

6. TURNING “OLD” BIOSPHERE RESERVES INTO NEW GENERATION BIOSPHERE RESERVES (WITH SPECIAL ATTENTION TO “OLD” BIOSPHERE RESERVES IMPORTANT FOR LONG-TERM RESEARCH)

PLENARY PRESENTATION ON NEUSIEDLER-SEE BIOSPHERE RESERVE, AUSTRIA, BY ALOIS HERZIG

In 1977 Austria nominated four biosphere reserves: Gurgler Kamm, Gossenköllesee, Neusiedler See and Lower Lobau. The initiative for the selection of the areas came from scientists and for many years mainly basic research was performed in the biosphere reserves. In general, the four first generation biosphere reserves cannot be described as “model regions for sustainable development” and hence do not follow the Sevilla Strategy.

On the other hand, research activities on Gossenköllesee and Neusiedler See have to be seen in the light of Long-Term Ecological Research (LTER). Invaluable insights into contemporary ecological relationships are coming from expanding the temporal scale of study. For 30 years the Institute of Zoology and Limnology of the University of Innsbruck has been studying the Gossenköllesee and the Biosphere Reserve should secure long-term scientific research. The studies include investigations on ice bacteria, the influence of UV radiation on various organisms, and high mountain lakes as indicators of global environmental changes. The Gossenköllesee played a central role within the international research project „MOLAR“ (Mountain Lake Research 1997-1999). It is the only high mountain lake in Europe with a well-endowed research station which made it a place of choice for participation in a research cooperation between the UNESCO MAB programme and the Mountain Research Initiative (Switzerland, GLOCHAMORE). Furthermore, the research activities are integrated in EU-wide networks. Gossenköllesee is the smallest Biosphere Reserve in the world (85 ha) but the high standard

of scientific research being performed in this Reserve and its international reputation and importance should be strong arguments for remaining a Biosphere Reserve even when not fully implementing the Sevilla Strategy.

Neusiedler See has been a focus of ecological research for 40 years. In the context of the International Biological Programme (IBP) extensive research on biological productivity was undertaken in the reed belt and the lake itself. The MAB programme (in the 1970s) was intended as a framework continuing and extending IBP research. It concentrated on the influence of agriculture and tourism on the trophic conditions of the lake. In the last 20 years the studies have included investigations on production of shallow lakes, biotic interactions, fisheries and water quality. The research activities are integrated in an international network on shallow lakes. Since 1993 the southern part of the Biosphere Reserve is representing the core zone of the “National Park Neusiedler See – Seewinkel”. Research in the national park is coordinated by the Biological Station Neusiedler See and is focusing on questions of the management of the park, conflicts of use and environmental protection. Topics include the monitoring of pastures, monitoring of fisheries and ornithological monitoring.

There are nine existing conservation categories with partly overlapping areas in the Neusiedler See area. Yet, no infrastructure for coordination is implemented. An extended Biosphere Reserve reaching from the Leithagebirge to the Seewinkel and in the south into Hungary could form an effective structure coordinating the conservation categories and the economic activities.

PLENARY PRESENTATION ON FEATURES OF 21 BIOSPHERE RESERVES OF THE EUROPEAN TERRITORY OF THE RUSSIAN FEDERATION AND THEIR INPUT TO THE BIOSPHERE RESERVE CONCEPT, BY VALERY NERONOV

In the previous years (before USSR's splitting) our MAB Committee had the support of different ministries and agencies and was responsible for the coordination of all 14 international projects included into the UNESCO/MAB program. That time more than 4000 ecologists and other specialists participated in different field projects and they made a considerable input into the development of the Biosphere Reserve concept. First of all, it is necessary to mention the First Soviet-US workshop on Biosphere Reserves (1976), when with participation of Dr. F. di Castri, the former Director of the UNESCO Division of Ecological Sciences besides scientific reports we visited three protected areas (zapovedniks Repeteksky in Turkmenistan, Tsentralno-Chernozemny and Prioksko-Terrasny on the European Territory of the Russian Federation) and discussed their suitability for a nomination as biosphere reserves (BR) and their future functions. In 1978 all these three zapovedniks and a few others at the territory of the Russian Federation (see table 1) were approved by UNESCO and a start was made on the development of our national network of BRs. After a meeting with US experts we had also a number of national meetings and meetings with our colleagues from Central and Eastern Europe. As a result of these collective efforts and in cooperation with UNESCO, UNEP, IUCN and FAO it was possible to convene in October 1983 in Minsk, Belarus, the First International Congress on Biosphere Reserves at which the Action Plan for Biosphere Reserves was elaborated. After this Congress six more BRs were nominated on the European territory of the Russian Federation, and they have been good testing areas for implementing different tasks envisaged in the Action Plan.

In 1995 there was the International Conference on Biosphere Reserves in Seville, Spain, when the Seville

Strategy and Statutory Framework of the World Network of Biosphere reserves were prepared and subsequently approved by the UNESCO General Conference. After 1995 up to 2005 we created 11 more BRs on the European territory of the Russian Federation (see table 2). In total currently on the whole territory of Russia we have 36 BRs (21 in the European part and 15 beyond the Ural Mountains in Siberia and Far East). I have to mention that according to a periodic review conducted by the Advisory Committee for BRs our biosphere reserves created before the Seville conference should use additional efforts to entirely complete all multi-functions of BRs as is required by the Seville Strategy.

As shown at the map, 21 BRs well represented different natural zones – from tundra to steppe and the Caucasus Mountains. Since in the most of them the long-term (more than 60 years) researches have been conducted by different specialists (each of our BRs has a department for science with numerous staff) a wealth of valuable data have been accumulated. With help by the US MAB Committee in cooperation with the Information Center for Environment, University of California, Davis, it was possible in 16 BRs on the European territory of the Russian Federation to conduct an inventory of biological diversity. Databases for vertebrates (mammals, birds, reptiles, amphibians and fishes) and vascular plants have been compiled and are available at website: <http://ice.ucdavis.edu/mab>. This pioneer project conducted in BRs had a positive influence and after that the Ministry of Natural Resources of Russian Federation, the Moscow office of IUCN and the Commission for Protected Areas of RAS have been able (with funding from CIDA) to prepare and publish four volumes covering of vertebrates, vascular plants and lichens/mosses discovered in most of our 100 zapovedniks (BRs are also presented in these volumes). These data are very suitable for conducting in-depth analysis of features of protected areas and their role in conservation of biodiversity. I would like to call your attention to the results of cluster analysis of diversity of mammal population in 16 biosphere reserves in the European part of the

Russian Federation (see fig. 2). As you may see there are several pairs of BRs with similar mammal faunas. Particularly it is necessary to mention a cluster made by six BRs situated in different parts of the Volga River basin that justifies the application of a common ecosystem approach for their management. At the workshop in June 2004 organized by our Committee in Volzhsko-Kamsky zapovednik (in 2005 this Reserve was approved as The Great Volzhsko-Kamsky BR) with the support of UNESCO Moscow office it was suggested to prepare the additional project proposal, as a follow-up to the multi-disciplinary project of UNESCO "Volga Vision", on the usage of the ecosystem approach for the proper management of the whole Volga River basin where we have more than 10 BRs which should participate in the sustainable development of adjacent territories. There are some perspectives in cooperation with the Great Volzhsko-Kamsky BR with the similar Elbe Valley BR in Germany and I hope during EuroMAB-2005 we will have progress in preparing for signing the relevant agreement. Any additional site-to-site cooperation agreements with Russian BRs are very welcome and could be discussed in detail with our delegates.

Besides the inventory of biodiversity in Russian BRs we have conducted also a special survey of presence of invasive alien species among mammals at their territory and it provided interesting results how insufficiently considered acclimatization / re-acclimatization activities could impact on native mammal species. It is possible to consider this survey as an input into the Global Invasive Species Programme (GISP) and currently we are preparing recommendations for BRs how to avoid the harm from invasive species on the basis of "A Toolkit of Best Prevention and Management Practices". I believe cooperation and sharing of experience on control of invasive species within BRs of EuroMAB region could be the special task for future activities.

Another important theme for future cooperation could be based on joint studies of impacts of global changes on biodiversity. In 1996 we published results of the ecological survey along the Russian

European Transect. A number of different environmental features have been mapped and analyzed but I would like to call your attention to fig. 3 showing the dynamics of the mean monthly temperature in July (during 1891–1994) in different parts of the taiga and steppe zone where we have several BRs. As you may see, long-term trends in summer temperature are different in these natural sub-zones and it is impossible to say that we have only a warming-up phenomenon of the global climate change. These regional features should be used in adaptive measures to protect different animal and plant species and also for sustainable development of agriculture and forestry. The closer cooperation between World Network of BRs and IUCN World Commission on Protected Areas in securing protected areas in the face of global change is desirable and a number of BRs could be used as model sites for the elaboration of relevant strategies. In this connection I would like to mention that our Committee is planning to convene next year a workshop in Teberdinsky BR to discuss a program "Global Change in Mountain Biosphere Reserves" initiated by UNESCO/MAB and Mountain Research Initiative of IUCN and facilitate its implementation in 15 mountain BRs of Russia. We will be glad to collaborate within this program with Austrian and other mountain BRs within the EuroMAB region.

And last but not least it is necessary to mention that Russia has the longest frontier in the world and many different protected areas are situated along this frontier (see fig. 4). In recent years our Committee has been paying special attention to the improvement of transboundary cooperation with our neighbors and to the creation of several TBRs as it was recommended in a number of meetings and conferences organized by UNESCO/MAB. A few days ago there was a meeting in Minsk, Belarus, on the development of a concept and scheme of forming a system of transboundary ecological corridors between Belarus and Russia. At the UNESCO General Conference the project proposal of the Belarus MAB Committee to improve the conservation of biodiversity in the Polesie ecoregion was sup-

ported and we very much hope that within this project it will be possible to create a trilateral (Belarus-Russia-Ukraine) TBR in Eastern Polesie. Besides this TBR as it is shown in fig. 4 there are some more perspectives in creating TBRs together with Norway, Finland and particularly with Kazakhstan to save sturgeons and the rich biodiversity of the North Caspian Sea coastal zone.

So, even from this brief description of features of the network of BRs on the European territory of Russia I hope it is clear that a concept of biosphere reserves is well-known in our country and its further implementation in conditions of our transition to market economy is very promising. We very much hope that our efforts will be supported by the UNESCO/MAB Secretariat and UNESCO Moscow office, and cooperation with any EuroMAB region country members is also important for us.

6.1 WORKSHOP SESSION RESULTS

MODERATOR: Mike Bailey, Dyfi BR, Wales, UK

PARTICIPANTS:

Valery Iukovich (Belarus)
Kristina Koczka (Hungary)
Mikhail Brynskikh (Russia)
Nikolay Korablev (Russia)
Valery Neronov (Russia)
Mikael Krekula (Sweden)
Marie Prchalova (UNESCO Moscow)

CASE STUDIES PRESENTED:

- Results and prospects of cooperation between the Berezinsky Biosphere Reserve (Belarus) and the Northern Vosges Biosphere Reserve (France), Valery S. Iukovich, Berezinsky Biosphere Reserve, Belarus.
- Turning old conflicts into new possibilities – Mikael Krekula, Biosphere Reserve Lake Torne Area, Sweden.
- Organisation of cooperation zone of Prioksko-Terrasny Biosphere Reserve – Mikhail Brynskikh, Prioksko-Terrasny BR, Russia.
- Comparison of key characteristics in existing and proposed, enlarged Dyfi BR – Mike Bailey, Biosphere Reserve Dyfi, Wales, UK.

The working group heard case studies presented by Valery Iukovich (Belarus) on Berezinsky BR and cooperation with the Vosges du Nord BR in France, Mikael Krekula (Sweden) on old conflicts and new possibilities at Lake Torne BR, Mikhail Brynskikh (Russia) on organisation of the co-operation zone in Prioksko-Terrasny BR and Mike Bailey (Wales) on characteristics of the old and new style Dyfi BR.

The presentations highlighted some quite different situations relating to the modernising or realisation of 'full functionality' of old style BRs. In Wales a large increase in geographic extent was proposed to facilitate sustainable development and community involvement. In contrast, the already extensive examples from Russia and Belarus required new ways of working within existing boundaries to

improve functionality. The Swedish case study site, like many others, requires the reconciling of different cultures and the need to relocate the main town was seen as an opportunity for furthering the BR values and interests.

A number of issues were identified, but with much overlap between them. Three over-arching or cross-cutting themes were suggested, namely: communication, co-operation and education/ training/ skills acquisition.

Development of the 'third function' (community participation and capacity building) was identified as being central to the challenge of modernising old style BRs. Those with a long history of environmental research and monitoring have concerns about maintaining continuity of natural science research and data collection whilst also embracing human development issues. Taking stock of past achievements and building upon them, should not be neglected when focus and roles are expanded. Balancing conservation & development, ensuring 'conservation gain' in all zones, integrating local knowledge and multi-cultural dimensions were identified as common issues. The need for better integration into regional planning is also likely to become more evident in enlarged Biosphere reserves.

Public awareness or visibility of the BR was recognised as a key issue for development. Heightened awareness is likely to bring greater expectation for the resolution of conflicts.

BR managers needed to develop better sharing of experiences, including access (via EuroMaB) to documented exemplar projects (both successes and failures). The availability of BR literature/ support material in BR managers' and stakeholders' language of choice also needs attention.

Zoning is another area where case studies covering the range of methodologies employed, and perhaps a best practice guide were needed. Zones need to be flexible to adapt to changing circumstances including the results of climate change and sea level rise.

A related issue is the definition of 'sustainability' and

the question of whether different levels of sustainability can or should be applied in different situations or zones. The definition of measurable targets needs to be developed.

We recognised the truth in the assertion that 'conservation without a budget is just conversation' and identifying resource allocation as a crucial part of implementing the Seville Strategy. 'Seed money' was considered important, but skilled and motivated personnel with equally vital. Training and mentoring should be available to BR managers along with backup information, not least in the area of stakeholder engagement and using the media.

Finally, we thought that BRs should consider setting out a resource acquisition strategy, and we put forward the idea of an additional 'implementation indicator' based on the 'environmental footprint' of BR communities/residents.

ISSUES

1. Visibility/awareness of BR (all different levels)
 - Stakeholders
 - MAB & other BR's
 - Conflict resolution
 - Language & terminology (local as well as English)
 - Exemplar projects/good examples & failures (inventory)
2. Zoning
 - Best practice for definition
 - Flexibility
3. Interpretation of 'Sustainability'
 - Monitoring of environmental v human values (measurable targets)
 - Local v global
4. Assimilating past experience/ knowledge & current concerns
 - linked projects using past achievements, current & new initiatives
5. Development of third function (community participation/development)
 - Balancing conservation & development
 - Integrating social and natural science
 - Multi-cultural dimension

- Traditional/local knowledge
- 6. Resources**
- Management expertise (training, exchanges, support documents etc.)
 - Project implementation
 - Support community involvement

Over-arching & cross-cutting issues

- Communication
- Co-operation
- Education/understanding/skills

QUESTIONS

- Zonation guidelines are open to different interpretations. How should they be determined, and by whom? How rigid should they be once agreed?
- How do we ensure conservation 'gain' in all zones and an appropriate balance of conservation and development projects particularly across the transition area?
- How do we secure sufficient flexibility of zonation to allow for the problems of the potential loss of buffer, and even core zone areas due to climate change and sea level rise, (eg. to allow/assist habitats to transfer landwards)?
- Research needs for transition areas are likely to be quite different to those of core areas, and not necessarily relevant to one another. How then are research needs best prioritised and developed to satisfy all aspects?
- Sustainability. How do we measure it? Should we have different levels for different zones?
- How does the BR management ensure that community generated initiatives / demands are truly appropriate in terms of the wider community/public good/BR ideals? And, how should inappropriate proposals be dealt with to avoid conflict?
- Development proposals eg a marina construction, are often justified in terms of jobs, income generation and/or retaining young people in a rural area. These are emotive issues usually seen by the majority of stakeholders as outweighing environmental disbenefits. Can/does BR status demand a higher level of environmental protection and at the same time offer opportunities to compensate for the rejection of such proposals?

- Working towards achievement of the Seville Strategy 'Implementation Indicators' is a daunting prospect for a current non-functional BR, where the existing Reserve area will be dwarfed by a greatly extended transition of very different character. How do we supplement and apportion the significantly enlarged resource demand?
- Should we consider using the green credentials/ 'environmental footprint' of businesses/sectors/ zones as a further implementation measure.

POTENTIAL TOOLS/SOLUTIONS

- Seed money to initiate actions (via EuroMaB?)
- EuroMaB databases of case studies with focus on main concerns/lessons learnt ('Best practise') eg approaches to zoning definition, conflict resolution, co-operative projects.
- EuroMaB support for better use of media
- Add new BR 'implementation indicator' for 'environmental footprint' of BR stakeholders/ zones
- Partnership developments (eg. local fund raising).
- Resource development strategy

6.2 WORKSHOP SESSION RESULTS

MODERATOR: Vladimir Vladimirov, Bulgarian MAB Committee

The workshop was attended by 8 participants, representing individual BRs or MAB Committees from 5 countries – Austria, Byelorussia, Bulgaria, Greece and Russia.

CASE STUDIES PRESENTED:

- ‘Central Forest Biosphere Reserve as a successful example of old traditions and new approaches in long-term observations and their analyses’
- Nikolay Korablev, Central Forest Biosphere Reserve, Russia – ‘The revision of the Bulgarian Biosphere reserves – problems and challenges’, Vladimir Vladimirov, Bulgarian MAB Committee, Bulgaria
- ‘Biosphere Reserve of Samaria: difficulties faced in introducing a new management body’ – Hariklia Kargiolaki, Biosphere Reserve Samaria, Greece.

The following two main issues were discussed:

The importance of some of the ‘old’ BRs as sites for effective conservation of natural ecosystems and long term monitoring of various parameters.

It was pointed out that following the initial concept of the MAB Program many research projects were started for long term monitoring of changes in the biosphere. A very positive example is the Central Forest BR where monitoring activities started in 1961, i.e. much before the official designation as BR. These activities comprised monitoring of climatic parameters, phenology phenomena and individual mammal and bird species. All the data accumulated for this long period were well documented and stored, and now are being digitized, and are invaluable source of information. The group stressed the high potential of the reserve for continuation of these studies and participation in many international projects on Global Monitoring of Environment, Ecological Safety, etc.

The importance of the ‘old’ BRs for research was highlighted in the other case studies too. For

instance in Bulgaria, where 17 protected areas were designated as BRs in 1977, numerous research projects were initiated in almost all of them. Research data were published in a number of publications and presented also at two international conferences organized in Bulgaria in 1980 and 1985 particularly on conservation of protected areas and their gene fund.

Difficulties with implementing the Seville strategy to many of the ‘old’ reserves.

Some difficulties are related to proposing appropriate zonation of the territory, since, as underlined for Bulgaria, most of the BRs were selected in very remote mountainous areas without any population around. However, it was pointed out that the main difficulty is to make the ‘old’ BR a functioning one. In this process the crucial issues are the establishment of a ‘working’ management plan and body, involvement of local people in the activities and fair sharing of the benefits. This was well illustrated in the example from Crete, where despite the existing legal basis for establishment of a new managing body, many difficulties were faced and it is not properly functioning yet. It was discussed that the revision process is very difficult and slow in the countries in transition to a market economy. In these cases the MAB Program is often not among the priorities, and not even on the agenda of the governmental authorities.

The main conclusions and recommendations we could draw from our discussion are:

- most of the ‘old’ BRs are very valuable sites for long-term research and monitoring, and preservation of the natural ecosystems; there were opinions that these BRs should not be excluded from the World Network of BRs;
- establishment of a Task Force to deal particularly with the revision process;
- MAB Committees have significant role at national level in the revision process with their expertise and dedication to the MAB concept but often do not have enough influence on public institutions; therefore, the MAB Secretariat is

kindly requested to address officially governments to fulfill their obligations within the MAB Program;

- more published samples of good, functioning BRs are needed to help the revision process in the respective countries;
- all the basic MAB documents should be translated into all languages;
- the periodic review form should be adjusted to be suitable also for the 'old' BRs to demonstrate their value;
- bilateral, twinning cooperation between functioning BR and an 'old' BR could be very helpful in the revision process.

CASE STUDIES:

RESULTS AND PROSPECTS OF COOPERATION BETWEEN THE BEREZINSKY BIOSPHERE RESERVE (BELARUS) AND THE VOSGES DU NORD BIOSPHERE RESERVE (FRANCE), BY VALERIY S. IUKOVICH, BELARUS

Mutually beneficial cooperation between the Berezinsky Biosphere Reserve (Belarus) and the Northern Vosges Biosphere Reserve (France) began in 1994. It is based on exchanges and joint projects in conservation of biodiversity and support for ecological education and tourism.

The most important functions for these reserves are: conservation of landscapes, ecosystems, and diversity of species, support for ecologically sustainable economic development of the region, scientific research, monitoring, and ecological education.

Berezinsky Biosphere Reserve, which is situated in the sub zone of plain deciduous-spruce forests (85,100 hectares) was organized in 1925. The Reserve is especially valuable as it features a huge forest massif which managed to preserve its natural state with exceptional diversity of plant communities and animal populations. The Berezinsky Biosphere Reserve was given the status of the Biosphere Reserve in 1979. In 1995 for its successful work in conservation of natural complexes it was awarded the European Diploma for Protected Areas. The Diploma has been twice renewed since then.

The regional Natural Park Northern Vosges (122,000 hectares), which received the status of Biosphere Reserve in 1989, represents the zone of medium-height mountains, covered with temperate forests with numerous rivers and lakes, boasts of a substantial cultural heritage, including castles, churches, the Maginot line. This natural park was started in 1975. And if distance, language, and different biogeographical regions (Atlantic for the one, and continental for the other) set the two reserves apart, then 60% of common vegetation unite them.

As a result of the program of cooperation more than 15 staff and specialists of the Berezinsky Biosphere

Reserve visited the Northern Vosges to exchange information and experience in protection and restoration of plant and animal communities. Five people stayed in the Northern Vosges for half-year periods studying flora, birds of prey, small mammals, Heteroptera, and the structure of natural forests. As a result of visiting the Berezinsky Biosphere Reserve by scientists from universities in Paris, Strasburg, and Metz, a number of joint publications were prepared, both scientific and popular scientific, in several prestigious foreign journals. The book "Between Taiga and Berezina" was published. Due to the joint efforts the Berezinsky Biosphere Reserve annually conducts ecological tours for French tourism companies.

Further cooperation will be aimed at comparing biodiversity of the territory where the nature is untouched, with few settlements or which is not exploited at all by man (the Berezinsky Biosphere Reserve) and biodiversity of the territory that is extensively used by man (the Northern Vosges).

TURNING OLD CONFLICTS INTO NEW POSSIBILITIES, BY MIKAEL KREKULA, LAKE TORNE BIOSPHERE RESERVE, SWEDEN

Lake Torne area Biosphere Reserve was established in 1986, as the first generation of biosphere reserves. There were excellent facilities for research and monitoring activities through Abisko scientific research station. The BR is situated 200 kms north of the Arctic circle and consists of two national parks with a visitor's centre, two nature reserves and recently one Natura 2000 area. There are several small villages and tourist resorts close to the BR, also a railway and a road to Norway. Infrastructure is a well developed, close to a relatively unspoilt subarctic nature.

The main activities are reindeer husbandry, tourism, research, education and recreation. Kiruna is the community center with 20,000 inhabitants, mainly based on iron ore mining. Kiruna is 100 kms from Abisko, and it has a great impact on the BR. The mountain area is very important for tourism; the last wilderness in Europe, Saami culture, Icehotel, midnight sun, northern lights, clean water and exciting

activities, are used to attract visitors to the region. In 1988 there was a big conflict, when the national Environmental Protection Agency tried to create the largest national park in Europe, with different zoned areas. Strong interests for local recreation such as hunting, fishing and snow-mobiling gathered almost 80% of the population in Kiruna against the national park plan. Today, some stakeholders still regard EPA and nature conservation as a threat to development and the "last freedom" of hunting and snow-mobiling. "No more restrictions" is their message.

Different stakeholders have different needs for land-use. Conflicts are often debated in media. Tensions between different groups have appeared, sometimes with ethnic dimensions.

What are the possibilities to change this situation? How can the BR be a tool to achieve sustainable development in the area? Is it possible to turn old conflicts to co-operation and progress? Some opportunities can be seen:

Kiruna was planned as a model town 100 years ago, when mining started. The town was adapted to the local climate, good conditions for the working force, modern techniques, art, education, and good relations with the native Saami population. Perhaps this was an early stage of sustainable development.

Today China's growth has increased the need for iron. A great deal of iron ore lies underneath the city center. One lake has already been emptied. Railways, roads and parts of the town have to be moved within 10-30 years. Local politicians can see new possibilities and call this "model town part 2". Energy efficiency, environment and ecology are words used in this process. Women and children are important groups to include. This need for upgrading can also be extended to include the Biosphere Reserve. Sustainable development can be a common goal built on history, for both processes.

The first possibility is to increase the development function. The MaB label is one way to increase interest for sustainable development. The question is whether it is wiser to use already existing labels or to develop a new one. Product development, mutual

marketing and co-operation can also help to develop the area. Icehotel has shown an interest to take part in the extension of the BR. TEK and tourism has a great potential in the BR.

The second possibility is to improve the logistic function, even if research already is very well developed. Local education is progressing, tourism, environmental planning, out-door education, sustainable development are new developed courses. The third possibility is to use the BR as a tool for discussion and conflict solving, connected to research and democratic processes. Process support is important. From an international point of view there is still a need to expose the good examples and to communicate the benefits with BRs. Education and meetings for BR co-ordinators can improve this process. Process support, and long term funding is also needed to turn old conflicts into new possibilities.

ORGANISATION OF THE COOPERATION ZONE OF THE PRIOKSKO-TERRASNY BIOSPHERE RESERVE, RUSSIAN FEDERATION, BY MIKHAIL BRYNSKIKH

First of all I have to say a few words about the structure of reserves' management in Russia. Currently we have 100 zapovedniks and 35 national parks. National park's structure roughly corresponds to its international concept. Zapovednik is the Soviet invention. It represents only a core area zone from international point of view. Conservancy, monitoring and education are permitted on the territory of zapovedniks. This type of education began only recently with the necessity to work with the local population. Those who work on the "biosphere reserves" project understand what 'involvement of local population into biosphere reserve management' means. This work is done mainly in the areas bordering zapovedniks territory.

There are three levels of state management of reserves in Russia. Federal level is represented by the Government of Russia, regional level by regional governments (in our case it is the Government of Moscow Region), municipal level by the Adminis-

tration of Serpukhovskiy district of Moscow Region. The work of the Reserve is managed by the Federal Agency for Supervision of Nature Management. The regional and municipal authorities do not take part in this work. The law prohibits them from interfering with the work of federal agencies. This rule creates a lot of difficulties. Moscow is too far and local authorities have a lot of work to do besides our problems.

I work as the director of this zapovednik. Formally I am responsible only for its territory which is 5,000 hectares. A few words about this Reserve. It is located in Serpukhov district in the southern part of Moscow region. The Oka river divides subzones of coniferous-deciduous forests and deciduous forests. This leads to big biodiversity.

One can see here plants both from Northern taiga and Southern steppe. This territory was taken under protection in 1945.

Prioksko-Terrace Reserve was included into the Programme "Man and Biosphere" in 1979. There were first 7 reserves in the Soviet Union at that time. So when I say zapovednik I mean the core zone of Prioksko-Terrace Reserve. When I say Prioksko-Terrace Reserve I mean the whole area of the Reserve and bordering areas. When the Biosphere Reserve was organized in 1979 we worked out a special structure. It was a very bold proposal as it included territories 20 times bigger than the core zone into our dominancy. That time we did not have the task of securing the status of this zone officially. We worked out a special status of protection (buffer) zone that was approved by the Government of Moscow region. This buffer zone is a 2 km wide belt around the core zone. The buffer zone had three users. 4000 hectares were given to a forestry company. 2 agricultural companies received 500 hectares each. There were a number of limitations on the activities in these areas. The work in the forest zone of the area is conducted on the basis of 10-year plans. These plans take into account the proximity of the core zone of the biosphere reserve. This procedure has been maintained for the last 30 years. Previously they were growing corn, edible roots and grass in the water-meadow areas of the buffer zone.

In the years of Perestroika agricultural companies disappeared and these lands have not been used for the last 15 years. Part of these lands is taken by the forests but the bigger part is occupied by weed now. Currently the owners of these lands plan to construct cottages here. This territory is ecologically attractive and costs a lot. However this is prohibited by the buffer zone regime. It happens that only the management of Prioksko-Terrasny Reserve is preoccupied by nature conservation in this area. Regional authorities are preoccupied mainly by the control over existing treatment plants. Local authorities are engaged in collecting taxes for the pollution of the environment only.

The management of Prioksko-Terrace Reserve suggested to the Regional Government to create a zone of cooperation several years ago. We argued that the creation of such a zone is envisaged by the "Man and Biosphere" UNESCO Programme. We suggested to create a cooperation zone of 60,000 hectares. But the Moscow Region Government declined to accept our proposals due to the suggested forms of use of this zone. They offered to create a formal cooperation zone of 50 hectares of forests. We continued our work and suggested to the administration of Pustchino town to confirm their desire to join Prioksko-Terrace Reserve officially. They have accepted this officially. This decision does not limit the use of town territory but promotes rational management of the town's environment.

Now we plan to issue special certificates to every child born in our Biosphere Reserve. We also work with the Serpukhov District administration. I addressed the local assembly. Thus we decided to create a cooperation zone starting with agreements with local authorities and enlarging it step by step instead of fighting regional authorities. It is much easier to work with local authorities as they now appreciate our activities much better.

We have created an ecological route at the side of our Reserve. It is visited but 50,000 people annually. This route includes the museum of nature describing the details of our Reserve, visitor center (cafe, souvenirs, etc.) and breeding center of European bison where we work on the rehabilitation of bison in its

natural environment

Our small section of ecological education (4 persons) is not able to cope with this number of visitors. Each group visiting the Reserve is spending at least 2-3 hours on our territory. We began hiring local people to work as guides. We have trained about 50 persons by now. Thus we are able to increase the number of local people who understand the issues of nature conservation and know about our work. Besides this provides significant additional earnings to local people. Even those who stopped working with us for various reasons obtained a new knowledge and understand the significance of our work much better.

We also work with schools located in the cooperation zone. There are 12 schools in the Serpukhov district. One of them is located very close to the territory of the Reserve. We consider the work with school children as our priority. Many of them chose to work in nature conservation and biology after graduation. 'The Science Society of Students' of Dankovs school established on January 1, 1999 works on our territory to identify most gifted children. The Society published a collection of scientific works of school children in 2003–2005. For several years now the Dankovs school has had an ecological theatre which participates in many competitions. This year another theatre for young school children began its work at Bolshegyrylovsky school. For 10 years now we have been conducting an annual festival which includes various competitions and events. A literary and art competition "Reserved Locations" is held annually. Practically all school children are participating in this competition. It has three nominations: for best drawing, best poem and best story. The first stage of the competition is held at schools and then we receive the best work for further selection. The results are published in the local press.

The Academy of Sciences of the USSR created the post of Reserve's curators after the Congress on Biosphere Reserves in Minsk. That was a very important decision as the reserves became not only the base for serious scientific research but for educational projects on sustainable development for school children, students and the local population.

As the result we have conducted a number of meetings and conferences in Pustchino. Unfortunately Perstroyka stopped this cooperation.

Since 2005 is the first year of the UN Decade for better education in sustainable development Prioksko-Terrace Reserve began to reestablish contacts with Pustchino Science Center, Pustchino University and number of departments of Moscow State University.

To realize this project we require funds. Who would be able to provide these funds remains to be seen.

Concluding my presentation I'd like to suggest to the leaders of UNESCO "Man and Biosphere" Programme to organize in Russia a meeting on the role and development of biosphere reserves for the heads of biosphere reserves on the territory of Russia and EuroMAB.

COMPARISON OF KEY CHARACTERISTICS IN EXISTING AND PROPOSED, ENLARGED DYFI BIOSPHERE RESERVE, WALES, UK, BY MIKE BAILEY

EXISTING BR	CHARACTERISTIC	NEW EXTENDED BR
60 sq. km.	Territorial extent	c.700 sq. km.
Estuarine unit	Geographic extent	Whole river catchment incl. marine
Soft coast, estuary, bog, dune & coastal grassland	Geographic character	Predominantly low altitude upland & valley slopes
Inter-tidal, salt-marsh, sand-dune, raised bog, marshy grassland	Habitat components	Acidic grassland/upland heath, sessile oak woodland. Riverine wetland
High (> 60%)	Extent of semi-natural habitat	Low (> 30%)
Nature conservation, recreation and tourism	Predominant land-uses	Sheep farming, forestry & tourism
Marine & terrestrial SAC, SPA, Ramsar, NNR	Land-use/landscape designations	National Park (part of); ESA.
Significant proportion of incomers, more (sub)urban & tourism related	Cultural characters	Predominantly, indigenous Welsh-speaking agricultural/small market town. Dispersed, small settlements
Part of 'Objective 1' area	Socio-economic designations	'Communities First' area; Part of 'Objective 1' area
Small (hundreds); mostly landowners	Stakeholder population	Much larger (thousands); mostly not landowning
Largely prevented by conservation requirements	Sustainable development	Strong minority alternative culture; 'Ecodyfi', 'Centre for Alternative Technology'
Geographical & biological studies	Educational activities	Outdoor activities, geographic & cultural
Beach, water & wildlife based	Recreational activities	Traditional & contemporary outdoor pursuits
Natural sciences	Research activities	Sustainable technologies; forest quality
Natural scientist/nature reserve manager	BR manager	?
Statutory & voluntary bodies; landowners (small number)	Policy & management decision making	Stakeholders (very many more)

CENTRAL FOREST BIOSPHERE RESERVE AS A SUCCESSFUL EXAMPLE OF OLD TRADITIONS AND NEW APPROACHES IN LONG-TERM OBSERVATIONS AND THEIR ANALYSIS, BY NIKOLAY KORABLEV, RUSSIAN FEDERATION

The long-term environmental parameters' monitoring lines represent essential value at present time. The stated processes dynamics comparison plays the most important role in global changes evaluation. Similar analysis can give the answer to a question whether human activity plays an appreciable role in the environmental changes observable in biosphere, or they are caused by automatic fluctuations not connected with anthropogenic factor. Due to global climate change the capacity of environment may decrease as well as increase. Estimate and understand this processes could be possible only on the base of long-term observation of nature processes reserves' territory. That is why the observations made by Russian natural reserves in a long-term period are valuable contribution in a scientific global knowledge base.

The history of existence of the Central-Forest Reserve totals already almost 75 years, it was organized in 1931. For this period of work the staff of Reserve and other organizations have saved a unique material on southern taiga ecosystem and its components' long-term dynamics.

It was not an easy task to create a Reserve at the beginning of 30s of the last century. Moreover, it was not easy to generate efficient staff of the employees and to adjust all complex of research works. Nevertheless, it became possible to provide monitoring on biotical and non-biotical natural components.

The territory of the Reserve that is situated at the centre of the European part of Russia is convenient for global monitoring at this region. It is important that Valdai height where the Central-Forest Reserve is located represents the watershed of the largest rivers of Europe: Volga, Western Dvina (Daugava), Dnepr. It defines demand for hydrological and hydrogeological information. The presence of the large not

disturbed massif of fir-tree forest and upper peat bogs determines the demand for basic research territory for the purposes of initial ecological system functioning study. The territory of Reserve is of model ecological purity, as it is situated far from large sources of environmental pollution. The geographical situation of the Reserve on western slope of the first height of the route of western air massive streams determines demand for data on air pollution, atmosphere precipitation and superficial waters.

At the first stages the work was carried out without apparatus methods of monitoring use.

From 1961 the tool methods of monitoring have been widely applied; the meteorological station has begun its functioning, all data have been inserted in the Chronicles of Nature;

Mammals' and birds number calculation is made by an uniform technique means and all data received for the long-term work of Reserve are comparable. It is possible to emphasize the most long-term directions of monitoring:

Climate monitoring carried out with tool methods since 1963.

Phenology phenomena monitoring in phytocynosis at phenology routes and stationary plots since 1961, and since 1969 with the complete characteristic of phases of seasons.

Fruit efficiency rating of bushes, trees, berries and mushrooms in quantity, from 1961 to 1987.

Account numerical data for nine mammals' species and five birds' species.

We can emphasize the fact that all the research results without exception worked out by the leading scientific staff of the country at the Reserve territory are kept in archives of Reserve and are accessible to synthesis and analysis. The themes changed with current time, new technologies and apparatus were elaborated, scientific potential of the staff grew.

The standard techniques and recognized guides application allows to observe continuity of researches and congruence of results, though some of them can be recognized as out-of-date and not humane. We try to preserve old naturalists' traditions, what allows to satisfy modern science requirements. At

the same time, new directions in natural processes' various characteristics fixing are widely used by us. It is possible to relate to them climate, phytosynosis, plants and mammals populations monitoring. It is necessary to note among innovations automatic fixing of climatic parameters, monitoring of water mode with the portable thermometers and pH-meters use, GPS-positioning, radio-tracking, use of the remote satellite information, geo-information systems application for spatial and temporary analysis. The works on site binding of stationary research objects such as biological statistics routes, stationary plots, geomorphology profiles, catens have been recently completed.

All long-term monitoring lines are converted from paper data carrier into digital data format. Relational data bases are widely used. On the basis of long-term complex monitoring with modern powerful means of the analysis and from modern scientific performance point of view the integrated rating of natural systems' condition is being carried out, providing monitoring character of southern taiga ecosystem' development.

These data represent the unique basic ecosystem characteristics, which is actual for monitoring, environmental status and evaluation of human influence at the environment (OVOS). The Reserve is included into International Biosphere reserves Network, and in this quality it realizes its potential for Global monitoring. The Reserve has represented its data and has taken part in long-term biota changes observations of the processes of climate changes within the framework of The UN Convention for Global Climate change performance.

Thus on the present moment at The Central-Forest Reserve disposal there is powerful potential for scientific research performance in the field of environment protection and ecological safety.

This potential can be successfully used for Globe monitoring purposes.

THE REVISION OF THE BULGARIAN BIOSPHERE RESERVES: PROBLEMS AND CHALLENGES, BY VLADIMIR VLADIMIROV

Bulgaria joined the MAB Program at the very beginning (1977), designating 17 Biosphere Reserves (BRs). All the reserves were carefully selected to meet the requirements of the Program at that time: 1) sites that contain well preserved, natural ecosystems representative of different biogeographic regions in the country; 2) sites that were important for research and monitoring of changes in the biosphere; 3) sites that were important for environmental education and international scientific cooperation.

Most of the Bulgarian BRs include mountain ecosystems which are best preserved in the country. Only a few exceptions exist: Srebarna BR (wetland and Important Bird Area near Danube river) and Kamchia BR (includes unique riparian forests near the Black Sea coast).

At the beginning the MAB Program was very innovative and respectful in the country which presupposed for initiation of research projects in nearly all BRs. A few scientific workshops with international participation were organized devoted particularly to BRs and protected areas. The results have been published and are available to the scientific community and authorities responsible for the reserves.

In the late 80s the MAB Program in the country became somewhat unfashionable and nearly inactive. Only a few studies continued in the BRs, including those by four young scientists within the MAB Young Scientist Award scheme. Despite the very significant developments in the MAB Concept in 1995, nothing happened with the Bulgarian network of BRs for nearly eight years. It was in late 2002 when a new MAB Committee was elected and took the risk of trying to vitalize the MAB Program in the country. The following difficulties have been faced:

- the MAB ideas were already forgotten and lost any popularity in the country;
- MAB Program was neither on the priority list nor on the agenda of the governmental authorities;

the highest priority of the Government is to cover the very hard and demanding criteria for joining the EU;

- the members of the MAB Committee themselves needed training and time to realize the very innovative and flexible MAB Concept;
- lack of any funding to the MAB Committee and MAB Program at national level;
- poverty in the country especially around the sites suitable for BRs.

Despite these difficulties, important progress has been made for the past three years:

- Organizing in 2003 of a national meeting devoted to the periodic review and necessity of changing the BRs in the country (generously supported by the MAB Secretariat and ROSTE-Venice). The meeting was very important for introducing the modern concept for BRs and discussing the opportunities for its implementation in Bulgaria. The Seville Strategy and Statutory Framework were translated into Bulgarian and disseminated to all BR managers and other authorities. The periodic review for the individual BRs was carried out within 3 months after the meeting and was a very positive exercise, a kind of 'clearing house' for BRs in Bulgaria.
- Tasks for revision of Bulgarian BRs have been included in several very important national documents: National Biodiversity Action Plan (2005-2010), National Strategy for the Environment and Action Plan (2005-2014), Capacity Building Strategy and Plan for Bulgaria's Implementation of the Obligations under the UN Framework Convention on Climate Change, the UN Convention on Biological Diversity and the UN Convention to Combat Desertification.
- Members of the MAB Committee participated in several meetings with local people around 'old BRs' within different initiatives, where the MAB concept was discussed.
- A national Working Group has been established in order to develop the mechanism to implement the Seville Strategy in Bulgaria. The group involves representatives of the MAB Committee,

Ministry of Environment and Waters, Ministry of Agriculture, Ministry of Economy and Energetics, Ministry of Regional Development and Public Works, Ministry of Culture, National and Nature Parks, NGOs, etc.

The Bulgarian MAB Committee believes that implementation of the Seville Strategy in the country is a worthwhile challenge.

DIFFICULTIES FACED IN INTRODUCING A NEW MANAGEMENT BODY, BY HARIKLIA KARGIOLAKI, GORGE OF SAMARIA BIOSPHERE RESERVE, GREECE

Samaria National Park is an area that has been traditionally managed by the Greek Forestry Service. The introduction of a new law transfers the management to individual management bodies that act under the jurisdiction of the Greek Ministry of Environment and Public Works. Difficulties of the introduction of the New Management Body are discussed.

Greek Forestry Service (under the jurisdiction of the Greek Ministry of Agriculture) manages the forests as well as the whole area of the White Mountains, following the approved Management plan. Nevertheless, after the study of NATURA 2000 network and its legal instruments, protected area management has passed under the jurisdiction of the Ministry of Environment and Public Works. New legislation has been introduced giving the management of protected areas two new semi-independent Management bodies supervised by the Ministry of Environment and Public Works (Greek legislative decree 2742/1999).

The responsibilities of the new Management Body include:

- Outline and enforcement of regulations and management
- Monitoring and evaluation of the area resources
- Scientific research and construction of infrastructure
- Environmental education
- Development of the area (eco-tourism, project participation, etc.)
- Definition and enforcement of land uses
- Collaboration with the specified administrative and legal bodies in the enforcement of law

Reshuffling of the above responsibilities has proved difficult so far.

Legislation was left inert for Samaria, until in 2003, members of the management body were proposed. Initial proposition for the Management Body included the following representatives:

1. One representative from the Ministry of Environment and Public Works
 2. One representative from the Ministry of Agriculture
 3. One representative from the Ministry of Development
 4. One representative from the Region of Crete
 5. One representative from the Prefecture of Chania
 6. One representative each from the municipalities of Sfakia, Mousouroi, Eastern Selino & Therisso (adjacent municipalities)
 7. One specialized scientist
 8. One representative of an environmental NGO
- However, concealed public pressure resulted in an amendment of the number of representatives to the above Ministerial Act (2003), by increasing the members from eight to eleven.

No 6 became: One representative from the municipality of Sfakia, one representative from the municipality of Mousouroi & one representative from the municipality of either Eastern Selino or Therisso (practically increasing the participation of the local politicians to the management body).

No 7 became: two specialized scientists.

Last year, the actual members of the Management Body were initially nominated. The Management Body met a few times without making any breakthrough. Currently, new nominations are under way.

However, the prerequisites for it to work include

- a. An ability to enforce its public authority,
- b. Decentralized operation,
- c. The protected area acting as reference but also to harmonize its actions with a larger area management,
- d. Administrative, functional and financial self-sufficiency and flexibility
- e. Collaboration with other local and state organizations, as well as institutions.

In conclusion, despite legal alterations no significant change has been enforced in the management of

the area so far. This transitional period did not allow specific requirements of the Seville Strategy to be totally implemented and practiced, turning old biosphere reserve management to new.

However, certain requirements of biosphere reserves were fulfilled to an extent:

CONSERVATION was practiced by the park authorities (ecosystem, species, etc.)

DEVELOPMENT of the locals was encouraged by offering adjacent communities 30% of the Park's annual income, building different works (environmental information centres, water reservoirs, etc.)

LOGISTIC SUPPORT was also practiced by participating to various projects (national and international, i.e. LIFE project on *Gypaetus barbatus*, or a LIFE project on microreserves, etc.).

Samaria, an old Biosphere Reserve, deserves remaining in the international Excellency network. The main reasons are its valuable ecological and cultural significance. Many landscapes have changed, as a result of human action; Samaria remains intact, as it always used to be. The only forces that change it are natural, (water, sun, air); they create a unique environment in which unique organisms survive. People who survived in the mountains surrounding it also have distinctive qualities. A fighter has always been a leader in revolutions for freedom.

Hoping that the Samaria management body will eventually overcome its teething problems and will come in action soon, practicing not only the protected area regulations but also Seville Strategy implementation. Management based on the twinning of nature conservation and human development can give a good example here, an area significant for long time research. The help of the MAB Secretariat in the implementation of the Seville Strategy will be greatly appreciated.

7 PARTNERSHIPS AND NETWORKING OF BIOSPHERE RESERVES (ESTABLISHING OFFICIAL WORKING GROUPS DEDICATED TO COORDINATING PARTNERSHIPS BETWEEN GERMAN AND INTERNATIONAL BIOSPHERE RESERVES)

RESULTS OF WORKSHOP 7, BY SIGRID HOCKAMP-MACK, GERMANY

The workshop was hosted by MAB Germany and aimed at the identification of biosphere reserves that are interested in a co-operation with German biosphere reserves. The workshop was attended by representatives of the MAB Secretariat, UNESCO HQ, and of the following biosphere reserves: Wienerwald (Austria), Sumava and Krkonose (both Czech Republic), Vosges du Nord (France), Volzko-Kamsky (Russia), Camili (Turkey) and representatives of the German biosphere reserves Elbe Flusslandschaft, Oberlausitzer Heide- und Teichlandschaft, Pfaelzerwald, Rhoen, Schaalsee und Schorfheide-Chorin. The participants presented their biosphere reserves as well as their ideas for a future cooperation. The representatives of Elbe Flusslandschaft, Schaalsee, Camili und Volzko-Kamsky presented their Biosphere Reserve and their work in detail.

The Biosphere Reserve representatives agreed to exchange experience and information in the framework of a permanent working group. As main fields of cooperation were identified:

- Communication and public relations
- Participation
- Education
- Regional development
- Tourism management
- Agriculture
- Regional products and labelling

The following procedure was agreed:

Within one month after the workshop the German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) will contact all participants requesting them to present a detailed descrip-