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ÖSTERREICHISCHE
AKADEMIE DER
WISSENSCHAFTEN

NATIONALE UND
INTERNATIONALE
FORSCHUNGSPROGRAMME

REPORT ON AUSTRIAN CONTRIBUTIONS TO THE MAB PROGRAMME

1. RE-DESIGNING THE RESEARCH AGENDA OF MAB AUSTRIA:

MAB relevant activities in Austria are organized along two lines: MAB Research is under the patronage of the MAB National Committee at the Austrian Academy of Sciences which is also responsible for the evaluation and monitoring of the MAB-Biosphere Reserves. Administration is in the hand of the Austrian UNESCO Commission which also supports non-scientific activities such as education and cultural activities.

In March 2002 the Austrian MAB committee under its new Chair Prof. Georg Grabherr has decided to re-design its research activities and to develop a new medium term research agenda that will

- suit the priorities set by the International Council, in particular concerning the further development and implementation of “Biosphere Reserve integrated Monitoring” (BRIM)
- fit well to the particular opportunities and needs of Austrian Biosphere reserves
- utilize existing excellence and develop further Austrian research capacity
- help to link to and complement existing research programmes and initiatives on the international level and in other countries so as to create favourable synergisms
- be able to mobilize additional funding opportunities
- enhance the visibility and impact of Austrian MAB research on the national and international level.

According to the new research agenda for the Austrian MAB-programme (<http://www.biosphaerenparks.at>), and in response to the priorities set by the International MAB Council, the Austrian National MAB-Committee decided to focus future research predominantly on the needs of the biosphere reserves in Austria, but also to benefit from biosphere reserves as “living laboratories” for studying, testing out and demonstrating integrated management of land, water, and biodiversity.

Biosphere reserves have the double mandate of nature conservation and sustainable development and rely on integrated monitoring and sustainability assessments to be developed. Both science driven and stakeholder (problem) driven research approaches are required. ‘

International workshop in Illmitz, June 2004

For advice on this new research agenda from the international MAB community, there was organized a consultancy workshop “Re-Designing the Research Agenda of MAB Austria, in special consideration of BRIM”. This workshop, endorsed by UNESCO-MaB, took place in the MaB Biosphere Reserve Neusiedlersee, at Illmitz (Austria) on the 17. and 18. of June, 2004, and attracted strong participation from the international MAB community (see participants list and program in the Appendix). The purpose of this workshop was to present and get feedback on the conceptual considerations in preparation of an Austrian research agenda (see paper “Extending BRIM to BRIA” in the Appendix). The presentations were well received, and several working groups discussed in detail how they would advise the Austrian National Committee to proceed. While many considered the proposal as an important step forward to make the Rome BRIM report operational, others were afraid that some of the broadness in approaching the social dimensions could get lost. Finally, all participants strongly welcomed the following general principles for future Austrian MAB research:

- **interdisciplinarity** across the „great divide“ of natural and social sciences. All research questions should entail a focus on, or should at least be somewhat related to, the interaction of natural and socio-economic processes.
- **transdisciplinarity** („mode 2 research“). MAB research should take stakeholders perspectives seriously and communicate its research results to them. Stakeholders should have a fair chance to invoke research to help in solving their problems.
- **international orientation**: Austrian MAB research should be embedded into international research efforts, and use at least part of its resources for internationally comparative and or cooperative projects.

A recent call for project submission published in August 2004 is focused on the following research topics:

- **Projects for establishing basic monitoring systems (BRIM- environmental as well as social monitoring) in line with international standards**

Research questions could include:

- What is the interplay of socio-demographic dynamics and resource use?
- How do local economies (e.g. tourism, agriculture, forestry etc.) in BRs and their dynamics impact upon the environment and how could this be managed?
- How do global change impacts such as climate change, pollution, neobiota invasion alter the natural and semi-natural environment?
- What kind of, and how much, impacts on the socio-economic system will be induced by climate change or other global change phenomena?

- What kind of basic long term monitoring (cheap, robust, simple) should be installed in core areas, transition-, and buffer zones?
- How to design an internationally promising process towards a core set of BRIM indicators?

- **Projects for supporting design and management of BRs**

Research questions could include:

- How can conflict resolving procedures in BRs be designed and processed? What information basis is required for this?
- How can the legal practice of Austrian BR's be improved?
- How can the role of the Austrian pre-Sevilla type BRs be re-defined in relation to the Sevilla mandate (needs for basic ecological and socio-economic assessments for zoning; defining conservation, research, and development tasks)?
- How can stakeholder involvement and ownership of the BR vision be improved?

- **Major perspectives and development options for BRs (cross-cutting)**

Research questions could include:

- What historical transformations can be observed in BRs and how do they impact upon contemporary development options?
- Can BRs play a role in testing sustainability scenarios, such as renewable energy provision and use, or ecotourism?
- What kind of influence might have changes in the natural and seminatural systems on the social system, the wealth of the local people, and the appreciation of visitors?

2. CURRENT STATUS OF BIORESERVES IN AUSTRIA:

Approved:

Lobau (alluvial area of the Danube near Vienna, now part of the "Nationalpark Donauauen"),

Neusiedlersee (an extensive cross-border lake shared by Austria and Hungary)

Gossenköllesee (a small lake in the high alpine region of the Tyrolean Stubai Alps)

Gurgler Kamm (a transect zone in the Ötztaler Alps, reaching from timberline to the nival zone)

Großes Walsertal (in the Western Austria, reaching from montane river alluvia to high alpine peaks; this parks is designed and implemented according to the Sevilla Strategy)

In planning stage (planning along the requirements of the Sevilla Strategy):

March-Thaya (= Moravia; including alluvial forests, sand dunes and halophyte communities along the rivers March (= Morava) and Thaya (= Dyje) in Austria, Czechia, and Slovakia; planning dropped for the moment).

Wienerwald (a forest area in close vicinity to the city of Vienna; planning far advanced; official proposal expected for 2005)

Planning in *statu nascendi* (oder: Regions suitable for implementation of a biosphere reserve):

Dürrenstein/Ötscherland

Lungau/Murau

Nockberge

Koralpe

Tennengebirge

These areas are mountain regions of „Alpine“ character in different parts of Austria (like *Großes Walsertal* these are regions without good opportunities for winter tourism).

Wachau (part of the Danube valley; important wine-making region)

3. CURRENT RESEARCH PROJECTS WITHIN THE FRAMEWORK OF MAB:

Project Title	Coordinator
Changing Agriculture and Landscape: Ecology, Management and Biodiversity Decline in Anthropogenous Mountain Grassland	H. Palme
Topoclimatic comparison of grass land types	W. Wanek
Global Observation Research Initiative in Alpine Environments (GLORIA)	G. Grabherr
Effect of livestock and game on vegetation dynamics and biodiversity of alpine grassland up to the nival land-use limit (contribution to the GLORIA programme = Global Observation Research Initiative in Alpine environments) ¹	G. Grabherr
Biosphere Reserves in Austria (White Paper ² , Database, Current state of research)	A. Borsdorf, M. Jungmeier
Educational initiative “Living in the biosphere reserve Wienerwald”	G. Eschig

¹ GLORIA is a research programme which was initiated by a research group at the Institute of Ecology and Conservation Biology, University of Vienna, chaired by Prof. Georg Grabherr, about 10 years ago. GLORIA is aimed to develop a global network of permanent plots for observing alpine vegetation as an indicator for impacts of climate change. Alpine vegetation is at the limits of plant life, sensitive to warming in particular, and in many mountain region not affected by direct human impacts. Starting with a pilot project funded by the EU-Commission, and supported by the Austrian MAB-funds, the GLORIA-network includes now more than 100 settings across the globe. Some so-called target regions are placed in biosphere reserves (e.g. Glacier National Park, USA; Kosciusko National Park, Australia; Berchtesgaden Biosphere Reserve, Germany). These target regions are also on the list of selected biosphere reserves for the MRI*/MAB–initiative to establish MRI-related research in biosphere reserves. GLORIA as such fits into the task defined for MRI, and is probably the first activity already established. To push MRI further a concerted action, GLOCHAMORE**, tries to set the scene for operationalization the

MRI-task which are: monitoring changes in mountain environments, catchment studies to display the mechanism behind climate change impacts, modelling climate change effects, and investigation of impacts on the socio-economic sphere.

* MRI (Mountain Research Initiative) is a core project of IGBP (International Geo-Biosphere Project).

** GLOCHAMORE (Global Change in Mountain Regions) is funded by the EU-Commission and coordinated by the GLORIA-crew at the Institute of Ecology and Conservation Biology (University of Vienna).

² The White Paper is aimed to provide an overview of the Austrian Biosphere Reserves (incl. those in planning stage) along the lines given by UNESCO, but should also introduce the reader to the MAB-programme, and the concept of biosphere reserves in general. The White Paper will be printed as a book, the style will be for the open public which is involved in planning or being habitants of a particular, or planned, biosphere reserve. The book will be published this autumn.

4. PUBLICATIONS

The successful international research cooperation GLORIA is described in an article published in *SCIENCE* in March 2004: Krajick, K. (2004) All downhill from here? *Science* 303, 1600-1602). Furthermore, the project is presented in an article published in *National Geographic* in September 2004 (38-55).

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Berger, N., 2004: Nachhaltige Entwicklung einer Grenzregion am Beispiel Biosphärenpark March-Thaya. Diplomarbeit an der Wirtschaftsuniversität Wien, 201 pp.

Dünser, E. & Schoch, C., 2002: Biosphärenpark Großes Walsertal - Analyse eines regionalen Netzwerkes. Diplomarbeit an der Wirtschaftsuniversität Wien, Wien, 130 pp.

Huemer, A., 2002: Biosphärenparke als Chance für die touristische Entwicklung von Grenzregionen dargestellt am Beispiel des geplanten Biosphärenparks Moravien. Diplomarbeit an der Fachhochschule Krems, 120 pp.

Imhof, G., 2002: Wissenschaftliche Reihe 01/2002- Gewässer Lobau-Literaturführer, 85 pp.

Janauer, G. & Hary, N., 2003: Ökotone Donau-March. Österreichische Akademie der Wissenschaften, ISBN 37030-0377-4, Veröffentlichungen des Österreichischen MAB-Programmes Band 19, 418 pp.

Jungmeier, M. & Zollner, D., 2004: "Biosphere Reserves in Austria - Grundlagenerhebung und Stand der Forschung". Studie im Auftrag von: ÖAW. Bearbeitung: E.C.O. Institut für Ökologie GmbH, Klagenfurt, 75 pp. + Anhang (in press).

Landschaft und Landwirtschaft im Wandel - Das Grünland im Berggebiet Österreichs (in press).

Lange, S., 2004: "Leben in Vielfalt. UNESCO Biosphärenreservate als Modellregionen für ein Miteinander von Mensch und Natur". Der

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- Meisinger, M. & Nielsen F., 2002: Seminararbeit zum Biosphärenpark Großes Walsertal. Hochschule für Wirtschafts, Rechts- und Sozialwissenschaften, St.Gallen, 18 pp.
- Reutz- Hornsteiner, B., 2003: Biosphärenpark Großes Walsertal. Bioskop - Zeitschrift der Vereinigung österreichischer Biologen, Ausgabe 4/0.
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- Reutz-Hornsteiner, B., 2002: UNESCO - Biosphärenpark Großes Walsertal. G'stettn 52/2002, 12-15.
- Scherer, R. & Schnell K.-D. 2003: Tourismuskonzept Biosphärenpark Großes Walsertal.
- Szalai, E., 2002: 1 aus 6 - der Biophärenpark Großes Walsertal als Chance für die Gemeinde Raggal-Marul. Diplomarbeit Universität für Bodenkultur Wien, 100 pp.
- Topoklimatischer Vergleich zweier Grünlandtypen (in press).
- Walser, C., 2001: Seilbahnprojekt "Pirchkogel - Schafjoch". Rechtliche Betrachtung. Diplomarbeit an der Universität Innsbruck, 72 pp.

MEETINGS

Workshop „Ziele und Perspektiven der MAB-Forschung in Österreich“ (Aims and perspectives of MAB-research in Austria), 28.3.2003, held at ÖAW, Vienna; speakers: Grabherr, Ehrendorfer, Reiter, Reasoner (MRI), Albrecht (Vorarlberg Government/responsible for Biosphere Reserve Großes Walsertal).

Workshop „Forschungsperspektiven in den österreichischen Biosphärenreservaten“ (Research perspectives for Austrian biosphere reserves“), 20.11.2003, held at ÖAW, Vienna; speakers: Grabherr, Clüsener-Godt (UNESCO), Borsdorf-Lange (Weissbuch), E.C.O. (MAB-Research), Fischer-Kowalski/Reiter (BRIM).

MAB Consultancy Workshop, 17.-18. June 2004, held in Illmitz, situated in the Biosphere Reserve, Ramsar- and UNESCO World Heritage Site “Neusiedler See”.

Vienna, 28/09/2004

Stichwort: Wissenschaft/Forschung/Ökologie/Biosphäre/Österreich

Eingelangt am 17.11.2004

APA W&B vom 17.11.2004

Rubrik: Wissenschaft

UNESCO-Programm "Man and Biosphere"

Utl.: Utl.: Österreich in einflussreiche Position gewählt

(OM) - Das UNESCO-Programm "Man and Biosphere" (MAB) wurde vor mehr als dreißig Jahren gegründet, um wissenschaftlich fundierte Modelle für eine sorgsame Bewirtschaftung der Biosphäre zu erproben. Österreich ist eines der 130 an diesem Programm beteiligten Länder. Bei der letzten Sitzung des Internationalen Koordinierungsrates (ICC) Ende Oktober in Paris wurde Österreich als Vertreter der MAB-Region "Europa und Nordamerika" in das Bureau des UNESCO-Programms gewählt. Das Bureau ist ein sechsköpfiges Entscheidungsgremium, dem - außer einem Vertreter des österreichischen MAB-Nationalkomitees, angesiedelt an der Österreichischen **Akademie** der Wissenschaften - Mitglieder aus Mexiko, Ghana, Tunesien, Russland und Korea angehören (<http://www.unesco.org/mab/bureau.htm>).

Die Österreichische **Akademie** der Wissenschaften (ÖAW) wurde von der Bundesregierung beauftragt, das UNESCO-Programm "Man and Biosphere" sowie auch das jüngere Programm "Global Change" zu verwalten. Die ÖAW stellt für jedes Programm ein Nationalkomitee zusammen, das für die Umsetzung der internationalen Ziele in nationale Arbeitsprogramme verantwortlich ist. Vor kurzem wurden in Österreich 13 neue MAB-Projekte genehmigt, die der Erforschung der heimischen Biosphären-Parks dienen. Die Forschungsprojekte decken dabei sowohl naturwissenschaftliche als auch kulturwissenschaftliche Fragestellungen ab, sollen doch die genaue Kenntnis natürlicher Gegebenheiten einer Landschaft zu einer nachhaltigen Nutzung führen. So werden basierend auf sozial- und wirtschaftswirtschaftlichen Forschungsergebnissen Entwicklungsoptionen und Managementkonzepte für die einzelnen Regionen erarbeitet. Bei all diesen Projekten, die üblicherweise zwei oder drei Jahre dauern, ist neben der wissenschaftlichen Exzellenz die explizite Einbindung der Probleme der Landnutzer gefordert (http://www.oeaw.ac.at/shared/news/2004/pdf/mab_call.pdf).

In der Abschlussphase befinden sich ältere MAB-Projekte mit Schwerpunkt Grünlandforschung im alpinen Raum (<http://www.oeaw.ac.at/deutsch/forschung/programme/mab.html>).

Der Wiener Wald: Österreichs sechster Biosphären-Park in Planung Das MAB-Nationalkomitee entscheidet nicht nur über Forschungsprogramme, sondern schlägt der UNESCO auch neue Biosphären-Parks im eigenen Land vor. Solche Landschaften haben Modellcharakter für nachhaltige Entwicklung. Dabei gilt es, ökologische und wirtschaftliche Ziele zu vereinbaren und rechtlich abzusichern. Weltweit gibt es 459 Biosphären-Parks in 97 Ländern. In Österreich sind es derzeit 5 (Gossenköllesee, Tirol; Gurgler Kamm, Tirol; Lobau, Wien; Neusiedler See, Burgenland; Großes Walsertal, Vorarlberg) ein sechster, nämlich der Wiener Wald steht knapp vor der Einreichung.

Georg Grabherr, Vegetationsökologe der Universität Wien und Mitglieder der ÖAW, ist Vorsitzender des österreichischen Nationalkomitees an der ÖAW. In seiner Funktion als Vize-Chairman im Bureau des UNESCO-Programms ist er an der Weiterentwicklung und Koordinierung von MAB auf internationaler Ebene beteiligt, sowie in die Nominierung neuer Biosphären-Parks eingebunden.

<http://www.biosphaerenparks.at/biosphaerenparks/>

<http://www.unesco.at/user/programme/wiss/biosphaeren.htm>

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(Schluss) APA