „GW-Unterricht", durch neue kompetenzorientierte Lehrpläne für die Sekundarstufe I und II, durch die aktive Mitarbeit von Fachdidaktikerinnen und Fachdidaktikern an der nationalen Finanzbildungsstrategie und vieles mehr wird versucht, den Lehrkräften die Umsetzung zu erleichtern und das Fach in der Bildungslandschaft gefestigt zu positionieren. Und doch … …

Wurde die Auseinandersetzung früher mit traditionellen Anhängerinnen und Anhängern der Länderkunde (oder zumindest traditioneller geographischer Inhalte) geführt, erleben wir gegenwärtig die permanenten populistischen Angriffe mancher Ökonominnen und Ökonomen, Banken, Wirtschaftsverbände und politischer Parteien, die lautstark ein eigenes Fach Wirtschaft fordern. Ignoriert wird dabei, dass eine fachliche Zersplitterung von Lernbereichen einem ganzheitlich-lebensweltlichen Bildungsziel widerspricht (auch wenn dann im Lehrplan das Wort „fächerübergreifend" steht). Die Reformer von 1962 haben diesen elementaren pädagogischen Ansatz für die allgemeinbildenden Schule noch berücksichtigt.

Es gibt viele Gründe für die aktuelle Schwächung der Position unseres Unterrichtsfachs. Sie liegen in einer stark veränderten gesellschaftlichen, ökonomischen und medialen Welt und auch in veränderten Interessen der Jugendlichen. Der Blick auf Wolfgang Sittes Wirken für das Integrationsfach „Geographie und Wirtschaftskunde" (GW) lässt jedoch eine andere Schwachstelle der Gegenwart erkennen: Ohne selbstbewusste, gut informierte und vor allem engagierte Lehrerinnen und Lehrer, die im Unterricht die Integration von „G" und „W" tagtäglich erlebbar machen, werden wir diese Auseinandersetzung verlieren.

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Siehe auch das ausführliche Stichwort zu Wolfgang Sitte in Wikipedia: *https://de.wikipedia.org/wiki/Wolfgang_Sitte.*

Mitteilungen der Österreichischen Geographischen Gesellschaft, 167. Jg., S. 417–456
(Annals of the Austrian Geographical Society, Vol. 167, pp. 417–456)
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Buchbesprechungen

Book Reviews

Barisitz Stephan (2023): Zentralasien und die Seidenstraße: Wirtschaftlicher Aufschwung und Niedergang über mehrere Jahrtausende. Cham: Springer Gabler, 1. Aufl., XV + 310 S., 25 Schwarz-Weiß-Abb. (durchwegs Karten), 2 Tab., 14 Textboxen, ISBN 978-3-031-23074-5 (Print), ISBN 978-3-031-23075-2 (eBook).

Stephan Barisitz legt mit diesem großformatigen Werk (Abmessungen 21,5 x 2,4 x 28,5 cm) das Ergebnis langjähriger Studien auch in deutscher Sprache vor. Es handelt sich um die Übersetzung seines 2017 im Verlag Springer International erschienenen Buches „Central Asia and the Silk Road. Economic Rise and Decline over Several Millennia".[1)] Das Buch entstand parallel zu Barisitz' Tätigkeit als Ökonom in verschiedenen wissenschaftlichen Institutionen. Er arbeitete ab 1986 im Wiener Institut für Internationale Wirtschaftsvergleiche (WIIW), ab 1992 im Österreichischen Ost- und Südosteuropa-Institut, ab 1995 im „Economics Department" der OECD in Paris und ab 1998 in der „Foreign Research Division" der Oesterreichischen Nationalbank. In allen diesen Funktionen lag der Schwerpunkt seiner Analysen und Forschungen auf Osteuropa und zunehmend auch auf Zentralasien. Über die englische Version des Buches ist bereits Band 159 (2017) der Mitteilungen der Österreichischen Geographischen Gesellschaft auf S. 416–419 eine Rezension von Franz Greif, einem ausgewiesenen Kenner Zentralasiens, der die wesentlichen Inhalte treffend zusammengefasst hat, veröffentlicht worden. Auf diese Rezension sei hier ausdrücklich verwiesen. Zum Inhalt des Buches mögen daher die nachstehenden kurzen Hinweise genügen.

Das Buch umfasst nach einem Einleitungskapitel zur Begriffsabgrenzung von Zentralasien und der Seidenstraße drei große Abschnitte: Kapitel 2: „Von den Anfängen bis zum Entstehen der Seidenstraße" (bis ca. 350 n. Chr.); Kapitel 3: „Von der Völkerwanderungszeit bis zum Höhepunkt der nomadischen Macht: Das mongolisch-eurasische Reich" (bis ca. 1350); Kapitel 4: „Vom relativen Niedergang zur Kolonisierung" (bis Ende des 19. Jahrhunderts). Das kurze Kapitel 5 fasst in kompakter Form „Lehren und Ergebnisse dieser Studie" zusammen.

Der Autor formuliert in der Einleitung auf Seite 2 fünf große Forschungsfragen:

(1) Welchen Einfluss hatten der Handel und die Geschäfte der Seidenstraße auf den wirtschaftlichen Wohlstand Zentralasiens?
(2) Welchen Beitrag leistete das Nomadentum zur Wirtschaft in Zentralasien?
(3) Was waren die ökonomischen Grundlagen des Mongolen- und des Tamerlan-Reiches?
(4) Wie erklärt sich der langanhaltende wirtschaftliche Abwärtstrend in Zentralasien und der Seidenstraße seit dem 16. Jahrhundert, der in einem Abgleiten in den Kolonialismus endete?

[1)] Im Dezember 2025 erschien auch eine russischsprachige Übersetzung des Buches („Tsentralnaya Azia i Shelkovy Put", Verlag Academic Studies Press, Boston / St. Petersburg), wichtig im Blick auf Zentralasien, wo Russisch nach wie vor eine *lingua franca* ist. Außerdem wurde eine Übersetzung in die chinesische Sprache (Mandarin) von einem Historiker aus Lanzhou erstellt (noch nicht publiziert: Mitteilung von S. Barisitz, April 2026).

(5) Was waren die Hauptunterschiede zwischen der Wirtschaftspolitik Chinas und Russlands gegenüber ihren Kolonien in Zentralasien im 18. bis 19. Jahrhundert?

Zur fundierten Beantwortung werden diese Fragen weiter präzisiert; so enthält zum Beispiel Frage (2) drei Detailfragen: „Wie funktionierten die nomadischen Volkswirtschaften und Gemeinwesen?" „Was waren die herausragenden Merkmale der Interaktion zwischen nomadischem Pastoralismus und sesshafter Landwirtschaft und Handwerk in Zentralasien?" „Wie wirkte sich die lang anhaltende militärische Überlegenheit der Reiternomaden auf die wirtschaftlichen Beziehungen zu den sesshaften Kulturen und auf das Funktionieren der Seidenstraße aus?" (S. 2).

Schon aus den genannten Forschungsfragen lässt sich erkennen, dass das Buch wesentlich mehr behandelt als nur die Geschichte der Seidenstraße. Diese wird vielmehr eingebettet in die großen welthistorischen Entwicklungen und in kultur- und politikwissenschaftliche sowie wirtschaftliche Zusammenhänge. Aus all diesen Perspektiven liefert das Buch wertvolle Erkenntnisse.

Die nun folgende Besprechung konzentriert sich auf Merkmale, die nach Ansicht des Rezensenten ein Alleinstellungsmerkmal (USP) dieses Buches darstellen und es speziell für Geographinnen und Geographen interessant machen.

Die bereits angedeutete *Interdisziplinarität der Darstellung* äußert sich in der intensiven Auswertung von Publikationen aus Archäologie, Wirtschafts- und Sozialgeschichte, Kulturgeschichte und Politikwissenschaft sowie Geographie (Details zur geographischen Perspektive siehe weiter unten). Die Interdisziplinarität zeigt sich auch in den weiterführenden Informationen, die häufig in den zum Teil umfangreichen Fußnoten enthalten sind.

Zusammen mit der Interdisziplinarität ist die *Vielsprachigkeit der herangezogenen Quellen* hervorzuheben. Barisitz wertet nicht nur die deutsch- und englischsprachige Literatur aus – einschließlich zahlreicher Arbeiten chinesischer Autoren, die in englischer Sprache in China erschienen sind –, sondern viele Titel in französischer und russischer Sprache. Dies ist den ausgezeichneten Sprachkenntnissen des Autors zu verdanken, der in Kanada, Österreich und Frankreich gelebt hat und Englisch (Muttersprache), Deutsch, Französisch und Russisch spricht und weitere Sprachen versteht.

Ein weiterer Vorzug des Buches liegt in der *benutzerfreundlichen Anordnung des Textes* sowie in der *guten Erschließung und didaktischen Aufbereitung* des Inhalts. In dieser Hinsicht sind folgende Merkmale zu nennen:

– Der Text ist durchgehend zweispaltig angeordnet, was die Lesbarkeit der großformatigen Seiten erleichtert. Und alle Seiten besitzen eine Kopfzeile, die der Orientierung in dem umfangreichen Werk dient: die Kopfzeile links enthält die Kapitelüberschrift (1-stellig nummeriert), die Kopfzeile rechts die Überschrift des jeweiligen Unterkapitels (2-stellig).
– Die Überschriften der Unterabschnitte sind sehr informativ formuliert und geben den Inhalt prägnant wieder: vgl. das tiefgegliederte Inhaltsverzeichnis (S. VII–X). Der Text wird durch fettgedruckte Zwischenüberschriften mit bis zu 4-stelliger Nummerierung weiter gegliedert.
– Wichtige Zusammenfassungen werden als grau unterlegte Textboxen („Kästen", insgesamt 14) auch optisch hervorgehoben; hierzu einige Beispiele: „Kasten 2.3: Die Große Seidenstraße, mit Schwerpunkt auf ihrer ersten Blüte in der Antike" (S. 40–43); „Kasten 3.2: Eurasien auf dem Höhepunkt des Seidenstraßen-Fernhandels: Wichtige Akteure, Produkte und Reisende" (S. 131–133); „Kasten 3.3: Über die Seidenstraße übertragene Erfindungen/Innovationen und verbreitete kulturelle Praktiken in der Mongolenzeit" (S. 138–139);
– Weitere Übersichten allgemeinhistorischer und kulturwissenschaftlicher Natur finden sich als Listen oder Tabellen im Text, so zum Beispiel ein Überblick über bedeutende Gelehrte des Mittelalters aus Zentralasien (S. 83–84) oder ein Glossar mit den Namen von Textilien, die auf der Seidenstraße gehandelt wurden (S. 292).

Ein besonderer Vorzug des Buches für ein geographisches Fachpublikum ist die *durchgehende regionalgeographische Perspektive des Autors*. Diese zeigt sich vor allem in der reichen Ausstattung des Buches mit eigens erstellten *thematischen Karten:* Auf insgesamt 23 ganzseitigen Landkarten wird die Situation Zentralasiens in den aufeinanderfolgenden Zeiträumen – von der Prähistorie bis in das 19. Jahrhundert – dargestellt. Alle Karten wurden auf Basis von Originalentwürfen des Autors vom Kartographen Florian Partl in gekonnter Ausnutzung der Möglichkeiten des graphischen Methodenkanons gestaltet: einheitliche Farbgebung für die verschiedenen Territorialmächte, Differenzierung der politischen und der naturlandschaftlichen Bezeichnungen durch unterschiedlichen Schrifttyp und unterschiedliche Schriftfarbe, gesamtes Namensgut in derselben Sprache (Deutsch), zusätzliche Anwendung von Ausschnittkarten („Nahaufnahmen") zur besseren Lesbarkeit aller Details, u.a. Weiters äußert sich die geographisch-raumbezogene Perspektive in folgenden Merkmalen:

– Die Abgrenzung von Zentralasien erfolgt mit Verweis auf geographische Autoren (Ferdinand von Richthofen – der als erster den Begriff „Seidenstraßen" 1877 verwendet hat – und Fritz Machatschek, 1928) primär nach physiogeographischen Kriterien: kein Abfluss zum Meer und klimabedingte Wasserarmut; vgl. „Abb. 1.1: Lage und Grenzen Zentralasiens" (S. 4).
– Im einleitenden Unterkapitel 1.3 werden die geographischen Grundlagen der geschichtlichen Entwicklung (mit Verweis auf das klassische Werk von Hugo Hassinger, 1931) erläutert. Hierzu werden zwei Farbkarten „Elemente der physischen Geographie" (S. 5) und „Natürliche Ressourcen" (S. 9) geboten. Barisitz empfiehlt, während der Lektüre einen Atlas zur Hand zu nehmen und schreibt (Fußnote 5, S. 6): „Ein Mindestmaß an Vertrautheit mit der Geographie Zentralasiens ist eine conditio sine qua non für das Verständnis der (Wirtschafts-)Geschichte der Region."
– Ein Absatz auf Seite 10 bietet Übersetzungen ausgewählter Toponyme, in denen der Charakter der betreffenden Berge, Gewässer und Areale zum Ausdruck kommt. Eine eigene Karte (S. 290) zeigt lagegetreu viele im Text genannte Orte, wobei neben den gängigen Namen auch ältere oder anderssprachige Namen in Klammern angegeben werden.

Fazit: Das vorliegende Buch ist ein sowohl wirtschaftshistorisches als auch raumwissenschaftliches Werk über einen in Europa wenig bekannten Teil der Erde mit äußerst abwechslungsreicher Geschichte. Wie F. Greif in seiner Rezension (2017, S. 418) festhält, wird eine „Vielzahl von relevanten Faktoren (ökologische, wirtschafts- und machtpolitische, institutionelle, sozialkulturelle, technologische, religiöse …)" in äußerst sorgfältiger Weise synthetisch-wissenschaftlich ausgewertet. Das Buch gelangt zu allgemeingültigen Erkenntnissen, die den Wissensstand vertiefen und erweitern. Für die Lektüre des Buches hat F. Greif (a.a.O.) die Empfehlung ausgesprochen, zum Einstieg das kurze Kapitel 5 (in der deutschen Ausgabe S. 297–306) zu lesen, das die wesentlichen Erkenntnisse pointiert zusammenfasst. Diese Empfehlung wird hiermit gerne wiederholt.

Stephan Barisitz hat bereits eine Fortsetzung des Buches erarbeitet, die die Wirtschaftsgeschichte Zentralasiens bis zur Gegenwart behandelt; der betreffende Band wird voraussichtlich nächstes Jahr erscheinen. Einige Beiträge über die aktuellen Entwicklungen Zentralasiens rund um die „Neue Seidenstraße" hat er bereits vorgelegt (Barisitz 2020, 2024, 2025).

Abschließend eine praktische Bemerkung zu den eingangs genannten drei Varianten der Publikation: Die thematischen Landkarten sind, wie dargelegt, ein wesentlicher Teil des Buches. Sie wurden in der englischen Ausgabe im Mehrfarbendruck wiedergegeben. Für die vorliegende Ausgabe wurden sie ebenfalls als mehrfarbige ganzseitige Karten mit durchgehender deutscher Beschriftung neu erstellt. Leider hat der Verlag im gebundenen deutschsprachigen Buch – ohne Absprache mit dem Autor, wie dieser versicherte – die Karten nur in Schwarz/Weiß gedruckt. Die digitale Version hingegen enthält alle 23 Karten im mehrfarbigen Original. Durch den Schwarz-Weiß-Druck gehen wesentliche Inhalte der Kartendarstellung verloren. Der Rezensent rät daher, das Buch in einer

digitalen Version zu nutzen. Eventuell könnte man beim Lesen des gebundenen Buches ergänzend die mehrfarbigen Karten heranziehen, die man von jemand erhalten kann, der (wie der Rezensent) eine digitale Version verwendet.

Zitierte Literatur:

Greif F. (2017): Rezension von Stephan Barisitz „Central Asia and the Silk Road. Economic Rise and Decline over Several Millennia". In: Mitteilungen der Österreichischen Geographischen Gesellschaft, 159, S. 416–419.

Barisitz S. (2020): China's New Silk Road: A Stocktaking Update and Economic Review (2017–2019). In: Oesterreichische Nationalbank [OeNB], Focus on European Economic Integration, Q1/20, S. 20–50. Mit 3 Tabellen und drei Farbkarten.

Barisitz S. (2024): Downsized, Restructured and Greener (2019–2023): A New Era for China's New Silk Road? (= OeNB Occasional Paper, 4). Wien: Oesterreichische Nationalbank. Mit 2 Karten und 3 Tabellen.

Barisitz S. (2025): Robust Growth in Central Asia 2019–2024 – In the Face of Uncertainties, the Pandemic and Protracted War in the Neighbourhood (= OeNB Occasional Paper, 10). Wien: Oesterreichische Nationalbank. Mit 3 Karten und 5 Tabellen.

Albert Hofmayer (Wien)

Bätzing Werner (2026): Die Alpen. Geschichte und Zukunft einer europäischen Kulturlandschaft. 5. völlig überarbeitete und aktualisierte Auflage. München: Verlag C. H. Beck, 502 S., 155 überwiegend farbige Abb., 30 Karten, 17 Tab., ISBN: 978-3-406-84395-2 (Hardcover), ISBN: 978-3-406-84396-9 (eBook).

Die Alpen neu gelesen

Das bekannte „Alpen-Buch" von Werner Bätzing hat nun seine 5. Auflage erhalten. Kaum zu glauben eigentlich, dass die letzte Auflage schon wieder elf Jahre zurückliegt. Und wir alle wissen, wie schnell sich die Welt – und mit ihr auch die Alpen – in diesem Jahrzehnt weitergedreht haben: Klimawandel, Energiewende, neue touristische Dynamiken, Peripherisierung, Verstädterung, Nutzungsaufgabe, Naturgefahren, europäische Raum- und Umweltpolitik und schließlich grausame Kriege. Es ist also nicht irgendeine Neuauflage, sondern eine Neuvermessung eines Raumes, der sich gerade mit großer Geschwindigkeit verändert.

Entsprechend gespannt war ich, wie es dem Autor gelingen würde, in gewohnt präziser Manier die Ausgangslage neu zu analysieren, bekannte Szenarien nachzuschärfen und gegebenenfalls auch bisherige Einschätzungen zu korrigieren. Der Zeitpunkt für diese Neuauflage ist jedenfalls vollkommen richtig. Die 4. Auflage hatte gerade begonnen, Staub anzusetzen – und nun erscheint die Alpen-Bibel in frischem Gewand. Aber wie!

Kurz zu meiner Perspektive: Als Ingenieurbüro für Geographie bin ich zwar auch in wissenschaftsnahen Projekten tätig, arbeite aber vor allem an der Schnittstelle von Analyse, Regionalentwicklung, Landschaft, Planung und Umsetzung. Genau dafür war Bätzings Buch in den vergangenen Jahren immer wieder hervorragend brauchbar. Nicht als Nachschlagewerk im engen Sinn, sondern als großes Orientierungsbuch und Methodeninput – um laufende Prozesse besser zu verstehen, Entwicklungen in einzelnen Regionen einzuordnen und den Blick über den eigenen Tellerrand hinaus zu weiten und vergleichen zu können. Wer in den Alpen oder mit Bezug auf alpine Regionen arbeitet, findet hier nicht nur Fakten, sondern Deutungsmuster. Und das ist oft wertvoller.

Ich möchte daher gar nicht so tun, als hätte ich „Die Alpen“ zum ersten Mal in der Hand. Mich interessiert vor allem der Vergleich zur 4. Auflage: Was ist gleichgeblieben? Was wurde verändert? Was ist neu gewichtet? Und warum lohnt es sich, diese neue Auflage tatsächlich wieder zur Hand zu nehmen?

Aufbau, Form und Umfang

Mit 502 Seiten inklusive Anmerkungen, Literatur und Sachregister ist die 5. Auflage um 18 Seiten länger als ihr Vorgänger. Das ist einerseits logisch, weil die Geschichte der Alpen weitergeschrieben werden muss. Andererseits dürfte es keine einfache Aufgabe gewesen sein, neue Erkenntnisse, neue Krisenlagen und neue politische Rahmenbedingungen einzubauen, ohne das Buch ausufern zu lassen.

Sofort fällt das etwas veränderte Schriftbild auf, vor allem aber die große Zahl an neuen Fotos und Abbildungen. Das Buch wirkt dadurch frischer, stellenweise zugänglicher, ohne an wissenschaftlicher Dichte zu verlieren. Nach wie vor ist allerdings sehr viel Text in den Anmerkungen „geparkt“. Das ist einerseits notwendig, weil sonst der Haupttext überfrachtet wäre und der argumentative Faden verloren ginge. Andererseits bedeutet es auch: Wer wirklich alles mitnehmen will, blättert ständig hin und her. Auf die Anmerkungen zu verzichten, wäre aber ein Fehler. Gerade dort finden sich wichtige Hinweise, Ergänzungen, Begründungen, wissenschaftstheoretische Hintergründe und weiterführende Zusammenhänge.

Die grobe Gliederung in fünf große Kapitel wurde auch bei der Neuauflage beibehalten:

I. Was sind die Alpen? Kulturelle und naturräumliche Voraussetzungen
II. Die Alpen im Agrarzeitalter
III. Der Zusammenbruch der traditionellen Alpenwelt und die neuen Nutzungsformen der Moderne
IV. Bilanzierung und Bewertung des großen Wandels
V. Welche Zukunft für die Alpen?

Im Vergleich zur 4. Auflage ist also zunächst bemerkenswert, wie stark die Grundarchitektur erhalten bleibt. Bätzing beginnt weiterhin mit der Frage, was die Alpen überhaupt sind, entwickelt dann die Alpen als Agrar- und Kulturlandschaft, analysiert den Einbruch der Moderne und bilanziert schließlich den großen Wandel, bevor er Zukunftsperspektiven entwirft. Diese Kontinuität ist Teil der Methode, die sich durch alle Auflagen mehr oder weniger zieht. Und das hilft, wenn man eine neue Auflage vor seinen Augen hat. Bätzings Argumentation lebt vom langen historischen Bogen.

Er zeigt die Alpen nicht als Naturkulisse, sondern als Ergebnis eines über Jahrhunderte herausgebildeten Mensch-Umwelt-Verhältnisses. Genau darin liegt seine bleibende Stärke. Die Alpen sind bei ihm nicht „Natur“ auf der einen und „Nutzung“ auf der anderen Seite, sondern eine hochkomplexe Kulturlandschaft, deren ökologische Stabilität vielfach erst durch angepasste Nutzung entstanden ist.

Schon im ersten Kapitel beginnt aber eine Neubewertung. Das Thema Klimawandel ist stärker präsent und wurde erweitert. Natürlich könnte man dieses Thema problemlos zu einem eigenen Buch ausbauen. An dieser Stelle wirkt es daher fast etwas knapp. Gleichzeitig ist klar: Bätzing will kein Klimawandelbuch schreiben, sondern die Alpen als Ganzes verstehen. Der Klimawandel ist in weiterer Folge nicht einfach ein zusätzliches Thema, sondern ein Verstärker bestehender Problemlagen.

Die Alpen als gewachsene Kulturlandschaft

Es folgen meine persönlichen Lieblingskapitel: Kapitel II und III über die Entwicklung der Alpen seit dem Eingreifen des Menschen. Sie bilden für mich das Rückgrat des Buches. Wer heutige Vorgänge in den Alpen verstehen will, kommt an diesen Kapiteln kaum vorbei.

Erstaunlich ist: Obwohl man meinen könnte, die Geschichte bis 1871 könne man nicht neu schreiben – Werner Bätzing kann es offenbar doch. Auch diese Kapitel wurden neu strukturiert und

geschärft. Gerade für Geograph/innen, Raumwissenschaftler/innen, Regionalentwickler/innen und Planer/innen, die in den Alpen arbeiten, sind sie aus meiner Sicht nahezu unverzichtbar.

Bätzing gelingt hier etwas, das selten ist: Er erzählt Geschichte nicht als bloße Chronologie, sondern als Erklärung heutiger Raumstrukturen. Die traditionelle Alpwirtschaft, der Altsiedelraum und Jungsiedelraum, Schwaighöfe und Walsersiedlungen, die Verkehrserschließung, die Arbeitsteilung zwischen Höhenstufen, die Rolle der Täler, der Umgang mit Knappheit – all das wird nicht romantisiert, und sehr ernst genommen. Das ist wichtig, weil viele aktuelle Debatten über den Alpenraum oft ahistorisch geführt werden. Man diskutiert dann über Tourismus, Naturschutz, Landwirtschaft oder Mobilität, ohne die langen Linien zu kennen, aus denen diese Konflikte entstanden sind.

Diese Kapitel lesen sich streckenweise fast wie ein „normales" Buch, manchmal sogar wie ein Krimi. Man folgt der Entwicklung, erkennt Zusammenhänge, versteht Brüche. Und dann merkt man: Vieles, das heute als neues Problem erscheint, hat tiefere historische Wurzeln.

Bilanz des Wandels: scharf, dicht, unbequem

Mit Kapitel IV wird das Buch analytisch deutlich härter. Die Bilanz und Bewertung des großen Wandels bringt wie in der Auflage zuvor konkrete (selbstverständlich aktualisierte) Zahlen, Typisierungen und Bewertungen ins Spiel. Während die vorhergehenden Kapitel stärker erzählend angelegt sind, muss man hier intensiver mitdenken und den Gedankengängen des Autors genauer folgen.

Die Analysen wurden gegenüber der 4. Auflage neu interpretiert. Besonders wichtig bleibt Bätzings Einteilung in sozioökonomische Regionstypen. Diese Typisierung ist anspruchsvoll zu lesen, aber ungemein hilfreich. Ich habe sie selbst in Projekten angewendet, weil sie Regionen nicht nur beschreibt, sondern verständlich macht und Zusammenhänge multidimensional aufzeigt. Sie zeigt mit großer Klarheit, warum manche Räume wachsen, andere stagnieren, manche touristisch überprägt werden und wieder andere in eine problematische Abwärtsspirale geraten. Das macht es leichter, Maßnahmen für die Zukunft zu entwickeln. Schade ist höchstens, dass die konkreten Resultate dieser Typisierung an dieser Stelle nicht ausführlicher dargestellt werden. Aber klar: Das würde den Rahmen sprengen. Das Buch ist ohnehin dicht genug.

Ab dem Abschnitt zur „Modifikation des Wandels auf staatlicher, alpenweiter und europäischer Ebene" folgt eine schonungslose, präzise, aber auch stark sozio-philosophische Analyse der gegenwärtigen Situation. Bätzing beschreibt nicht nur einzelne Probleme, sondern ein mehrfaches Dilemma: Die Alpen sollen Lebensraum, Wirtschaftsraum, Erholungsraum, Verkehrsraum, Energie- und Wasserressource, Naturraum und europäischer Ausgleichsraum zugleich sein. Diese Ansprüche widersprechen einander nicht immer, aber sehr oft. Und sie werden politisch selten auf jener Ebene verhandelt, auf der sie tatsächlich lösbar wären.

Im Unterkapitel „Sind Alternativen denkbar?" bietet Bätzing dabei eine nicht gerade überschäumende Hoffnung. Aber vielleicht ist das auch nicht seine Aufgabe. Es geht weniger darum, Optimismus zu verbreiten, sondern darum, die Bedingungen für echte Alternativen überhaupt sichtbar zu machen, mit der Absicht, keine blinden Flecken mitzuschleppen.

Welche Zukunft für die Alpen?

Das letzte Großkapitel baut auf den Erkenntnissen und der Struktur der Vorauflage auf, wurde aber erwartungsgemäß am stärksten ergänzt und verändert. Hier wird Bätzing besonders relevant.

Vor allem das Kapitel zur „wünschenswerten Zukunft für die Alpen" halte ich für zentral und sehr gelungen. Es sollte nicht nur in wissenschaftlichen Auseinandersetzungen über den Alpenraum gelesen werden, sondern auch von politischen Entscheidungsträger/innen, Planer/innen, Regionalmanager/innen, Tourismusverantwortlichen und Verwaltungsbehörden. Denn hier geht es nicht um

abstrakte Zukunftsbilder, sondern um die Frage, wie die Alpen konkret als eigenständiger, vielfältiger Lebens- und Wirtschaftsraum erhalten bleiben können. In diesem Zusammenhang werden fast schon pragmatische Vorschläge gebracht, die aber nur richtig verstanden werden können, wenn man ihnen aufmerksam folgt. Ich konnte ehrlicherweise dieses Kapitel nicht in einem durchlesen, sondern habe nach jedem Unterkapitel das Buch zur Seite gelegt und (innerlich) weiterdiskutiert und versucht, die Aussagen zu evaluieren. Jeder findet in diesem Kapitel seine persönlichen Ankerpunkte und mag manchmal Bätzing widersprechen oder besser gesagt, mit ihm diskutieren. So soll es wohl gedacht sein. Ich glaube, er hat auch sehr viel mit sich selbst und seinem Umfeld über dieses Kapitel diskutiert.

Ergänzend möchte ich aus meiner eigenen Arbeitsperspektive festhalten: Bei konkreten Umsetzungen und Planungen entscheiden fast immer politische Ebenen – von der Gemeinde über Länder und Staaten bis zur EU. Genau hier liegt ein Grundproblem. Langfristige Strategien brauchen lange Atemzüge. Vielleicht die EU ausgenommen, aber die meisten politischen Ebenen unterhalb der EU sind strukturell gezwungen, in Wahlperioden zu denken. Alle paar Jahre erfolgt eine Neuorientierung, manchmal auch ein thematischer Neustart. So lässt sich schwer eine langfristige Strategie verfolgen, wie sie etwa in weniger parteipolitisch getriebenen Organisationen – beispielsweise Naturparken, Biosphärenparks oder manchen regionalen Trägerstrukturen – eher möglich ist.

Bätzings Buch macht deutlich, dass die Zukunft der Alpen nicht allein durch bessere Daten, bessere Technik oder bessere Förderprogramme entschieden wird. Es braucht auch eine spezifische, authentische räumliche und innere Haltung: die Bereitschaft, dezentrale Strukturen, regionale Wertschöpfung, angepasste Nutzung, kulturelle Eigenständigkeit und ökologische Tragfähigkeit etc. zusammenzudenken.

Fazit

Die 5. Auflage von „Die Alpen. Geschichte und Zukunft einer europäischen Kulturlandschaft" ist keine bloße Aktualisierung eines Klassikers. Sie ist eine verdichtete Neuanalyse eines Raumes, der sich seit der 4. Auflage deutlich weiter verändert hat. Die Grundstruktur bleibt erhalten, aber die Gegenwartsdiagnose ist schärfer geworden. Klimawandel, räumliche Polarisierung, politische Steuerungsprobleme und die Frage nach einer wirklich eigenständigen Zukunft der Alpen treten stärker hervor.

Wer die 4. Auflage kennt, wird vieles wiedererkennen – aber nicht einfach wiederlesen. Es lohnt sich gerade der Vergleich. Denn man sieht, welche Linien Bätzing konsequent weiterführt und wo die Entwicklungen der letzten Jahre neue Akzente erzwingen. Wer das Buch noch nicht kennt, sollte es ohnehin vom Anfang bis zum Ende lesen.

Also: Buch lesen. Sei es zur Auffrischung, sei es als Neueinstieg. Und vor allem nicht aufhören, sich für die Zukunft des Alpenraumes einzusetzen. Denn dieser Raum ist einzigartiger, verletzlicher und politisch wichtiger als viele meinen.

Hannes Hoffert-Hösl (St. Anton an der Jeßnitz, NÖ)

Embleton-Hamann Christine (Hrsg.) (2022): Landscapes and Landforms of Austria (Serie: World Geomorphological Landscapes Book Series). Cham: Springer International Publishing, 1. Aufl., 496 S., 353 farbige Abb., 15 Schwarz-Weiß-Abb., ISBN: 978-3-030-92813-1 (Print), 978-3-030-92815-5 (eBook).

Dieser Sammelband aus der renommierten Reihe „World Geomorphological Landscapes" von Springer ist ein Versuch, in einem einzigen Band einen Überblick über den aktuellen Stand des Wissens zur vielfältigen und sehr bemerkenswerten Geomorphologie Österreichs zu geben. Eingeleitet

wird der Band durch ein Vorwort des Reihenherausgebers Piotr Migoń und in den Kontext gestellt durch die Herausgeberin Christine Embleton-Hamann, vor ihrem Ruhestand Professorin am Institut für Geographie und Regionalforschung an der Universität Wien, die in ihrer Einleitung unter anderem eine interessante Verbindung zwischen Kulturlandschaft und Geomorphologie herstellt, die sich auch in der Struktur des Sammelbandes niederschlägt. Der sehr umfangreiche und facettenreiche Band vereint die Beiträge von 50 Autorinnen und Autoren. In 33 Kapiteln, gegliedert in zwei Abschnitte, (1) *Einführung in die Physische Geographie Österreichs* sowie (2) *Geomorphologische Hotspots mit hoher landschaftlicher Wertigkeit und/oder bedeutendem wissenschaftlichem Interesse*, wird die Leserschaft auf eine Entdeckungsreise mitgenommen. Diese beginnt bei den geologischen und tektonischen Prozessen, die die verschiedenen Landschaftstypen Österreichs hervorgebracht haben und behandelt Themen von fluvialen Landschaften bis hin zu Hochgebirgen und dem geomorphologischen Erbe Österreichs und dessen Inwertsetzung. Die Bandbreite der geomorphologischen Erscheinungen, die hier entdeckt und erkundet werden können, ist wahrlich beeindruckend!

Der erste Teil des Buches gibt eine ausführliche Einführung zu den physisch-geographischen Charakteristika Österreichs (*Part I: Introduction to the Physical Geography of Austria*), die den Leserinnen und Lesern geologische Grundlagen, die langfristige Landschaftsentwicklung im Kontext verschiedener Prozessdomänen sowie das Gefahrenpotenzial, das Geo-Erbe, Geotourismus und Landschaftsschutz näherbringt.

Das erste Kapitel „Geologische und tektonische Rahmenbedingungen von Österreich“ bietet den notwendigen Kontext sowie einen Überblick über die Landschaftsentwicklung für alle, die sich mit der österreichischen Geomorphologie vertraut machen möchten. Die Darstellung unternimmt eine Zeitreise, die rund 600 Millionen Jahre Erdgeschichte bis in die Gegenwart umfasst. Weiterhin wird auch ein kurzer Überblick über die wissenschaftliche Forschungsgeschichte der Geologie im 19. Jahrhundert in Österreich gegeben, als die Grundlagen moderner geologischer Kartierung und Interpretation gelegt wurden. Darüber hinaus bietet der Beitrag eine Übersicht über die wichtigsten geologischen Einheiten Österreichs, die in ihrer Vielfalt und komplexen Entwicklung die Grundlage für das heutige Landschaftsbild bilden.

Das Anschlusskapitel „Geomorphologische Landschaftsräume in Österreich“ nimmt den Faden auf und behandelt die geomorphologischen Regionen Österreichs. Es werden 10 geomorphologische Regionen anhand der Kombination von Geologie und Relief identifiziert und vorgestellt. Der Hauptschwerpunkt dieser Darstellung liegt auf den quartären und rezenten geomorphologischen Prozessen sowie den charakteristischen Landschaftsformen, mit Verweisen auf die Kapitel in Teil 2, in denen sie ausführlich behandelt werden. Diese Heranführung an die im zweiten Teil des umfangreichen Bandes mit dem Rahmentitel „Geomorphologische Hotspots mit hoher landschaftlicher Wertigkeit und/oder bedeutendem wissenschaftlichem Interesse“ behandelten Hotspots stellt einen schönen Brückenschlag innerhalb des Buches her.

Im Anschluss behandelt ein weiteres Kapitel die langfristige Abtragungs- und Landschaftsgeschichte, beginnend mit dem Quartär, welches durch stark wechselnde klimatische Bedingungen, fluktuierend zwischen Glazialen und Interglazialen geprägt war. Dazu werden stratigraphische Belege vier früherer Hauptvergletscherungsphasen sowie die Rolle des Permafrosts und die nachhaltige Wirkung dieser Faktoren auf die Geomorphologie sehr ansprechend dargelegt. Auf den letzten Seiten des Kapitels werden schließlich die im Holozän wirksamen Prozesse beleuchtet. Lobend hervorzuheben sind in diesem Kapitel die große Fülle und Qualität an Abbildungen und Fotografien, welche das Verständnis und den Überblick über die beschriebenen Formen, Prozesse und Zeitskalen stark erleichtern.

Das vierte Kapitel widmet sich den Fluss- und Tallandschaften Österreichs. Dies beinhaltet eine hydro-klimatologische Einordnung des Landes sowie eine Übersicht der vorzufindenden Abflussre-

gime, die Rolle der Flüsse für die Stromproduktion sowie der Verbauungspraktiken im Kontext von Überschwemmungen und Flüssen. Weiterhin werden detaillierte Informationen zu verschiedenen Talformen und Terrassenstrukturen gegeben. Im Text wird die Bedeutung der Auswirkungen des anthropogen induzierten Klimawandels auf Flusssysteme angedeutet, was im weiteren Verlauf leider nicht stärker vertieft wird. Es werden hilfreiche Referenzen zu anderen Kapiteln im Buch gegeben und ein sehr schöner Übergang zum folgenden Kapitel zum Thema Karst geboten.

Das Kapitel 5 beschäftigt sich mit Karstlandschaften auf österreichischem Gebiet. Etwa ein Fünftel Österreichs besteht aus löslichen Gesteinen wie Kalkstein, Dolomit und Marmor, die in allen großen Landschaftseinheiten und Höhenstufen vorkommen. In diesem Kapitel wird sehr anschaulich dargelegt, welche Prozesse in Karstgebieten vorherrschend sind, zum Beispiel glaziale, fluviatile und andere nichtkarstische Prozesse, was zu einer großen Vielfalt an Endo- und Exokarstformen führt. Österreich beherbergt über 18.000 Höhlen, zahlreiche Karstquellen sowie kleinräumige Formen wie Karren und Dolinen. Weiterhin werden Mensch-Karst-Interaktionen beschrieben; diese reichen von prähistorischer Nutzung bis hin zu moderner Wasserversorgung (z. B. Wiener Hochquellenwasserleitung), Tourismus und wissenschaftlicher Forschung, etwa in der Paläoklimatologie.

Im vorletzten Kapitel des ersten Teils werden geomorphologische Gefahren besprochen. Die Autorinnen und Autoren nehmen die Leserinnen und Leser mit auf eine Reise durch die große Bandbreite endogener und exogener geomorphologischer Prozesse in Österreich, die sich in Typ, Intensität und räumlich-zeitlicher Dynamik unterscheiden. Werden dadurch Gebäude, Infrastruktureinrichtungen oder andere Sachwerte beeinträchtigt, entwickeln sich diese Prozesse zu Naturgefahren. Besonders in den Gebirgsregionen und im Alpenvorland führen geomorphologische Gefahrenereignisse unterschiedlicher Magnitude und Wiederkehrhäufigkeit immer wieder zu Todesopfern und wirtschaftlichen Schäden. Zusammen nehmen diese Landschaftsräume rund 70 Prozent des österreichischen Staatsgebiets ein, was die hohe Relevanz geomorphologischer Gefahren verdeutlicht. Weiterhin werden die wichtigsten Gefahren dargestellt, dazu zählen Fluss- und Wildbachhochwasser, gravitative Massenbewegungen, Lawinen, Gefahren im Zusammenhang mit Gletschern und Permafrost sowie seismische Ereignisse, die jeweils spezifische räumliche und zeitliche Ausprägungen aufweisen. Positiv hervorzuheben sind hier auch die theoretischen Erläuterungen zu einigen Gefahren, beispielsweise gravitative Massenbewegungen. Die Darstellung der Konsequenzen geomorphologischer Gefahren und die daraus resultierenden Risiken rundet das gelungene Kapitel ab.

Den Abschluss von Teil 1 bildet Kapitel 7, das dem geomorphologischen Erbe Österreichs und dessen Inwertsetzung gewidmet ist. Die Basis wird zu Beginn mit der Vielfalt der Gesteine, Landformen und geomorphologischen Prozesse gelegt, welche eine wichtige Grundlage für Ökosysteme, Landnutzung und kulturelle Landschaften Österreichs darstellen. Viele Schutzgebiete stellen diese abiotischen Naturmerkmale in den Mittelpunkt, doch aufgrund der föderalen Zuständigkeit bestehen unterschiedliche Naturschutzgesetze mit variierender Qualität. Das geomorphologische Erbe wird in National- und Naturparks sowie in mehreren „UNESCO Global Geoparks“ bewahrt, wobei Geoparks gesetzlich nicht verankert sind. Geotourismus trägt zur Vermittlung geowissenschaftlicher Inhalte und zum Schutz der Geodiversität bei, erfordert jedoch ein sensibles Gleichgewicht zwischen Besucherlenkung und Erhaltung des Landschaftsraumes. Begrenzte finanzielle Mittel erschweren sowohl den Betrieb als auch Bildungsmaßnahmen, die zu einem nachhaltigen Umgang mit naturräumlichen Ressourcen beitragen sollen. Die sehr ansprechenden Bilder sind eine schöne Ergänzung zu dem ausgesprochen interessanten Kapitel.

Der zweite Teil des Buches, Geomorphologische Hotspots mit hoher landschaftlicher Wertigkeit und/oder bedeutendem wissenschaftlichem Interesse *(Part II: Geomorphic Hotspots of High Scenic*

Quality and/or High Scientific Interest), beinhaltet mit 23 Kapiteln den größten Teil dieses sehr umfassenden Werkes.

Er beginnt mit dem Kapitel 8, „Granitfelsen der Waldviertel-Region in Niederösterreich". Das Waldviertel im Norden Niederösterreichs beherbergt zahlreiche Granitfelsen, die durch langfristige Tiefenverwitterung und Abtragung entstanden sind und zur landschaftlichen Vielfalt der Region beitragen. Diese Formen variieren stark in Größe und Gestalt: Kastellartige Granittürme treten bevorzugt in höheren Lagen auf, während blockreiche und monolithische Formen in sanft hügeligen Bereichen dominieren. Eine Vielzahl kleinräumiger Oberflächenformen wie Verwitterungsmulden, Flankenformen, Karren und Rillen ergänzen das geomorphologische Inventar. Besonders herausgehoben wird das Geotop der „Kogelsteine" bei Eggenburg am Ostrand des Waldviertels.

Das darauffolgende Kapitel 9 thematisiert „Tief eingeschnittene Talmäander im Böhmischen Massiv". Die östlichen Randbereiche des Böhmischen Massivs in Österreich sind durch tief eingeschnittene Flussschleifen geprägt, die infolge tektonischer Hebung und fluvialer Erosion seit etwa fünf Millionen Jahren entstanden sind. Besonders markante Beispiele finden sich im Waldviertel entlang der Flüsse Thaya, Kamp und Krems, welche in diesem Beitrag beispielhaft behandelt werden, wobei der Nationalpark „Thayatal-Podyji" ein zentrales Interessengebiet darstellt. Dort zeigt der Umlaufberg mit seinem doppelten Mäanderbogen eindrucksvoll den Einfluss widerstandsfähiger Gesteine auf die Flussführung. Das Tal der Thaya ist durch steile Hänge, Felsformationen, Blockfelder und Schuttströme gekennzeichnet, die sich seit dem Spät-Pleistozän durch Entlastungs- und Hangprozesse bildeten. Entlang von Kamp und Krems treten zudem Lössprofile und Höhlensysteme auf, die wichtige Hinweise auf Klimaentwicklung und frühe menschliche Besiedlung liefern. Die geomorphologischen Formen werden in diesem Beitrag ansprechend mit deren Bedeutung für den Nationalpark verknüpft.

Das anschließende zehnte Kapitel mit dem Titel „Weltkulturerbe Wachau: Eine vielfältige Flusslandschaft" beschäftigt sich weiter mit Flusslandschaften, diesmal mit der Wachau als UNESCO Weltkulturerbe. Dieses Kapitel bietet einen prägnanten Überblick über die geologisch/geomorphologische Entwicklung, landschaftliche Vielfalt und kulturelle Bedeutung dieser UNESCO-Welterbestätte. Es zeichnet die Entstehung des Donautals im Kristallin des Böhmischen Massivs nach und verknüpft tektonische, klimatische und anthropogene Prozesse zu einer überzeugenden Gesamtdarstellung. Besonders gelungen ist die enge Verflechtung von Natur- und Kulturlandschaft, die sich in den historischen Terrassen, der kontinuierlichen Besiedlung und der heutigen agrarischen und touristischen Nutzung widerspiegelt. Die Autor/inn/en betonen, dass der außergewöhnliche Wert der Wachau nicht nur in ihrer landschaftlichen Schönheit, sondern auch im nachhaltigen Management durch lokale Akteurinnen und Akteure, etwa den Arbeitskreis Wachau, liegt. Gleichzeitig wird auf die bestehenden Gefährdungen durch Hochwasser und anthropogen ausgelöste Felsstürze in Steinbrüchen aufmerksam gemacht, die das sensible Gleichgewicht der Region bedrohen. Insgesamt vermittelt das Kapitel ein facettenreiches Bild einer Landschaft, in der sich geologische Dynamik, kulturelle Kontinuität und aktiver Schutz beispielhaft verbinden.

Das darauffolgende Kapitel 11 mit dem Titel „Versunkene Straßen und Paläoböden in Lössgebieten in Niederösterreich: Landformentwicklung und kulturelle Bedeutung" beschreibt eine vielschichtige Region, in der geologische, klimatische und kulturelle Dimensionen eng miteinander verflochten sind. Die Autor/inn/en beschreiben eindrucksvoll, wie Löss als feinkörniges Sediment nicht nur spezifische Formen wie Hohlwege prägt, sondern auch wertvolle Archive zur Klima- und Siedlungsgeschichte bietet. Besonders hervorgehoben werden die zahlreichen Aufschlüsse, die entscheidende Einblicke in vorherrschende Prozesse in Glazialen und Interglazialen liefern. Die Kombination aus geomorphologischer Dynamik und archäologischen Funden – darunter einige der ältesten Lössvorkommen Europas – verdeutlicht die internationale Bedeutung der Region für die Forschung. Gleichzeitig zeigen die historischen Hohlwege und Weinkeller, wie eng Natur und

menschliche Nutzung hier verwoben sind und wie aus erosiven Landschaftsformen kulturelle Orte von Identität und Tourismus entstanden sind. Insgesamt vermittelt das Kapitel anschaulich, wie die Lösslandschaften Niederösterreichs sowohl naturwissenschaftlich als auch kulturhistorisch eine herausragende Stellung einnehmen.

Das Kapitel 12 „Der Nationalpark Donau-Auen: Eine Auenlandschaft mit Verfallsdatum?" untersucht die geomorphologische Entwicklung und gegenwärtige Dynamik der Donau-Auen im Nationalpark Donau-Auen, einer der größten erhaltenen Flussauen Mitteleuropas zwischen Wien und Bratislava. Die Autoren zeichnen nach, wie die Donau vor den Regulierungsmaßnahmen des 19. Jahrhunderts als frei fließendes System mit sowohl verflochtenen als auch mäandrierenden Abschnitten eine hohe morphodynamische Aktivität aufwies. Die historische Analyse belegt den dominierenden Anteil aktiver Wasserläufe und hebt die zentrale Bedeutung lateraler Erosions- und Umlagerungsprozesse hervor. Mit der Flussregulierung und den Hochwasserschutzmaßnahmen kam es zu einer weitgehenden Stabilisierung der Flusslandschaft und zum Verlust natürlicher Habitatdynamik. Die morphologische Entwicklung wird zudem durch anthropogene Einflüsse aus den Donaubereichen im Oberlauf, insbesondere durch reduzierte Geschiebezufuhr, weiter eingeschränkt. Der Beitrag zeigt, dass aktuelle Renaturierungsbemühungen durch konkurrierende Nutzungsansprüche, insbesondere Schifffahrt und Hochwasserschutz, sowie durch großräumige Defizite im Sedimenthaushalt begrenzt sind. Damit verdeutlicht das Kapitel exemplarisch die Spannungsfelder zwischen Gewässerdynamik, Schutzinteressen und Nutzungserfordernissen in stark anthropogen überprägten Flusslandschaften.

Auch das folgende Kapitel 13 beschäftigt sich mit Gewässerdynamiken, und zwar mit dem Thema „Neusiedler See: Eine besondere Seenlandschaft an der Grenze zwischen Alpen und Pannonischem Becken". Das Kapitel behandelt die geomorphologische und hydrologische Entwicklung des Neusiedler See-Gebiets, einer einzigartigen Übergangslandschaft zwischen Alpen, Karpaten und Pannonischem Becken. Auf Grundlage geologischer, geomorphologischer und historischer Daten werden die Paläohydrologie und die damit verbundenen Landschaftsveränderungen besonders nachvollziehbar rekonstruiert. Besonders hervorgehoben werden die starken Wasserstandsschwankungen des Sees in den letzten Jahrhunderten, die das Landschaftsbild, die Vegetation und die menschliche Nutzung erheblich beeinflusst haben und die wissenschaftliche Basis für die aktuellen Diskussion rund um die zukünftigen Ideen für eine nachhaltige Erhaltung und Entwicklung des Sees bieten. Zudem wird die Entstehung der zahlreichen flachen Seen und Trockentäler im Seewinkel als Folge spätglazialer Thermokarstprozesse interpretiert. Der Beitrag verdeutlicht die hohe Dynamik und Sensibilität dieses Grenzraums im Kontext von Klima-, Landschafts- und Kulturwandel.

Mit Kapitel 14 bewegen wir uns in Richtung Westen, es behandelt „Quartäre Landformen und Sedimente im nördlichen Alpenvorland von Salzburg und Oberösterreich". Der Text führt durch die Entwicklung dieser Landschaft von der fluviatil dominierten Mio- und Pliozänphase bis zu den glazial überprägten Formen des Pleistozäns. Dabei wird deutlich, dass die ursprünglichen Sedimente aus den sich hebenden Alpen in das Molassebecken transportiert wurden, bevor wiederholte Vergletscherungs- und Entgletscherungszyklen zu einer tiefgreifenden geomorphologischen Umgestaltung führten. Dies wird sehr anschaulich und gut nachvollziehbar dargestellt und bereitet Freude beim Lesen. Im Zentrum des Beitrags stehen die Sedimentabfolgen und Formenelemente, die auf die Aktivität des Salzach- und des Traungletschers zurückgehen. Ihre Spuren lassen sich von den alpinen Quellgebieten über die Transportwege entlang der Haupttäler bis zu den Endmoränen und Schotterflächen des Alpenvorlands nachverfolgen. Besonders betont wird der Unterschied in Ausdehnung und Dynamik beider Gletscher: Während der Salzachgletscher als großräumiger Vorlandgletscher in das nördliche Alpenvorland vordrang, erreichten die Traungletscher aufgrund geringerer Akkumulationsgebiete in den Nördlichen Kalkalpen nur die inneralpinen Becken. Darüber hinaus werden bedeutende Terrassensysteme, etwa die Traun-Enns-Platte und das

Konfluenzgebiet von Salzach und Inn, als geomorphologische Archive regionaler Eisrandlagen und Sedimentationsprozesse hervorgehoben. Abschließend verweist das Kapitel auf die Fragilität dieser Landschaften, deren glaziales Erbe nicht nur für die Rekonstruktion pleistozäner Dynamiken von zentraler Bedeutung ist, sondern auch einen schützenswerten Bestandteil des geomorphologischen Erbes des Alpenvorlands darstellt.

„Der Walgau: Eine von gravitativen Massenbewegungen geprägte Landschaft" ist der Titel des fünfzehnten Kapitels. Im Untersuchungsgebiet prägen sowohl flachgründige als auch tiefreichende gravitative Massenbewegungen das Landschaftsbild. Diese Hangprozesse haben seit dem Ende des letzten Glazialen Maximums deutlich an Bedeutung gewonnen und wirken bis heute als zentrale Faktoren der Landschaftsentwicklung. Anhand zahlreicher Fallbeispiele verdeutlicht der Beitrag, dass die Ursachen dieser gravitativen Massenbewegungen in einem komplexen Zusammenspiel verschiedener Einflussfaktoren liegen, die auf unterschiedlichen räumlichen Skalen wirken. Entscheidend sind dabei das reliefreiche Gelände, die lokale geologische Struktur, die Beschaffenheit der Lockergesteinsdecken sowie das feuchte Klima und wiederkehrende Veränderungen der Bodenbedeckung. Neben diesen natürlichen Faktoren werden auch anthropogene Einflüsse angesprochen, die in jüngerer Zeit zur Auslösung oder Reaktivierung von gravitative Massenbewegungen beigetragen haben. Das Kapitel weist zudem auf zukünftige Herausforderungen hin, da sich Veränderungen in Klima, Landnutzung und menschlicher Aktivität sowohl auf die Häufigkeit und Intensität von gravitativen Massenbewegungen als auch auf die Gefährdung von Siedlungen und Infrastrukturen auswirken dürften.

Kapitel 16 widmet sich dem Tiroler Lech und seiner fluvialen Geomorphologie und Flussrenaturierung im Naturpark. Der Lech wird häufig als letzte weitgehend naturnahe Flusslandschaft der nördlichen Alpen bezeichnet. Im Gegensatz zu vielen anderen alpinen Flusssystemen erfolgten größere Regulierungsmaßnahmen hier erst gegen Ende des 19. Jahrhunderts. Dennoch prägen seither sowohl längs als auch quer gerichtete wasserbauliche Eingriffe das Flussbild. Trotz dieser Eingriffe konnte auf weiten Strecken die charakteristische verflochtene Morphologie mit ausgedehnten Schotterflächen und artenreichen Auwäldern bewahrt werden. Die baulichen Maßnahmen führten jedoch zu erheblichen Veränderungen des Sedimenthaushalts, insbesondere zu Schottermangel und Eintiefung des Flussbetts. Dies hatte eine Zunahme des Hochwasserrisikos sowie negative Auswirkungen auf die ökologische Vielfalt zur Folge. Gegen Ende des 20. Jahrhunderts wurden diese Entwicklungen zunehmend erkannt, woraufhin umfangreiche Renaturierungsmaßnahmen eingeleitet wurden. Dazu zählen die Verbreiterung des Flussbetts, der Rückbau von Rückhaltestrukturen in Seitenzubringern, die Wiederanbindung abgetrennter Flussarme sowie ein gezieltes Artenmanagement und Öffentlichkeitsarbeit. Der Beitrag verdeutlicht die Spannungsfelder zwischen Hochwasserschutz, Flussökologie und Landschaftsentwicklung im Alpenraum und zeigt auf, dass integrative Restaurationsstrategien auch in stark regulierten Flusssystemen erfolgreich sein können.

Im Mittelpunkt des 17. Kapitels steht die Geomorphologie der UNESCO-Welterberegion Hallstatt–Dachstein/Salzkammergut, deren geologische sowie geomorphologische Vielfalt und kulturhistorische Bedeutung eng miteinander verwoben sind. Nach einem einleitenden Überblick über die geowissenschaftliche und historische Relevanz der Region werden drei zentrale Teilgebiete näher beleuchtet. Für das Dachsteinmassiv werden die tektonische Entwicklung, die gut erhaltenen 35 Millionen Jahre alten Paläooberflächen sowie die langfristige Ausbildung des komplexen Karsthöhlensystems beschrieben. Ergänzend werden aktuelle geomorphologische Prozesse infolge des Klimawandels, vornehmlich, Gletscherrückzug und Permafrostdegradation, die die jüngste Landschaftsentwicklung deutlich prägen, vertiefend diskutiert. Der Abschnitt zum Gosautal thematisiert die spätglaziale und paraglaziale Dynamik im Kontext gravitativer Massenbewegungen. Die geomorphologische Ausprägung rund um den Hallstätter See wird dabei stark durch das „Hart-auf-weich"-System aus Fest- und Lockergesteinen beeinflusst, das die Stabilität der Hänge und die

Mechanik gravitativer Prozesse bestimmt. Abschließend reflektiert der Beitrag die geotouristischen Potenziale und Herausforderungen der Region und zeigt, wie sich geomorphologische Prozesse, geologische Rahmenbedingungen und menschliche Nutzung in einer alpinen Kulturlandschaft überlagern und gegenseitig bedingen.

Der Beitrag „Gesäuse: Flussschluchten, Kalksteinmassive und Sedimentkaskaden“ des 18. Kapitels befasst sich mit der geomorphologischen Entwicklung des Gesäuses, einer markanten Durchbruchsschlucht der Enns in den Nördlichen Kalkalpen, die durch relative Reliefunterschiede von bis zu 1800 m beeindruckt. In dem Beitrag werden unter anderem das Zusammenspiel von Lithologie und Relief sowie die Auswirkungen der pleistozänen Vergletscherung auf die Landschaftsentwicklung dargestellt. Besondere Aufmerksamkeit gilt der Interpretation erhaltener Paläooberflächen, aus welchen eine Hypothese zur Genese der Gesäuse-Schlucht abgeleitet wird. Im Fokus aktueller Forschung stehen Sedimentkaskaden, insbesondere im Dolomitgebiet um den Johnsbach, wo außergewöhnlich hohe Rückverlagerungsraten an Felswänden festgestellt wurden. Die Schuttmassen werden über episodische Muren in den Johnsbach transportiert. Der Beitrag thematisiert zudem den Einfluss menschlicher Eingriffe, etwa durch früheren Schotterabbau und bauliche Engstellen, die lokale Sedimentflüsse verändern. Darüber hinaus werden die komplexen Wechselwirkungen zwischen Geomorphologie, Naturgefahren und sozioökonomischer Nutzung im Kontext des Nationalparks Gesäuse diskutiert. Abschließend werden Forschungsperspektiven skizziert, die künftige geomorphologische Untersuchungen in dieser dynamischen Gebirgslandschaft anregen können.

Das Kapitel 19, „Das Karstmassiv der Rax: Ein typisches Plateau der Nördlichen Kalkalpen?“ untersucht das Rax-Plateau an der Grenze zwischen der Steiermark und Niederösterreich. Das Plateau besteht aus einer über 1 km mächtigen karbonatischen Abfolge der Trias und weist Reste tertiärer Paläooberflächen mit quarzreichen Sedimenten der Augenstein-Formation auf. Der Text greift die seit fast einem Jahrhundert geführte wissenschaftliche Diskussion um Alter und Genese dieser Oberflächen auf und verortet das Raxgebiet in der neueren konzeptionellen Einteilung der sogenannten „Dachstein-Paläooberflächen“. Ein zentraler Punkt des Kapitels ist die detaillierte Analyse der Karstformen und ihrer Morphogenese. Das Plateau ist durch eine intensive Verkarstung mit vollständig unterirdischer Entwässerung gekennzeichnet. Der Epikarst wird maßgeblich durch Bodenbedeckung und Vegetationsmuster beeinflusst, was zu überwiegend abgerundeten Karrenformen führt. Dolinen bilden das dominierende Oberflächenmerkmal: Basierend auf LIDAR-Daten und Geländeerhebungen wurden 914 Dolinen mit einer Gesamtfläche von rund 0,15 km^2 kartiert und morphometrisch ausgewertet. Im Gegensatz zu anderen Massiven der Nördlichen Kalkalpen fehlen auf der Rax bislang großräumige Höhlensysteme oder tiefe Schächte, was auf spezifische lithologische und hydrologische Bedingungen hinweist. Darüber hinaus hebt das Kapitel die Bedeutung des Raxmassivs als Einzugsgebiet mehrerer Quellen der Wiener Wasserversorgung hervor. Insgesamt liefert dieser Artikel einen wichtigen Beitrag zum Verständnis der morphologischen Entwicklung und der hydrogeologischen Besonderheiten dieses markanten Karstplateaus der Ostalpen.

Das anschließende 20. Kapitel „Montafon: Geodiversität und menschliche Einflüsse“ widmet sich einer Region, die, trotz ihrer vergleichsweise geringen Ausdehnung von rund 560 km^2, durch eine außergewöhnlich hohe geologische und geomorphologische Vielfalt geprägt ist. Das Tal der Ill, tief in die alpinen Gesteinsformationen eingeschnitten, wurde im Wesentlichen durch das Zusammenspiel glazialer Erosion und fluviatiler Akkumulation geformt. Neben den charakteristischen Hochgebirgsformen prägen zahlreiche fossile und rezente gravitative Massenbewegungen das Landschaftsbild und dokumentieren die anhaltende morphodynamische Aktivität der Region. Die hohe Geodiversität des Montafons wird als zentrale Ressource hervorgehoben, die seit Jahrhunderten wirtschaftlich und kulturell genutzt wird, von historischem Bergbau über den modernen Einsatz für Wasserkraft bis hin zum Tourismus. Damit verdeutlicht der Beitrag die enge Verzahnung von

naturräumlichen Prozessen und anthropogener Landschaftsgestaltung. Zugleich fungiert das Kapitel als Exkursionsführer entlang der Ill, der die geomorphologische Entwicklung vom Unterlauf bis zu den Quellgebieten nachzeichnet und die Vielfalt geomorphologischer Formen im Montafon veranschaulicht.

Der Beitrag des Kapitels 21 „Große Bergsturz-Landschaften in Tirol“ behandelt die außergewöhnlich hohe Dichte prähistorischer Großrutschungen entlang der Linie zwischen der Zugspitze und dem mittleren Ötztal. Diese Region ist durch markante „Bergsturz-Landschaften“ geprägt, die sich in den Ablagerungsgebieten der Massenbewegungen deutlich abzeichnen. Allen Ereignissen gemeinsam ist eine geologische Prädisposition durch komplexe Falten-, Störungs- und Kluftsysteme. Die Rutschungen mobilisierten enorme Gesteinsmassen und führten zur Ablagerung von Rückstausedimenten. Zeitlich lassen sich diese frühen bis mittelholozänen Ereignisse interessanterweise mit weiteren Bergstürzen im Alpenraum korrelieren. Die Ablagerungsgebiete zeichnen sich durch grobblockiges, stark durchlässiges Material aus, das landwirtschaftlich kaum nutzbar ist. Dadurch entwickelten sich spezifische Waldökosysteme, häufig dominiert von der Waldkiefer, die an diese Bedingungen besonders gut angepasst ist. Während die Bergsturzablagerungen seit jeher Hindernisse für Verkehr und Nutzung darstellen, besitzen sie zugleich einen hohen landschaftsästhetischen Wert und sind heute bevorzugte Räume für Freizeit- und Erholungsaktivitäten. Der Beitrag illustriert eindrucksvoll, wie geomorphologische Extremereignisse langfristig die naturräumliche und kulturelle Prägung alpiner Landschaften beeinflussen.

„Das Obere Ötztal: Vielfalt der Hochgebirgslandschaft und lange Forschungstradition“, so lautet der Titel von Kapitel 22. Der Beitrag beschreibt die geomorphologische Entwicklung des oberen Ötztals mit seinen Nebentälern Vent und Gurgl, einer der am stärksten vergletscherten Regionen Österreichs. Weltweite Aufmerksamkeit erlangte das Gebiet durch den Fund der etwa 5300 Jahre alten Gletschermumie „Ötzi“ im Jahr 1991, der die frühe menschliche Präsenz und Nutzung alpiner Hochgebirgsräume eindrucksvoll belegt. Geomorphologisch wird das Landschaftsbild des oberen Ötztals maßgeblich durch die pleistozänen Gletscher geformt, deren Wirkung sich in einer Vielzahl typischer glazialer und periglazialer Formen manifestiert. Besonders die Vorfelder von Gurgler Ferner und Rotmoosferner dienen als klassische Untersuchungsgebiete im Kontext der Vergletscherungsgeschichte und als natürliche Chronosequenzen für ökologische Forschung. Mit Vernagtferner, Hintereisferner und Kesselwandferner befinden sich zudem einige der bestuntersuchten Gletscher der Ostalpen in diesem Gebiet. Die wiederholten Vorstöße des Vernagtferners in das Rofental während historischer Zeit führten zur Bildung von Eisstauseen und deren Ausbrüchen. Dies führte zu systematischen Beobachtungen und Forschungen im Bereich glazialer und periglazialer Prozesse. Dazu zählt auch die Untersuchung des Hochebenkar Blockgletschers im Gurglertal. In jüngerer Zeit wird das obere Ötztal verstärkt als Testgebiet für Fernerkundungsanwendungen, zum Beispiel Airborne Laser Scanning, genutzt, um Gletscherveränderungen und geomorphologische Dynamiken im zu erfassen. Der Beitrag stellt die besondere Bedeutung des oberen Ötztals als Forschungsraum heraus, in dem traditionelle Geländestudien und moderne methodische Ansätze kombiniert werden, um aktuelle Landschaftsveränderungen zu analysieren.

Das Kapitel 23 widmet sich der „Moräne bei Trins und dem alpinen Spätglazial“. Seit dem frühen 20. Jahrhundert dient die markante Endmoräne bei Trins alpenweit als Typuslokalität für Gletschervorstöße im Spätglazial. Eine Datierung mittels kosmogener ^{10}Be-Isotope ergab ein Stabilisierungsalter der Moräne von etwa 16.600 ± 1.400 Jahren. Da der Gletscher von Trins über bereits eisfreies Terrain vordrang, markiert das Gschnitz-Stadium den ersten eigenständigen Gletschervorstoß der Ostalpen nach dem Letzten Glazialen Maximum, unabhängig von den großräumigen Talvergletscherungen. Die ausgeprägten End- und Seitenmoränen belegen eine stabile Gletschergeometrie über mehrere Jahrzehnte bis Jahrhunderte. Am Typusstandort lag die Gleichgewichtslinie etwa 700 m unterhalb jener des Spätmittelalters beziehungsweise der Kleinen Eiszeit. Aus den

geomorphologischen und glaziologischen Befunden lässt sich ein deutlich kühleres und trockeneres Klima ableiten: Die Sommertemperaturen lagen schätzungsweise 8–10 °C unter den heutigen Mittelwerten, während die jährliche Niederschlagsmenge auf etwa ein Drittel des gegenwärtigen Niveaus reduziert war. Das Kapitel veranschaulicht die zentrale Rolle des Gschnitz-Stadiums für die Rekonstruktion spätglazialer Klimaverhältnisse und Gletscherfluktuationen in den Ostalpen und unterstreicht die Bedeutung lokaler geomorphologischer Archive für das Verständnis überregionaler Klimadynamiken. Weiters unterstützen die großen und hilfreichen Fotos das Landschaftsverständnis.

Kapitel 24 widmet sich den Krimmler Wasserfällen, die sich über eine rund 400 m hohe, mehrfach gegliederte Felsstufe im Krimmler Trogtal erstrecken. Sie gelten als die bekanntesten Vertreter einer ganzen Reihe von Wasserfällen im oberen Abschnitt des Salzachtals. Während holozäne Erosionsprozesse an den Felsen und Talstufen nur geringe Einschnitte hinterließen, zeigen die benachbarten Wasserfälle in den Sulzbachtälern – der Sulzbachfall und der Gamseckfall – deutlich stärker ausgeprägte erosive Formen. Alle Wasserfälle führen während der Sommermonate hohe Abflüsse und bilden damit besonders eindrucksvolle geomorphologische Erscheinungen. Ihre Entstehung ist auf das Zusammenwirken struktureller, lithologischer und geomorphologischer Faktoren in den jeweiligen Einzugsgebieten zurückzuführen. Seit dem frühen 19. Jahrhundert sind die Krimmler Wasserfälle ein Anziehungspunkt für naturbegeisterte Personen und Alpinisten; der Alpenverein legte früh Wanderwege im Umfeld an. 1983 wurden die Wasserfälle in den Nationalpark Hohe Tauern integriert. Als eine der meistbesuchten Natursehenswürdigkeiten Österreichs besitzen sie heute auch eine herausragende Bedeutung als sog. “Geomorphosite” – ein eindrucksvolles Beispiel für das Zusammenspiel von Geologie, Morphodynamik und touristischer Wahrnehmung in den Alpen.

Das Kapitel 25 „Großglockner und Pasterze-Gletscher: Landschaftsentwicklung am höchsten Gipfel Österreichs und seinem benachbarten Gletschersystem“ bietet einen eindrucksvollen Überblick über die glaziale Entwicklung einer der ikonischsten Hochgebirgslandschaften Europas. Die Autoren verbinden die lange Forschungstradition seit dem 19. Jahrhundert mit aktuellen Beobachtungen zum beschleunigten Gletscherrückzug, der seit 1879 in einer der weltweit längsten Messreihen dokumentiert ist. Besonders überzeugend ist die Darstellung, wie paläoklimatische Funde und geomorphologische Prozesse, einschließlich paraglazialer Massenbewegungen, die Dynamik des Hochgebirgsraums nachvollziehbar machen. Die Schlussausführungen unterstreichen, dass diese Landschaft trotz ihres Wandelns weitgehend naturnah geblieben ist, was einer frühen und konsequenten Schutzpolitik zu verdanken ist, die bis zur Gründung des Nationalparks Hohe Tauern zurückreicht. Vorbildlich wird gezeigt, wie naturtouristische Infrastrukturen wie der „Gletscherweg Pasterze“ den Zugang zur Landschaft ermöglichen, ohne ihre Integrität zu gefährden. Insgesamt vermittelt das Kapitel eine sorgfältig recherchierte und anschauliche Analyse einer alpinen Landschaft im raschen Wandel und hebt zugleich deren langfristige Schutzgeschichte hervor.

Kapitel 26 beschäftigt sich mit „Schluchten und Klammen in Westkärnten: Ihre Entwicklung und Bedeutung als geomorphologische Sehenswürdigkeiten“. Das Kapitel bietet eine präzise und anschauliche Darstellung der geomorphologischen Prozesse. Es wird überzeugend gezeigt, wie glaziale Übertiefung, tektonische Hebungen und daraus resultierende Knickpunkte die Entwicklung der Ragga-, Gaisloch- und Garnitzenschlucht gesteuert haben. Besonders eindrucksvoll ist die Herausarbeitung der unterschiedlichen Entwicklungsstadien, vom jungen, steil eingeschnittenen Felsschluchtstadium bis hin zu komplexen Klammsystemen. Die detaillierte Analyse der geologischen Strukturen und der langfristigen morphodynamischen Abläufe verdeutlicht, dass diese Formen nicht nur landschaftlich spektakulär, sondern auch wichtige „geomorphosites“ mit hoher wissenschaftlicher Aussagekraft sind. Gleichzeitig wird die historisch frühe Erschließung und Unterschutzstellung der Schluchten thematisiert, die ihren Wert für Naturtourismus und Regionalidentität unterstreicht.

Insgesamt bietet das Kapitel eine tiefgehende und zugleich gut verständliche Darstellung der vielfältigen Fluss- und Schluchtlandschaften Kärntens und ihrer Entstehungsmechanismen.

„Blockgletscher in den österreichischen Alpen: Ein allgemeiner Überblick mit besonderem Fokus auf den Dösener Blockgletscher in den Hohen Tauern" ist der Titel von Kapitel 27. Das Kapitel zu den Blockgletschern und Permafrostlandschaften Österreichs bietet einen fundierten Überblick über die räumliche Verbreitung, Dynamik und klimatologische Bedeutung dieser prägenden Hochgebirgsformen. Die Autoren zeigen eindrücklich, wie mehr als 5700 dokumentierte Blockgletscher, sowohl intakte als auch fossile, wichtige Indikatoren für gegenwärtige und vergangene Permafrostbedingungen darstellen. Besonders hervorzuheben ist die detaillierte Darstellung des Dösener Blockgletschers, der seit den 1990er-Jahren ein zentraler Forschungsstandort für geomorphologische, geophysikalische und klimatologische Untersuchungen ist und über eine außergewöhnlich lange Monitoring-Historie verfügt. Die präsentierten Messreihen zu Temperaturentwicklungen, internen Strukturen und Fließgeschwindigkeiten verdeutlichen die deutlichen Erwärmungstendenzen seit 2007 und unterstreichen die Sensitivität von Blockgletschern gegenüber klimatischen Schwankungen. Gleichzeitig wird in diesem Kapitel der hohe Wert von Wissensvermittlung und nachhaltigem Naturtourismus, etwa durch den thematischen Lehrpfad und die Einbindung in das langfristige Monitoring des Nationalparks Hohe Tauern, betont. Insgesamt bietet der Beitrag eine ausgezeichnete Synthese aus Grundlagenforschung, angewandter Geomorphologie und öffentlichkeitsorientierter Vermittlung zu einer der dynamischsten Landschaftsformen der Alpen.

Der Fokus des Kapitels 28 liegt auf dem „UNESCO Global Geopark in Salzburg". Der Beitrag bietet eine eindrückliche Übersicht über die geologische Vielfalt und kulturhistorische Bedeutung dieser Region im Bereich der Grauwackenzone und der Nördlichen Kalkalpen. Die Verfasser zeigen anschaulich, wie geologische Schlüsselstrukturen, quartäre Formungsprozesse und eine jahrtausendealte Bergbaugeschichte zu einer Landschaft von außergewöhnlicher wissenschaftlicher und kultureller Tiefe verschmelzen. Hervorgehoben wird insbesondere das dicht dokumentierte Netzwerk an Geostätten, das sowohl die erdgeschichtlichen Grundlagen als auch die Spuren menschlicher Aktivitäten von der Jungsteinzeit bis zur Gegenwart sichtbar macht. Die Ausführungen betonen den zentralen Stellenwert regionaler Identität für die Entwicklung eines Geoparks und die Rolle lokaler Akteurinnen und Akteure, die wissenschaftliche Erkenntnisse, Bildungsarbeit und nachhaltige Regionalentwicklung miteinander verknüpfen. Geotourismus wird dabei als zukunftsweisende, ressourcenschonende Ergänzung klassischer Tourismusformen präsentiert, der langfristig ökonomische Stabilität schaffen kann. Insgesamt vermittelt das Kapitel ein stimmiges Bild eines Geoparks, der Geologie, Kulturgeschichte und nachhaltige Entwicklung erfolgreich miteinander verbindet.

Kapitel 29 widmet sich der „Variabilität und Einzigartigkeit der Karlandschaften in den Schladminger Tauern" und bietet eine präzise und anschauliche Analyse einer der eindrucksvollsten Karlandschaften der Ostalpen. Anhand einer detaillierten geomorphologischen Kartierung und der Auswertung von 76 Karen wird gezeigt, dass die Region durch außergewöhnlich tief eingeschnittene und großdimensionierte Formen sowie eine bemerkenswerte Dichte und Verschachtelung von Karstrukturen geprägt ist. Besonders greifbar wird dargelegt, dass diese geomorphologische Ausprägung auf die besondere Lage des Gebirges an der Hauptwasserscheide der Ostalpen zurückzuführen ist, die während des Pleistozäns sowohl ausgedehnten Transektionsvergletscherungen als auch langandauernden Phasen lokaler Karvergletscherung ausgesetzt war. Die statistische Analyse der Expositionen unterstreicht zudem ein nahezu symmetrisches Muster der Karentwicklungen, was die Robustheit der Ergebnisse stärkt. Die Verknüpfung geomorphologischer Prozesse mit gut nachvollziehbaren glazialhistorischen Rahmenbedingungen macht das Kapitel wissenschaftlich ansprechend. Abgerundet wird der Beitrag durch praktische Hinweise zur Begehung der besprochenen Region, inklusive eines Routenvorschlags mit Hütten.

„Das Erzberggebiet: Eine Bergbaulandschaft in der Steiermark“ ist das zentrale Thema in Kapitel 30. Dieses Kapitel zum Erzberg bietet eine schöne Analyse der langfristigen landschaftsverändernden Wirkungen des Bergbaus in einer Region mit jahrhundertelanger Dokumentation. Die Bergbaugeschichte wird in drei markante Phasen gegliedert und nachvollziehbar gezeigt, wie sich die anthropogenen Eingriffe von geringen frühen Effekten über großräumige mittelalterliche Entwaldung bis hin zu den massiven Landformen- und Landschaftstransformationen des modernen Tagebaus entwickelten. Herauszustellen ist die Verknüpfung historischer Quellen mit geomorphologischen Befunden, die eine seltene Rekonstruktion der räumlichen und zeitlichen Ausdehnung mittelalterlicher Kahlschläge und ihrer erosiven Folgen ermöglicht. Die quantitativen Vergleiche von durch den Menschen bewegtem Material mit natürlichen Sedimentbudgets verdeutlichen in bemerkenswerter Weise die enorme Wirkmacht des Bergbaus und ordnen ihn überzeugend in die Diskussion um den Menschen als geomorphen Akteur im Anthropozän ein. Die Ergebnisse zeigen, dass menschliche Eingriffe lokal um mehrere Größenordnungen wirksamer sein können als natürliche Prozesse. Insgesamt bietet das Kapitel eine ausgezeichnete Synthese aus historischer Analyse, geomorphologischer Quantifizierung und aktueller Anthropozän-Diskussion.

Der Beitrag Nummer 31, „Dobratsch: Gravitative Massenbewegungen und Karst im südlichsten Naturpark in Österreich“, beschreibt ein vielschichtiges Bild eines markanten Karstgebirges, dessen geomorphologische und hydrologische Besonderheiten eng mit einer langen Geschichte von Naturgefahrenereignissen verwoben sind. Es wird aufschlussreich dargestellt, wie wiederholte Groß- und Kleinrutschungen (darunter das historisch bedeutsame Ereignis von 1348) sowohl die steile Südflanke des Berges als auch die ausgedehnte Hügellandschaft im Tal geprägt haben. Zugleich wird die außergewöhnliche Dichte an Karstformen, insbesondere Dolinen und vertikalen Höhlen, herausgearbeitet, die den Dobratsch zu einem zentralen Beispiel südlicher Alpenkarstentwicklung machen und eine wichtige Ressource für die Trinkwasserversorgung darstellen. Während zahlreiche geomorphologische Fragen weiterhin offen sind, hebt der Beitrag die intensive Biodiversitätsforschung hervor, die wesentlich zur Ausweisung des Gebiets als Naturpark beigetragen hat. Die Nähe zu besiedelten Räumen und die Tourismusattraktivität unterstreichen zudem die besondere Bedeutung des Dobratsch als Schnittstelle zwischen Naturgefahren, Naturschutz und regionaler Nutzung. Insgesamt wird hier eine ausgewogene Dokumentation eines komplexen Gebirgsraums, der wissenschaftlich wie gesellschaftlich gleichermaßen relevant ist, geboten.

Das vorletzte Kapitel 32 thematisiert das „Klagenfurter Becken: Ein großes Becken in den Alpen“. Es bietet eine klar strukturierte Darstellung der geomorphologischen Vielfalt eines inneralpinen Beckens. Der Verfasser erläutert verständlich die tektonische Entstehung sowie die prägende Rolle der pleistozänen Vergletscherung, die mit der Ausbildung zahlreicher Seen und ungewöhnlicher Flussnetzstrukturen, etwa jener der Gurk, maßgeblich zur heutigen Landschaftsform beigetragen hat. Besonders schön ist die detaillierte Analyse zweier exemplarischer Teilregionen, des Sattnitz-Plateaus und des Krappfelds, deren Sedimentarchitektur und pleistozäne Entwicklung spannende Einblicke in erosive und glazifluviatile Prozesse bieten. Die Schlussabschnitte betonen die herausragende Bedeutung pleistozäner Landformen für Siedlungsentwicklung, Landwirtschaft, Rohstoffnutzung und Tourismus seit der Römerzeit. Gleichzeitig weist das Kapitel auf überraschend große Forschungslücken hin, vor allem hinsichtlich der tektonischen Entwicklung, der Ausdehnung älterer Vergletscherungen und der genauen Chronologie des letzten glazialen Maximums. Insgesamt macht der Beitrag deutlich, dass das Klagenfurter Becken trotz seiner gesellschaftlichen Relevanz ein geomorphologisch hochspannendes und bisher relativ untererforschtes Gebiet bleibt.

Mit Kapitel 33 „Geomorphologische Hinweise auf vergangene vulkanische Aktivitäten im Südosten Österreichs“ endet der sehr ausführliche Sammelband. Das Kapitel zu den vulkanischen Relikten des Steirischen Beckens bietet eine ausführliche Darstellung der geomorphologischen Relikte zweier bedeutender vulkanischer Phasen, die zwischen 23 Millionen und 1 Million Jahren vor

unserer Zeit die Landschaft prägten. Es wird hervorragend gezeigt, wie tektonische Bewegungen, Sedimentation, unterschiedliche Eruptionsstile und intensive Erosion gemeinsam dazu führten, dass heute nur noch die erodierten Kerne der einst mächtigen Vulkangebäude erhalten sind. Die Diskussion der Hypsometrie zeigt zudem die methodischen Grenzen morphometrischer Ansätze bei komplex überprägten Vulkanrelikten und unterstreicht die vielschichtige Entwicklungsgeschichte des Gebietes. Die detaillierte Analyse macht deutlich, dass das heutige Landschaftsbild das Ergebnis eines Zusammenspiels verschiedener Faktoren wie beispielsweise Hebung, Sedimentbedeckung und tiefgreifender Denudation ist, wodurch die ursprünglichen Vulkanformen vollständig verschwunden sind. Insgesamt präsentiert das Kapitel eine sorgfältig recherchierte und methodisch reflektierte Synthese der vulkanisch geprägten Landschaften im Südosten Österreichs.

Insgesamt ist der Herausgeberin zu dieser Veröffentlichung, die zur Zeit das umfassendste Werk in diesem Kontext in Österreich ist, zu gratulieren! Zum einen für die wissenschaftlich herausragenden Beitrage der führenden Wissenschaftler aus Österreich und darüber hinaus, die hier mitgewirkt haben und so die Zusammenstellung eines derart umfassenden Werks ermöglicht haben. Zum anderen müssen auch neben dem qualitativ hochwertigen und sehr verständlich kommunizierten Inhalt die sehr schön kuratierte Struktur des Buches und die erarbeiteten Zusammenhänge zwischen den einzelnen Beiträgen positiv hervorgehoben werden. Der ähnliche Aufbau der Beiträge sowie die regelmäßige Einbettung in einen gesellschaftlichen, oft touristischen Kontext erweitern die Perspektive für die Leserinnen und Leser über die geomorphologische Brille hinaus, was positiv anzumerken ist. Abschließend bleibt festzuhalten, dass dieses Buch die Erwartungen des Verfassers dieser Rezension übertroffen hat und meiner Einschätzung nach eine interessante Lektüre für die Leserinnen und Leser der Mitteilungen der Österreichischen Geographischen Gesellschaft darstellt!

Philipp Marr (Wien)

Franz Yvonne, Heintel Martin (Hrsg.) (2025): Kooperative Stadt- und Regionalentwicklung. 2. überarbeitete und erweiterte Auflage. Wien: Facultas Verlag (= UTB-Uni Taschenbücher, Band 5880), 592 S., 70 Schwarz-Weiß-Abb., 6 Tab., ISBN 978-3-8252-6363-8 (Print-Ausgabe), eISBN 978-3-8385-6263-3 (e-Book), e-Pub 978-3-8463-6363-8.

Wenn ein Lehrbuch binnen weniger Jahre in einem namhaften Verlag in zweiter Auflage erscheint, spricht das eine eindeutige Sprache: Es muss ein Erfolg sein. So geschehen mit dem von Yvonne Franz und Martin Heintel, beide Lehrende am Institut für Geographie und Regionalforschung der Universität Wien, im Jahr 2022 in der bekannten rotfarbigen UTB-Reihe herausgegebenen Sammelband zur Kooperativen Stadt- und Regionalentwicklung, der 2025 in zweiter, zugleich aktualisierter und erweiterter Auflage erschienen ist. Dass Bücher in mehrfacher Auflage erscheinen, ist keineswegs selbstverständlich. Im Gegenteil hält der Abgesang auf das Medium Buch auch und gerade im Wissenschaftsbetrieb weiter an. Insbesondere gilt dies für Lehrbücher, denen von verschiedener Seite bereits wiederholt ein trauriges Ende vorhergesagt wurde. Wenn dessen ungeachtet ein Band offensichtlich so stark nachgefragt ist, dass eine Neuauflage in Druck gegeben wird, so ist das zweifellos etwas Besonderes und sagt gewiss auch eine Menge über dessen Relevanz und Qualität aus.

Kooperation, das Thema des vorliegenden Bandes, ist kein neues Thema, auch nicht für die Stadt- und Regionalentwicklung. Zurück bis in die 1990er Jahre reichen die Wurzeln einer engagierten, ebenso theoretisch angelegten wie anwendungsorientierten, bisweilen auch kontroversen Debatte um die Vorteile von Zusammenarbeit in den verschiedensten Kontexten der Raumentwicklung. Kooperation in der Stadt- und Regionalentwicklung, so viel darf konstatiert werden, ist un-

terdessen längst gängige Praxis. Strategien und Konzepte der räumlichen Entwicklung versprechen dann besonders erfolgreich zu sein, wenn alle Akteure, die ein Gegenstand oder Anliegen betrifft, zusammenarbeiten und ihre Kräfte bündeln. Gleichwohl gehen damit auch erhebliche Herausforderungen einher, ist Kooperation kein Selbstläufer, sondern erfordert Toleranz und Geduld sowie kreative Zusammenarbeit auf der Grundlage von theoretischen Erkenntnissen und praktischen Erfahrungen.

Im kurzen Vorwort ihres Bandes haben die beiden Herausgeber/innen erläutert, was sie zu diesem Sammelband bewogen hat und wie sie diesen konzipiert haben. Anders als eine Vielzahl anderer Publikationen, darunter auch Lehrbücher, die auf Stadtentwicklung oder Regionalentwicklung fokussieren, teilen die Herausgeber/innen die Perspektive verschiedener, vor allem jüngerer Beiträge, die Regionalentwicklung und Stadtentwicklung nicht separat adressieren, sondern als ein zusammenhängendes Handlungsfeld verstehen. Im Zentrum ihrer Konzeptionierung steht unterdessen der Fokus auf Kooperation als konstitutivem Merkmal von Stadt- und Regionalentwicklung. Das ist im Vergleich zu der Vielzahl bereits vorliegender Publikationen ohne Frage ein gewisses Novum. Mit dieser Schwerpunktsetzung verbinden sich zwei Fragen: Erstens, warum es Kooperation braucht und wie diese gelingen kann; zweitens, welche Kompetenzen dafür im Berufsfeld einer „Kooperativen der Stadt- und Regionalentwicklung" benötigt werden. Hierzu versammelt der Band Einblicke in die Überlegungen und Erfahrungen von 41 überwiegend österreichischen Autorinnen und Autoren, die sich intensiv mit dem Thema Kooperation auseinandergesetzt haben, darunter auch vier Beiträge, die in der ersten Auflage noch nicht vertreten waren. Interdisziplinarität, Transdisziplinarität und Ko-Kreation bilden dabei gleichermaßen Grundlage und Klammer der sehr heterogenen Beiträge, die ebenso auf Befunden aus der wissenschaftlichen Forschung wie Erfahrungen aus der Praxis beruhen. Die Provenienz der Autorinnen und Autoren könnte dabei nicht größer sein – sie reicht von der Architektur über Geographie, Raumplanung und Soziologie bis zu den Wirtschaftswissenschaften.

Das sehr übersichtlich und konsistent organisierte Buch ist in drei große Abschnitte gegliedert, die zu Lektüre, Wissensaneignung und Reflexion einladen. Im ersten Abschnitt „Konzeption_Kooperativ" werden konzeptionelle Ansätze einer kooperativen Stadt- und Regionalentwicklung behandelt. Sie reichen von der nationalen Raumordnung Österreichs über eine transformative Innovationspolitik und die Rolle solidarischer Ökonomien für die Stadt- und Regionalentwicklung bis zum kooperativen Handeln in der lokalen Wirtschaftsentwicklung. Für die erfolgreiche Umsetzung regionalpolitischer Strategien und Programme bedarf es dabei, so schreibt Roland Arbter, einer kooperativen Governance auf Ebene der Region, mittels der sich am ehesten die erforderliche Politikintegration einlösen lässt, die sowohl „'horizontal' im Sinne einer sektorübergreifenden und interkommunalen Kooperation […] wie auch 'vertikal' im Zusammenspielen und damit im 'Auf-den-Boden-Bringen' übergeordneter Politiken" (S. 52) wirkt. In der Österreichischen Raumordnungskonferenz (ÖROK) werde, so berichtet er, bereits seit Jahrzehnten ein „Partnerschaftsmodell" praktiziert, das durch eine Kultur des Miteinanders auf Augenhöhe geprägt sei. Das könnte, so möchte man meinen, als Vorbild auch für andere Länder dienen. Gleichwohl räumt Arbter selbst einschränkend ein, dass es ein „optimales oder 'One-size-fits-all'-Modell für regionale Zusammenarbeit" (S. 55) nicht geben könne.

Der zweite Abschnitt „Methode_Kooperativ" ist Fragen gewidmet, die das methodische Instrumentarium einer kooperativen Stadt- und Regionalentwicklung thematisieren. Ein besonderer Fokus ist dabei auf die methodische Weiterentwicklung kooperativer Praktiken gerichtet. Die Beiträge umfassen dabei so unterschiedliche Werkzeuge wie die Sozialraumanalyse, die Datenvisualisierung und das „Design Thinking", um nur einige zu nennen. In einem gemeinsam verfassten Beitrag setzen sich Michael Fischer und Martin Heintel mit der Bedeutung von Stereotypen und Metaphern

im Kontext der Stadt- und Regionalentwicklung auseinander. Sie konstatieren, dass diese einen nicht zu unterschätzenden Bedeutungsrahmen, sprich ‚Frame', schaffen und damit Wahrnehmung, Interpretation und Handeln von Akteuren nachhaltig prägen können. In diesem Sinn können negative Frames Entwicklung behindern, positive hingegen Entwicklungsdynamiken auslösen oder verstärken. Die „Macht der Worte" (S. 298) wird dabei insbesondere an Beispielen sogenannter ‚Deep Frames' deutlich, Bildern und Methapern negativer Konnotation, die zum Teil unabhängig von ihrer empirischen Evidenz kursieren. Begriffe wie „Landflucht", „entwicklungsschwach" oder „benachteiligte Region" und darum rankende Narrative sind Beispiele dafür, wie die in einer Region lebenden Menschen in die Rolle von Opfern gedrängt werden, die sich selbst aus dieser Lage nicht mehr befreien können. Umgekehrt verspricht ein Begriff wie „Hidden Champion" Wandlungsfähigkeit und Resilienz.

Im dritten und längsten Abschnitt „Implementierung_Kooperativ" wird schließlich eine Reihe ausgewählter Projekte vorgestellt, wie in verschiedenen Handlungsfeldern der Stadt- und Regionalentwicklung durch Kooperation Erfolge erzielt werden können. Die vorgestellten Beispiele, die größtenteils aus Österreich stammen, illustrieren erfolgreiche Formen der Zusammenarbeit in so unterschiedlichen Handlungsfeldern wie der Gewerbeentwicklung, dem Stadtmarketing, dem Städtebau, dem Tourismus, der Lebensmittelversorgung oder der Gebietsschutzentwicklung. Zum letztgenannten Thema illustrieren Nina Kovacs und Norbert Weixlbaumer am Fall des UNESCO-Biosphärenparks Wienerwald, wie, initiiert durch das Biosphärenparkmanagement, ein Netzwerk aus Partnerbetrieben des Schutzgebiets entstanden ist, das als „Plattform für Erfahrungsaustausch und Zusammenarbeit" (S. 467) dient. Die Partnerbetriebe und ihr Netzwerk haben dabei eine Schnittstellenfunktion zwischen ansässiger Bevölkerung, Gästen, den Partnerbetrieben untereinander sowie dem Biosphärenparkmanagement. Ihr Zusammenwirken bildet die Grundlage für die modellhafte Umsetzung von Ansätzen eines nachhaltigen Wirtschaftens in der Region und unterstreicht damit die Vorbildrolle, die Schutzgebiete für eine Nachhaltigkeitstransformation auch über ihre Grenzen hinaus übernehmen können. Das vorgestellte Beispiel steht stellvertretend für die Projektsammlung insgesamt, die eindrucksvoll die große Breite kooperativer Praktiken in der Stadt- und Regionalentwicklung widerspiegelt.

Die konsistente Organisation des Sammelbandes kommt auch in einigen Merkmalen zum Ausdruck, die alle Beiträge teilen: So ist diesen jeweils eine kurze Zusammenfassung sowie eine Liste von Keywords vorangestellt, und sie werden durch ein Verzeichnis ausgewählter Literatur sowie etwaiger anderer Quellen ergänzt. Dieses erlaubt den interessierten Leserinnen und Lesern, sich über den jeweiligen Buchbeitrag hinaus eigenständig weiter intensiver mit dem Thema zu beschäftigen. Auch wenn das Buch weithin durch das Format Text bestimmt wird, unterstützen zahlreiche Schwarz-weiß-Abbildungen die Textbeiträge und lockern das Buch auf. Das Potenzial geeigneter Illustrationen wurde dabei womöglich nicht vollständig ausgeschöpft. Ein Verzeichnis aller beteiligten Autorinnen und Autoren am Ende des Bandes bezeugt eindrucksvoll, welch großes Netzwerk von engagierten Expertinnen und Experten aus Wissenschaft und Praxis Yvonne Franz und Martin Heintel für den Sammelband gewinnen konnten. Dies gilt insbesondere auch im Blick auf die vorliegende Neuauflage, für die viele Autorinnen und Autoren eine Aktualisierung ihrer Beiträge vorgenommen haben, sowie zusätzliche Beiträge eingeworben werden konnten.

Gleichwohl wird der Sammelband keinen Anspruch auf Vollständigkeit für sich in Anspruch nehmen können – und ebenso wenig wollen. Dafür wird der Gegenstand kooperativer Praktiken in Stadt- und Regionalentwicklung durch eine Dynamik gekennzeichnet, die eine abschließende Gesamtschau kaum zulassen wird. Wünschenswert für die weitere Diskussion zum Thema wäre es, über den österreichischen (und teilweise deutschen) Erfahrungsraum, auf den die Sammlung der Beiträge fokussiert, hinaus auch Stimmen aus anderen Ländern der EU zu Wort kommen zu

lassen. Ein Blick in die Niederlande, nach Großbritannien, Skandinavien oder auch in die baltischen Staaten, um nur einige mögliche Beispiele zu nennen, könnten interessante Ergänzungen zu der vorliegenden Sammlung von Beiträgen versprechen. Womöglich liegt hierin das Potenzial für einen englischsprachigen Sammelband.

Die beiden Herausgeber/innen haben sich große Verdienste erworben, die umfangreiche Sammlung von Texten, die mit der Neuauflage auf 592 Seiten gewachsen ist, in dieser Form erstmalig in Form eines Lehrbuches zusammengestellt und einer interessierten Leserschaft zugänglich gemacht zu haben. Besondere Aufmerksamkeit verdient dabei die erklärte Überzeugung der Herausgeber/innen, dass „Kooperation […] nicht vorausgesetzt, jedoch gelernt werden (kann)“ (S. 17). Mit diesen Worten sprechen nicht zuletzt zwei Lehrende zu ihren Leserinnen und Lesern, die über viele Jahre in der universitären Lehre tätig sind und über einen entsprechenden Fundus an Erfahrungen verfügen. Darüber hinaus haben sich die beiden auch einen Namen mit der Implementierung des Weiterbildungsprogramms „Kooperative Stadt- und Regionalentwicklung“ am Postgraduate Center der Universität Wien gemacht, an dem inzwischen mehr als 100 Lehrbeauftragte mitwirken.

Ausdrücklich betonen die Herausgeber/innen in der Einleitung des Sammelbands die Bedeutung von Aus- und Weiterbildung zur Steigerung kollektiver Handlungsfähigkeit und der Sicherstellung niedrigschwelliger Zugänge zu entsprechenden Angeboten (S. 19). Wie mit dieser Herausforderung umzugehen ist, was es dafür an spezifischen Voraussetzungen bedarf und was sich insbesondere aus dem erwähnten Weiterbildungsprogramm lernen ließe, wäre zweifellos ebenfalls einen eigenen Beitrag für dieses Buch wert gewesen. Diese Frage bleibt insofern (im Rahmen dieses Buches) ein Stück weit unbeantwortet. Die Herausgeber/innen haben sich offen erklärt für weitere Anregungen zum Buch und freuen sich auf die Weiterführung eines ergiebigen Diskurses. In diesem Sinne sei der vorliegende Sammelband allen Interessierten, Studierenden ebenso wie Praktikerinnen und Praktikern, in Österreich ebenso wie im übrigen deutschsprachigen Raum, auf das Wärmste zur Lektüre empfohlen.

Ingo Mose (Oldenburg)

Heintel Martin (Hrsg.) (2025): Wien7_Neubau. Stadtplanung, Stadtentwicklung und Stadtlabor. Wien: Verlag Böhlau, 1. Aufl., 376 S., 219 farbige Abb. und Karten, 10 Tab., ISBN 978-3-205-221432-2 (Print), ISBN 978-3-205-22143-2 (open access).

Wie kann die sozialökologische Transformation des öffentlichen Raums gelingen, und welche Gestaltungsmöglichkeiten gibt es dazu auf kommunaler Ebene? Der neue Sammelband „Wien7_Neubau“, herausgegeben von Martin Heintel, bietet hierzu Antworten. Das Buch nimmt, titelgebend, den siebenten Gemeindebezirk Wiens in den Fokus und möchte mit Blicken in die jüngere Vergangenheit, die Gegenwart sowie die nahe Zukunft dazu motivieren, sich den aktuellen Herausforderungen in der Stadt- und Bezirksentwicklung, der Umgestaltung und Neuaufteilung des öffentlichen Raums sowie der klimabewussten Transformation zu stellen. Warum ausgerechnet der Bezirk Neubau als Blaupause dienen soll, wird schnell beantwortet: Es fungiere als „exemplarischer Untersuchungsgegenstand für urbane Transformationsprozesse im 21. Jahrhundert“ und zugleich als „Labor urbaner Zukunftsmodelle“. Zu Beginn formuliert der Sammelband zwei zentrale Prinzipien für eine gelungene urbane Transformation: Zum einen ist es essenziell, konkrete Teilhabemöglichkeiten zu etablieren, zum anderen bedarf es einer soliden Basis aus belastbaren Fakten und datengestützter Expertise. Auch wenn „wissenschaftliche Grundlagen“ hier durch die Begriffe faktenbasiert und Datengrundlagen präzisiert werden könnten, ist es eine erfrischende und in diesen Zeiten wohltuende Herangehensweise (bezirks-)politischer Player.

Insofern erscheint die Publikation zum richtigen Zeitpunkt. Das Buch vereint insgesamt 35 Beiträge, gegliedert in fünf Teile. Der erste Teil klärt empirische Grundlagen und Rahmenbedingungen im Bezirk Neubau. Der zweite Teil widmet sich konzeptionellen Überlegungen. Im dritten Teil stehen Partizipation und das Miteinander im Zentrum. Teil vier beleuchtet verschiedene Fallbeispiele. Abschließend bietet Teil fünf sehr diverse, mitunter persönliche Perspektiven auf den Bezirk. Die Beiträge von insgesamt 78 verschiedenen Autorinnen und Autoren variieren in ihrer Länge: Es finden sich sowohl ausführliche, tiefgehende Analysen als auch kurze, eher anreißende Einblicke. Positiv hervorzuheben ist der Umfang an Wiederholung pro Artikel. Es gibt pro Kapitel genug einleitende Worte, sodass einzelne Kapitel unabhängig voneinander gelesen werden können. Möchte man das Buch in einem Ganzen genießen, ist das Ausmaß nicht störend. Ebenso wie die Länge variieren auch die Qualitätsmerkmale der Artikel: Während einige Beiträge etwas ausschweifend und weniger systematisch ausfallen, ist der überwiegende Teil angenehm zu lesen und regt zur weiteren Beschäftigung mit den Themen an.

Teil 1: Basis im Bezirk Neubau – Rahmenbedingungen und gesellschaftliche Voraussetzungen

Der grundlegende Teil des Sammelbandes ist mit neun Kapiteln besonders umfassend vertreten. Der erste Beitrag zeigt auf, warum es sich lohnt, den Blick auf einen einzelnen Stadtteil zu richten: Globale Prozesse sind im Kleinen verhandelbar und Transformation konkret erlebbar. Kapitel zwei erweitert die Perspektive der sozialökologischen Transformation durch das Konzept der sorgenden Stadt. Im Anschluss folgen mehrere datenbasierte Kapitel: Beitrag drei liefert Einordnungen zur Bevölkerung in Neubau, das vierte Kapitel einen Blick auf das Wahlverhalten, Kapitel fünf stellt Haushalte, Einkommen und Wohnsituation in einen Zusammenhang. Der sechste Beitrag thematisiert die Transformation des Gebäudebestands. Kapitel sieben befasst sich mit den Nutzungen und der Entwicklung der Erdgeschoßzone. Im achten Beitrag stehen Gentrifizierung und Anpassungsstrategien von Langzeitbewohnenden im Mittelpunkt. Schließlich rundet Kapitel neun mit einem Blick auf die Relevanz von Narrativen für zukünftige Stadtgestaltung den ersten Teil ab.

Teil 2: Konzeptionelle Überlegungen der sozialökologischen Transformation des öffentlichen Raums

Ein besonders umfangreicher Abschnitt des zweiten Teils ist Kapitel eins gewidmet: Es bietet einen sehr detaillierten Blick in den Entwicklungsplan für den öffentlichen Raum des Bezirks und nimmt dabei eine Perspektive auf das Jahr 2040 ein. Beitrag zwei stellt den Masterplan Grün mit einem Baukastensystem für kleinräumige Klimawandelanpassungsmaßnahmen vor. Kapitel drei präsentiert den Masterplan „Gehen“ mit möglichen Verbesserungen für den Fußverkehr. In Kapitel vier steht eine Analyse des Kfz-Parkens im Bezirk Neubau im Mittelpunkt. Der fünfte Beitrag erläutert das Projekt „Gemma Gürtel 2030+“, eine Vision für die Neuaufteilung des Straßenraums im Bereich der großen Verkehrsachse „Gürtel“, die den Bezirk im Westen begrenzt.. Kapitel sechs beschließt den Abschnitt mit einer Evaluierung bisheriger Umgestaltungsprojekte, bei der die Neubauer Bevölkerung befragt wurde. Am Ende des zweiten Teils bleibt offen, wie verbindlich die vorgestellten Dokumente für den Bezirk tatsächlich sind bzw. welche Wirksamkeit diese erfahrungsgemäß entfalten können. Spätestens nach der Lektüre dieses Abschnitts wird deutlich, welchen hohen Stellenwert das Buch der qualitätsvollen Kartendarstellung und visuellen Aufbereitung von Abbildungen beimisst. Es ist erfreulich, dass diesem Aspekt so viel Raum im Werk eingeräumt wird.

Teil 3: Dialog im Bezirk Neubau – Partizipation

Im dritten Teil wird die Bandbreite möglicher Dialogmaßnahmen im Rahmen von Umgestaltungsprojekten und Transformationsprozessen sichtbar. Kapitel eins erläutert die Grundlagen zu Partizi-

pationsprozessen im Bezirk Neubau. Kapitel zwei präsentiert ein Fallbeispiel zum Stakeholdermanagement in der Stadtentwicklung. Beitrag drei beleuchtet den Einsatz von Augmented Reality in Partizipationsverfahren anhand eines konkreten Fallbeispiels. In Kapitel vier wird die Planung einer Straßenumgestaltung mit unterschiedlichen Dialogformaten vorgestellt. Beitrag fünf ermöglicht einen detaillierten Einblick in die Entstehung des Projekts „Grünes Band". Abschließend werden in Kapitel sechs unterschiedliche Ansatzpunkte zur Transformation eines Viertels diskutiert.

Teil 4: Ein Blick auf Fallbeispiele

Teil vier widmet sich intensiv einzelnen Fallbeispielen und stellt konkrete kommunale Anwendungsfälle für (Um-)Gestaltungsmaßnahmen des öffentlichen Raums in den Mittelpunkt. Kapitel eins beleuchtet den Umbau der Mariahilfer Straße. Kapitel zwei präsentiert das Beispiel Zollergasse als Teil eines größeren Transformationsprozesses. Beitrag drei stellt eine Idee zur Begrünung von Straßen, den „Wiener Klima Himmel" vor. Kapitel viert rückt das Mobilitätskonzept der Bernardgasse als Teil einer integrierten Planung und Transformation des öffentlichen Raums in das Zentrum. Beitrag fünf fokussiert auf Zwischennutzungen und deren Bedeutung für öffentliche Räume und die Stadtgesellschaft. Kapitel sechs präsentiert das Wassermonitoring eines Stadtbaums. In Beitrag sieben werden Analysewerkzeuge des Mikroklimas offeriert. Kapitel acht schließt mit einem Fokus auf Kunst und (Erinnerungs-) Kultur im öffentlichen Raum.

Teil 5: Unterschiedliche Perspektiven auf den Bezirk Neubau

Teil fünf bietet zum Abschluss eine vielfältige Mischung an Perspektiven auf den Bezirk Neubau. Kapitel eins referenziert den Bezirk Neubau als urbanes Dorf. Beitrag zwei beinhaltet ein Interview mit dem aktuellen Bezirksvorsteher. Der dritte Text gewährt sehr persönliche Einblicke in das Leben im Bezirk. Kapitel vier beleuchtet die Entwicklungen im Bezirk aus politischer Sicht deutscher Amtskolleg/inn/en. In Kapitel fünf wird Neubau im internationalen Vergleich betrachtet; die Bemühungen hinsichtlich Klimawandelanpassung, Nahverkehr und Beteiligung werden jeweils mit zwei europäischen Städten verglichen. Beitrag sechs schließt mit einer Perspektive auf den Bezirk Neubau im Vergleich zu New York City. Ein gelungener Schlussbogen, so weitreichend, wie es das Buch beabsichtigt.

Weitblick

Der Sammelband erhebt den Anspruch, beispielgebend für zukünftige Transformationsvorhaben im öffentlichen Raum zu sein. Der Aufbau sowie die Gliederung in fünf Teile orientieren sich an der Logik, ein Planungsvorhaben von den Grundlagen über die Idee bis hin zur Umsetzung und Wirkung nachvollziehbar darzustellen. Dieses Vorhaben ist sehr begrüßenswert. Allerdings erscheint die Zuteilung der einzelnen Kapitel nicht durchgehend schlüssig. Besonders die Abgrenzung zwischen den Teilen drei und vier ist nicht immer klar ersichtlich, da die meisten Beispiele partizipative Elemente enthalten und zahlreiche Kapitel zur Beteiligung als Fallbeispiele angelegt sind. Eine noch klarere Gliederung sowie eine mögliche Nummerierung der Kapitel könnten die Nachvollziehbarkeit weiter erhöhen.

Dem Buch „Wien7_Neubau" gelingt es in jedem Fall, Ideen und Inspiration für Stadtentwicklungsprojekte und eine Stadt der Zukunft zu geben. Die detaillierten Erzählungen sowie zahlreichen Abbildungen laden zum Nach- und Weiterdenken ein. Konkrete Handlungsanleitungen sollte man jedoch nicht erwarten, diese finden sich lediglich vereinzelt bei spezifischen Projekten. Die zentrale Frage lautet daher: Funktioniert das Buch als Motivationsgeber? Für Leser/innen,

die inhaltlich einen ähnlichen Zugang haben und auf der Suche nach neuen Ideen sind, trifft dies definitiv zu.

Das Werk zeigt eindrucksvoll, was auf Bezirksebene möglich ist, wenn Stadtgestaltung konsequent, faktenbasiert und dialogorientiert angegangen wird. Personen, die der dringenden Relevanz sozialökologischer Transformationen noch skeptisch gegenüberstehen, werden vermutlich nicht überzeugt. Dafür holt es alle an der Thematik interessierten Leserinnen und Leser auf einem fundierten Niveau ab. Darüber hinaus wäre es für viele Leserinnen und Leser von Interesse, wie die im Buch beschriebenen Vorhaben und Dynamiken auf andere Bezirke mit unterschiedlichen Voraussetzungen übertragbar wären. Für eine mögliche weitere Auflage wäre es daher eine Überlegung wert, jedem Kapitel drei „Quick Wins" voranzustellen oder anzuhängen. So könnte sichergestellt werden, dass die Erkenntnisse aus dem Bezirk Neubau auch auf andere Kontexte übertragen werden können.

Martin Heintel bietet mit seinem Buch einen umfassenden Einblick in die Entwicklungen der sozialökologischen Transformation des öffentlichen Raums in Neubau. Auf nahezu 400 Seiten wird eindrucksvoll verdeutlicht, wie wichtig sowohl faktenbasierte Herangehensweisen als auch die Beteiligung der Bürgerinnen und Bürger sind. Ein Zitat aus der Einleitung bringt dies treffend auf den Punkt: *„Transformationen im öffentlichen Raum sind machbar, wenn sie entsprechend vorbereitet und begleitet werden."* Dem ist uneingeschränkt zuzustimmen. Insofern bleibt zu hoffen, dass viele Akteurinnen und Akteure der Stadtgestaltung – nicht nur in Neubau – dieses Credo beherzigen. Vielleicht kann das Buch dazu einen Beitrag leisten – um gerechte Räume für die Vielen zu schaffen.

Malena Haas (Wien)

Ireinová Martina, Voženílek Vít et al. (2023): Atlas nářečí českého jazyka – nominativ singuláru feminin [Atlas der tschechischen Dialekte – Femininum Singular Nominativ]. Olomouc: Univerzita Palackého v Olomouci. 107 S., 111 Karten und zahlreiche Abb., großteils in Farbe, ISBN 978-80-244-6413-8.

Ireinová Martina, Voženílek Vít et al. (2024): Atlas nářečí českého jazyka – nominativ a akuzativ plurálu životných maskulin [Atlas der tschechischen Dialekte – Nominativ und Akkusativ Plural maskuliner Substantive]. Olomouc: Univerzita Palackého v Olomouci. 100 S., 91 Karten und zahlreiche Abb., großteils in Farbe, ISBN 978-80-244-6561-6.

Sprache ist gewiss ein gesellschaftliches Phänomen. Sie ist aber auch ein raumbezogenes Phänomen – allein schon deshalb, weil ihre Sprecher im geographischen Raum verbreitet sind. Daneben gibt es aber noch viele andere Raumbezüge von Sprache, zum Beispiel die Eigenschaft von Dialekten, Merkmale lokaler oder regionaler Identität zu sein. Sprache ist damit ein ebenso legitimer Gegenstand geographischer Forschung wie andere Merkmale der Bevölkerung (siehe dazu Jordan 2006). Trotzdem gibt es kaum eine Sprachengeographie im Sinne einer geographischen Teildisziplin und Geographen befassen sich sehr selten mit Sprache. Viel häufiger als in der Geographie verwendet man in der Linguistik den Terminus „Sprachgeographie", allerdings in einer Bedeutung eingeengt auf die räumliche Variation von Sprech- und Schreibweisen, das Feststellen von „Sprachlandschaften". Diese Variation betrifft hauptsächlich Dialekte, aber auch die Standardsprache, obwohl die viel stärker normiert ist. Die linguistische Sprachgeographie hat auch eine Vielzahl von Dialekt- und Sprachatlanten hervorgebracht, die für Linguisten ein wichtiges Erkenntnisinstrument sind: Die in den Karten verortete und sichtbar gemachte Variation ermöglicht Schlüsse auf Diffusionszentren und -richtungen, auf soziologische und kulturelle Gründe der Verbreitungsmuster. In Österreich ist damit besonders der Salzburger Romanist Hans Goebl hervorgetreten (siehe Goebl 1984, 1992,

2004). In einer sehr geographischen Weise mit Sprache, den Gründen ihrer räumlichen Verbreitung und deren politischen Hintergründen besonders im mittleren Europa, hat sich der polnische Linguist Tomasz Kamusella (siehe z. B. Kamusella 2009, 2021) befasst.

Für das Zustandekommen des vorliegenden tschechischen Dialektatlasses ist neben Sprachwissenschaftlern der Dialektologischen Abteilung des Instituts für die Tschechische Sprache der Tschechischen Akademie der Wissenschaften [Oddělení dialektologie Ústavu pro jazyk český Akademie věd ČR] dem Lehrstuhl für Geoinformatik der Naturwissenschaftlichen Fakultät der Palacký-Universität [Katedra geoinformatiky Přírodovědecká fakulta Univerzita Palackého] in Olmütz [Olomouc] und dessen Leiter Vít Voženílek zu danken, der sich umfassend für die kartographische Visualisierung von Forschungsergebnissen einsetzt und die Universität Olmütz zu einem Zentrum der modernen Atlaskartographie gemacht hat.

Die beiden hier zu besprechenden Bände sind die bei der Internationalen Kartographischen Konferenz 2025 in Vancouver vorgestellten Teile eines fünfteiligen Atlasprojekts, welches den fünfbändigen Tschechischen Linguistischen Atlas (Ùstav pro jazyk český AV ČR 1992–2011) mit dem Datenstand der 1960er und 1970er Jahre fortführt und durch jüngere Forschungsergebnisse der Dialektologischen Abteilung des Instituts für die Tschechische Sprache der Tschechischen Akademie der Wissenschaften ergänzt. Von diesem neuen Atlasprojekt sind bereits die Bände „Vokalkürzungen“ [krácení vokálů] (2020), „Plural instrumental“ [instrumentál plurálu] (2022) und „Deklination von Hauptwörtern“ [deklinace substantiv] (2022) erschienen.

Der 2023 erschienene Band “Femininum Singular Nominativ” bietet in seinem Einleitungsteil zunächst eine Übersicht über die Dialektregionen in Tschechien. Diese und alle folgenden Karten beschränken sich in ihrer thematische Darstellung auf das slawische Altsiedelgebiet Tschechiens und beziehen die ehemals deutschen Siedlungsgebiete an den Rändern Böhmens [Čechy], Mährens [Morava] und Tschechisch-Schlesiens [Slezsko] nicht mit ein, da sie heute eine sprachlich gemischte Bevölkerung aufweisen, die nach dem Zweiten Weltkrieg aus verschiedenen Teilen der Tschechoslowakei zugezogen, jedenfalls nicht autochthon genug ist, um einen bodenständigen Dialekt ausgebildet zu haben. Das slawische Altsiedelgebiet ist unterteilt in ein Gebiet tschechischer Dialekte im engeren Sinn (im Wesentlichen auf Böhmen beschränkt), in ein Gebiet zentralmährischer Dialekte, in ein solches ostmährischer und in ein Gebiet schlesischer Dialekte, wobei auch noch Übergangszonen (tschechisch-mährische Dialekte, schlesisch-mährische Dialekte, schlesisch-polnische Dialekte im Gebiet von Teschen [Těšínsko], siehe dazu Jordan und Mácha et al. 2021) und Unterteilungen ausgewiesen sind. So scheint als eine Untereinheit des ostmährischen Dialektgebiets die Mährische Walachei [Valašsko] mit ihren walachischen Einflüssen auf die Volkskultur im Allgemeinen auf (siehe Vencálek et al. 1993).

Im ersten Teil („Analytische Karten. Appellativa und Toponyme“) zeigen sodann auf 35 Doppelseiten analytische Karten die räumliche Verteilung von Dialektformen im Femininum Singular Nominativ, wobei die Hauptkarten im Maßstab 1:1,4 Millionen die regionalen phonetischen Hauptvarianten behandeln, während Nebenkarten in kleineren Maßstäben noch auf weitere Varianten hinweisen. Im zweiten Teil („Synthetische Karten. Typisierung und Regionalisierung“) werden die Feldforschungsergebnisse des ersten Teils in sieben Karten des Maßstabs 1:1,4 Millionen zu Typen zusammengefasst. Der Rest des Bandes bezieht sich auf den 1992–2011 erschienenen Tschechischen Linguistischen Atlas und enthält eine Bibliographie, Links zu Audiobeispielen, Hinweise auf die beteiligten Institute sowie neben einer tschechischen auch eine englische Zusammenfassung.

Der 2024 erschienene Band „Nominativ und Akkusativ Plural maskuliner Substantive“ ist ganz ähnlich aufgebaut. Er besteht wieder aus einem analytischen Teil mit Verbreitungskarten von Dialektwörtern – jeweils sechs Bezeichnungen von Personen (*sedlák* ‚Bauer‘, *kluk, hoch*, jeweils ‚Bub‘, *syn* ‚Sohn‘, *host* ‚Gast‘, *pekař* ‚Bäcker‘) und von Tieren (*ptáček* ‚kleiner Vogel‘, *pes* ‚Hund‘, *holub*

‚Taube', *vůl* ‚Ochs', *jelen* ‚Reh', *vrabec* ‚Sperling') und einem zweiten Teil mit Typenbildungen wie auch aus den beim vorigen Band erwähnten Einleitungs- und Schlussteilen.

Man kann auf dem Standpunkt stehen, dass tschechische Dialektologie ohnehin nur für ein des Tschechischen mächtiges Publikum interessant ist. Doch wäre eine vielleicht auch nur zusätzlich angebotene Version in der globalen Verkehrssprache Englisch internationalen Vergleichen sehr förderlich. Das würde sich dieser kartographisch sehr eindrucksvolle Atlas, der zu den Legendenerklärungen auch noch reichlich Text enthält, durchaus verdienen. Ein Atlas ist jedenfalls auch ein geeignetes Mittel, um Raumbezüge von Sprache in das Blickfeld der Geographie zu rücken.

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Ùstav pro jazyk český AV ČR [Institut für die tschechische Sprache der Akademie der Wissenschaften der Tschechischen Republik] (1992–2011): Český jazykový atlas [Tschechischer Sprachatlas]. Praha: Academia.

Vencálek J. et al. (1993): Valašsko. Geografie místního region pro základní školy [Walachei. Geographie der Region für Grundschulen]. s.l.: Školský úřad Kroměříž, Školský úřad Vestín, Školský úřad Zlín.

Peter Jordan (Hermagor / Wien)

Job Hubert, Kempf Jürgen, Lang-Novikov Katrin, Losang Eric (Hrsg.) (2025): Atlas 100 Jahre Geographische Gesellschaft Würzburg 1925–2025. Würzburg: Julius-Maximilians-Universität Würzburg, Geographische Gesellschaft Würzburg e.V. (= Würzburger Geographische Arbeiten, Band 128), 1. Aufl., 200 S., 215 großteils farbige Abb., 147 Karten, ISBN 978-3-00-083741-8.

Geographische Gesellschaften haben es heute – wie wohl auch ähnliche Verbände anderer Wissenschaften – nicht leicht: Sie stehen in Konkurrenz zu einem vielfältigen Medien- und Freizeitangebot und sind mit dem Qualifikationsdruck junger Wissenschaftler an den Universitäten konfrontiert, der diesen kaum Zeit lässt, sich ehrenamtlich zu engagieren. Eine Besonderheit der Geographie dürfte

aber wohl deren mangelnde fachliche Geschlossenheit sein. Sie hat sich in viele Zweige aufgesplittert, Geographen bezeichnen sich oft auch nicht mehr als solche, sondern als Demographen, Migrationsforscher, Tourismusforscher oder Klimatologen; manchmal hat sich sogar die institutionelle Einheit an Universitäten aufgelöst. Unter diesem Umstand leiden geographische Gesellschaften aber nicht nur; er vermittelt ihnen auch die neue und nicht unbedeutende Rolle, ein letztes gemeinsames Dach zu bilden, ein Bindeglied zu sein zwischen den auseinanderdriftenden Teilgebieten. Wie man aus all diesen Gegebenheiten das Beste macht, zeigt der vorliegende Band der Geographischen Gesellschaft Würzburg (GGW), die auch mit 100 Jahren noch einen sehr lebendigen Eindruck macht und zu diesem Jubiläum mit diesem Band beweist, dass die Geographie nicht nur eine bedeutende Wissenschaft war, sondern auch zu Themen unserer Zeit viel zu sagen hat.

Die genau 200 Seiten umfassende, großformatige, reich illustrierte Festschrift enthält außer Gruß- und Vorworten und Darstellungen der Geographischen Gesellschaft Würzburg (GGW) im Speziellen sowie Gedanken zu geographischen Gesellschaften im Allgemeinen im Teil „Vorspann“ in zwei umfangreichen „Kartenteilen I und II“ und in zeitlicher Ordnung sowie hervorragender kartographischer Qualität 68 jeweils zweiseitige Darstellungen der Forschungsfelder schon verstorbener, überwiegend aber noch lebender Mitglieder der GGW zu einer großen Fülle von Themen, wobei die Forschungsfelder schon Verstorbener von den vier Herausgebern zusammengefasst werden.

Ute Wardenga, Präsidentin der Deutschen Gesellschaft für Geographie, leitet mit ihrem Grußwort die Festschrift ein und sieht den Gründungszeitpunkt 1925 und die Gründung als Ausdruck der Hoffnung und eines wachsenden Vertrauens in der ersten Phase einer politischen Erholung nach dem Ersten Weltkrieg. Weitere Grußworte des Oberbürgermeisters und des Präsidenten der Universität Würzburg folgen.

Hubert Job, Kulturgeograph, Träger des Hans-Bobek-Preises der Österreichischen Geographischen Gesellschaft (2000) und bis 2025 Präsident der GGW, verweist in seinem Rückblick auf die Geschichte der Gesellschaft auf deren Gründung durch einen Hochschulprofessor (Karl Sapper) wie ab dem Ende des 19. Jahrhunderts zunehmend üblich, während frühere Gründungen zumeist adelige oder großbürgerliche Initiativen waren. Er erklärt auch, warum die Festschrift zum 100-jährigen Bestand der Gesellschaft „Atlas“ genannt wurde, obwohl sie kaum einen höheren Kartenanteil enthält als eine textliche geographische Abhandlung: weil Karten „das Alleinstellungsmerkmal unserer Disziplin“ sind. Dieser Feststellung kann der Rezensent, der selbst als Kartograph begonnen hat, nur zustimmen.

Vorspann

Heinz Peter Brogiato, bis vor Kurzem Leiter der Kartensammlung des Leibniz-Instituts für Länderkunde in Leipzig, steuert mit seinen Gedanken zu geographischen Gesellschaften in Deutschland ein sehr grundsätzliches und wesentliches Kapitel bei. Er kehrt hervor, dass die Gründung der ersten Gesellschaften im früheren 19. Jahrhundert in erster Linie vom Motiv getragen war, geographische Bildung in eine weitere Öffentlichkeit zu tragen, wissenschaftliche Geographie in der Praxis anzuwenden. Zur Mitte des 19. Jahrhunderts entwickelten sie unabhängig von der Universitätsgeographie eine gewisse Eigendynamik, weil Berichte von Entdeckungsreisenden sehr populär wurden. Im späteren 19. Jahrhundert gerieten viele deutsche geographische Gesellschaften in das Fahrwasser der deutschen Kolonialpolitik, obwohl sich einige auch davon distanzierten. Es ist hier eine gewisse Parallele zur Gründungswelle geographischer Gesellschaften im östlichen Mitteleuropa und in Südosteuropa zu erkennen, die ihre „Sendung“ jeweils als nationale Sprachrohre einer an sich internationalen Wissenschaft erblickten und dadurch sehr bedeutend wurden, weil sie nationale Ideen und die entsprechenden Staatsbildungen legitimierten. Der Beitrag erwähnt auch interessante Aspekte der Entwicklung deutscher geographischer Gesellschaften in der

Zwischenkriegszeit, in der Ära des Nationalsozialismus und in der in zwei deutsche Staaten geteilten Nachkriegszeit.

Konrad Schliephake und Raphael Meinhart beleuchten sodann Umfeld, Personen und Konzepte der Geographischen Gesellschaft Würzburg in den 100 Jahren ihres Bestandes, Winfried Weber fügt dem noch einen Blick auf Vereinsleben und Mitgliederentwicklung hinzu. Dabei sticht die enge Bindung der Gesellschaft an das Universitätsinstitut von Anfang an und bis heute hervor, während sich solche Bindungen anderswo deutlich gelockert haben und oft kaum noch erkennbar sind. Unter den mit der Gesellschaft eng verbundenen Universitätslehrern sind sicher die GGW-Vorsitzenden Julius Büdel und Horst Hagedorn die prominentesten.

Von zwei Absolventen der Würzburger Geographie, Felix Weinrich und Ulrich Neuhaus, stammt eine Art Exkurs über Schulatlanten früher und heute. Außer auf die Zunahme thematischer Karten wird dabei vor allem auf die heutigen digitalen Angebote hingewiesen.

Eric Losang vom Leibniz-Institut für Länderkunde in Leipzig, Co-Chair der „ICA Commission on Atlases“, steuert als Mitherausgeber dieser Festschrift und Mitglied der GGW einen weiteren Exkurs zur Entwicklung von thematischen Landkarten als Medien der Visualisierung geographischer Forschungsergebnisse bei. Er rollt darin die historische Entwicklung ab dem 17. Jahrhundert auf und verweist nicht nur auf kartographische Aspekte, sondern auch auf die Rolle der thematischen Kartographie und einzelner thematischer Karten in der öffentlichen und politischen Meinungsbildung, zum Beispiel auf die der ethnographischen Karte des Königreichs Ungarn („Carte Rouge“) von Pál Teleki bei den Pariser Friedensverhandlungen nach dem Ersten Weltkrieg. Es kommt auch die Entwicklung einer wissenschaftlichen Kartographie seit dem grundlegenden Werk von Max Eckert-Greifendorff „Die Kartenwissenschaft“ (1921) zur Sprache, die mit der Einordung der Kartensprache in die allgemeine Zeichentheorie durch Jacques Bertin (1967) eine entscheidende Wende erfuhr. Schließlich verweist Losang auch auf die interaktiven Möglichkeiten digitaler Kartographie und die nicht so neue, aber früher wohl zu wenig deutlich formulierte Erkenntnis, dass Karten generell nicht objektive Abbilder der Wirklichkeit sind, sondern soziale, interessengeleitete Konstrukte.

Es folgen auf 154 Seiten die schon erwähnten in zwei „Kartenteile“ gegliederten und chronologisch geordneten zweiseitigen Kurzdarstellungen wichtiger Forschungsfelder der Würzburger Geographie. Sie seien im Folgenden nur mit dem Namen des Forschers/der Forscher und ihrem Titel kursorisch erwähnt.

Kartenteil I: Frühere Würzburger Geograp/inn/en

Karl Theodor Sapper (1866–1945): „Vom Vulkanismus in Guatemala zu den Ernährungsproblemen der Menschheit“; Arthur Lichtenauer (1898–?): „Wasserkraft in Europa“; Otto Jessen (1891–1951): „Angola und die Randstufen der Kontinente“; Hilde Heumüller: „Würzburg – eine geographisch-historische Momentaufnahme vor der Zerstörung“; Horst Mensching (1921–2008): „Land-Degradation und Ressourcenverbrauch im Mediterranraum“; Walter Gerling (1907–1986): „Die Gewinnung und Verarbeitung von Naturstein bei Kirchheim/Unterfranken“; Theodor Kraus (1894–1973): Houston als städtisches Abbild des „Texas-Booms“; Hermann Flohn (1912–1997): „Grundlagen der allgemeinen Zirkulation der Atmosphäre“; Hubert Körber (1925–1999): „Reliefgenerationen im Maintal“; Ulrich Glaser (1936–2008): „Miozäne Strände im süddeutschen Molassemeer“; Alfred Herold (1929–1999): „Der zelgengebundene Anbau im Randgebiet des Fränkischen Gäulandes“; Horst Hagedorn (1933–2018): „Äolische Abtragung: Windrelief und Ende der Kernwüste“; Gerhard Stäblein (1939–1993): „Die Oberflächenformen der Vorder- und Südpfalz“; Arno Semmel (1929–2010): „Periglaziale Lagen als Bezugshorizonte umweltgeschichtlicher Forschungen“; Hanna Bremer (1936–2012): „Inselberge – ein Charakteristikum tropischer Rumpfflächen“; Adolf Arnold (1935–2015): „Tunesien – Entwicklungen und Charakteristika ei-

ner touristischen Destination im Globalen Süden“; Detlef Busche (1942–2011): „Pedimente – Ein Beitrag zur geomorphologischen Terminologie“; Hermann Weizmann (1938–): „Erdölförderung und Erdölverbrauch 1967 und heute“; Joachim Jeske (1947–1985): „Verkehrsinfrastruktur im südlichen Afrika: Kontinuität und Wandel seit den 1970er Jahren“; Hermann Aschenbach (1937–): „Hygrische Variabilität, agronomische Trockengrenzen und Klimawandel – das Fallbeispiel Tunesien“; Fouad Ibrahim (1938–): „Stadtentwicklung zwischen Desertifikation und Bürgerkrieg: das Beispiel El Fasher (Sudan)“; Julius Büdel (1903–1983): „Formungszonen und klima-genetische Geomorphologie“; Horst-Günther Wagner (1935–) und Hubert Job (1958-): „Straßenbau-Großprojekte in Westafrika“; Lutz Holzner (1938–): „Stadtland USA – zur schematischen Abbildung von Lutz Holzner“; Ingrid Stengel (1963–): „Das Geheimnis der Rippelmarken auf Sandoberflächen“; Johannes Müller (1959–): „Raumzeitliche Veränderungen landschaftlicher Kleinstrukturen: das Beispiel Ochsenfurter Gau (Gaukönigshofen/Eichelsee)“; Bernd M. Schmitt (1953–): „Ein kommunales Informationssystem für die Stadt Würzburg“; Hans-Ulrich Hahn (1962–): „Historische Starkniederschläge als Modell für die Wirkung des Klimawandels in Süddeutschland“; Helmut Jäger (1923–2017): „Der Wolf als Repräsentant deutscher Umweltgeschichte“; Barbara Sponholz (1960–): „Silikatkarst in der Sahara“; Wolf Dieter Blümel (1943–): „Spitzbergen als eine Typuslokalität für Polarforschung“; Klaus Wolf (1938–2014): „Motorisierter Individualverkehr im Rhein-Main-Gebiet“.

Kartenteil II: Beiträge aus der heutigen Zeit

Ulrich Ante (1944–): „Würzburg und seine Partnerstädte: Eine Skizze zur Internationalisierung der Stadt“; Roland Baumhauer (1956–): „Sahara oder Sahel? – 10.000 Jahre zwischen Weide und Wüste“; Dieter Böhn (1938–): „Handel im Wandel – Auswirkungen auf Raumstrukturen am Beispiel des Mittelzentrums Kitzingen“; Ludger Brenner (1966–): „Biosphärenreservate als Mittel des partizipativen Naturschutzes in Mexiko“; Hartwig Frimmel (1960–): „Das Witwatersrand-Becken – älteste und größte Konzentration von Gold in der Erdkruste“; Philipp Garbe (1993–), Eva Lange-Athinodorou (1974–) und Julia Meister (1986–): „Die sakralen Wasserlandschaften im altägyptischen Nildelta am Beispiel des Bastet-Tempels im antiken Bubastis“; Barbara Hahn (1955–): „New York. Eine von Krisen geschüttelte Stadt“; Sina Hardaker (1985–): „Der Hafen von Liverpool – eine bewegte Geschichte“; Jucundus Jacobeit (1955–): „Atmosphärische Zirkulationstypen und großflächige Starkniederschläge im südlichen Mitteleuropa“; Hubert Job (1958–): „Schutzgebiete und Bevölkerungswachstum – das Beispiel Kenia“; Jürgen Kempf (1966–): „Polygenetische Böden der Wüste Namib und ihrer Randlandschaften“; Andreas Klee (1966–): „Forschen im Netzwerk: Die Akademie für Raumentwicklung in der Leibniz-Gemeinschaft“; Ralf Klein (1960–): „Die landesplanerische Ausweisung zentraler Orte in Bayern. Verlust der raumordnerischen Steuerungswirkung durch inflationäre Zunahme und Aufstufung“; Dorothée Kleinschrot (1963–): „Historische Erzlagerstätten im Harz – eine Ausstellung im Mineralogischen Museum“; Thomas Kreuzer (1984–), Christian Büdel (1980–), Peter Priesmeier (1993–), Alexander Fekete (1976–) und Birgit Terhorst (1962–): „Rutschungsgefährdung im Elburs-Gebirge, Iran: ein zeit-dynamischer, hybrider Ansatz physikalischer und statistischer Methoden“; Fred Krüger (1959–): „Afrikanischer Urbanismus? Stadtentwicklung und urbaner Lebensalltag im östlichen und südlichen Afrika“; Katrin Lang-Novikov (1976–), Fidelcastor Kimario (1984–) und Hubert Job (1958–): „Serengeti darf nicht sterben“; Marius Mayer (1982–): „Wandel der skitouristischen Infrastruktur und Gletscherschwund auf der Zugspitze“; Dieter K. Müller (1968–): „Vom Ferienhausurlaub zum multilokalen Wohnen – schwedische Erfahrungen mit einem touristischen Phänomen“; Matthias Naumann (1976–): „Ländliche Gentrifizierung in Brandenburg?“; Heiko Paeth (1970–): „Das Stadtklima von Würzburg“; Markus Pingold (1977–): „Kulturland-

schaftswandel in Bad Hindelang im Allgäu“; Felix Pollinger (1981–): „Anthropogener Klimawandel in Unterfranken“; Joachim Rathmann (1972–): „Therapeutische Landschaften“; Sebastian Rauch (1987–) und Jürgen Rauh (1961–): „Hausärztinnen/Hausärzte und ihre Erreichbarkeit in Bayern“; Marit Rosol (1974–): „Ortoloco Zürich – Urbane Landwirtschaft als solidarische Ökonomie“; Philipp Sacher (1992–): „Militärkonversion in Unterfranken – Urbane Experimente zwischen Nachhaltigkeit und Wettbewerbsdruck“; Winfried Schenk (1956–): „Weinbau in Franken vom 19. bis ins 21. Jahrhundert – aus der Dauerkrise zum Motor der Regionalentwicklung“; Erhard Schulz (1944–) und Aboubacar Adamou (1948–): „Die Sahara. Mehr als eine Wüste!“; Georg Stauch (1975–), Lukas Dörwald (1991–), Alexander Esch (1991–) und Janek Walk (1992–): „Der Urfstausee – ein Archiv des Anthropozäns“; Hannes Taubenböck (1977–), Johannes Mast (1993–) und Henri Debray (1993–): „Stadtgeographie aus dem Weltraum: Dynamiken, Dimensionen und Formen der globalen Urbanisierung“; Michael Thiel (1973–): „Schutzgebiete und Kakao-Anbau in Westafrika“; Tobias Ullmann (1985–) und Leon Nill (1996–): „Folgen des Klimawandels in der westlichen kanadischen Arktis“; Mark Vetter (1972–): „Bekämpfung vernachlässigter Infektionskrankheiten mit geographischen Informationssystemen in Togo“; Oliver Weidlich (1965–): „Regionale Initiativen als Raum-Gestalter und Regionalentwickler: das Beispiel Unterfranken“; Manuel Woltering (1979–): „Wildnis in Deutschland zwischen Idealismus und Realismus“.

Ein umfangreiches Literatur- und ein Autorenverzeichnis schließen den Band ab. Mit ihm erweist sich die Geographische Gesellschaft Würzburg als eine Gesellschaft mit stolzer Geschichte, aber auch als eine in den „besten Jahren“. Sie ist auch ein Beweis dafür, dass geographische Gesellschaften sehr wohl in der Lage sind, heutigen Anforderungen gerecht zu werden und sich immer wieder zu erneuern. Ein besonderes Erfolgsrezept der GGW dürfte dabei die stets enge Verbindung von Universitätsinstitut und Vereinsstruktur gewesen sein.

Peter Jordan (Hermagor / Wien)

Kocsis Károly, Kovács Zoltán, Nemerkényi Zsombor, Gercsák Gábor, Kincses Áron (Hrsg.) (2024): National Atlas of Hungary Volume 1: State and Nation. Budapest: Hungarian Academy of Sciences, Research Centre for Astronomy and Earth Sciences, Geographical Institute. 207 S., 496 Abb. und Karten, großteils in Farbe, 978-963-9545-70-0.

Der vorliegende Band ist Teil 1 des neuen ungarischen Nationalatlasses und der dritte erschienene Teil des aus vier Teilen bestehenden Projekts. Als erster Teil erschien im Jahr 2018 Band 2 zur natürlichen Umwelt, als zweiter im Jahr 2021 Band 3 zur Gesellschaft. Band 3 zur Wirtschaft soll noch folgen. Jeder Band erscheint in einer ungarischen und englischen Druckausgabe sowie in einer Digitalversion.

Das laufende Projekt stellt die dritte Generation ungarischer Nationalatlanten nach den von Sándor Radó im Jahre 1967 und von Márton Pécsi im Jahre 1989 herausgegebenen Atlanten dar, wobei letzterer nach der politischen Wende durch weitere Karten ergänzt wurde. Man kann diesen Atlas auch als die vierte Generation bezeichnen, wenn man András Rónais 1945 erschienenen „Atlas von Mitteleuropa“ als ungarischen Nationalatlas wertet. Ungarn dürfte damit das Land Europas mit den meisten nach dem Zweiten Weltkrieg erschienenen Nationalatlanten sein. Dies ist erstens wohl damit zu erklären, dass Ungarn in Geographie, Kartographie und benachbarten Wissenschaften eine sehr engagierte wissenschaftliche Szene aufweist; zweitens mit den häufigen politischen Veränderungen des Landes in diesem Zeitraum, die Aktualisierungen notwendig machten. Drittens empfindet man in Ungarn wohl auch ein besonderes Bedürfnis, das Land seinen Bürgern und der

internationalen Öffentlichkeit zu präsentieren – eben wegen der grundlegenden Umbrüche, die es seit dem Ersten Weltkrieg erlebt hat und wegen des markanten Wandels seiner Rolle unter den europäischen Staaten. Wie der federführende Herausgeber, Károly Kocsis, in seinem Vorwort feststellt, sind Nationalatlanten nicht nur wissenschaftliche Werke, sondern auch Symbole nationaler Identität (‚identity cards') ähnlich Fahnen, Wappen und Hymnen (siehe dazu auch Jordan 2002, 2004). Sie spiegeln das Selbstbild eines Landes wider wie es auch einer internationalen Öffentlichkeit vermittelt werden soll.

Wer selbst schon einen Atlas herausgegeben hat weiß, dass das die „Mutter aller Schlachten" in der Kartographie ist. Es muss ein Gesamtkonzept entwickelt werden, es sind Autoren für die einzelnen Karten zu finden, Karten- und Textmanuskripte müssen in ein System gebracht und koordiniert werden, die kartographischen Lösungen sollen zugleich innovativ, harmonisch und die Leserschaft ansprechend sein, und nicht zuletzt soll der Atlas die weitestmögliche Verbreitung finden. Im Fall der englischen Ausgabe eines in einer anderen Sprache gestalteten Originals ist nicht nur für eine sprachlich einwandfreie Übersetzung zu sorgen, sondern obliegt es auch noch den Fachautoren, die richtige Wiedergabe der Terminologie genau zu überprüfen.

Es kann hier auf die ersten beiden schon erschienenen Bände nur kursorisch hingewiesen werden. Band 2 zur natürlichen Umwelt besteht aus 13 Kapiteln mit 137 Karten- und Textteilen. Kapitel I stellt Ungarn im Überblick dar, Kapitel II die Geologie, Kapitel III die Geophysik, Kapitel IV das Relief, Kapitel V das Klima, Kapitel VI die Gewässer, Kapitel VII die Böden, Kapitel VIII die Vegetation, Kapitel IX die Tierwelt, Kapitel X die Landschaften, Kapitel XI die Entwicklung von Umweltindikatoren, Kapitel XII den Umweltschutz und Kapitel XIII die Naturgefahren.

Der Band 3 zur Gesellschaft umfasst 12 Kapitel mit 163 Karten- und Textteilen. Wieder wird in Kapitel I zunächst ein Überblick geboten. Sodann stellt Kapitel II die Besiedlungsgeschichte dar, Kapitel III Bevölkerungsverteilung und Bevölkerungsdichte, Kapitel IV die natürliche Bevölkerungsentwicklung, Kapitel V die Wanderung, Kapitel VI Bevölkerungsstrukturen, Kapitel VII historische Siedlungsstrukturen und -entwicklungen, Kapitel VIII das heutige Siedlungssystem, Kapitel IX städtische Siedlungen, Kapitel X Budapest und seine Region, Kapitel XI ländliche Gebiete und Kapitel XII Lebensbedingungen und Lebensqualität.

Im Gegensatz zu vielen anderen Nationalatlanten gewinnt dieser Atlas vom Blick auf eine größere Region, in diesem Fall (40 % der Karten) auf das gesamte Pannonische Becken oder Karpatenbecken, was natürlich auf Ungarns Selbstbild als Nachfolger einer viel größeren historischen Einheit zurückzuführen ist. Dabei ist anzuerkennen, dass dies viel mehr Arbeit bedeutet, weil vergleichbare Daten und Klassifikationen für eine ganze Reihe von Ländern gefunden werden müssen. Es ist auch anzumerken, dass man in Ungarn unter dem *Pannonischen Becken* und dem *Karpatenbecken* verschiedene Raumeinheiten versteht. Während mit *Pannonischem Becken* die naturräumliche Raumeinheit gemeint ist, bezieht sich der Begriff des *Karpatenbeckens* auf die historisch-kulturelle Heimat oder das autochthone Siedlungsgebiet der Ungarn, also auf das historische Staatsgebiet des Königreichs Ungarn (Kocsis im Vorwort auf Seite 12).[2)]

Der vorliegende Band hat 18 Herausgeber, 53 Textautoren und 64 Kartenautoren und ist in 12 Kapitel gegliedert. Das Verzeichnis der Mitwirkenden liest sich wie ein „Who is who?" der ungarischen Geographie und Kartographie. Wie schon die früheren Bände ist er das Ergebnis der Zusammen-

[2)] Im Originalwortlaut: „Whereas the *Pannonian Basin* is a geographical and natural phenomenon, meaning the actual basin between the Alps, the Carpathians and the Dinarides, the *Carpathian Basin* is (without irredentistic connotations), a term frequently used in colloquial Hungarian, covering the historical-cultural homeland, or autochthonous settlement area, of Hungarians, in fact, the historical territory of the State." (Kocsis, S. 12)

arbeit mit dem Statistischen Zentralamt [Központi Statisztikai Hivatal] sowie mit allen Universitäten des Landes und darüber hinaus (z. B. der Babeş-Bolyai-Universität Klausenburg/Cluj-Napoca/Kolozsvár in Rumänien). Die einzelnen Kapitel sind nicht nur nummeriert, sondern auch farblich gekennzeichnet, was die Übersichtlichkeit fördert. In der englischen Ausgabe erscheinen englische Exonyme an erster Stelle, wenn es solche für ein Objekt gibt, und die jeweiligen Endonyme bei Siedlungen darunter, bei anderen Objektkategorien aber nur in einem Ortsverzeichnis am Ende des Bandes. Namen in Minderheitensprachen sind laut Vorwort in der Karte angegeben, wenn die Minderheit einen Anteil von mehr als 10 Prozent an der Gesamtbevölkerung erreicht. Allerdings bleibt offen, auf welche Raumeinheit sich dieser Schwellenwert bezieht und stellt sich zum Beispiel die Frage, warum die rumänischen Städtenamen *Sibiu* und *Braşov* nicht von deutschen (oder auch ungarischen) Namen begleitet sind, *Saxonian Land (Königsboden)* und *Ţara Bârsei* (*Burzenland*) aber doch. Es wäre klarer und aussagekräftiger, nach dem Kriterium der Amtlichkeit eines Namens vorzugehen, was bei gleichrangiger Amtlichkeit zu S*opron/Ödenburg* statt *Sopron* und zu *Cluj-Napoca/Kolozsvár/Klausenburg* statt *Cluj-Napoca (Kolozsvár)* führen würde.

Kapitel I „Ungarn auf einen Blick“ vermittelt auf drei Seiten zunächst eine Übersicht über die aktuelle administrativ-territoriale Gliederung des Landes in die traditionsreichen Komitate [vármegye] (derzeit 19) und die Hauptstadt [főváros] Budapest auf der ersten subnationalen Ebene und in 174 Kreise [járás] bzw. 23 Stadtbezirke [kerület] in Budapest auf der zweiten. Zusätzlich sind die Grenzen und Hauptorte der im Jahr 1999 eingerichteten 7 Planungs- und Statistikregionen [tervezési-statisztikai régiók] angegeben, die der Ebene NUTS-2 entsprechen. Auf einer Doppelseite folgt sodann eine topographische Karte des ganzen Pannonischen Beckens und seiner Nachbarschaft mit farbiger Reliefdarstellung. Obwohl ansonsten Landschaftsnamen in hoher Dichte angegeben sind (wie auch für Untereinheiten Siebenbürgens, z. B. Königsboden, Burzenland), fehlt sonderbarerweise der viel verwendete Name für die traditionsreiche Kulturlandschaft Siebenbürgen / Ardeal / Erdely.

Kapitel II „Wissen und Studien zum Karpatenbecken bis 1945“ umfasst sechs reich mit Karten und Bildern illustrierte Seiten und ist in wissenschaftsgeschichtliche Abschnitte gegliedert. Die Zeit nach dem Vertrag von Trianon (1920) wird nach Nachfolgestaaten behandelt. Für das an Österreich gekommene Burgenland werden die Werke von Eduard Stepan, Georg A. Lukas, Norbert Krebs, Fritz Bodo und Hugo Hassinger erwähnt.

Kapitel III „Geodäsie und Kartographie“ (14 Seiten) beschreibt die Geschichte der kartographischen Erfassung Ungarns von der Geographie des Claudius Ptolomeus im 2. nachchristlichen Jahrhundert über die zwölfblättrige Wandkarte Ignác Müllers aus 1769, die habsburgischen Landesaufnahmen, die „Carte rouge“ Pál Telekis aus 1919 bis zu den topographischen Karten der Zwischenkriegs- und Nachkriegszeit. Wie in den anderen Nachfolgestaaten der Habsburgermonarchie wirkte das Wiener Militärgeographische Institut (MGI) auch noch auf Ungarn längere Zeit nach. So wurde zum ersten Leiter der Militärkartographischen Gruppe und damit zum maßgebenden Gestalter ihrer organisatorischen Struktur Oberst Arthur Freiherr von Hübl bestellt (siehe Jordan 1996). Er hatte am Wiener MGI ab 1886 die Funktion eines Leiters der technischen Gruppe bekleidet. Auch in Ungarn wurden die Karten der Dritten oder Franzisko-josephinischen Landesaufnahme („Spezialkarte“ 1:75.000, „Generalkarte von Mitteleuropa“ 1:200.000, „Übersichtskarte von Mitteleuropa“ 1:750.000) zunächst photographisch vervielfältigt, ohne dass sie inhaltlich verändert worden wären. Man versah sie lediglich mit einem zusätzlichen roten Aufdruck der neuen Staatsgrenzen. Bald begann man aber, die deutschen Abkürzungen in der Beschriftung durch ungarische und die Böschungsschraffen durch Höhenlinien zu ersetzen. Die Blätter der „Generalkarte“ 1:200.000 wurden vorlagengetreu in vier Farben vervielfältigt. Die nach dem Zweiten Weltkrieg neu eingerichtete Militärkartographische Anstalt begann 1950 mit der Revision des Maßstabs 1:25.000. In nur zwei Jahren erschienen alle 1.250 Blätter dieses Maßstabs mit neuer Legende, neuer Bezugs-

fläche und in einer Blatteinteilung nach sowjetischem System. Davon abgeleitet erschienen auch die Karten der Maßstäbe 1:50.000 und 1:100.000. Obwohl man zum Teil Neuvermessungen durchgeführt und Luftbilder verwendet hatte, beruhten viele Blätter noch auf den Karten der Monarchie (siehe Jordan 1996). An der Entwicklung der modernen computergestützten Kartographie war das Institut für Kartographie der Eötvös-Loránd-Universität in Budapest maßgeblich beteiligt, später spielten auch das Verlagshaus Kartográfiai Vállalat und das Lechner-Wissenszentrum [Lechner Tudásközpont] eine wichtige Rolle.

Kapitel IV „Das Karpatenbecken vor der ungarischen Eroberung“ (8 Seiten) präsentiert in einer ausgewogenen Kombination von Karten, Text und Bildern die Besiedlungs- und politische Geschichte von den ersten Ansiedlungen in der Altsteinzeit bis zur Ankunft der Ungarn im späten 9. Jahrhundert. Wenig in unserem Geschichtsbild verankert ist die Tatsache, dass im 2. und 3. nachchristlichen Jahrhundert ein von iranischen Sarmatern besiedelter und kontrollierter Keil zwischen den römischen Provinzen Pannonien und Dakien die Ebenen zwischen der mittleren Donau und dem Westrand des heutigen Rumäniens einnahm. Wie für die rumänische Historiographie ist es auch für die ungarische bezeichnend, dass die Zeit vom Ende Roms bis zur Ankunft der Ungarn in erster Linie als Herrschaftsgeschichte beschrieben wird, in der die Awaren einen wichtigen Platz einnehmen, während die Ausbreitung der Slawen über das ganze Pannonische Becken, den ganzen Karpatenraum, ganz Südosteuropa und bis in die heute österreichischen Alpen im 6. und 7. Jahrhundert in diesem Kapitel mit keinem Wort erwähnt wird (wohl aber im nächsten: Seite 44). Wohl ist von Mosaburg [Zalavár] zwischen dem großen [Balaton] und Kleinen Plattensee [Kis-Balaton] die Rede, aber als Sitz des Ostfrankenkönigs Arnulf (Arnulf von Kärnten) und nicht als Missionsstation der Slawenapostel Kyrill und Method, obwohl dort heute ein Denkmal steht, das an eben diese erinnert. Sie sind im späten 9. Jahrhundert von Konstantinopel [İstanbul] durch das Pannonische Becken bis ins Großmährische Reich gezogen, haben aus den vorgefundenen slawischen Idiomen ein Gemeinslawisch destilliert, das in glagolitischer Schrift zum Altkirchenslawischen wurde und in der ganzen Slavia als Kirchensprache fungierte (Magocsi 2002; Kamusella 2021). Es geht damit auch die Tatsache unter, dass – wie auch in Rumänien – die Namenlandschaft in Ungarn viele Einflüsse des Slawischen zeigt (*Visegrád*! *Cernavoda* in Rumänien!), weil die ungarischen Neuankömmlinge eben Slawen vorfanden und diese fragten, wie dieser Fluss oder jener Hügel denn heißen. Wie vom östlichen österreichischen Alpenraum ist auch vom Pannonischen Becken anzunehmen, dass die Slawen die ersten waren, die nicht nur strategische Punkte besetzten, sondern als eine bäuerliche Bevölkerung das Land flächenhaft erschlossen.

Das **Kapitel V „Historische Verwaltungsgeographie Ungarns“** (22 Seiten) gehört bezeichnenderweise zu den längsten des Bandes, denn die Ungarn bildeten bald nach ihrer Sesshaftwerdung als Teil der römischen Kirche und alliiert mit dem damaligen Dominator des europäischen Westens, dem karolingischen Frankenreich, einen mächtigen westlich orientierten Staat in der Mitte Europas, der seinerseits wie Polen weiter im Norden zur Speerspitze westeuropäischer/lateinischer Kultur in den byzantinisch geprägten Teil Europas hinein wurde. Seine politischen und kulturellen Strukturen wirken in der weiteren Region bis heute fort. Der von Stephan dem Großen, dem Heiligen, um das Jahr 1000 begründete Staat gliederte sich folgerichtig in zehn Verwaltungseinheiten, die zugleich katholische Diözesen waren und bis heute als letztere bestehen – zwei davon außerhalb des heutigen Ungarns: Neutra [Nitra, Nyitra] in der heutigen Slowakei und Karlsburg [Alba Iulia/Gyulafehervár] im heutigen Rumänien. Eine Verwaltungsebene darunter sorgten die Komitate für die örtliche Durchsetzung königlicher Macht, waren also von Anfang an Einheiten dekonzentrierter Staatsverwaltung und blieben das mit Einschränkungen bis heute.

Der ungarische Staatsaufbau unterschied sich so von Anfang an (und bis heute) vom österreichischen, der sich aus einem Herrschaftskonglomerat entwickelte und föderalistisch blieb. Auch die bis 1918 währende Bindung Kroatiens an Ungarn geht schon auf das 11. Jahrhundert zurück, als König

Ladislaus I. 1091 kroatische Gebiete eroberte, deren Raumbegriffe allerdings nicht mit den heutigen übereinstimmen: Unter Slawonien [Slavonija] wurde damals das Gebiet um Zagreb verstanden, unter Kroatien [Hrvatska] im Wesentlichen die Lika einschließlich des oberen Unatals im heutigen Bosnien und des Kroatischen Küstenlandes [Hrvatsko primorje]. Nach den Mongoleneinfällen des Jahres 1241 rief der ungarische König Szekler als Grenzwächter im Osten sowie Moselfranken (später „Siebenbürger Sachsen" genannt) und Kumanen zur Wiederbesiedlung des zentraleren Siebenbürgens und des Großen Ungarischen Tieflandes [Alföld]. Auch die Autonomie Siebenbürgens wurde zu dieser Zeit begründet.

Nach der Niederlage gegen das Osmanische Reich in der Schlacht von Mohács 1526 entstand bis 1711 eine Situation, die in diesem Band als „Tripartite Hungary" (‚dreigeteiltes Ungarn') bezeichnet wird. Während das zentrale Ungarn unter direkte osmanische Herrschaft geriet, wurde sein westlicher und nördlicher Rand habsburgisch und das Großfürstentum Siebenbürgen, später noch erweitert um die Partes oder das Partium, ein de facto eigener Staat unter osmanischer Oberhoheit. Interessanterweise finden sich im Atlas keine Karten, welche die weite Ausdehnung Ungarns im 14. Jahrhundert unter den Anjou zeigt, als auch die Walachei [Ţara Românească] und Teile des engeren Serbiens [Srbija] zu Ungarn gehörten, und die maximale Ausdehnung unter Matthias Corvinus, welche außerdem noch die österreichische Steiermark, Österreich unter der Enns, Mähren [Morava] und Schlesien [Slezsko, Sląsk] bis in die Lausitz umfasste.

Nachdem die österreichischen Armeen das Osmanische Reich aus dem Pannonischen Becken zurückgedrängt hatten, war das ganze Königreich Ungarn von 1711 bis 1867 ein integraler Teil der Habsburgermonarchie, wobei erst Jospeh II. stärker zentralisierte und mit 13 neuen Bezirken auch die traditionelle Komitatsgliederung außer Kraft setzte. Die Sonderstellung Siebenbürgens als autonomes Großfürstentum blieb aber erhalten, ebenso jene der ab 1535 eingerichteten Militärgrenze gegen das Osmanische Reich, die zunächst dem Grazer, dann dem Wiener Hofkriegsrat direkt unterstand (siehe Kaser 1997). Besonders interessant sind sechs Nebenkarten, welche die Änderungen der Verwaltungsgliederung des Banats mit den Zeitpunktständen 1498, 1579, 1765, 1810, 1914 und 1920 zeigen.

Für die Zeit des österreichisch-ungarischen Dualismus von 1867 bis 1918 vertritt der Atlas natürlich die ungarische Sichtweise (die sich in der Praxis durchgesetzt hat), dass die Österreichisch-Ungarische Monarchie eine Verbindung zweier souveräner Staaten sei, die von einem gemeinsamen Herrscher regiert wird, der in Österreich Kaiser und in Ungarn König ist. Dem stand die österreichische Auffassung gegenüber, es gäbe einen Gesamtstaat mit einem Kaiser an der Spitze, gemeinsamen Ministerien und einem Reichsparlament, der sich aus zwei Teilstaaten, nämlich den Ländern der österreichischen Krone und den Ländern der ungarischen Krone zusammensetze (siehe Brauneder und Lachmayer 1992). Das im Gegensatz zur österreichischen Reichshälfte zentralistische Ungarn hob die Autonomie Siebenbürgens auf, schloss aber 1868 mit Kroatien einen Ausgleich, der diesem in seinen damaligen Grenzen (ohne die österreichischen Kronländer Küstenland und Dalmatien [Dalmacija] und das Corpus separatum Fiume [Rijeka]) weitreichende Autonomie gewährte. Dem zentralstaatlichen Konzept Ungarns entsprach auch István Széchenyis in einer Karte dargestellter Plan zur Entwicklung eines Eisenbahnnetzes aus dem Jahr 1848, der ein radiales, von Budapest ausgehendes Eisenbahnnetz ohne Tangentialverbindungen vorsah und später auch weitgehend umgesetzt wurde (siehe Jordan 1986).

Breiten Raum nimmt selbstverständlich auch das Schrumpfen des Landes auf ein Kerngebiet durch den Friedensvertrag von Trianon 1920 ein, wobei stets auch Mehrheiten von ungarischen Muttersprachlern in den abgetretenen Gebieten dargestellt werden. Das gilt auch für die Gebietsänderungen kurz vor und während des Zweiten Weltkriegs, als Ungarn durch den Ersten und Zweiten Wiener Schiedsspruch 1938 bzw. 1940 slowakische und rumänische Gebiete zurückgewann und sich mit militärischen Mitteln das bis dahin tschechoslowakische Subkarpatien [Podkarpatská Rus'], das heutige ukrainische Transkarpatien [Zakarpattja] einverleibte. Bezeichnenderweise nennt der Atlas

dessen Mehrheitsbevölkerung *Rusinen*, die heute tatsächlich dominante Selbstbezeichnung einer Gruppe, die sich durch ein ungarisches Geschichtsbild, eine eigene griechisch-katholische Kirche (Union von Ungvár [Užhorod]) und einen in der Slowakei als Standardsprache anerkannten Dialekt von den Ukrainern unterscheidet, aber aus ukrainischer Sicht ein Teil der ukrainischen Nation ist (siehe Jordan und Klemenčić 2004).

Der Hinweis auf die ungarischen Muttersprachler im nahen Ausland zieht sich auch durch alle Karten der kommunistischen Periode bis 1989, die sich wenig unterscheiden. An diesen ist vor allem bemerkenswert, dass das kommunistische Regime das traditionsreiche ungarische Komitatssystem kaum anzutasten wagte, während in allen anderen kommunistischen Staaten Europas mit Ausnahme Jugoslawiens das subnationale administrativ-territoriale System oft sogar mehrmals umgestaltet wurde, um regionale Identitäten, die der Zentralmacht gefährlich hätten werden können, zu zerstören oder nicht aufkommen zu lassen.

Kapitel VI „Verwaltungsgeographie des heutigen Ungarns“ (20 Seiten) geht zunächst auf die Umgestaltung des politischen Systems nach dem Ende des Kommunismus und in Hinblick auf einen Beitritt zur Europäischen Union (EU) ein, der mit seinen Dezentralisierungserfordernissen gerade für Ungarn eine große Herausforderung darstellte. Eben weil das ungarische Komitatssystem vom kommunistischen Regime übernommen worden war, war es durch diese Instrumentalisierung diskreditiert. Die erste postkommunistische Verwaltungsreform 1990 hätte es beinahe beseitigt und verlegte fast alle subnationalen Kompetenzen auf die Gemeindeebene. Komitate hatten Kompetenzen nur in Bereichen, welche die Gemeinden (vor allem aus finanziellen Gründen) nicht übernehmen wollten, und selbst dabei brauchten sie die Zustimmung jeder einzelnen Gemeinde. Aber schon die Reform von 1994 musste der historischen Bedeutung der Komitate wieder Tribut zollen und wies den Komitaten einige spezifische Aufgaben zu: Raumplanung, Umweltschutzagenden von regionaler Bedeutung, Aufbau räumlicher Informationssysteme, Tourismusförderung. Die Generalversammlung des Komitats wurde zu einem gewählten Gremium aufgewertet, also zu einem Organ der Selbstverwaltung. Allerdings können die meisten Kompetenzen nur in Abstimmung mit allen Gemeinden des Komitats ausgeübt werden. Dies erschwert auch die grenzüberschreitende Zusammenarbeit, zum Beispiel im Rahmen von Euroregionen. Komitate haben auch keine eigenen Einnahmen und sind auf staatliche Transferleistungen angewiesen.

Die lokale Verwaltungsebene ist damit in der deutlich stärkeren Position (siehe auch Jordan 2010). Die mehr als 3.000 Gemeinden [község] verfügen mit dem gewählten Gemeinderat [önkormányzati tanács] und einem direkt gewählten Bürgermeister [polgármester] über zwei Organe der Selbstverwaltung. Auch ihre Finanzlage ist im Durchschnitt besser als die der Komitate, weil sie Eigeneinnahmen aus Anteilen an der Einkommen- und Kraftfahrzeugsteuer beziehen und ihnen die ganze Grund-, Vergnügungs- und Gewerbesteuer zufällt. Allerdings gibt es keinen horizontalen Finanzausgleich, wodurch Gemeinden in peripheren Gebieten in einer ungünstigeren Position sind. Seit 1999 sind auf NUTS-2-Ebene sieben Planungs- und Statistik-Regionen eingerichtet, die aber keine Gebietskörperschaften darstellen. Sie bestehen aus zwei bis drei Komitaten, die auf dieser Ebene freiwillig kooperieren. Der Einfluss der Zentralregierung ist aber groß. Auch für andere Aufgaben wie die Forstverwaltung oder die Tourismuswerbung gibt es Einrichtungen, die jeweils mehrere Komitate umfassen. Seit 2011 können sich Ortschaften zu gemeinsamen Lokalverwaltungen zusammenschließen, von denen es mittlerweile mehr als 700 gibt und deren Kompetenzen zu Lasten der Gemeinden und der Komitate gehen.

Weitere Karten dieses Kapitels widmen sich den Raumstrukturen anderer öffentlicher Einrichtungen wie der Polizei oder der Feuerwehren. Eine Doppelseite zeigt die administrativ-territoriale Gliederung des ganzen Karpatenbeckens wieder mit einem Ausweis der Gebiete mit einer Mehrheit von ungarischen Muttersprachlern, ergänzt bzw. erläutert durch Tabellen und Texte, die besonders auf Regelungen für die ungarischen Minderheiten hinweisen.

Das **Kapitel VII „Ungarn und die Ungarn“** (8 Seiten) ist allein von Károly Kocsis gestaltet, der als Autor zahlreicher ethnischer Karten hervorgetreten ist. Er weist gleich zu Beginn darauf hin, dass die Ungarn zu jenen Ethnien zählen, die zu 30 bis 50 Prozent außerhalb ihres eigenen Landes leben – nämlich von den geschätzt insgesamt 14,2 Millionen 1,9 Millionen in Nachbarstaaten und 2,9 Millionen in der restlichen Welt, vor allem in Nordamerika und Westeuropa. Dies setzt besonders in Hinblick auf Nordamerika ein Verständnis ethnischer Zugehörigkeit voraus, das von objektiven Merkmalen (wie Sprache) oder Abstammung und nicht von subjektiver Zuordnung (ethnischem Bewusstsein) bestimmt ist. Es folgt eine Zeitreihe vergleichbar gestalteter Karten, welche die Siedlungsgebiete von Sprechern des Ungarischen und von Anderssprachigen vor dem Hintergrund der jeweiligen internationalen Grenzen mit den Zeitpunktständen 1090, 1495, 1590, 1784, 1880, 1910, 1931, 1942, 1960, 1990 und 2011 zeigen. Dabei fällt besonders der Rückzug von Sprechern des Ungarischen aus dem südlichen Pannonischen Becken durch Flucht und Vertreibung unter Osmanischen Herrschaft ins Auge, dem eine nur teilweise Wiederbesiedelung ab der mariatheresianischen Kolonisation folgte. Die Zahl von Ungarn in Europa außerhalb des Karpatenbeckens war dem Kapitel zufolge 2022 mit etwa 300.000 in Deutschland am größten, gefolgt vom Vereinigten Königreich mit etwa 200.000 und Österreich ohne das Burgenland mit 130.000. Weltweit liegen die USA mit 1,323.000 an der Spitze, gefolgt von Kanada mit 320.000 und Israel mit 200.000.

Das **Kapitel VIII „Die Regionalstruktur der traditionellen ungarischen Volkskultur“** (8 Seiten) bezieht sich durchwegs auf das gesamte Karpatenbecken, also auf den ganzen traditionellen Lebensraum der Ungarn. Er wird auf einer ersten Karte in ethnographische Groß-, Mittel- und Kleinregionen gegliedert. Als Großregionen gelten Transdanubien [Dunántúl] mit dem in die Slowakei und nach Österreich hineinragenden Kleinen Ungarischen Tiefland [Kisalföld] und dem heute kroatischen Slawonien, das in die Slowakei hineinragende Oberungarn [Felföld], das Große Ungarische Tiefland [Alföld] und dessen Ränder, die in die Slowakei, die Ukraine, Rumänien und Serbien hineinreichen oder sogar ausschließlich dort liegen wie Siebenbürgen und die Moldau [Moldova], beide in Rumänien. Diese Regionalisierung beruht teilweise auf natürlichen Barrieren wie Gebirgen oder Flüssen, langwährenden Staatsgrenzen, der Gliederung in Komitate oder auch Kirchenprovinzen, wodurch sich ethnographische Unterschiede ergeben haben. Im Weiteren beschäftigt sich das Kapitel mit einzelnen Sparten der Volkskultur wie Architektur oder Musik mit jeweils sehr ähnlichen räumlichen Gliederungen.

Das **Kapitel IX „Die räumliche Verteilung der ungarischen Dialekte“** (8 Seiten) bestätigt im Wesentlichen die im vorigen Kapitel dargestellte Raumgliederung, denn Dialekte sind ja ebenfalls (wichtige) Elemente der Volkskultur. Wie auch in anderen Ländern Europas sind sie heute in Ungarn einer Erosion unterworfen, weil sich die Aktions- und Kommunikationsräume der Menschen ausgedehnt haben und sich damit die Möglichkeit ausgeprägten Dialektsprechens auf nur noch wenige Personen mit einem sehr örtlichen Lebensumfeld eingeschränkt hat. Anders als Standardsprachen haben Dialekte zumeist auch keine scharfen Grenzen, sondern gehen fließend ineinander über. Das gilt heute für die ungarischen Dialekte besonders innerhalb des heutigen Ungarns, während die ungarischen Gemeinschaften in den Nachbarstaaten doch ihre sehr eigenen Dialekte verwenden – als Peripherien und Sprachinseln des ‚ungarischen Universums‘, die nicht mehr so viele Innovationen aus dem Zentrum empfangen und auch durch Vermischen mit Elementen der jeweiligen örtlichen Mehrheitssprache. Markante Beispiele dafür sind die Ungarn im burgenländischen Oberwart/Felsőőr oder die Csángós in der rumänischen Moldau. Das Kapitel enthält auch Karten zur Verbreitung typischer Familiennamen und Dialektwörter.

Das **Kapitel X „Die Räumlichkeit sozial-politischer Aktivität“** gliedert sich in die zwei Unterkapitel X.1 „Wahlengeographie“ (16 Seiten) und X.2 „Zivilgesellschaft“ (8 Seiten). Das erste Unterkapitel verweist zunächst auf Wahlen schon ab 1848, als das Elektorat allerdings noch auf einen engen Personenkreis beschränkt war. Nach dem Ausgleich von 1867 bestimmten ethnische Bindun-

gen das Wahlverhalten. An den Wahlen des Jahres 1920 konnten sich bereits 40 Prozent der Bevölkerung beteiligen und das Parteiensystem ähnelte dem im übrigen Europa. Lediglich die kommunistische Partei war im Herbst 1919 verboten worden. Die ersten Wahlen nach dem Zweiten Weltkrieg im November 1945, die trotz sowjetischer Besatzung als frei und demokratisch bezeichnet werden konnten, von denen die Deutschungarn aber ausgeschlossen waren, brachten einen klaren Sieg der Kleinbauern-Partei über die Kommunisten, die lediglich im Osten des Landes und im Bergbaugebiet von Tatabánya Mehrheiten erreichten. Ab 1947 und bis 1990 gab keine fairen demokratischen Wahlen. Nach sehr stark schwankenden Wahlergebnissen von 1990 bis 2006 erreichte Fidesz-KDNP bei den Parlamentswahlen der Jahre 2010, 2014, 2018 und 2022 jeweils die klare Mehrheit. Dabei sind keine großen Unterschiede zwischen den Landesteilen, aber zwischen städtischen und ländlichen Gebieten zu erkennen, wobei Fidesz-KDNP in den Großstädten am schlechtesten abschneidet. Sehr interessant sind zwei Nebenkärtchen, welche die Ergebnisse der Ungarnpartei (Ungarische Demokratische Allianz in Rumänien [Romániai Magyar Demokrata Szövetség, RMDS]) bei den rumänischen Parlamentswahlen 2020 zeigen. Etwa 80 Prozent der rumänischen Ungarn wählen diese Partei, die im rumänischen Parlament oft die Rolle eines ‚Züngleins an der Waage' spielt. Am stärksten ist die Bindung der Ungarn an diese Partei in den kompakt ungarischen Siedlungsgebieten wie im Szeklerland [Székelyföld], geringer in Gebieten, in denen die Ungarn verstreut leben wie im Banat oder im westlichen Siebenbürgen.

Das Unterkapitel X.2 „Zivilgesellschaft" beschreibt alle Aktivitäten, die gemeinschaftlich, freiwillig und ehrenamtlich ausgeübt werden. In der Einleitung wird ihnen die wichtige Funktion zugeschrieben „die Macht von politischen und Marktakteuren zu begrenzen und dabei das Zusammenspiel von Staat, Privatunternehmen und der Öffentlichkeit zu erleichtern."[3] Im Vergleich der EU-Staaten mit Daten von 2021 zeigt sich, dass zivilgesellschaftliches Engagement in Ungarn wie auch in der Slowakei, Rumänien und Bulgarien deutlich geringer ist als etwa in Österreich oder anderen Staaten insbesondere des mittleren und nördlichen Europas. Innerhalb Ungarns zeigen sich keine großen Unterschiede, am ehesten noch ein etwas größeres Engagement im Westen des Landes mit Ausnahme in Organisationen des Zivilschutzes, die, weil sie auch den Grenzschutz einschließen, an der Schengen-Außengrenze im Südosten Ungarns aktiver sind. Verdientermaßen wird auch die Ungarische Geographische Gesellschaft erwähnt, die 2022 ihren 150-jährigen Bestand feiern durfte. Eine Karte weist auch auf die große Zahl ungarischer zivilgesellschaftlicher Organisationen in den Nachbarländern vor dem Hintergrund von Mindestanteilen von 10 Prozent Ungarischsprechern an der Gesamtbevölkerung im Jahr 2023 hin.

Kapitel XI „Internationale Beziehungen" gliedert sich wieder in zwei Unterkapitel, nämlich XI.1 „Diplomatische Beziehungen" (22 Seiten) und XI.2 „Wirtschaftliche Außenbeziehungen" (12 Seiten). Unterkapitel XI.1 blickt weit in die Geschichte zurück und zeigt mit zwei ersten Karten die Herkunft von Königinnen bzw. Königinnen ungarischer Herkunft im übrigen Europa im Mittelalter. Wohl der bekanntestes ungarische ‚Königinnen-Import' ist jener der bayrischen Prinzessin Gisela, der Gemahlin des ersten ungarischen Königs Stephan des Großen, des Heiligen, nach dessen Tod sie auch selbst die Regierungsgeschäfte führte. Sie ist im Kloster Niedernburg in Passau begraben, wo ihr Grab bis heute von Kränzen mit Schleifen in den ungarischen Landesfarben geschmückt ist. In Wien heiratete 1296 Agnes von Habsburg den ungarischen König Andreas III. Im Wiener Stephansdom heiratete 1515 auch Maria von Österreich den ungarischen König Ludwig II. Personalunionen zwischen Ungarn und anderen europäischen Staaten gab es im Mittelalter mit Polen und Kroatien (unter den Anjou 1370–1382), mit dem Heiligen Römischen Reich und Kroatien (unter den Luxemburgern 1411/1419–1437 und den Habsburgern 1438–1439), mit Polen-Litauen und Kroatien (unter

[3] Im Originalwortlaut: „... to limit the power of political and market actors, while facilitating interaction between the state, private enterprise and the general public" (Seite 126).

den Jagiellonen 1440–1444), mit Kroatien, Böhmen und Österreich (unter den Hunyadi 1477–1490) und mit Kroatien und Böhmen (unter den Jagiellonen 1490–1526).

Der gegenwartsbezogene Abschnitt scheint mit einer Karte über Ungarns diplomatische Beziehungen im Jahr 2023 zu beginnen, doch zeigt sie tatsächlich Ungarns diplomatische Beziehungen zwischen 1945 und 1989, nämlich den Zeitpunkt der Aufnahme dieser Beziehungen und die Zahl der Staatsbesuche. Erst eine Karte im kleineren Maßstab wird ihrem Titel gerecht und bezieht sich mit Angaben zum Zeitpunkt der Aufnahme diplomatischer Beziehungen zwischen 1919 und 2023 und den Standorten ungarischer diplomatischer Vertretungen tatsächlich auf 2023. Dieses Thema wird – ergänzt um Angaben über die Zahl von Staatsbesuchen – auch noch nach einzelnen Weltgegenden wie der arabischen Welt und Israel abgehandelt. Aus geographischer Sicht besonders interessant sind Karten der grenzüberschreitenden regionalen Zusammenarbeit im Jahr 2022 im Karpatenbecken sowie der Gemeindepartnerschaften, die es vor allem mit Gemeinden mit einem ungarischen Bevölkerungsanteil in den Nachbarstaaten gibt.

Auch das Unterkapitel XI.2 „Wirtschaftliche Außenbeziehungen“ beginnt nicht erst mit der Gegenwart, sondern mit einer Karte der Außenhandelspartner Ungarns im Jahr 1913, welche die österreichische Reichshälfte als den weitaus wichtigsten ausweist. Selbst in der Zwischenkriegszeit steht das damals wirtschaftlich schwache und kleine Österreich vor der Tschechoslowakei und Deutschland an der Spitze. Heute ist Deutschland Ungarns weitaus wichtigster Handelspartner, mit deutlichem Abstand folgen Österreich, die Slowakei, Polen, Tschechien und Italien, weltweit spielen China und Russland vor allem bei Importen sowie das Vereinigte Königreich und die USA vor allem bei Exporten eine große Rolle. Bei den ausländischen Direktinvestitionen in Ungarn nach Daten von 2019 liegen Deutschland, Österreich, die Niederlande, Luxemburg und die Schweiz an der Spitze. Ungarische Firmen haben nach Daten von 2020 vornehmlich in Kroatien und den Niederlanden investiert, gefolgt von der Slowakei, Rumänien, Bulgarien und Tschechien. Weltweit spielen auch noch Israel und die USA eine größere Rolle. Der Bestand an ungarischen Direktinvestitionen im Ausland ist in den 2000er Jahren deutlich angestiegen und erreichte in der ersten Hälfte der 2010er Jahre seinen bisherigen Höhepunkt.

Bei **Kapitel XII „Die Geographie des ungarischen Talents“** (14 Seiten) denkt ein Österreicher, der herausstechende Eigenschaften seiner Nachbarn gern liebevoll persifliert, unwillkürlich an die Idee des ungarischen Kosmos, der alle Berühmtheiten dieser Welt – von Cäsar über Kolumbus und Napoleon bis Shakespeare – den Ungarn zurechnet. Das Kapitel schränkt (herausragendes) Talent aber nicht auf eine ethnische Gruppe ein, misst dem kulturellen Umfeld einer Person hingegen sehr wohl große Bedeutung bei. Dieses kulturelle Umfeld wäre im Karpatenbecken als einer zentralen Region Europas, in der sich stets viele kulturelle Strömungen begegnet und ausgetauscht hätten, besonders förderlich gewesen. Aus einer Karte mit den Geburtsorten von mehr als 17.000 im Ungarischen Biographischen Lexikon (Markó 2001–2007) verzeichneten Personen ragen nicht überraschend die großen Städte hervor, darunter auch Wien als frühere Hauptstadt des Reiches. 77 Prozent dieser Personen blieben allerdings ihrem Geburtsort nicht erhalten, sondern wanderten zum Teil auch nach Übersee aus. Die Zahl der Sterbeorte, die offenbar in der Lage waren, Talente anzuziehen, ist nur weniger als halb so groß wie die der Geburtsorte. Für die Hälfte aller im Lexikon verzeichneten Personen war es Budapest. Mit großem Abstand folgen wieder die größeren Städte des Karpatenbeckens, Wien rangiert hinter Klausenburg/Cluj-Napoca/Kolozsvár, Debrecen und Szeged. Nettogewinner von Talenten sind in diesem Sinn neben den Großstädten nur die Umgebung von Budapest und die Orte am Plattensee [Balaton] als besonders attraktive Wohngegenden. Ungarische Wissenschaftler und Künstler wanderten besonders in der Zwischenkriegszeit häufig aus, wobei das Hauptziel die USA waren.

Der Band schließt mit einem Autorenverzeichnis und einer Bibliographie zu den einzelnen Kapiteln auf 13 Seiten, einem Abbildungsverzeichnis und einem Verzeichnis der im Atlas verwende-

ten englischen Exonyme mit ihren endonymischen Entsprechungen. Wie schon die beiden zuvor erschienenen Bände zeichnet er sich durch eine ideale Mischung aus kartographisch fachgerecht gestalteten Karten, Tabellen, Diagrammen, prägnanten Texten und Fotos aus, die thematisch gut geordnet und durch ein geschicktes Nummerierungs- und Kolorierungssystem leicht auffindbar sind. Es ist den Herausgebern zu wünschen, dass auch der den Atlas abschließende Band zur Wirtschaft so gut gelingt.

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Peter Jordan (Hermagor / Wien)

Marshall Tim (2024): Die Geografie der Zukunft – Wie der Kampf um Vorherrschaft im All unsere Welt verändern wird. Aus dem Englischen von Lutz-W. Wolff. München: dtv Verlagsgesellschaft, 2. Aufl. (Deutsche Erstausgabe 2023), 352 S., 10 Schwarz-Weiß-Fotos, ISBN 978-3-423-35238-3 (Print), ISBN 978-3-423-44169-8 (eBook).

Tim Marshall ist bekannt für seine bisher erschienenen Bücher, die alle die Geographie im Titel haben. Mit „Geographie der Zukunft“ erweitert er im Rahmen der Geo- und der Kosmoswissenschaft den Blick auf den Weltraum Dieser neue Raum wird von ihm in das Bewusstsein gestellt, denn auch aus ihm drohen Gefahren für die Sicherheit angesichts moderner Waffen, die die „alten“ Geopolitiker wie Admiral Mahan und Halford Mackinder nicht vorhergesehen haben konnten.

Heute sind Spionagesatelliten, der „Abbau wertvoller Bodenschätze auf Asteroiden“ und „Menschen auf dem Mars in den nächsten Jahren“ keine abstrusen Visionen in der Zukunft, sondern eine Realität. Eine solche wird zum Beispiel in der deutschen Bundeswehr mit dem neu geschaffenen Weltraumkommando gewürdigt. Marshall weist darauf hin, dass der Weltraum im Alltag bereits genutzt wird für Kommunikation, für die Wirtschaft und für die Militärstrategie mit Auswirkungen auf die internationalen Beziehungen. Aus denen sich letztlich Bedrohungen ergeben, die nach einer größeren räumlichen Wirkung für Angriff und Verteidigung rufen.

In seinen Kapiteln beschreibt er den neuen „Weg zu den Sternen“, der mit stets fortentwickelten Raketen und Transportmitteln überwunden werden muss. Er stellt fest, dass vor dem Hintergrund vieler Science-Fiction-Medien manche der Unwirklichkeiten bereits Realität geworden sind und die Zukunft bestimmen werden. Damit hat die „Epoche der Astropolitik“ begonnen, die im Gegensatz zu Land-, Meer- und Luftpolitik keine Regeln kennt. Hinzu kommt der Wettbewerb der Weltmächte China, USA und Russland, die außerdem in Konkurrenz stehen zu neuen Staaten in der Weltraumfahrt. Marshall entwirft auch visionäre Weltraumkriege, die alle Menschen zwingen, über eine Geographie der Sicherheit im Weltraum nachzudenken. Er schließt mit den nachdenklichen Worten: „Alle vorstellbaren Wunder sind irgendwo da draußen, direkt vor uns, und warten darauf, dass der *Homo Sapiens* sie entdeckt.“

Das Buch ist damit ein recht interessanter Beitrag zur Geostrategie und damit auch zu unserer Wissenschaftsdisziplin Geographie. Wegen des journalistischen Stils ist es aber lediglich ein Denkanstoß, sich von Seiten der Geographie auch mit solchen eher randlichen Fragen der kollektiven Sicherheit geowissenschaftlich zu beschäftigen.

Thomas Palaschewski (Kiel)

Mitteilungen der Österreichischen Geographischen Gesellschaft, 167. Jg., S. 457–477
(Annals of the Austrian Geographical Society, Vol. 167, pp. 457–477)
Wien (Vienna) 2025, https://doi.org/10.1553/moegg167-m01

Informationen der Österreichischen Geographischen Gesellschaft

Information of the Austrian Geographical Society

Gesellschaftsnachrichten 2024/2025[1)]

Helmut Wohlschlägl, Wien*

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[1)] Zur Vereinfachung und besseren Lesbarkeit werden die akademischen Titel bei der Nennung der jeweils Zuständigen oder Berichtenden weggelassen.

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1 Ordentliche Hauptversammlung der ÖGG 2025

Die **Einladung** zzur Hauptversammlung am Dienstag, 29. April 2025 um 16:15 Uhr erfolgte, wie üblich, in der 10. Kalenderwoche 2025 und wurde in der Informationszeitschrift der ÖGG „Geographie aktuell" Nr. 63 (I/2025) Mitte März 2025 schriftlich sowie eine Woche später ergänzend per E-Mail an alle Mitglieder zugestellt. Die Hauptversammlung wurde als Online-Videokonferenz durchgeführt.

Die **Beschlussfähigkeit** der Hauptversammlung war satzungsgemäß erst ab 16:45 Uhr gegeben, da zu Beginn der Veranstaltung nur 22 Mitglieder online anwesend waren. Gegen das in den „Mitteilungen der Österreichischen Geographischen Gesellschaft" (MÖGG), Bd. 166/2024, S. 383–404 veröffentlichte **Protokoll** der Hauptversammlung 2024 vom Freitag, 26. April 2024 lagen keine Einwände vor. Die für die Hauptversammlung 2025 vom Präsidenten vorgelegte **Tagesordnung** wurde einstimmig genehmigt.

Zu Beginn der Hauptversammlung überbrachte der Vizepräsident der Deutschen Gesellschaft für Geographie (DGfG), Prof. Dr. Rudolf JUCHELKA (Universität Duisburg-Essen), der seit 2003 auch Mitglied der ÖGG ist, ein freundliches **Grußwort** unserer deutschen Schwestergesellschaft. Herzlichen Dank!

1.1 Bericht des Präsidenten zur Lage der ÖGG 2024

(Helmut WOHLSCHLÄGL)

Im Vereinsjahr 2024 wurde die **Österreichische Geographische Gesellschaft** (ÖGG) bereits **168 Jahre** alt und ist damit eine der ältesten geographischen Gesellschaften der Welt sowie die drittälteste im deutschen Sprachraum nach den Geographischen Gesellschaften von Berlin (seit 1828) und Frankfurt am Main (1836) und die zweitälteste wissenschaftliche Gesellschaft in Österreich nach der Zoologisch-Botanischen Gesellschaft. Dieses kontinuierliche Bestehen einer wissenschaftlichen Gesellschaft über einen so langen Zeitraum ist nicht selbstverständlich und nicht alltäglich. Das Ziel ist über die Jahre im Wesentlichen gleichgeblieben: Die Förderung und Verbreitung geographischen Wissens im Fach und über die Grenzen des Faches und der Wissenschaft hinaus. Dazu organisiert die ÖGG Vorträge, Exkursionen und weitere wissenschaftliche Veranstaltungen wie zum Beispiel Fachausstellungen, Tagungen und Symposien, fördert den akademischen Nachwuchs durch die Vergabe von wissenschaftlichen Preisen und gibt eine angesehene wissenschaftliche Fachzeitschrift, die „Mitteilungen der Österreichischen Geographischen Gesellschaft" (MÖGG, „Annals of the Austrian Geographical Society") und eine vierteljährliche farbige Informationszeitschrift für die Mitglieder, „Geographie aktuell", heraus.

Die ÖGG möchte Studierende, Wissenschaftler und alle ansprechen, die sich für geographische Themen interessieren. Sie versteht sich in diesem Sinn als Interessenvertretung der Geographinnen und Geographen an den Universitäten, in den Schulen und in den vielfältigen Arbeitsfeldern der außeruniversitären und außerschulischen Berufspraxis im öffentlichen Dienst und in der Privatwirtschaft und ist bemüht, die Anliegen unseres Faches in der Öffentlichkeit und gegenüber anderen Institutionen zu vertreten.

Der **Hauptsitz** der ÖGG befindet sich in Wien, zwei **Zweigstellen** sind in Graz und in Klagenfurt am Wörthersee lokalisiert (diese bilden zusammen mit dem Hauptsitz den sog. „Stammverein Wien". Zusätzlich zählt noch zur ÖGG der selbstständig wirtschaftende **Zweigverein** Innsbruck (Innsbrucker Geographische Gesellschaft, IGG), der vor allem das westliche Österreich betreut. Auch die Geographische Gesellschaft Salzburg (GeoComPass SALZBURG) ist ein **Mitgliedsverein** der ÖGG.

Innerhalb der ÖGG bestehen zum Zweck der besonderen fachlichen Vertiefung für Spezialgebiete oder zur Anwendungsorientierung sowie als Interessen- und Kontaktgruppen für verschiedene Fachgebiete zurzeit **fünf Fachgruppen**: Die Österreichische Kartographische Kommission (ÖKK), die Österreichische Forschungsgruppe für Geomorphologie und Umweltwandel (geomorph.at), der Österreichische Verband für Angewandte Geographie (ÖVAG) und die Fachgruppe für Geographische und Sozioökonomische Bildung (GESÖB). Eine neue, **fünfte Fachgruppe**, die Junge Österreichische Geographische Gesellschaft (JÖGG, Junge ÖGG) wurde vor Kurzem gegründet und im Rahmen der Hauptversammlung 2024 am 26. April 2024 einstimmig als neue Fachgruppe offiziell in die ÖGG aufgenommen.

- So wie in den letzten Jahren konnten auch 2024 vom Standort Wien aus wieder vier **Exkursionen** angeboten werden. Alle Exkursionen waren sehr gut besucht, sowohl von Mitgliedern als auch von Gästen, und weitgehend ausgebucht.

  Im Frühjahr 2024 wurden zwei Exkursionen durchgeführt, eine interessante Exkursion in den „Hölzel Verlag", den traditionsreichen und bedeutenden österreichischen Kartographie-, Schulbuch- und Atlasverlag, am 10. Jänner 2024, mit ausführlicher Verlagsbesichtigung, Präsentationen von Mitarbeiter/inne/n des Verlags und Diskussionen mit dem Geschäftsführer des Verlags, Herrn Dr. Birsak und dem Leiter der Kartographie, Herrn MMag. Knabl, beide Geographen, die persönlich die den ganzen Nachmittag dauernde Verlagsführung und -präsentation begleiteten, sowie am 12. April 2024 eine Exkursion in die „Deponie Rautenweg", Wiens größte Mülldeponie mit Spezialführung durch einen kompetenten Fachexperten samt Einführungsvortrag, Rundfahrt im Deponiebereich und Besteigung des Deponiehügels.

  Ende August folgte eine dreitägige Exkursion vom 30. August bis 1. September 2024 nach Nordrhein-Westfalen unter dem Titel „Wuppertal und das Neandertal" unter der ausgezeichneten Leitung von Mag. Wolfgang Ludwig. Ziel der Exkursion war zunächst am Samstag die Industriestadt Wuppertal, die vor allem durch ihr besonderes städtisches Verkehrsmittel – die Schwebebahn, die älteste immer noch in Betrieb befindliche Hängebahn der Welt – Berühmtheit erlangt hat. Neben der Fahrt mit der Schwebebahn beschäftigte sich die Exkursion mit der Stadtgeschichte und dem Transformationsprozess dieses bedeutenden deutschen und europäischen Zentrums der Frühindustrialisierung (vor allem Textilindustrie) mit all seinen Nachteilen zu einem modernen Wirtschaftsstandort. Am Sonntag wurden eine Autobusfahrt mit Besichtigung stillgelegter und renaturierter Tagbauanlagen, alter Bahntrassen mit diversen Formen der Nachnutzung und eine Fahrt zu den Ursprüngen der Menschheit in das Neandertal (eigentlich das Tal der Düssel) mit Museumsbesuch sowie abschließend eine kurze Rundfahrt durch Düsseldorf, die Landeshauptstadt von Nordrhein-Westfalen, im Rahmen dieser vielseitigen und interessanten Exkursion durchgeführt.

  Eine weitere Exkursion fand am 29. November 2024 in das Globenmuseum der Österreichischen Nationalbibliothek statt. Dieses befindet sich mitten in der Wiener Innenstadt und stellt ein weltweit einzigartiges Kleinod dar. Ausgestellt sind ca. 250 Erd-, Himmels-, Mond- und Planetengloben, die vom 16. Jahrhundert bis in die Gegenwart reichen. Der älteste Globus Österreichs, ein Erdglobus des Gemma Frisius aus dem Jahr 1536, kann neben wertvollen Globen von Gerardus Mercator genauso bestaunt werden wie ein moderner digitaler Hyperglobus, wodurch die Entwicklung der Kartographie und Globenherstellung anhand verschiedener Epochen deutlich wird. Die Sammlung setzt sich sowohl aus privaten Leihgaben als auch aus Globen und Karten aus dem Eigenbestand der Österr. Nationalbibliothek zusammen. Neben dem Globus als kartographischer Ausdrucksform wurden weitere Ausstellungsstücke und Messinstrumente vorgestellt, die die Entwicklung und Veränderung kartographischer Kenntnisse und des Globenbaus zeigen. Im Rahmen einer ausgezeichneten Fachführung durch den Leiter der Globensammlung

der ÖNB, Herrn MMag. SCHOBESBERGER, ein Geograph und Kartograph, wurde bei dieser Exkursion die spannende Geschichte der Globenkunde und Kartographie gezeigt; es wurde auch genügend Raum für Fragen und Diskussionen geben.
In diesem Zusammenhang danke ich im Namen des gesamten Vorstands sehr herzlich Herrn Jakob PACHSCHWÖLL, der als Exkursionsreferent der ÖGG und als für die Exkursionen zuständiges Mitglied des Vorstandes den Exkursionsbereich in hervorragender Weise sehr umsichtig und professionell betreut und organisiert. Weiters gilt mein Dank den Exkursionsleiter/inne/n für ihre fachlich ausgezeichneten Führungen.
Kurzberichte von Wolfgang LUDWIG und Jakob PACHSCHWÖLL über die ÖGG-Exkursionen 2024 befinden sich in unserer Informationszeitschrift „Geographie aktuell", Nr. 61 (III/2024) und 63 (I/2025).

- Die farbige Informationszeitschrift für alle Mitglieder, **„Geographie aktuell"**, ist im Jahr 2024 mit den Heften 59, 60, 61 und 62 wie geplant regelmäßig erschienen. Die Neuerung, dass seit Anfang 2017 jedes erste und dritte Heft eines Jahrgangs mit einem um 50 Prozent erweiterten Umfang veröffentlicht wird, wodurch den Mitgliedern noch mehr aktuelle Informationen aus der Geographie bzw. der ÖGG, insbesondere zu Ereignissen und Aktivitäten aus den Fachgruppen, Zweigstellen und Zweigvereinen der ÖGG, aus den Geographie-Instituten, aus dem Bereich der Schulgeographie und der Berufspraxis von Geographen vermittelt werden können, wurde beibehalten. Dem Redaktionskomitee unter der Leitung von Robert MUSIL und Mitwirkung von Jakob PACHSCHWÖLL, Wolfgang SCHWARZ, Christian STAUDACHER und Helmut WOHLSCHLÄGL gelang es auch im Jahr 2024, dieses Medium mit zahlreichen interessanten und anregenden Beiträgen zu füllen. Dafür ist herzlich zu danken!

- Der Jahresband der **„Mitteilungen der Österreichischen Geographischen Gesellschaft"** (MÖGG) (Annals of the Austrian Geographical Society) (Bd. 166/2024) ist mit 406 Seiten und 11 wissenschaftlichen Fachbeiträgen, davon vier in deutscher und sieben in englischer Sprache, mehreren kleineren Berichten und Mitteilungen, einem Abschnitt über Personalia (Würdigungen), einem Buchbesprechungsteil und den jährlichen Gesellschaftsnachrichten samt Rechnungsabschluss im gewohnten Umfang erschienen, allerdings erst etwas verspätet im März 2025.
  Inhaltlich weist der Band ein breites Themenspektrum auf: Neben einem Beitrag zur Wissenschaftsforschung und vier Beiträgen zur Sozial- und Wirtschaftsgeographie (über Migration, Teilhabe und Raum sowie über nachhaltige agrarische Praktiken beim Kaffeeanbau in Vietnam reichen die Themen bis zur Clusterbildung in der dänischen Möbelindustrie und einem Grundsatzartikel über die Rolle von Produktionsdienstleistern bei der Sicherung grüner Gewinne). Zwei weitere empirische Beiträge thematisieren die Entwicklung von Städtepartnerschaften im Mittel- und Osteuropa am Beispiel Polens und die Problematik der Unterstützung bzw. Ausgrenzung unter thailändischen Heiratsmigrantinnen in Österreich. Weitere Beiträge befassen sich mit Fragen der Verkehrsgeographie (über die Bedeutung der Flughäfen-Fluglinien-Binome für die Positionierung der großen Flug-Drehkreuze in der Golfregion im globalen Städtesystem) sowie mit regionalen Fallstudien zum Thema Erholung und Tourismus in Serbien und China. Ein interessanter namenkundlicher Beitrag über die Verwendung von Endonymen und Exonymen für geographische Objekte des Westbalkans in der deutschen Gegenwartssprache – Reiseführer als Fallbeispiel – beschließt die Fachaufsätze in Band 166 (2024).
  Um die Online-Präsentation der MÖGG und die Verfügbarkeit der Beiträge der Zeitschrift im Internet „open access" zu professionalisieren, wurden bereits 2018 Gespräche mit dem Verlag der Österreichischen Akademie der Wissenschaften über eine Kooperation aufgenommen, die 2019 mit dem Abschluss eines Vertrages zwischen der ÖGG und dem ÖAW-Verlag zu einem positiven

Ergebnis führten. Demnach übernahm der ÖAW-Verlag rückwirkend ab Band 151 (2009) die Online-Präsentation der MÖGG und sichert seither die laufende Verfügbarkeit der MÖGG-Beiträge im DOI-System, im ISI Web of Science, dem Social Science Citation Index (SSCI), bei SCOPUS und Google Scholar sowie anderen internationalen wissenschaftlichen Zitierungs- und Referenzplattformen und verwaltet auch die digitalen Versionen der MÖGG-Beiträge auf der Homepage des Verlags der ÖAW und unter der Internetadresse *„www.austriaca.at“*.

- Nachdem im Jahr 2019 das von der ÖGG in Kooperation mit dem Naturwissenschaftlichen Verein für Kärnten herausgegebene monumentale Werk von Martin Seger **„Österreich. Raum und Gesellschaft – Vermessung der Landschaft – Porträts der Bundesländer“** erschienen ist, konnte von der ÖGG Ende 2019/Anfang 2020 eine weitere interessante Sonderpublikation veröffentlicht werden. Das Buch ist im Anschluss an die 2019 vom Land Niederösterreich durchgeführte Niederösterreichische Landesausstellung „Welt in Bewegung“ in Wiener Neustadt erschienen, um allen Interessierten den Großraum Wiener Neustadt“ näher vorzustellen. Der Band mit dem Titel **„Zur Geographie des Großraums Wiener Neustadt“** (= Sonderpublikation Nr. 24 der ÖGG) von Werner Bätzing, Gerhard Fasching und Wolfgang Schwarz umfasst 248 Seiten, zahlreiche Tabellen und farbige Abbildungen und Kärtchen sowie vier Kartenbeilagen. Die ÖGG freut sich, dass es möglich war, diesen inhaltsreichen, informativen und sehr gut ausgestatteten Begleitband zur Niederösterreichischen Landesausstellung herauszugeben.
  Beide Sonderpublikationen wurden auch im Jahr 2024 weiter beworben und an interessierte Mitglieder jeweils zu einem ermäßigten Mitgliederpreis sowie an Nichtmitglieder und den Buchhandel zum Ladenpreis abgegeben

- Im Vereinsjahr 2024 wurden vom Stammverein Wien insgesamt sieben **Vortragsveranstaltungen**[2)] durchgeführt. Da sich während der Covid-Pandemie die Durchführung der ÖGG-Vorträge online mit Hilfe eines Videoprogrammsystems bewährt hat, wurde die Online-Präsentation zusätzlich zu den als Präsenzveranstaltung abgehaltenen Vorträgen beibehalten. Die Kombination der Vorträge in Präsenz plus Online erwies sich in Bezug auf die Zuhörerzahl durchaus als günstig, da nun auch Mitglieder und Interessierte, die nicht in Wien wohnhaft sind, eine verstärkte Teilnahme an den Vorträgen zeigten.
  Die Vorträge wurden ab dem Wintersemester 2021 durch Mag. Dr. Alois Humer (unter Mitwirkung von Michael Kloiber MA, vor allem für die technische Betreuung der Online-Teilnehmer/innen) in ausgezeichneter Weise organisiert und moderiert. Der Präsident und der gesamte Vorstand der ÖGG danken Alois Humer für sein Engagement bei der Organisation und Moderation des Vortragswesens am Standort Wien. Zu würdigen ist auch, dass sich im Jahr 2024 die Teilnehmer/innen/zahl bei den Vorträgen sehr gut entwickelt hat

- Von 22. bis 24. Oktober 2024 fand in Tropölach bei Hermagor das internationale **Symposium „Zukunft des Tourismus im Alpen-Adria-Raum“** statt. Das Symposium war dem Gedenken an den 20. Todestag von Zlatko Prepeonik, Professor am Institut für Geographie der Naturwissenschaftlichen Fakultät der Universität Zagreb und bedeutender kroatischer Geograph und Tourismusforscher gewidmet. Es wurde von der deutschen Südosteuropa-Gesellschaft (SOG) mit ihrer neuen Zweigstelle in Klagenfurt und der Österreichischen Geographischen Gesellschaft (ÖGG) und ihrer Zweigstelle in Klagenfurt sowie vom Institut für Geographie und Regionalforschung der Universität Klagenfurt, dem Institut für Geographie der Universität Zagreb

[2)] Zu den einzelnen Vortragstiteln in Wien sowie zu jenen im Zweigverein Innsbruck, in den Zweigstellen Graz und Klagenfurt und beim Mitgliedsverein in Salzburg siehe die detaillierten Ankündigungen in „Geographie aktuell“ Nr. 59, 60, 61 und 62.

und der Kroatischen Geographischen Gesellschaft veranstaltet. Geleitet und organisiert wurde es von Peter JORDAN, Mitglied des Geschäftsführenden Vorstands und Leiter des Referats für Internationale Beziehungen der ÖGG. Mitveranstalter waren auch die Commission on Tourism, Leisure and Global Change der International Geographical Union (IGU), die IGU Commission on Marginalization, Globalization and Regional and Local Response, der Verband der Slowenischen Geographen, die Italienische Geographische Gesellschaft, die Universität des Küstenlandes in Koper/ Capodistria, die Kroatische Akademie der Wissenschaften (Abteilung Naturwissenschaften), die Stadtgemeinde Hermagor-Pressegger See und die NLW Tourismus Marketing GmbH, Hermagor.

Zum Symposion an zwei Vortragstagen und mit einer abschließenden Exkursion auf das Nassfeld wurden 33 Vorträge und zwei Posterpräsentationen aus Österreich, Slowenien, Kroatien, Italien, Bosnien-Herzegowina, Serbien, Albanien und Indien angemeldet. Die drei Keynote-Vorträge hielten Lea HARTL mit Andrea FISCHER (österreichische Wissenschaftlerin des Jahres 2024 und ÖGG-Mitglied) vom Institut für Interdisziplinäre Gebirgsforschung der Österreichischen Akademie der Wissenschaften in Innsbruck über Gletscherveränderungen in den Alpen von 1850 bis 2050, der bedeutende slowenische Tourismusgeograph Anton GOSAR zum Thema des Übertourismus („overtourism“) und Daniela SOLDIĆ FRLETA von der Fakultät für Tourismus und Hotelmanagement in Opatija über die Möglichkeiten der Tourismusentwicklung in der kroatischen Kvarnerregion. Die Konferenzsprache war Englisch.

Das Symposium war von zahlreichen Teilnehmerinnen und Teilnehmern aus dem Alpen-Adria-Raum sehr gut besucht. Im Rahmen der Veranstaltung wurde versucht, Antworten auf zwei wichtige Fragen zu geben: Was bedeutet der Klimawandel für den Tourismus im Alpen-Adria-Raum? und: Was bedeuten die anhaltende Abwanderung aus dem ländlichen Raum und der Wunsch nach einer angenehmeren Work-Life-Balance für die Rekrutierung von Arbeitskräften im Tourismus? Das Symposium erfuhr durch die Teilnahme von Bürgermeistern und Touristikern sowie durch Berichte in den regionalen Medien auch lokale und regionale Aufmerksamkeit. Eine Information zur Veranstaltung findet sich in „Geographie aktuell“, Nr. 61 (III/2024) auf Seite 9, ein ausführlicherer Bericht über die Tagung in Band 166 (2024) der MÖGG auf den Seiten 347–350.

- Am 21. Juni 2024 fand an der Wirtschaftsuniversität Wien eine **akademische Festveranstaltung** anlässlich des 80. Geburtstags von Christian STAUDACHER, Vizepräsident der ÖGG, früherer Präsident der ÖGG von 2006 bis 2015 und ehemaliger Leiter der Abteilung für Angewandte Regional- und Wirtschaftsgeographie der WU Wien statt. Die Moderation erfolgte durch Robert MUSIL, Generalsekretär der ÖGG. Nach Grußworten des Präsidenten der ÖGG. Helmut WOHLSCHLÄGL und einer Würdigung der Leistungen von Christian STAUDACHER durch Albert HOFMAYER hielt Prof. Dr. Rudolf JUCHELKA, Universität Duisburg-Essen sowie Vizepräsident der Deutschen Gesellschaft für Geographie (DGfG), den Festvortrag zum Thema „Herausforderungen, Notwendigkeiten und Perspektiven einer Angewandten Regional- und Wirtschaftsgeographie – die Geographie in der Verantwortung“. Schlussworte von Christian STAUDACHER „In eigener Sache“ und ein Umtrunk beendeten die kleine, aber stimmungsvolle Veranstaltung.
- Zahlreiche in der Geschäftsstelle der ÖGG eingelangte **Anfragen** aus Österreich, Deutschland und anderen europäischen Staaten, aber auch aus Übersee, die das **Archiv** der ÖGG oder älteres Kartenmaterial aus unserer Bibliothek, schwerpunkthaft aus der Zeit der „k.k. Geographischen Gesellschaft in Wien“ zwischen 1856 und 1918 betreffen, konnten dankenswerterweise von unserem für Ehrungen, Traditionspflege und das Archiv zuständigen Vorstandsmitglied Gerhard FASCHING erfolgreich und zur Zufriedenheit der Nachfrager bearbeitet werden.

- Im Jahr 2020 wurde auch eine wichtige Neuerung innerhalb der ÖGG eingeführt, nämlich die Schaffung eines eigenen **Referats für Internationale Beziehungen** („Department of International Relations"), um einerseits die vielfältigen internationalen Kontakte der ÖGG besser pflegen zu können und andererseits im internationalen Feld der Geographie und ihrer Nachbargebiete stärker präsent und sichtbar zu sein. Die Leitung dieses Referats hat unser international ausgezeichnet vernetztes und im Bereich internationaler Angelegenheiten sehr erfahrenes und kompetentes Vorstandsmitglied Peter Jordan übernommen, wofür ihm herzlich gedankt sei.
  Die Neueinrichtung dieses Referats bewährte sich auch 2024. Peter Jordan vertrat den Präsidenten bei mehreren internationalen Veranstaltungen, darunter auch bei Tagungen und Festveranstaltungen unserer Nachbargesellschaften in Mittel-, Ost- und Südosteuropa. Durch seine Berichte über internationale Großkongresse aus dem Bereich der Geographie, Kartographie und Onomastik, an denen er laufend teilnimmt, gewinnt der Vorstand der ÖGG wichtige Informationen. Die Pflege der internationalen Beziehungen der ÖGG zu unseren Schwestergesellschaften und zu fachspezifischen internationalen Organisationen (EUGEO, DGfG, IGU, ICA, UNGEGN etc.) wurde dadurch deutlich verbessert.
  In diesem Zusammenhang sei auch darauf hingewiesen, dass die ÖGG gleich nach dem Einmarsch von Truppen der Russischen Föderation in die Ukraine im Februar 2022 unter dem Titel „Erklärung der ÖGG zum Krieg in der Ukraine" („Declaration of the Austrian Geographical Society Regarding the War in Ukraine") eine eindeutige, von Peter Jordan erstellte und vom Geschäftsführenden Vorstand der ÖGG einstimmig beschlossene **Stellungnahme** in deutscher und englischer Sprache verfasst hat, die auch auf der Homepage der ÖGG abgebildet ist:
  „Die Österreichische Geographische Gesellschaft (ÖGG) verurteilt die militärische Aggression der Russischen Föderation gegen die Ukraine und die verzerrte Darstellung historischer und kultureller Fakten zur Legitimierung ihres Vorgehens. Wir bringen hiermit unsere Solidarität und unser Mitgefühl mit allen Menschen in der Ukraine und in Russland zum Ausdruck, die unter diesem Krieg leiden und die gegen diesen Krieg sind. Wir möchten auch betonen, dass sich unsere Erklärung nicht gegen die russische Nation als solche und unsere geschätzten russischen Kolleginnen und Kollegen richtet."

- Eine schmerzliche Nachricht hat die ÖGG bereits im Oktober 2020 erreicht. Wie bekannt, besitzt die ÖGG auch eine sehr umfangreiche, historisch wertvolle **Bibliothek** mit rund 23.000 Bänden sowie eine umfangreiche **Kartensammlung** mit mehr als 4.000 Karten und einigen alten und seltenen Atlanten aus dem 16., 17. und 18. Jahrhundert, die alle im Österreichischen Staatsarchiv untergebracht waren. Im Oktober 2020 hat das Staatsarchiv nun den Vertrag mit der ÖGG wegen Eigenbedarf gekündigt. Es war eine wichtige Aufgabe des Geschäftsführenden Vorstands im Jahr 2021, nach Lösungsmöglichkeiten für die Erhaltung der ÖGG-Bibliothek, die quasi das „historische Erbe" der ÖGG darstellt, zu suchen.
  Diese Suche war erfolgreich und Ende 2021 konnte im Rahmen einer ausgezeichneten Kooperation mit der Bibliothek der Österreichischen Akademie der Wissenschaften mittels eines Schenkungsvertrags, über den 2021 und 2022 in den Vorstandssitzungen ebenso wie in der Hauptversammlung 2022 ausführlich berichtet worden ist, die Übersiedlung der wertvollen und großen Bibliothek der ÖGG in die neuen Räumlichkeiten in der ÖAW abgeschlossen werden.
  Es wird natürlich noch etwas dauern, bis diese in den neuen Räumlichkeiten der ÖAW vollständig neu aufgestellt, katalogisiert und – heutzutage besonders wichtig – erstmals digitalisiert sein wird, aber dann wird die „Sammlung ÖGG", wie sie auch in der Bibliothek der ÖAW als eigenständiger Sammlungsbereich betitelt und leicht zu finden ist, auch deutlich besser benützbar und durch den digitalen Katalog viel besser erschlossen sein als im Staatsarchiv mit seinen doch aus Sicherheitsgründen sehr restriktiven Zutrittsbedingungen, wodurch es dort

leider immer nur sehr wenige Benützer gab. Ich freue mich, dass wir – nach der für uns alle überraschenden Kündigung durch das Staatsarchiv – nun mit der Schenkung an die ÖAW eine, wie ich meine, ausgezeichnete Lösung für die altehrwürdige Bibliothek der ÖGG gefunden haben und das „historische Erbe der ÖGG" kann somit geschlossen weiter bestehen – das war vielen Vorstandsmitgliedern sehr wichtig. Im Berichtsjahr 2024 kann somit berichtet werden, dass das Großprojekt „Übersiedlung von Bibliothek und Kartensammlung der ÖGG" mittlerweile abgeschlossen ist.

Einen „Wermutstropfen" gibt es allerdings auch, nämlich das Handling des Tauschverkehrs. Ich habe vor einem Jahr im Rahmen der letzten Hauptversammlung berichtet, dass die Behandlung des Tauschverkehrs, der weiterhin in der Geschäftsstelle der ÖGG eintrifft, noch unklar ist und noch geklärt und geregelt werden soll. Bedauerlicherweise hat die Bibliothek der ÖAW mittlerweile mitgeteilt, dass sie wie wertvollen Bestände der „Sammlung ÖGG" in Form einer umfangmäßig abgeschlossenen Bestandsbibliothek führen und aufbereiten will und daher am Tauschverkehr kein Interesse hat.

Leider muss ich sagen, dass daher das Problem des Tauschverkehrs nach wie vor nicht gelöst ist. Die ÖGG verschickt die Bände ihrer wissenschaftlichen Fachzeitschrift an zahlreiche Tauschpartner in der ganzen Welt und das ist uns auch wichtig, weil dadurch die internationale Präsenz der MÖGG in den Universitätsbliotheken und Geographie-Instituten auch physisch – und nicht nur online – gewährleistet ist. Allerdings senden viele dieser Tauschpartner, die die MÖGG ja kostenlos erhalten, ihre Fachpublikationen im Tauschverkehr an die ÖGG, so dass sich mittlerweile in der Geschäftsstelle eine ganze Menge an Büchern und Fachzeitschriften angesammelt hat, deren weitere Verwendung bis dato noch unklar ist.

- Schließlich soll noch auf eine ganz wesentliche neue Errungenschaft der ÖGG im Jahr 2023 hingewiesen werden: Die **neue Homepage**. Die alte Homepage war sowohl in technischer Hinsicht als auch in Bezug auf das optische Erscheinungsbild nicht mehr zeitgemäß, überdies war sie in vielen Bereichen inhaltlich veraltet und nicht aktualisiert. Ich habe die neue Homepage in den letzten Monaten gemeinsam mit der Firma Medienwerkstatt (Herr Gerhard MAYER) und mit freundlicher Unterstützung von Frau Karin MAYER (Institut für Geographie und Regionalforschung) konzipiert und zusammengestellt und bedanke mich sehr herzlich für die wirklich großartige Unterstützung und die hervorragende Zusammenarbeit (von Frau MAYER in ihrer Freizeit außerhalb ihrer Dienstzeit am Institut, das muss wirklich gewürdigt werden!) Die Homepage ist im Content Management System TYPO 3 erstellt, das vor allem im Universitätsbereich sehr verbreitet ist. Das System hat auch den Vorteil, dass Aktualisierungen sehr schnell durchgeführt werden können.

  Die neue Homepage hat auch eine neue Adresse: *https://oegg.univie.ac.at* (bisher: *http://www.geoaustria.ac.at*). Die Homepage ist seit Oktober 2023 online und jederzeit benützbar. Sie wurde im Jahr 2024 weiter ausgebaut.

  Die Homepage über unsere wissenschaftliche Fachzeitschrift „Mitteilungen der Österreichischen Geographischen Gesellschaft" (MÖGG) ist seither als Ganzes in die neue Homepage integriert. Es gibt allerdings, obwohl die MÖGG nun voll in der ÖGG-Homepage enthalten ist, einen direkten Zugang zu den MÖGG-Seiten, denn das ist vor allem für internationale Benützer/innen, die nur an den MÖGG (zum Beispiel im Open-Access-Bereich) interessiert sind, wichtig. Die neue Adresse der MÖGG lautet: *https://moegg.univie.ac.at*). Auch hier wurde eine Umleitung eingerichtet, sodass die neue Homepage auch über die alte Adresse *http://www.moegg.ac.at* direkt erreichbar ist. Die neue MÖGG-Homepage wird mittlerweile laufend erweitert. So stehen mittlerweile bereits die Bände der letzten 16 Jahre (ab einschließlich Band 151, 2009) komplett als PDF auf der Homepage, so dass jeder Beitrag sofort online gelesen und heruntergeladen werden kann

- Die ÖGG versteht sich auch als Interessenvertretung der Geographinnen und Geographen an den Universitäten, in den Schulen und in den vielfältigen Arbeitsfeldern der außeruniversitären und außerschulischen Berufspraxis und gibt in diesem Zusammenhang, wenn erforderlich, auch **Stellungnahmen** ab, etwa zu den Forderungen nach Aufteilung des Schulfachs „Geographie und Wirtschaftskunde“ (neu: „Geographie und Wirtschaftliche Bildung“) oder Abtrennung der Wirtschaftskunde, zur Stärkung der Wirtschafts- und Finanzbildung, zur Rolle der Wirtschaftserziehung in den Lehrplänen etc. (vor allem über die Fachgruppe für Geographische und Sozioökonomische Bildung, GESÖB).
- Die **Zweigvereine**, **Zweigstellen** und **Fachgruppen**, also jene Teilorganisationen, welche entweder regional oder fachlich näher an den Mitgliedern sind, laufen überall dort, wo Engagement und freiwilliger Einsatz vorhanden sind, sehr gut und sind so Hoffnungsträger und Aktivposten der ÖGG. Es sei daher den Leitern und Leitungsgruppen des Zweigvereins bzw. der Zweigstellen in Innsbruck, Graz und Klagenfurt am Wörthersee sowie den Vorsitzenden der vier ÖGG-Fachgruppen „Österreichische Kartographische Kommission“ (ÖKK), „Österreichische Forschungsgruppe für Geomorphologie und Umweltwandel“ (geomorph.at), „Österreichischer Verband für Angewandte Geographie“ (ÖVAG) und „Fachgruppe für Geographische und Sozioökonomische Bildung“ (GESÖB) sowie der neu eingerichteten Fachgruppe „Junge Österreichische Geographische Gesellschaft (JÖGG, Junge ÖGG) sehr herzlich gedankt!
  Die Fachgruppen berichten laufend in unregelmäßigen Abständen über ihre Aktivitäten in unserer vierteljährlichen Informationszeitschrift „Geographie aktuell“. Hinzuweisen ist in diesem Zusammenhang für das Jahr 2024 auf die Berichte der „Jungen Österreichischen Geographischen Gesellschaft“ (JÖGG) in Heft 60 (II/2024) sowie der „Fachgruppe für Geographische und Sozioökonomische Bildung“ in Heft 61 (III/2024) und der „Arbeitsgemeinschaft für Kartographische Ortsnamenkunde“ (AKO) in Heft 59 (I/2024).

Das alles ist ohne die freiwillige und ehrenamtliche Mitarbeit, insbesondere aller Vorstandsmitglieder, und ohne die finanziellen Beiträge der Mitglieder nicht möglich! Ihnen allen gilt deshalb abschließend mein besonderer Dank!

1.2 Vermögensrechnung und Rechnungsabschluss zum 31.12.2024
(Bericht des Rechnungsführers Norbert Hackner-Jaklin)

Aus der Sicht des Rechnungswesens konnte das **Wirtschaftsjahr 2024**, wie aus den detaillierten Aufstellungen in Tabelle 1 und 2 hervorgeht, ordnungsgemäß – wenn auch mit einer Reihe finanzieller Herausforderungen – abgewickelt werden und die Österreichische Geographische Gesellschaft ihre Aufgaben voll wahrnehmen. Das Rechnungsjahr 2024 wurde wegen der erwähnten Herausforderungen (auf die hier noch weiter eingegangen werden wird) mit einem negativen Ergebnis von Euro –6.075,00 abgeschlossen.

Die Rechnungsprüfung hat am 14. April 2025 in den Räumlichkeiten der ÖGG-Geschäftsstelle stattgefunden. Es wurden dabei alle Unterlagen offengelegt, diese geprüft und als ordnungsgemäß befunden.

Nachfolgend einige Erläuterungen zum Zahlenwerk:

- Wie schon erwähnt, brachte das Jahr 2024 eine Reihe unerfreulicher Entwicklungen mit sich. **Ausgabenseitig** gab es eine Reihe deutlicher Kostensteigerungen, vor allem in den Bereichen der Herstellung der MÖGG sowie der Porto- und Personalkosten. Einnahmenseitig gingen aufgrund der aktuellen Wirtschaftslage langjährige Sponsoren, z. B. für „Geographie aktuell“, ver-

loren, neue Sponsoren sind aktuell kaum zu akquirieren. Zusätzlich blieben Einnahmen durch MÖGG-Druckkostenbeiträge von Autoren sowie Publikationsverkäufe zunehmend aus. Eine periodenfremde Ausgabenposition bei den MÖGG-Herstellkosten wurde nicht ergebniswirksam.

- Erfreulicherweise haben sich die **Einnahmen** aus den Mitgliedsbeiträgen und Spenden stabil entwickelt und bilden ein wichtiges Fundament für die Leistungserbringung der ÖGG (Vorträge, Exkursionen, „Geographie aktuell", MÖGG etc.)
- Da es sich hier um keine einmalige Entwicklung, sondern um einen dauerhaften Trend handelt, haben wir für 2025 entsprechende **Konsolidierungsmaßnahmen** eingeleitet, welche auch umgehend wirksam wurden. Darauf wird im Bereich der Budgeterstellung näher eingegangen.
- Der **Geographie-Fonds** konnte seine Aufgaben auch 2024 wahrnehmen. Er verzeichnet ein positives Gesamtergebnis von EUR 892,22. Es wurden Preisgelder in der Höhe von EUR 4.000,- ausgeschüttet. Auslaufende Veranlagungen wurden bereits 2023 entsprechend neu veranlagt und lieferten bereits 2024 ergänzend zu den laufenden Veranlagungen marktkonforme Erträge.
- Die **Budgeterstellung für 2025** steht ganz im Zeichen der Entwicklungen von 2024. Als wesentliche Änderung wird die Beschäftigung von Frau Mag. TYJAN in der Kanzlei nicht weiter

AKTIVA		**PASSIVA**	
Anlagevermögen		**Kapital**	
Inventar Geschäftsstelle (Wandsystem)	0,00	Kapital	1.409,98
Kaution Kanzlei	700,00		
		Rücklagen	
Umlaufvermögen		Allgemeine Rücklage	2.412,54
Forderungen (offene Rechnungen)	206,00	Rücklage Investitionsfonds	10.289,84
Ausstehende Mitgliedsbeiträge	1.608,00	Rücklage Fachgruppe ÖKK	4.549,45
		Rücklage Fachgruppe geomorph.at	7.241,26
Bankguthaben		Rücklage Fachgruppe ÖVAG	2.280,19
Giro Erste Bank ÖGG	10.724,49	Rücklage Fachgruppe GESÖB	18.440,92
Subkonto Fachgruppe ÖKK	475,39	Rücklage Exkursion Inland	863,67
Subkonto Fachgruppe geomorph.at	3.598,58	Rücklage Exkursion Ausland	1.354,45
Subkonto Fachgruppe ÖVAG	2.688,15	Rücklage Geographie-Fonds	148.365,82
Subkonto Fachgruppe GESÖB	18.440,92		
Depot Erste Bank, Anteil ÖGG	37.971,48	**Rückstellungen**	
		Druckkostenrückstellung	31.593,99
Barvermögen		Rückstellung Geographie aktuell	0,00
Kassa Geschäftsstelle Wien	0,00	Bewertungsgewinne Depot, Anteil ÖGG	-1.247,69
Kassa Zweigstelle Graz	874,77		
Kassa Zweigstelle Klagenfurt a.W.	1.914,27		
Kassa Fachgruppe ÖKK	0,14	Hans-Bobek-Preis der ÖGG	0,00
		Förderungspreis der ÖGG	0,00
Geographie-Fonds			
Wertpapiere Depot Bank Austria	44.561,69		
Referenzkonto Bank Austria	2.142,18		
Depot Erste Bank, Anteil Geographie-Fonds	90.267,21		
Subkonto Erste Bank Geographie-Fonds	11.381,15		
	227.554,42		**227.554,42**

Tab. 1: Vermögensrechnung der ÖGG per 31.12.2024 in Euro

AUFWENDUNGEN			ERLÖSE	
Publikationen			**Publikationen**	
Herstellung MÖGG		20.757,31	Verkauf Publikationen	1.988,49
„Geographie aktuell“		2.850,11	Inserate „Geographie aktuell“	1.400,00
Abschr. uneinbringlicher Forderungen		0,00		
Fachgruppen			**Fachgruppen**	
ÖKK		1.078,50	ÖKK	326,18
geomorph.at		1.500,57	geomorph.at	200,17
ÖVAG		165,88	ÖVAG	368,19
GESÖB		53.640,54	GESÖB	47.003,73
Exkursionen			**Exkursionen**	
Exkursionen		3.320,20	Exkursionen	3.987,00
Büroaufwand			**Mitgliedsbeiträge und Spenden**	
Raumaufwand			Mitgliedsbeiträge	25.635,00
Miete (inkl. Instandhaltung)	3.890,02		Spenden	2.002,00
Raumpflege	0,00			
Strom, Gas	–166,91		**Subventionen**	
Versicherungen	125,01	3.848,12	Subvention MÖGG	1.000,00
Kanzlei, Verwaltung		7.448.07		
Büroaufwand		0,0		
Portogebühren		5.885,57		
Telefongebühren, Internet		623,47		
AfA-Anlagen (Wandsystem)		0,00		
Sonstiger Druckaufwand		695,88		
Sonstige Vereinstätigkeiten			**Sonstige Vereinstätigkeiten**	
Veranstaltungen		0,00	Veranstaltungen	0,00
Beiträge zu Vereinen		185,00		
Bücher, Zeitschriften		0,00		
Vortragskosten		3.113,07		
Reisekosten		0,00		
Repräsentation, Ehrungen		0,00		
Sonderband Österreich-Buch		0,00	Sonderband Österreich-Buch	0,00
Geographie-Fonds			**Geographie-Fonds**	
Aufwendungen Geographie-Fonds		4.551,40	Erlöse Geographie-Fonds	5.443,62
Sonstiger Aufwand			**Sonstige Erlöse**	
Bankspesen		550,84	Kapitalerlöse	1.743,76
Sonstiger Aufwand		1.177,50	Sonstige Erlöse	2.400,00
Depot Erste Bank / Bewertungsverluste		0,00	Depot Erste Bank / Bewertungsgewinne	0,00
Dotierung Rückstellungen			**Auflösung Rückstellungen**	
Rückstellung Geographie aktuell		0,00	Aufl. Rückstellung Geographie aktuell	0,00
Rückstellung Druckkostenbeitrag		0,00	Aufl. Rückstellung Druckkostenbeitrag	3.226,39
Rückstellung Bewertungsgewinne		0,00	Auf. Rückstellung Bewertungsgewinne	0,00
Dotierung Rücklagen			**Auflösung Rücklagen**	
Allgemeine Rücklage		0,00	Aufl. Allgemeine Rücklage	6.075,00
Rücklage ÖKK		0,00	Aufl. Rücklage ÖKK	752,32
Rücklage geomorph.at		0,00	Aufl. Rücklage geomorph.at	1.300,40
Rücklage ÖVAG		202,51	Aufl. Rücklage ÖVAG	0,00
Rücklage GESÖB		0,00	Aufl. Rücklage GESÖB	6.636,81
Rücklage Investitionsfonds		0,00	Aufl. Rücklage Investitionsfonds	997,50
Rücklage Geographie-Fonds		892,22	Aufl. Rücklage Geographie-Fonds	0,00
		112.486,56		**112.486,56**

Tab. 2: Rechnungsabschluss mit Jahresabgrenzungen per 31.12.2024 in Euro

fortgesetzt. Ich möchte mich persönlich an dieser Stelle für die jahrelange gute Zusammenarbeit bedanken. Die Aufgaben werden in Zukunft ehrenamtlich, vor allem durch unseren Präsidenten, übernommen. Das darf als Aufruf an alle Mitglieder gesehen werden, sich aktiv in die Agenden unserer Gesellschaft einzubringen. Auf dieser Basis konnten wir für 2025 ein ausgeglichenes, konservativ gestaltetes Budget erstellen. Wesentlich bleiben auf der Einnahmenseite die Steigerung der Einnahmen aus den Mitgliedsbeiträgen durch das Gewinnen neuer Mitglieder sowie die Einwerbung von Spenden und Subventionen.

gez. N. Hackner-Jaklin, 17.04.2025

1.3 Bericht der Rechnungsprüfer und Entlastung des Vorstands für 2024
(Andreas PALKOVICS und Klaus WILHELMER)

Die Prüfung des Rechnungsabschlusses für das Geschäftsjahr 2024 fand am 15. April 2025 in Anwesenheit des Rechnungsführers, Mag. Norbert HACKNER-JAKLIN und des Präsidenten der ÖGG, Univ.-Prof. Mag. Dr. Helmut WOHLSCHLÄGL, in den Räumlichkeiten der ÖGG in der Karl-Schweighofer-Gasse 3/7, 1070 Wien statt.

Die Erstellung der Bilanz und der Gewinn/Verlust-Rechnung für 2024 sowie die zahlenmäßige Aufstellung des Geographie-Fonds für 2024 und die Erstellung des Ordentlichen Budgets für 2025 erfolgten zeitgerecht und konnten den beiden Rechnungsprüfern, Herrn Mag. Andreas PALKOVICS und Herrn Mag. Dr. Klaus WILHELMER, bereits einige Tage vor dem Prüfungstermin zur Verfügung gestellt werden.

Im Rahmen der Rechnungsprüfung wurden sämtliche Unterlagen offengelegt und sowohl stichprobenartig Aufwands- und Erlöspositionen der Gewinn-Verlust-Rechnung geprüft als auch die Bilanzpositionen erörtert. Alle Fragen wurden beantwortet und konnten inhaltlich geklärt werden. Die Überprüfung der Gebarung durch die Rechnungsprüfer erstreckte sich auf ziffernmäßige Richtigkeit, Rechtmäßigkeit, Sparsamkeit, Wirtschaftlichkeit und Zweckmäßigkeit.

Darüber hinaus wurden die Abweichungen des IST zum SOLL (Budgetentwurf) besprochen und sowohl vom Präsidenten als auch vom Rechnungsführer erläutert und begründet. Im Besonderen anzuführen ist der höhere Abgang auf Grund von stark zurückgegangenen Einnahmen durch Inserate und starken Preiserhöhungen, vor allem in den Bereichen Druck und Versand der ÖGG-Publikationen. Des Weiteren wurde auch das Budget für das laufende Geschäftsjahr 2025 durchgegangen. Hier sticht besonders hervor, dass durch eine Umschichtung im Bereich Personal die Kosten in diesem Bereich drastisch gekürzt werden können, wodurch mit einem ausgeglichenen bis positivem Jahresergebnis 2025 gerechnet werden kann.

1. **Zusammenfassend** wird wie folgt festgehalten:
   a) Sämtliche Prüfungsunterlagen (Bilanz und Gewinn/Verlust-Rechnung) wurden vorgelegt.
   b) Die Ausführung und die Rechnungsführung entsprechen vollinhaltlich den Grundsätzen ordnungsgemäßer Buchführung.
   c) Das pagatorische Rechnungswesen wurde formell richtig geführt, insbesondere wurde der Rechnungsabschluss zum 31.12.2024 ordnungsgemäß abgeleitet. Das ausgewiesene Vermögen ist laut Bestand vorhanden und alle Ausgaben sind durch Belege nachgewiesen.

2. **Antrag auf Entlastung des Vorstandes:** Es wird festgehalten, dass die Mittel des Vereins statutengemäß verwendet worden sind. Aus diesem Grund stellen die unterzeichneten Rechnungsprüfer an die Hauptversammlung der ÖGG den Antrag, den Rechnungsabschluss 2024 zu genehmigen und den Rechnungsführer sowie den gesamten Vorstand zu entlasten.

gez. Andreas Palkovics, Klaus Wilhelmer, 15.04.2025

Der Antrag der Rechnungsprüfer auf Entlastung des Vorstandes einschließlich des Rechnungsführers wurde in der Hauptversammlung vom 29. April 2025 einstimmig angenommen.

1.4 Budgetvoranschlag 2025

(Norbert Hackner-Jaklin, Helmut Wohlschlägl)

Der Budgetvoranschlag wurde wie üblich nach den Erfahrungen des abgelaufenen Vereinsjahres sowie den sich abzeichnenden Notwendigkeiten des laufenden Jahres solide und konservativ konzipiert. Unter diesen Rahmenbedingungen wurde ein ausgeglichenes Budget für 2025 erstellt.

Ausgaben (in 1.000 EUR)	**2024**		**2025**	**Einnahmen (in 1.000 EUR)**	**2024**		**2025**
	Soll	**Ist**	**Soll**		**Soll**	**Ist**	**Soll**
Publikationen				**Publikationen**			
Herstellung MÖGG	12,75	17,53	17,50	Publikationsverkauf	3,00	1,99	2,00
Versand MÖGG	0,00	0,00	0,00				
Sonstige Druckwerke	0,00	0,70	0,50				
„Geographie aktuell“	3,30	2,85	2,90	Inserate „Geographie aktuell“	3,00	1,40	1,60
Büroaufwand				**Mitgliedsbeiträge**			
Raumaufwand	5,00	3,85	4,50	**und Spenden**			
Kanzlei, Verwaltung	7,40	7,45	0,65	Mitgliedsbeiträge	26,00	25,64	26,00
Büroaufwand	0,00	0,00	0,00	Spenden	1,80	2,00	2,00
Portogebühren	4,85	5,89	6,00				
Telefongebühren, Internet	0,55	0,62	0,65	**Sonstige Erlöse**			
				Sonstige Erlöse	1,20	2,40	2,40
Sonstige Vereinstätigkeiten				Kapitalerlöse	0,30	1,74	1,50
Beiträge zu Vereinen	0,05	0,18	0,20	Subventionen	1,00	1,00	1,00
Bücher, Zeitschriften	0,00	0,00	0,00	Überschuss Exkursionen	0,50	0,67	0,50
Vortragskosten	2,00	3,11	3,00				
Reisekosten	0,00	0,00	0,00				
Veranstaltungen, Ehrungen	0,10	0,00	0,10				
Sonstiger Aufwand							
Bankspesen	0,50	0,55	0,50				
Sonstiger Aufwand	0,30	1,18	0,50				
AfA	0,00	0,00	0,00				
Zweigstellen	0,00	0,00	0,00				
	36,80	**43,91**	**37,00**		**36,80**	**43,91**	**37,00**

Tab. 3: Budgetvoranschlag 2025 in 1.000 EUR (ohne den Zweigverein Innsbruck)

Auf der **Ausgabenseite** wurde die Ausgabenstruktur des Jahres 2024 für 2025 im Wesentlichen fortgeschrieben. Bei den MÖGG ergaben sich 2024 ebenso wie schon 2023 überdurchschnittlich hohe Herstellungskosten. Diese sind vor allem durch eine starke Erhöhung der Papierpreise und der Druckkosten und eine erstmals nach fast zehn Jahren durchgeführte Erhöhung der Kosten für Lektorat, Layout, Grafik und Herstellung des Drucksatzes im Jahr 2022 bedingt sowie durch die laufende, an die Inflation angepasste Zunahme der Zahlung an den Verlag der Österreichischen Akademie der Wissenschaften für die internationale Online-Präsentation der MÖGG bedingt.

Durch Einsparungen beim Umfang der MÖGG und Reduktion des Anteils des Farbdrucks im aktuellen MÖGG-Band soll ein Teil der Mehrkosten wieder eingespart werden. Da nach dem Ausscheiden von Frau Mag. TYJAN die Stelle der Sekretärin in der Geschäftsstelle der ÖGG zunächst nicht nachbesetzt wird, ergibt sich hier eine wesentliche Einsparung, durch die das Budget 2025 nun mehr Spielraum hat und die Erstellung eines ausgeglichenen Budgetplans wesentlich erleichtert wurde.

Auf der **Einnahmenseite** wird eine Zunahme der Einnahmen aus Mitgliedsbeiträgen angestrebt. Weiters besteht das Ziel, höhere Erträge aus den Spenden, den Werbeeinnahmen für Inserate in „Geographie aktuell" und dem Publikationsverkauf zu lukrieren, dies wurde aber im Budgetvoranschlag nur sehr vorsichtig berücksichtigt. Die hohen Einnahmen aus dem Publikationsverkauf waren 2024 ein Einmal-Effekt wegen der hohen Zusatzeinnahmen aus dem Verkauf des Österreich-Buchs durch den Mitherausgeber „Naturwissenschaftlicher Verein für Kärnten", der die daraus lukrierten Verkaufsanteile aus den Verkäufen der Jahre 2021 bis 2023 im Jahr 2024 an die ÖGG überwiesen hat. Sie wurden daher für 2025 budgetär nicht fortgeschrieben.

1.5 Mitgliederstand und -bewegung 2024
(Helmut WOHLSCHLÄGL)

Gedenken für die im Jahr 2024 verstorbenen Mitglieder: Im Vereinsjahr haben uns folgende Mitglieder für immer verlassen:

OStR Mag. Dr. Harald HITZ, Waidhofen an der Thaya
Ao. Univ.-Prof. i. R. Dr. habil Robert KOSTKA, Graz
Em. O. Univ.-Prof. Dr. Helmut RIEDL, Salzburg / Wiener Neustadt
OStR Dr. Ludwig ROOS, Düsseldorf
Dr. Karl SCHAPPELWEIN, Wien

Die ÖGG wird den verstorbenen Mitgliedern ein ehrendes Andenken bewahren.

Die **Mitgliederentwicklung** der ÖGG (ohne Zweigverein Innsbruck) zeigt im Jahr 2024 – nach einer positiven Entwicklung im Jahr 2018 (Saldo: +7), einer leicht negativen Entwicklung im Jahr

	Wien	Innsbruck*	ÖGG gesamt
Mitglieder Anfang 2024	**592**	**526**	**1.118**
Eintritte	33	5	38
Todesfälle	5	1	6
Austritte	20	1	21
Streichungen	2	157	159
Mitglieder Ende 2024	**598**	**372**	**970**
Mitgliedergewinn/-verlust	+6	–154	–148

*) Im Jahr 2024 erfolgte durch die neue Leitung des Zweigvereins Innsbruck eine umfangreiche Revision der Mitgliederzahlen mit Streichung bzw. „Ruhendstellung" von 157 Mitgliedern, die – auch nach Aufforderung – für die fünf Jahre von 2019 bis 2023 keine Mitgliedsbeiträge gezahlt haben und bei denen es sich überwiegend um langjährige „Karteileichen" handelte. Dadurch reduzierte sich die „reale" Mitgliederzahl des Zweigvereins Innsbruck bis 31.12.2024 – bei fünf Beitritten, einem Austritt und einem Sterbefall – nach Auskunft des neuen Schriftführers des Zweigvereins Innsbruck, Tobias TÖPFER, auf 372 Mitglieder.

Tab. 4: Mitgliederbewegung 2024 im Stammverein Wien und im Zweigverein Innsbruck

2019 (Saldo: –10), einer stärker negativen Entwicklung 2020 (Saldo: –25), einer leicht negativen Entwicklung 2021 (Saldo: –10), einer nur gering negativen Bilanz 2022 (Saldo: –6) und einer relativ deutlichen negativen Entwicklung 2023 (Saldo: –20) erstmals nach längerer Zeit mit einem Saldo von +6 wieder ein positives Ergebnis, was vor allem auf die überdurchschnittlich große Zahl von Neubeitritten zurückzuführen ist. Sie ist aber dennoch nach wie vor nicht zufriedenstellend.

Ab 2025 soll daher – vor allem mit Hilfe der neu gegründeten Fachgruppe „Junge ÖGG" (JÖGG) ein verstärktes Augenmerk auf die Mitgliederwerbung, insbesondere beim jüngeren wissenschaftlichen Nachwuchs, bei den Studierenden und bei den Lehrkräften an den Schulen gelegt werden.

Tabelle 4 gibt einen Überblick über die Entwicklung der Mitgliederzahl im Stammverein Wien und im Zweigverein Innsbruck im Jahr 2024.

An dieser Stelle ist es immer ein erfreuliches Ereignis, auch die langjährigen Mitglieder der ÖGG zu würdigen und Ihnen für Ihre bemerkenswerte Treue zu unserer traditionsreichen Gesellschaft zu danken. Die folgende Tabelle 5 gibt einen Überblick über jene Mitglieder, die am Stichtag 31. Dezember 2024 bereits mehr als 60 Jahre Mitglied der ÖGG waren. Der Präsident und der gesamte Vorstand der ÖGG gratulieren herzlich und wünschen alles Gute.

Name	Mitgliedsjahre
Hofrat Prof. Dr. Walter Dujmovits, Stegersbach	72
Hofrat Dr. Maria Bobek-Fesl, Wien	67
Dir. Prof. Walter Grafenauer, Haslach an der Mühl	65
Prof. Dr. Eduard Kunze, Haag Am Hausruck	64
Oberrat Dr. Dietlinde Mühlgassner, Wien	64
Hofrat Dr. Werner Slupetzky, Wien	64
Prof. Dr. Johann Stippel, Wiener Neustadt	64
Univ.-Doz. Dr. Felix Jülg, Rekawinkel	63
Univ.-Doz. Dr. Lothar Beckel, Hof Bei Salzburg	62
Dr. Margarete Jericha, Wien	62
Hofrat Univ.-Doz. Dr. Wolfgang Schwarz, Wien	62
Em. Univ.-Prof. Dr. Martin Seger, Klagenfurt A. W.	62
Univ.-Prof. Dr. Wilhelm Lutz, Eschborn (D)	61
Dr. Brigitta Richter, Wien	61

Tab. 5: Langjährige Mitglieder der ÖGG in aufrechter, ununterbrochener Mitgliedschaft (Stand: 31.12.2024)

1.6 Anpassung der Mitgliedsbeiträge ab 2025

(Helmut Wohlschlägl)

Auf Antrag des Vorstandes der ÖGG, den dieser in seiner Sitzung am 22. April 2022 mehrstimmig gefasst hatte, war in der Hauptversammlung des Jahres 2022 am 26. April 2022 – einstimmig – beschlossen worden, die **Mitgliedsbeträge ab dem Jahr 2023** moderat um 50 Cent pro Monat = EUR 6,- im Jahr zu erhöhen (= bei Standard-Vollmitgliedschaft von EUR 48,- auf EUR 54,-; aliquote Erhöhung in allen anderen Mitgliedskategorien). Diese Erhöhung wurde im Jahr 2023 erstmals budgetär wirksam.

Eine weitere Erhöhung des Mitgliedsbeitrags ist zurzeit nicht vorgesehen. Der Hauptversammlung lag daher ein einstimmiger Antrag des Vorstands der ÖGG von seiner Sitzung vom 23. April 2025 vor, die Mitgliedsbeiträge f**ür 2026 nicht zu erhöhen**. Die Hauptversammlung stimmte diesem Antrag des Vorstands einstimmig zu.

1.7 Ergebnisse der Wahlen
(Helmut WOHLSCHLÄGL)

Wahl oder Wiederwahl von Vorstandsmitgliedern für die Funktionsperiode 2025 bis 2028

Der Vorstand hat in seiner Sitzung vom 23. April 2025 einstimmig beschlossen, der Hauptversammlung die folgenden Mitglieder des Vorstands der ÖGG zur **Wiederwahl** vorzuschlagen (da ihre gemäß Satzung der ÖGG dreijährige Funktionsperiode mit der Hauptversammlung 2025 abläuft) und eine diesbezügliche Empfehlung an die Hauptversammlung abgegeben: Peter JORDAN (Leiter des Referats für Internationale Beziehungen), Heinz FASSMANN (Vertreter der Österreichischen Akademie der Wissenschaften in der ÖGG), Max-Peter MENZEL (Leiter der Zweigstelle Klagenfurt der ÖGG) und sein Stellvertreter Peter MANDL.

Der Vorstand hat überdies einstimmig beschlossen, der Hauptversammlung mitzuteilen, dass folgende **neue Mitglieder** in den Vorstand der ÖGG aufgenommen werden sollen. Bei diesen handelt es sich zum einen um neue Leiter von Fachgruppen und Zweigstellen, die satzungsgemäß auch Mitglieder des Gesamtvorstands der ÖGG sind, zum anderen um zwei weitere neu aufzunehmende Vorstandsmitglieder. Sollte die Hauptversammlung diesem Vorschlag des Vorstandes zustimmen, erweitert sich die Zahl der Mitglieder des Gesamtvorstands der ÖGG auf insgesamt 22 Personen.

- Wolfgang SCHÖNER als neuer Leiter der Zweigstelle Graz der Österreichischen Geographischen Gesellschaft; Nachfolge von Gerhard LIEB),
- Ein Mitglied des Organisationsteams der neuen Fachgruppe „Junge ÖGG“ (ÖGG). Das Organisationsteam der Fachgruppe besteht zurzeit aus Dominik EBENSTREIT, Maria FEICHTINGER, Julian KUSSEGG, Raphael SACHS und Ulrike STROISSNIG.
- Roman STANI-FERTL als Vertreter der Arbeitsgemeinschaft für Kartographische Ortsnamenkunde (AKO). Diese ist eine wichtige international vernetzte Arbeitsgemeinschaft und als „Tochter“ unserer Fachgruppe „Österreichische Kartographische Kommission“ (ÖKK) eng mit der ÖGG verbunden.
- Barbara PUNDY als Stellvertretende Geschäftsführerin des Geographie-Fonds der ÖGG zur Unterstützung des Geschäftsführers, Albert HOFMAYER, bei der Verwaltung und Vergabe der wissenschaftlichen Preise der ÖGG.

Die Wahl wurde – nach dem gleichen Modus wie schon im Vorjahr – als **geheime Briefwahl** durchgeführt: Alle bei der Online-Hauptversammlung bei diesem Tagesordnungspunkt (noch) online anwesenden Mitglieder erhielten einen Wahlzettel per E-Mail zugesandt, der dann von den Mitgliedern auszufüllen und im doppelt verschlossenen Kuvert (wobei das innere Kuvert den ausgefüllten Wahlzettel, aber keine Namensangaben enthielt) per Post an die Geschäftsstelle der ÖGG in 1070 Wien, Karl-Schweighofer-Gasse 3/7 zu senden war.

Die Öffnung der per Post eingelangten anonymen Kuverts und die Auszählung erfolgten dann in der Geschäftsstelle der ÖGG durch zwei anwesende Skrutatoren und in Anwesenheit des Präsidenten der ÖGG.

Die Wahlen ergaben bei jeweils 14 abgegebenen gültigen Stimmen folgende Zustimmungswerte für die Wiederwahl bzw. Neuwahl (siehe Tab. 6). Damit wurden alle zur Wiederwahl oder Neuwahl vorgeschlagenen Vorstandsmitglieder auch gewählt.

Wiederwahl für die Funktionsperiode 2025–2028	ja	nein	Enthaltung
Univ.-Doz. Dr. Peter Jordan	12	0	2
Univ.-Prof. i.R. Dr. Heinz Fassmann	12	1	1
Univ.-Prof. Dr. Max-Peter Menzel	12	0	2
Ass.-Prof. i.R. Dr. Peter Mandl (*als Ersatzmitglied*)	10	2	2
Neuwahl für die Funktionsperiode 2025–2028	**ja**	**nein**	**Enthaltung**
Univ.-Prof. Dr. Wolfgang Schöner	12	1	1
Ein/e Vertreter/in des Organisationsteams der JÖGG	14	0	0
Dr. Roman Stani-Fertl	13	0	1
Mag. Barbara Pundy	12	0	2

Tab. 6: Ergebnis der Wieder- und Neuwahl in den Vorstand der ÖGG

Wahl von Rechnungsprüfern

Für die Funktion von Rechnungsprüfern standen für das Vereinsjahr 2025 neuerlich zur Verfügung: Mag. Andreas Palkovics und Dr. Klaus Wilhelmer. Beide Herren haben sich bereit erklärt, diese Funktion auch in Hinkunft weiterhin auszuüben. Sie wurden – ebenfalls per geheimer Briefwahl – bei 14 abgegebenen gültigen Stimmen mit jeweils mit 14 Pro-Stimmen ohne Gegenstimme oder Enthaltung in dieser Funktion für 2026 wiedergewählt. Die ÖGG dankt für ihre wertvolle Arbeit als Rechnungsprüfer!

2 Geographie-Fonds der ÖGG

2.1 Verleihung der wissenschaftlichen Preise der ÖGG für 2023 im Herbst 2024

Die wissenschaftlichen Preise des Geographie-Fonds der ÖGG für das Jahr 2023 wurden in Band 143/2022 der MÖGG sowie ab Jänner 2023 auf der Homepage der ÖGG, ferner ab Sommer 2023 bei der Deutschen Gesellschaft für Geographie (DGfG), im GEO-Büro und auf der Homepage des Verbandes der Geographen an deutschsprachigen Hochschulen (VGDH) sowie bei allen Institutsdirektoren und Sekretariaten der Geographie-Institute in Österreich, Deutschland und der Schweiz ausgeschrieben.

Bis zum festgesetzten Einreichtermin 31. Dezember 2023 sind insgesamt 17 Einreichungen eingegangen: für den Hans-Bobek-Preis fünf Einreichungen (eine Habilitationsschrift und vier Dissertationen), für den Förderungspreis der ÖGG sechs (alles Masterarbeiten), für den Leopold-Scheidl-Preis für Wirtschaftsgeographie zwei (eine Dissertation und eine Masterarbeit) und für den OeNB-Award für Wirtschaftsdidaktik vier (drei Dissertationen und eine Masterarbeit).

Entsprechend den Statuten des Geographie-Fonds mussten im Begutachtungsverfahren von Albert Hofmayer, dem Geschäftsführer des Fonds, dem an dieser Stelle für seine aufwändige Arbeit sehr herzlich gedankt werden soll, im nächsten Schritt für die ersten drei im Folgenden angeführten Preise insgesamt 34 Gutachterinnen und Gutachter, davon 22 aus dem Ausland, eingeworben werden; diese haben ihre Gutachten sehr gewissenhaft erstellt, wofür Ihnen im Namen der ÖGG herzlich zu danken ist. Die anschließende intensive Arbeit der zwölfköpfigen Jury über die Preisvergabe 2023 ergab in der **Jurysitzung vom 22. November 2024** für die ersten drei der im Folgenden angeführten Preise folgende Entscheidungen:

- **Hans-Bobek-Preis 2023** (EUR 2.000,-): Nach einer ausführlichen inhaltlichen Diskussion über die zuvor gutachterlich bewerteten fünf eingereichten Arbeiten durch die Jurymitglieder wurden zwei Abstimmungsrunden durchgeführt, wobei sich in der zweiten Runde eine mehrheitliche Entscheidung zur Vergabe des Hans-Bobek-Preises der ÖGG 2023 an die eingereichte Dissertation von Frau Dr. Sarah KAMLEITNER MSc BSc für ihre an der Eidgenössischen Technischen Hochschule (ETH) Zürich approbierte Forschungsarbeit *„Reconstructing the Evolution and Dynamics of Central Alpine Glaciers during the Last Glacial Maximum on the Basis of their Geomorphological Footprints and Cosmogenic Nuclide Surface Exposure Dating"* ergab.

- **Förderungspreis der ÖGG 2023** (EUR 1.000,-): Nach einer inhaltlichen Diskussion der zuvor gutachterlich bewerteten sechs eingereichten Arbeiten durch die Jurymitglieder wurde in der Sitzung festgestellt, dass sich unter den eingereichten Arbeiten gleich mehrere befänden, die wegen ihrer sehr guten Qualität den Förderungspreis verdienen würden. Nach ausführlicher Diskussion wurden zwei Abstimmungsrunden durchgeführt, wobei sich in der zweiten Abstimmungsrunde eine klare Mehrheit für eine Arbeit ergab. Der Förderungspreis 2023 wurde daher vergeben an Herrn Jonas MACHOLD MSc BSc für seine am Institut für Geographie und Regionalforschung der Universität Wien verfasste Masterarbeit *„Modellierung von Extremereignissen mit komplexen Kaskadeneffekten im Hochgebirge am Fallbeispiel des Schwarzenseebachtals (Österreich, Weststeiermark) mir r.avaflow und Konnektivitätsanalysen"*.

- **Leopold-Scheidl-Preis für Wirtschaftsgeographie 2023** (EUR 1.000,-): Nach einer inhaltlichen Diskussion der zuvor gutachterlich bewerteten zwei Arbeiten durch die Jurymitglieder erfolgte eine ausführliche grundsätzliche Diskussion über die Tatsache, dass bei diesem Preis zwei unterschiedliche Formate (Dissertationen ebenso wie Masterarbeiten) eingereicht werden können. Beide Arbeiten wurden von den Jurymitgliedern – jeweils auf ihrer Ebene – als ausgezeichnet bewertet, wobei sich in der ersten Abstimmungsrunde jedoch bereits eine klare Mehrheit für die für den Leopold-Scheidl-Preis eingereichte umfangreiche Masterarbeit und nicht für die ebenfalls eingereichte Dissertation ergab. Die Vergabe des Leopold-Scheidl-Preises für Wirtschaftsgeographie der ÖGG 2023 erfolgte daher an Frau Dipl.-Ing. (FH) Astrid PIETSCHNIG für ihre am Institut für Geographie und Regionalforschung der Universität Wien verfasste Masterarbeit *„Wohnen in der Kleinstadt, Arbeiten in der Großstadt. Einfluss großstädtischer Zuwanderung auf die Entwicklungsperspektiven ausgewählter niederösterreichischer Klein- und Mittelstädte im weiteren Wiener Umland"*.

- **OeNB-Award für Wirtschaftsdidaktik 2023** (EUR 2.000,-): Für diesen von der Oesterreichischen Nationalbank finanzierten, von der ÖGG gemeinsam mit ihrer Fachgruppe für Geographische und Sozioökonomische Bildung (GESÖB) vergebenen Preis für ausgezeichnete fachdidaktische Arbeiten im Bereich der sozioökonomischen Bildung ist eine eigene, fachdidaktisch ausgerichtete Jury unter der Leitung des Vorsitzenden der GESÖB, Christian FRIDRICH, eingerichtet, die am 14. Juni 2024 getagt hat. Nach ausführlicher Diskussion der zuvor bereits gutachterlich bewerteten vier Arbeiten (drei Dissertationen aus Deutschland und eine Masterarbeit aus Österreich) wurde die geheime Abstimmung durchgeführt. Diese ergab im ersten Wahlgang, dass von den vier eingereichten Arbeiten zwei Dissertationen ganz klar einstimmig bzw. mehrheitlich mit „nein" beurteilt wurden, sodass eine Dissertation und eine Masterarbeit zur Entscheidung verblieben, die jeweils die gleiche Zahl an Pro-Stimmen bei jeweils nur einer Ablehnung erhalten hatten. Vor diesem Hintergrund stellte das Jurymitglied Helmut WAGNER den Antrag, den Preis aufgrund des Ergebnisses des ersten Wahlgangs aufzuteilen und keinen zweiten Wahlgang durchzuführen. Dieser Antrag wurde von den Jurymit-

gliedern einstimmig angenommen. Die Vergabe des OeNB-Awards für Wirtschaftsdidaktik erfolgte daher zu gleichen Teilen an Dr. Christine Engartner MEd BA für ihre an der Universität Bremen approbierte Dissertation *„Dual(ität) politisch (aus-)gebildet? Ansprüche, Wirklichkeiten und Herausforderungen des Politikunterrichts an Berufsschiulen“* und an Sophia Hofbauer MEd BEd für ihre an der Pädagogischen Hochschule Wien verfasste Masterarbeit *„Alltagsvorstellungen von österreichischen Schüler:innen der 3. und 4. Klasse Volksschule zum Themenfeld Geld“*.

Die ÖGG gratuliert den fünf Preisträger/inne/n sehr herzlich. Kurzberichte über die fünf preisgekrönten Arbeiten wurden in „Geographie aktuell“, Nr. 61 (III/2024), Seite 5 (Engartner), Nr. 63 (I/2025), Seite 6 (Kamleitner) und Seite 7 (Pietschnig) und Nr. 64 (II/2025), Seite 6 (Machold) abgedruckt. Sie können auch online auf der Homepage der ÖGG unter *„https://oegg.univie.ac.at/publikationen-der-oegg/geographie-aktuell/“* nachgelesen werden.

2.2 Ausschreibung der wissenschaftlichen Preise der ÖGG für 2026

Hans-Bobek-Preis 2026

Zum Gedenken an den Ehrenpräsidenten der Österreichischen Geographischen Gesellschaft (ÖGG) sowie in Würdigung der großen Verdienste von Universitätsprofessor Dr. Dr. h.c. Hans Bobek als einem der bedeutendsten und international hoch angesehenen Geographen wird seit dem Jahr 1991 jährlich ein Förderungspreis in der Höhe von **EUR 2.000,-** ausgeschrieben, der von Frau Dr. Maria Bobek-Fesl gestiftet wird.

Eingereicht werden können in deutscher oder englischer Sprache verfasste Dissertationen, Habilitationsschriften oder andere gleichwertige, von einer Person selbstständig verfasste wissenschaftliche Arbeiten, die in den Jahren 2025 oder 2026 fertiggestellt und approbiert worden sind. Zugelassen sind Personen im Alter bis zu 45 Jahren.

Ausgeschlossen sind Personen, die zur Zeit der Bewerbung um den Hans-Bobek-Preis als Vorstandsmitglieder, Rechnungsprüfer oder Angestellte der ÖGG wirken, ferner solche, bei denen das Verfahren der Approbation der Dissertation oder das Habilitationsverfahren noch nicht rechtskräftig abgeschlossen ist.

Bei den eingereichten Arbeiten muss es sich um thematisch und methodisch besonders herausragende wissenschaftliche Leistungen handeln, die geeignet erscheinen, die geographische Wissenschaft wesentlich zu bereichern und voranzutreiben. Die dazu notwendige Feststellung trifft eine vom Vorstand der Österreichischen Geographischen Gesellschaft eingesetzte Jury des Geographie-Fonds der ÖGG. Der Preis wird unter Ausschluss des Rechtsweges zuerkannt.

Sollte keine der eingereichten Arbeiten den zu fordernden Standard erreichen, bleibt es der Österreichischen Geographischen Gesellschaft vorbehalten, von einer Preisverleihung Abstand zu nehmen und den Geldbetrag des Hans-Bobek-Preises auf Folgejahre zu übertragen.

Die Einreichung muss spätestens bis **31. Dezember 2026** bei der Geschäftsstelle der ÖGG, A-1070 Wien, Karl-Schweighofer-Gasse 3/7 (E-Mail: oegg.geographie@univie.ac.at), mit einem gedruckten Exemplar und einer elektronischen Version samt Bewerbungsschreiben, Lebenslauf und nach Möglichkeit mit bisher vorliegenden Gutachten erfolgen.

Die Jury des Geographie-Fonds der Österreichischen Geographischen Gesellschaft trifft ihre Entscheidung in ihrer Sitzung im Frühherbst des Jahres 2027 unter Einbeziehung von jeweils zwei Fachgutachten pro eingereichter Arbeit. Die eingereichten Unterlagen verbleiben bei der ÖGG.

Helmut Wohlschlägl, Präsident

Förderungspreis der ÖGG 2026

Die Österreichische Geographische Gesellschaft (ÖGG) vergibt seit 1995 alljährlich einen Förderungspreis in der Höhe von **EUR 1.000,-**. Die Mittel stammen zu 75 Prozent aus den Erträgen des Geographie-Fonds der ÖGG und zu 25 Prozent aus einem Beitrag des Zweigvereins Innsbruck der ÖGG.

Dieser Preis wird für thematisch und methodisch hervorragende Diplom- und Masterarbeiten aus allen Teilgebieten der Geographie verliehen, die von einer Person selbstständig verfasst und in den Jahren 2025 oder 2026 fertiggestellt und approbiert worden sind. Es können sich nur Personen bewerben, die zum Zeitpunkt der Bewerbung das 35. Lebensjahr noch nicht vollendet haben und deren eingereichte Arbeit an einer österreichischen Universität approbiert wurde. Ausgeschlossen von der Bewerbung sind Vorstandsmitglieder, Rechnungsprüfer oder Angestellte der ÖGG. Der Preis wird unter Ausschluss des Rechtsweges zuerkannt.

Die eingereichten Arbeiten müssen spätestens bis **31. Dezember 2026** in der Geschäftsstelle der ÖGG eingetroffen sein. Erwartet werden: ein gebundenes Exemplar und eine elektronische Version der Arbeit mit Bewerbungsschreiben, Lebenslauf und bisher vorliegenden Gutachten, zu senden an die Österreichische Geographische Gesellschaft, A-1070 Wien, Karl-Schweighofer-Gasse 3/7 (E-Mail: oegg.geographie@univie.ac.at).

Die Jury des Geographie-Fonds der Österreichischen Geographischen Gesellschaft trifft ihre Entscheidung in ihrer Sitzung im Frühherbst des Jahres 2027 unter Einbeziehung von jeweils zwei Fachgutachten pro eingereichter Arbeit. Die eingereichten Unterlagen verbleiben bei der ÖGG.

Helmut WOHLSCHLÄGL, Präsident

Leopold-Scheidl-Preis für Wirtschaftsgeographie 2026

Die Österreichische Geographische Gesellschaft (ÖGG) vergibt für hervorragende Leistungen auf dem Gebiet der Wirtschaftsgeographie den Leopold-Scheidl-Preis 2026 in Höhe von **EUR 1.000,-**.

Dieser Preis wird für thematisch und methodisch hervorragende Dissertationen, Diplom- und Masterarbeiten aus Wirtschaftsgeographie und verwandten Fachgebieten verliehen, die von einer Person selbstständig verfasst und in den Jahren 2025 oder 2026 fertiggestellt und approbiert worden sind. Es besteht keine Einschränkung nach Alter oder Wohnsitz der einreichenden Person. Ausgeschlossen von der Bewerbung sind Vorstandsmitglieder, Rechnungsprüfer oder Angestellte der ÖGG. Der Preis wird unter Ausschluss des Rechtsweges zuerkannt.

Die eingereichten Arbeiten müssen spätestens bis **31. Dezember 2026** in der Geschäftsstelle der ÖGG eingetroffen sein. Erwartet werden: ein gebundenes Exemplar und eine elektronische Version der Arbeit mit Bewerbungsschreiben, Lebenslauf und bisher vorliegenden Gutachten, zu senden an die Österreichische Geographische Gesellschaft, A-1070 Wien, Karl-Schweighofer-Gasse 3/7 (E-Mail: oegg.geographie@univie.ac.at).

Die Jury des Geographie-Fonds der Österreichischen Geographischen Gesellschaft trifft ihre Entscheidung in ihrer Sitzung im Frühherbst des Jahres 2026 unter Einbeziehung von jeweils zwei Fachgutachten pro eingereichter Arbeit. Die eingereichten Unterlagen verbleiben bei der ÖGG.

Helmut WOHLSCHLÄGL, Präsident

OeNB-Award für Wirtschaftsdidaktik 2026

Die Österreichische Geographische Gesellschaft (ÖGG) vergibt in Kooperation mit ihrer Fachgruppe für Geographische und Sozioökonomische Bildung (GESÖB) für hervorragende Leistungen auf dem Gebiet der Fachdidaktik „Sozioökonomische Bildung“ einen von der Österreichischen Nationalbank (OeNB) gestifteten Sonderpreis in Höhe von **EUR 2.000,-**. Dieser Preis wird für thematisch

und methodisch hervorragende Dissertationen, Diplom- und Masterarbeiten aus dem Bereich der sozioökonomischen Bildung verliehen, die von einer Person selbstständig verfasst und in den Jahren 2025 oder 2026 fertiggestellt und approbiert worden sind. Die eingereichte Arbeit muss in deutscher oder englischer Sprache verfasst sein. Es besteht keine Einschränkung nach Alter oder Wohnsitz der einreichenden Person. Ausgeschlossen von der Bewerbung sind Vorstandsmitglieder, Rechnungsprüfer oder Angestellte der ÖGG sowie der Vorsitzende und die stellvertretenden Vorsitzenden der Fachgruppe GESÖB und die Mitglieder der Jury.

Die eingereichten Arbeiten müssen spätestens bis **31. Dezember 2026** in der Geschäftsstelle der ÖGG eingetroffen sein. Erwartet werden: ein gebundenes Exemplar und eine elektronische Version der Arbeit mit Bewerbungsschreiben, Lebenslauf und bisher vorliegenden Gutachten, zu senden an die Österreichische Geographische Gesellschaft, A-1070 Wien, Karl-Schweighofer-Gasse 3/7 (E-Mail: oegg.geographie@univie.ac.at).

Eine Jury der Österreichischen Geographischen Gesellschaft und der GESÖB trifft ihre Entscheidung in der ersten Jahreshälfte 2027 unter Einbeziehung von jeweils zwei von der Jury eingeholten Fachgutachten pro eingereichter Arbeit. Wenn zwei der eingereichten Arbeiten von der Jury als gleichwertig preiswürdig beurteilt werden, kann der OeNB-Award gemäß Beschluss der Jury auch in zwei Preise à EUR 1.000,- geteilt werden. Der Preis wird unter Ausschluss des Rechtsweges zuerkannt. Die eingereichten Unterlagen verbleiben bei der ÖGG.

Christian Fridrich, Vorsitzender der Fachgruppe GESÖB
Helmut Wohlschlägl, Präsident der ÖGG

3 Herfried-Berger-Preis 2026

Der Fonds zur Förderung wissenschaftlicher Arbeiten auf dem Gebiet der Geographie in memoriam des aus Hermagor stammenden Prof. Herfried Berger verleiht 2026 wieder einen Preis für herausragende Diplomarbeiten oder Dissertationen auf dem Gebiet der Geographie. Sie sollen regional dem Bundesland Kärnten, dem Ostalpenraum oder dem östlichen Afrika, den Forschungsgebieten von Herfried Berger, zuordenbar, neu erstellt und zu einer Preisverleihung noch nicht eingereicht worden sein.

Prämiert werden im Jahr 2026 auch wieder, so wie schon 2025, vorwissenschaftliche geographische Arbeiten an Kärntner allgemeinbildenden höheren Schulen und geographische Diplomarbeiten an Kärntner berufsbildenden höheren Schulen, die sich auch mit dem Adriatischen Raum und dessen Teilgebieten oder mit Südosteuropa befassen können. Unter Adriatischem Raum werden dabei die Anrainerstaaten der Adria, insbesondere ihre adriatischen Fassaden sowie nicht unwesentlich auf den Kernraum der Adria bezogene Binnenländer wie Kärnten, die Steiermark oder Tirol verstanden; unter Südosteuropa die Staaten Bosnien-Herzegowina, Serbien, Montenegro, Kosovo, Nordmazedonien, Albanien, Griechenland, Zypern, Bulgarien, Rumänien und die Moldau. Es können Studien kleinerer Teilgebiete oder Überblicksarbeiten aus allen Zweigen der Geographie sein. Bevorzugt werden Arbeiten, die Kärnten mit diesen Gebieten in Beziehung setzen.

Über die Preisverleihung entscheidet das Kuratorium des Fonds unter Einbeziehung von Fachgutachten und unter Ausschluss des Rechtsweges.
Die Arbeiten mögen Univ.-Prof. h.c. Univ.-Doz. Dr. Peter Jordan an die Postadresse 9620 Hermagor, 10.-Oktober-Straße 4, oder (vorzugsweise) per E-Mail oder WeTransfer als PDF an peter.jordan@oeaw.ac.at mit formlosem Begleitschreiben zugesandt werden.

Für das Kuratorium:
Peter Jordan

Schriftliche Anfragen und Bestellungen

mögen an die Geschäftsstelle der Österreichischen Geographischen Gesellschaft, A-1070 Wien, Karl-Schweighofer-Gasse 3/7 (E-Mail: oegg.geographie@univie.ac.at), gerichtet werden.

Manuskripte von wissenschaftlichen Beiträgen

werden an den Schriftleiter (Univ.-Prof. i.R. Mag. Dr. Helmut Wohlschlägl, Institut für Geographie und Regionalforschung der Universität Wien, A-1010 Wien, Universitätsstraße 7/5, E-Mail: helmut.wohlschlaegl@univie.ac.at) erbeten. Es kommen nur Originalmanuskripte in Betracht, die anderweitig nicht publiziert wurden oder zur Publikation vorgesehen sind.

Die **Texte** müssen inhaltlich und sprachlich druckreif verfasst sein und ohne besondere Formatierungen in elektronischer Form übermittelt werden (helmut.wohlschlaegl@univie.ac.at). Die Sprache der Beiträge kann Deutsch oder Englisch sein. In beiden Fällen sind die Verfasser für den einwandfreien sprachlichen Stil zuständig. Der Umfang von Aufsätzen soll 25 Seiten zu je 3.700 Zeichen inkl. Leerzeichen nicht überschreiten. Abbildungen sind in dieser Seitenzahl bereits inbegriffen. Den Beiträgen sind eine *Zusammenfassung* in englischer *und* deutscher Sprache sowie eine Auswahl von treffenden *Schlagwörtern* in beiden Sprachen voranzustellen. Beim Literaturverzeichnis ist die Zitierweise der MÖGG (siehe Band 165 oder 166) einzuhalten. Literaturverweise im Text bestehen aus Familienname des Autors, Erscheinungsjahr und Seitenzahl in Klammern: z.B. (Seger 1982, S. 52 bzw. p. 52). Fußnoten werden fortlaufend nummeriert. Geographische Namen müssen jedenfalls auch in ihren endonymischen Formen (in mehreren, wenn auch Minderheitennamen amtlich sind), Namen in anderen als Lateinschriften auch in ihrer Originalschrift angegeben werden. Die Redaktion sorgt dann für Namenschreibung und Umschrift nach einheitlichen Prinzipien. Die Korrekturen in den Fahnen sind auf Schreibfehler zu beschränken. Bei darüberhinausgehenden Änderungen müssen die entstandenen Mehrkosten von den Verfassern getragen werden.

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