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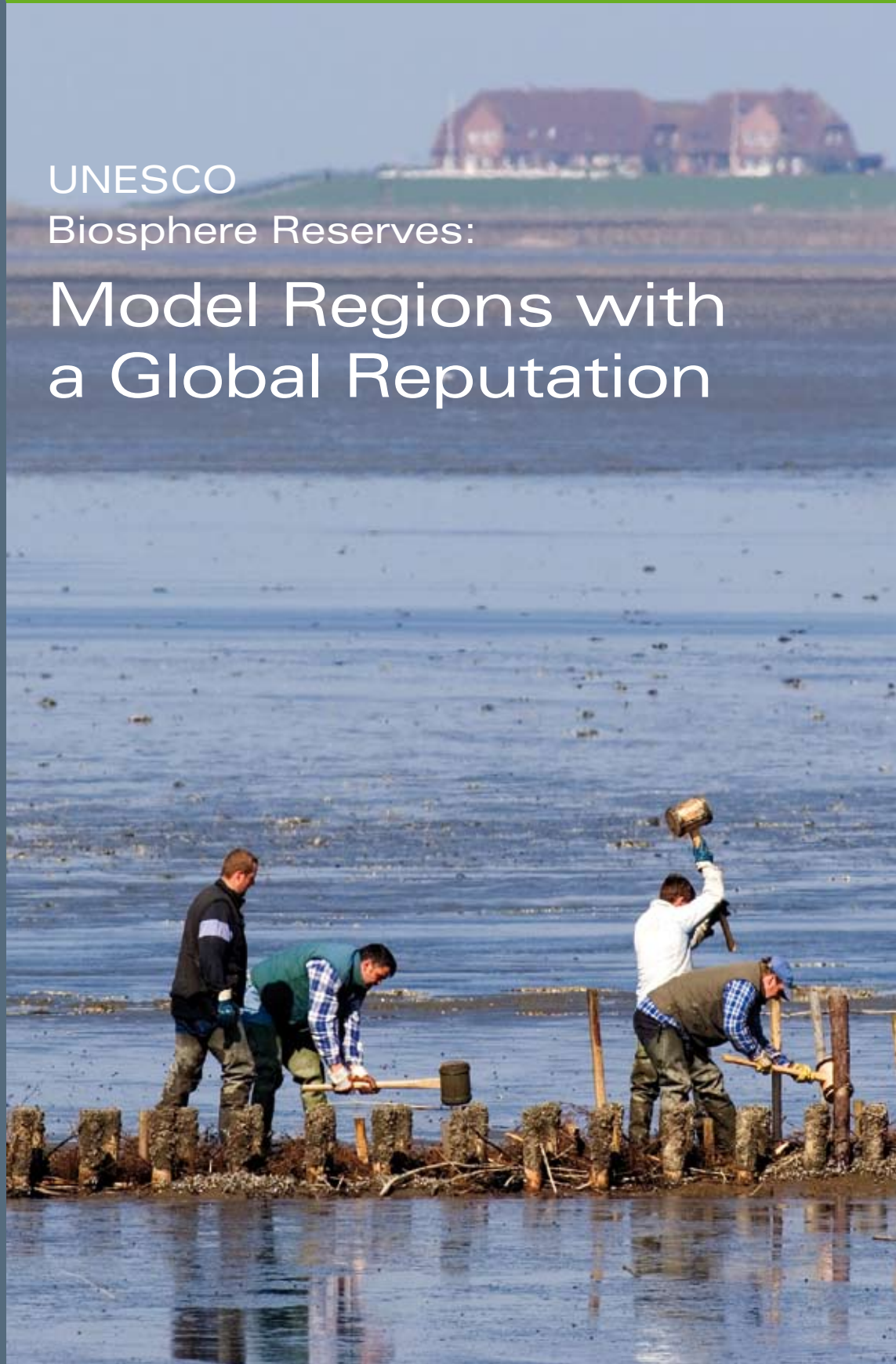


→ The Challenge Climate Change

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## UNESCO Biosphere Reserves: Model Regions with a Global Reputation





**UNESCO biosphere reserve and UNESCO World Heritage site Uluru (Ayers Rock – Mount Olga)**

Photo © Flickr Creative Commons: Paul Mannix

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**Great Egret in the UNESCO biosphere reserve and UNESCO World Heritage site Everglades**

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Lutz Möller

## Dear Reader,

Ayers Rock in Australia, the Everglades in the United States, the Spanish island Lanzarote and the Wadden Sea of Germany and the Netherlands are world famous travel destinations. Did you know that these are all UNESCO biosphere reserves?

UNESCO biosphere reserves are model regions for sustainable development. They protect biodiversity, support regional marketing and promote low-impact tourism as well as innovative, environmentally-friendly agriculture. They advance education and research and interact in a world network.

They are particularly important today in times of obvious global change. World-wide environmental changes such as climate change, desertification, and water shortage recently started to dominate the headlines. Centres of power and economy are shifting rapidly, both within and between countries. Increasing migration is, these days, seen to be a security risk by many states. The age pyramid of many countries is changing drastically. These developments occur not least, as a result of behavioural patterns – above all, in industrialised countries – which in the long term are intolerable.

Sustainable development is the alternative draft to escalating global change. Sustainable development looks for solutions as to how this planet's resources can be managed to ensure a decent life, both globally and for centuries to come. There is no patent formula for sustainable development. It can take on a different form on each continent, even in each district, because conditions differ and because global change is so complex. Even more, adapting to global change will require a temporarily changing concept of sustainable development. At any rate, all around the earth places are required, which serve as experimental laboratories for sustainable development. The biosphere reserves are such places.

One example: in Europe small farms are hardly profitable these days. Climate change leads to rising temperatures and

decreasing rainfall in many regions of Europe. In turn, rising prices are an incentive to produce biomass for the production of energy, potentially using genetically manipulated seed. What is the right alternative: Should farmers abandon their land and leave it at the mercy of natural succession? Should they grow rapeseed and corn on an industrial scale? Or are there economic frameworks for the remaining small-scale farming to survive?

Sigmar Gabriel and Carlo Jaeger justify the necessity of biosphere reserves in the era of global change in their contributions to this journal. The chairwoman of the German MAB (Man and the Biosphere) National Committee, Gertrud Sahler, while considering new challenges, comes to the conclusion that biosphere reserves all the more earn to be strengthened.

UNESCO biosphere reserves have not only recently gained importance. Julia Marton-Lefèvre describes know-how impulses for the management and zoning of protected areas. Thomas Schaaf presents research on the impact of global change in mountainous regions. Michael Succow illustrates how the biosphere reserve concept influences the establishment of national parks in the successor countries of the Soviet Union.

Natarajan Ishwaran sees biosphere reserves as being learning laboratories. What is meant by this and what the German biosphere reserves have got to offer is portrayed by Lenelis Kruse-Graumann.

A further important aspect of biosphere reserves is to look at 'cultural landscapes'. Although it is definite that traditional cultural landscapes did not always evolve while protecting nature, they often do offer habitats for a rich diversity of species. They are being threatened by increasingly intensive agricultural use in the same way as by the abandoning of unprofitable areas due to climate change and demographic change. UNESCO biosphere reserves preserve functioning cultural landscapes due to the groundbreaking concept of zoning.



Photo © DUK

Werner Konold stresses in his contribution that the accelerating dynamics of cultural landscapes today need value frameworks like the Seville Strategy.

Scepticism or even fear is not an appropriate response to global change; surprisingly obvious recipes sometimes turn out to be best practice for meeting the challenges. Claudia Neu presents success factors, which prevent migration from villages in Mecklenburg-Western Pomerania. Rainer Mönke reports how biosphere reserves can create more jobs. Martin Kremer describes influences of regional marketing, through which the Rhön, despite its peripheral location, was built up and which helped a new regional identity to emerge. Armin Kullmann explains how the biosphere reserves measure up with regard to regional marketing in comparison with other areas.

The involvement of local communities is a definite strength of biosphere reserves. Christine Kehl and Elke Baranek explain that this grants nature conservation projects the necessary acceptance. For Klaus Jarmatz and Johannes Treß this

is decisive for well-functioning framework concepts. Marcus Lämmle explains that local involvement is already significant during the founding phase of a biosphere reserve. According to Susanne Stoll-Kleemann, it is considered to be central for the management of biosphere reserves throughout the whole world. Eberhard Henne explains that the umbrella brand 'National Natural Landscapes' boosts awareness for biosphere reserves throughout Germany.

The UNESCO biosphere reserves create local success formulae, in order to enable sustainable development to become a reality. Local experience is incorporated and distributed in the world network of

biosphere reserves. In this journal we give you a brief introduction to 34 existing and planned regions. Peter Heyne as well as Guido Puhmann and Susanne Reinhardt report on new partnerships in the world network; Roland Stein describes the difficult additional tasks of transboundary biosphere reserves.

The German Commission for UNESCO held its General Assembly on the subject of UNESCO biosphere reserves in 2007. This Assembly passed a resolution on the UNESCO biosphere reserves in Germany which is reprinted on the third cover page. In line with the German MAB National Committee which has made the English version of this journal possible,

it stresses the significance of biosphere reserves in realising sustainable development. This journal should portray to you that UNESCO biosphere reserves – those you are already acquainted with and those that you may want to get to know better after reading this – really are 'Model Regions with a Global Reputation'.

*Dr. Lutz Möller,  
Head of the Section for Science  
of the German Commission for UNESCO*

## UNESCO Biosphere Reserve Arganeraie

### Morocco



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Corvin Wimmer

The biosphere reserve Arganeraie, designated in 1998, is situated in the south-west of Morocco, bordered by the Atlas Mountains and the Atlantic Ocean. The city of Agadir is also a part of this region

which spans 25,600 km<sup>2</sup> and supports almost 2.5 Million inhabitants, who predominantly earn their livelihood through agriculture and livestock farming. The priority of this biosphere reserve is the preservation of the Argan tree – which is currently under threat of extinction due to excessive human exploitation – and the sustainable production of Argan oil.

The Argan tree is endemic to this part of Morocco. This thorny tree, which loses its foliage in the dry period, is extremely well adapted to the high temperatures and extreme drought. Its fruits are roughly as large as hazelnuts and their look resembles that of yellow plums and olives. They are the source of the precious Argan oil known as the 'liquid gold of Morocco'. It is rich in unsaturated fatty acids and is used by the Berbers to treat stomach and bowel ailments, poor circulation or fertility problems. In Europe it is now widely used as high-quality cooking oil and as an ingredient in the manufacture of cosmetics.

Other products obtained from the Argan tree are wood and animal food. At the edge of the Sahara the tree also functions as a buffer against desertification. The Berber women have maintained sustainable methods of oil production based on century-old traditions. Importantly, the

fruits should never be beaten down from the trees, only gathered from the ground. The oil is produced by the Berber women meticulously by hand. It takes eight hours to produce one litre of oil from thirty kilogrammes of Argan fruits.

The biosphere reserve carries out replanting of the tree and supports marketing initiatives of oil produced in a traditional style. The 'Union des Coopératives des Femmes de l'arganeraie', was founded in 1999 for that purpose and is the first network of local cooperatives in Morocco. It promotes sustainable use of the precious resources and aims at increasing revenue. German-Moroccan technical cooperation has substantially supported projects for the sake of the Argan tree. The Argan tree is also a central issue in the research being carried out in the biosphere reserve.

*Further information:*  
<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=MOR+01>

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Title Illustration:  
UNESCO Biosphere Reserve  
Schleswig-Holstein Wadden Sea  
and Hallig Islands  
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# Message of Greeting

Prime Minister Christian Wulff



The German Commission for UNESCO has been using the occasion of its 67<sup>th</sup> General Meeting to particularly emphasize the theme of 'UNESCO biosphere reserves – model regions with a global reputation'. I am delighted to be able to express my appreciation for this work in the journal 'UNESCO today'.

You have chosen this date prudently as it is 15 years ago that the Earth Summit in Rio de Janeiro defined sustainable development as being a globally authoritative principle and made extensive recommendations for the realisation of the formulated goals. Sustainable development is an issue that the biosphere reserves feel particularly committed to and also bring to life. It is time to take stock of what has already been achieved, to take up the future challenges and to more firmly establish and extend the role-model function of the biosphere reserves as regions for an environmentally friendly and sustainable development.

The programme 'Man and the Biosphere' (MAB), which was adopted by UNESCO's General Conference in 1970, is a success story as far as its realisation is concerned. In 1974 the concept of the biosphere reserves was developed within the framework of the MAB programme. In 1995 the 'Seville Strategy' as well as the 'International Guidelines for the World Network of Biosphere Reserves' provided a groundbreaking basis for the preservation and development of UNESCO biosphere reserves.

Today there are 529 biosphere reserves worldwide in 105 countries. Thirteen of them are in Germany. The north German coastal landscape is, as one of the last large-scale nature landscapes in Central Europe an integral part of the world network through the three Waddensea biosphere reserves of Lower Saxony, Schleswig-Holstein and Hamburg. Lower Saxony has not only contributed

widespread areas of the Lower Saxony Middle Elbe into the trans-federal-state and largest German biosphere reserve 'Elbe River Landscape'. It was also the first Federal State to have areas of a UNESCO biosphere reserve on the Middle Elbe designated by law on the basis of the Federal Nature Conservation Act. The objective is to uniformly preserve and develop the area with its landscapes, cultural and socio-economic values and functions, oriented towards the coexistence of mankind and nature.

Biosphere reserves offer new opportunities for regional and tourist development. They create incentives for ecological cultivation and marketing of regional products. They are also locations for experiencing nature, for environmental education and research. Biosphere reserves go far beyond nature conservation. New challenges for biosphere reserves are emerging with regard to the looming issue of climate change.

I would like to emphasize that the work in the biosphere reserves is oriented towards involving the local population and winning them over as responsible supporters for the development of the biosphere reserves. Only if the local and regional players can identify with the idea of biosphere reserves and sustainability as such, progress can be made, which can, in turn, serve as an example for other regions.

The policy of the government of Lower Saxony is particularly committed to the principle of sustainability, developing and monitoring a modern and comprehensive sustainability strategy – relating to all policy areas and all departments. Thus we submitted a report on sustainability in 2006 and created a special unit dealing with sustainability at the Ministry of the Environment. We are in the process of developing an 'Alliance for Sustainability in Lower Saxony' together with the industrial sector.

Furthermore, sustainability regions have been defined. The draft of a funding programme 'Experience Nature and Develop Sustainably' is, at present, in the process of being approved.

The Lower Saxon 'Elbe River Valley Meadows' biosphere reserve, designated by law – as part of the trans-federal-state UNESCO biosphere reserve 'Elbe River Landscape' – as well as the biosphere reserve Wadden Sea of Lower Saxony are included in these considerations with priority.

I would like to wish the German Commission for UNESCO and the German MAB National Committee continuous good luck in their work and sincerely hope that the journal about the UNESCO biosphere reserves is widely and well received.

*Hanover, September 2007*

*Christian Wulff is Prime Minister of Lower Saxony and has been chairman of the Conference of German Prime Ministers in 2006/07.*



**UNESCO Biosphere Reserve Schleswig-Holstein Wadden Sea and Hallig Islands**

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Sigmar Gabriel

## “A Sustainable Coexistence of Mankind and Nature”



The adoption of Agenda 21 in Rio de Janeiro, 15 years ago prompted necessary changes in political reasoning and action. The world community has recognised that without this change of direction towards sustainable development, life would not be worth living for future generations. Agenda 21 was not the only programme adopted in 1992; the two most significant environmental conventions, the UN Framework Convention on Climate Change and the Convention on Biological Diversity were also agreed upon.

Thus, climate change and the loss of biodiversity were recognised, even then, as being the most urgent global environmental problems. Now the signs for on-going climate change are obvious; emissions of greenhouse gases have increased further, biodiversity has chalked up increasing losses and the red list of species threatened by extinction grows and grows. The demand is on politics worldwide to, at long last, take the necessary measures in order to stop these problems getting any worse. The German national climate protection programme and our strategy on biodiversity are two examples of how we can make a contribution with innovative and inter-departmental politics. At the end of the day however, sustainable development is dependent upon the contribution of all relevant stakeholders – agriculture and forestry, industry, trade and private households.

Increasingly extreme weather conditions have led to an increasingly large number of people being personally affected. This leads to the realisation that changes are necessary also in what we do as individuals. Awareness of the fact that effective climate protection is scarcely possible without functioning eco-systems is slowly being established. Thus we need more intact forests and moors, not only for storing carbon dioxide, but also to regulate the water supply.

The UNESCO research programme ‘Man and the Biosphere’ has, since the seventies, been dealing with the question of how the relationship of people to their environment should be managed, so that the biosphere is indeed preserved as a form of habitat. The Seville Strategy was adopted as a result of the conference in Rio; this has enabled the programme to develop substantially. Since then, biosphere reserves have been looked at as being model regions for sustainable development. In other words, in the world network of biosphere reserves right down to the local level, transferable models for comparable problems and strategies for coping with global environmental problems are being developed and tested. In these representative areas, findings on the function of specific ecosystems, the results of human interference and the success of certain measures for protection and development can be obtained and exchanged. UNESCO biosphere reserves are outdoor laboratories in the most positive sense with the objective of achieving a harmonious and sustainable coexistence between mankind and nature.

Germany’s Federal States, in charge of nature conservation in the German political system, have successfully applied for designation of 13 biosphere reserves by UNESCO. Thereby they also contribute to Germany’s engagement in finding solutions to these complex questions via these model regions. Thus they have paved the way by which Germany can do justice to its responsibility for future generations.

The Federal Government gives them all the support it can. One aspect is to support the cooperation of German biosphere reserves with those of other countries. Another is to convene the German MAB National Committee; a third is to financially support research and development projects for further developing the MAB programme in Germany.



Furthermore, a number of biosphere reserves profit from the Federal Programme for 'the installation and securing of parts of nature and landscapes with national significance' which has existed since 1979 and has, over the years, received more than 300 million Euros.

Germany will host the 9th conference of the Parties to the Convention on Biological Diversity in 2008. From my point of view, this conference is of outstanding importance for the politics of nature

conservation for the coming years, both nationally and internationally. We want to use this opportunity to make it clear to people that the wealth of nature is an indispensable foundation for development. I am convinced that biosphere reserves will also contribute to setting the course in this important endeavour.

*Sigmar Gabriel*

*Federal Minister for the Environment, Nature Conservation and Nuclear Safety*

## UNESCO Biosphere Reserve Vessertal-Thüringen Forest

The 'Vessertal-Thüringen Forest' biosphere reserve is situated in the middle of the Thuringian Forest between Illmehausen, Schleusingen and Suhl. It is crossed by the famous hiking trail 'Rennsteig'. The valley of the Vesser brook was designated

by UNESCO in 1979, making it one of the oldest German biosphere reserves. Since then, the area has been extended twice to the 171 km<sup>2</sup> it spans today. The Vesser valley is now the largest core area in the region. The beech and spruce forests

typical of the Thuringian-Franconian low mountain range cover almost 90 percent of the area. Rare species such as the fire salamander and the black grouse are at home in the forests and meadows.

Tourism is traditional in the Vessertal and nowadays the main source of income in the region. 'Visitor guidance' is the name of a project, initiated in 1999, whose objective is to promote a sustainable tourist development. Tourism, forestry and nature conservation, together with local authorities, define common measures to bring the interests of nature conservation in line with those of the tourism branch, especially with regard to the target group, hiking tourists. They record and assess tourist activities with a 'visitor monitoring', using light barriers for counting and interviews. Public transport was improved and the route network revised. The administration of the biosphere reserve organised symposia to present the results of the project at the national and international level.

*Further information:*

<http://www.biosphaerenreservat-vessertal.de>



Photo © Biosphärenreservat Vessertal-Thüringer Wald / Matthias Hellner

Gertrud Sahler

## Biosphere Reserves, a Response to Infrastructural Challenges

*Germany has to face fundamental challenges in the same way as other industrialised countries. Demographical change leads to considerable problems in the preservation of necessary infrastructure in education, culture, transport, administration and medical care, particularly in rural areas with a low population density. Increased competition caused by globalisation also on a regional and local level, requires future-oriented local politics, which use existing strengths and innovation potential. The MAB National Committee considers biosphere reserves as model regions to be an effective device for contributing to this structural challenge.*



Photo © BMU

### Momentum for a sustainable regional development

In contrast to other instruments of regional development, such as 'integrated rural development concepts' (ILEK) supported at the national level or the implementation of 'LEADER processes' in the European Union context, biosphere reserves are created for the long-term. They offer the opportunity for regional development processes to become firmly established.

After adoption of the Seville Strategy, the original focus of the MAB programme has shifted from being an interdisciplinary research programme. Biosphere reserves are now model regions for sustainable development. This makes high demands on the administrations; they must be competent in all aspects of nature conservation as well as in economic and social issues, in education and science. They must also be able to communicate effectively in order to do justice to the demands of the MAB programme and anchor the biosphere reserve in the region by a bottom-up process.

The management of biosphere reserves must have the administrative competence to realise the goal of their becoming model regions for sustainable development. These competencies should include the control and allocation of funds, the development and monitoring of innovative concepts, and especially the solution of problems connected to demographic developments.

Periodical assessment of the German biosphere reserves by the MAB National Committee in previous years has

disclosed very different competencies and rights of participation. Therefore, the chances of an integrated approach cannot usually be used sufficiently. In addition the biosphere reserves are almost exclusively supported by the Ministry for the Environment of the federal state they are part of. It would, however, make sense to take advantage of appropriate support programmes from all departments at federal state level. These could serve to open further economic perspectives in the biosphere reserves and their surroundings as well as inspiring a sustainable regional development, which could hold its own.

German biosphere reserves, to date, represent marine areas, river and pond landscapes and areas of open landscapes or with a high percentage of forest land, in both peripheral areas as well as close to agglomeration areas. Up to now, the selection has only been based on criteria of natural landscapes. This approach is however too limited, from the viewpoint of the MAB National Committee. With regard to the question of how representative a region is for the network of biosphere reserves, the interdisciplinary character of the MAB programme should be taken into consideration. A decision on how representative a region is should also be based on the different economic and social conditions. The MAB National Committee kept this issue in mind when revising the national criteria for designation and evaluation of biosphere reserves. New applications are in the pipeline from two federal states, Saarland and Baden-Württemberg: The biosphere

reserve Bliesgau has already been designated according to federal state law, the biosphere reserve Schwäbische Alb is in the process of being founded, both, as partially urban regions, will make a welcome addition to the German network. This development results in new challenges for us. Biosphere reserves in urban regions must also fulfil the three functions: protection, development as well as research and education. Among other things, we will be dealing with core zones in urban areas and the form they will have to take in order to be able to do justice to the protection function.

The changes to the MAB programme as a result of the Seville Strategy of 1996 will continue in the years to come. However new-style biosphere reserves are not the only new issue to be integrated; regions designated before 1996, often emanating from national parks must also become model regions for sustainable development. In this context, our experiences with the Wadden Sea and Berchtesgaden biosphere reserves can be brought into the international discussion.



Photo © Karl-Friedrich Abe

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*She has been Chairwoman of the German MAB National Committee since 2004.*

## UNESCO Biosphere Reserve Vosges Du Nord / Pfälzerwald

In the Pfälzerwald (Palatinate Forest) the German part of the first transboundary biosphere reserve of the European Union can be found. The German part was designated by UNESCO in 1992, the French part in 1988. The connected regions have been designated since 1998, spanning a total area of 3,018 km<sup>2</sup>. The Palatinate Forest is part of the geo-morphological landform of the southwest German cuesta and its sandstone mountains. Nearly three quarters of the transboundary mountain formation Vosges-Palatinate are covered with woods. What is characteristic for the southern Pfälzerwald and significant for the tourist industry are the impressive sandstone cliffs, which like the many caves, represent the habitat for rare animal and plant species. Furthermore, almost a hundred castles are to be found in this biosphere reserve.

A special feature in comparison to other German biosphere reserves is the winegrowing district Haardttrand, an area also known as the 'German wine route'. Vineyards are also part of the network 'economies in harmony with nature', whereby businesses from many sectors have joined forces since 2004, in order to ensure sustainable development in the biosphere reserve, together with the biosphere administration. Quality criteria and control systems were developed in order to guarantee the quality of products and a low environmental impact.

*Further information:  
<http://www.pfaelzerwald.de>*

Photo © Roland Stein



Julia Marton-Lefèvre

## Biosphere Reserves – A Visionary Tool for Addressing Today's Challenges

*The concept of biosphere reserves had an important impact on our perceptions of the man-biosphere-relationship and on the necessity of reconciling conservation and use. The concept paved the way for contemporary approaches to protected areas and for implementing international conventions such as Agenda 21, the Convention on Biological Diversity and the Ramsar Convention.*

A cornerstone of the concept of sustainable development is the conviction that nature and humans can co-exist in a harmonious way. This belief, however, was not widely spread when the concept of biosphere reserves was first proposed in the mid 60s. In fact, at that time many conservationists hesitated to adopt the notion and they questioned its success. But the concept was well-supported by results from scientific research in the late 60s and 70s which had shown that supposedly virgin habitats such as forests in the Congo and the Amazon Basins were in fact the result of interaction between human beings and their environment over millennia.

The Biosphere Conference organized by UNESCO in 1968 represented the first intergovernmental conference seeking to reconcile both, conservation and use of natural resources - a notion that was adopted by the Convention on Biological Diversity more than 20 years later. The aim of the conference was to promote the need for humans and nature to interact in a positive way. The "Man and the Biosphere" (MAB) programme was officially launched in 1970 and formally endorsed by the UN Conference on Human Environment in Stockholm in 1972. One of the most ambitious projects within this programme was the establishment of a coordinated, global network of biosphere reserves. This project was well received and has been very successful so far. Nowadays, 529 biosphere reserves cover more than 5 million square kilometres in 105 countries (UNEP-WCMC and IUCN, 2006). This success is the result of the commitment by governments and NGOs but it should also be seen as a tribute to the visionary thinking and hard work of

Michel Batisse who can be considered to be the "father" of biosphere reserves.

### The contribution of IUCN

From the outset, IUCN has been associated with the development and application of this concept. Many IUCN members have been engaged in promoting and establishing biosphere reserves. A number of IUCN field projects have been launched such as the one resulting in the development and implementation of an integrated management plan for the Saloum Delta Biosphere Reserve in Senegal. IUCN also contributes to the work of

the Advisory Committee for Biosphere Reserves which supports the work of the International Co-ordinating Council of the MAB Programme. In preparation for the International Conference on Biosphere Reserves (Seville, Spain 1995), IUCN carried out an evaluation of the coverage and management effectiveness of biosphere reserves. A number of technical and policy recommendations from this evaluation were formally included in the Seville Strategy and the Statutory Framework of the World Biosphere Network. Thus, IUCN is in a privileged position to assess the importance and impacts of the biosphere reserves concept and its application.



Photo © Lutz Möller

## New paradigm for protected areas

What did we learn? First of all, as noted above, the concept of biosphere reserves has influenced the overall understanding of the relationship between humans and nature and has emphasized the need to find a balance between nature conservation and sustainable use. Today, this is a widely accepted concept which has been included in a number of international and regional agreements. It is also a key principle in what IUCN called the "new paradigm for protected areas" which was discussed and endorsed at the 5th IUCN World Parks Congress (Durban, South Africa, 1993).

Biosphere reserves have played a seminal role in influencing the development of tools that are essential in achieving the key goals contained in Agenda 21 as well as in a number of international conventions such as the Ramsar Convention, the UNESCO World Heritage Convention and

the Convention on Biological Diversity. In all these agreements the need to ensure adequate planning and management of biodiversity is of paramount importance. They all call for proper ecological zoning and a management system that responds to the environmental and socio-economic needs of each particular area. Both concepts, zoning and management, have been tested in biosphere reserves all over the world and have had a deep impact on the practical work in protected areas.

Moreover, the idea of having core zones in which protection is enhanced through the establishment of buffer zones, where environmentally-friendly economic activities are implemented, has led to a number of crucial principles. These concern the development of biological corridors and other forms of ecological connectivity in, around and between protected areas (Ponce, C; 1998). These principles have, inter alia, been guiding most of the activities implemented by the government of Madagascar and

several NGOs in order to protect the remnants of tropical rainforest and its biodiversity. There is little doubt that the experience and the knowledge obtained from the management of biosphere reserves in relation to zoning and connectivity have greatly influenced both, the concept and the application of the ecosystem approach promoted by the Convention on Biological Diversity.

Other important issues that were influenced by the theoretical as well as the practical approach to biosphere reserves are those related to the need for inter-institutional coordination and a multi-disciplinary approach to planning and management. This is reflected by numerous projects such as those implemented in the woodlands of Mata Atlântica in Brazil (Lino/Dias, 2005), but there are also an increasing number of innovative initiatives that reach far beyond the national level: Several projects implemented in East Europe address transboundary management of shared ecosystems (Guziová,

## UNESCO Biosphere Reserve Sian Ka'an

### Mexico

"The place where the sky was born" – this is the meaning of Sian Ka'an in the language of the Maya. This biosphere reserve lies to the east of the Yucatan peninsula in the Mexican state Quintana Roo. The reserve covers an area of 5,281 km<sup>2</sup>. It was included into the world network in 1986 and in 1987 designated in addition as a World Heritage Site. Mangroves, dunes, marshes, forests and huge coral reefs, parts of the second largest barrier reef in the world, form this coastal landscape.

With over 4,000 species of plants and 336 species of birds, the area boasts a substantial biodiversity. For many species of waders and two endangered species of ocean turtles, it serves as breeding territory. Sian Ka'an is not only of importance for its biodiversity but also for its history. Located a few kilometres to the south of the famous Maya-Tempel Tulum, 23 Maya sites have been discovered in the area. The Maya still represent the majority of the 2,000 residents of this biosphere reserve.

Tourism, immigration and development put a lot of pressure on the biosphere reserve. The management and preservation of natural resources are therefore top priorities. Furthermore, agricultural methods are being tested in order to conserve the delicate character of the soil.

#### Further information:

<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=MEX+05>

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1998) while Spain and Morocco have successfully established an intercontinental coastal and marine biosphere reserve, an initiative that was supported by the IUCN Centre for Mediterranean Cooperation.

## Sources of hope

Furthermore, biosphere reserves have a great influence on socio-economic issues and therefore play an important role in relation to poverty reduction and the achievement of the Millennium Development Goals. In many cases, biosphere reserves are sources of hope for local communities and indigenous peoples that perceive them as a viable option for enhancing their livelihoods. This is probably the most important success story of the MAB programme. Many examples give proof of this, such as the Sierra Gorda Biosphere Reserve in Mexico that successfully managed to provide a number of alternative economic options for the local population, and the Fitzgerald River Biosphere Reserve in Southern Australia which has helped to revitalize the local economy (West, 2001).

Finally, the contribution of biosphere reserves to the understanding of dynamics in ecosystems has also been important for global efforts concerning the conservation of biodiversity. From the outset, environmental and socio-economic research has been a key objective of the MAB programme. The global network of biosphere reserves has indeed contributed to assessing the "health" of our planet and the impacts of human development, such as climate change. An excellent example of this is the research programme implemented in the Amazon Basin which has substantially contributed to understanding and guiding conservation and development efforts in this critical area of biodiversity (UNESCO, ANCB, EBB, CYTED and IUCB, 2000).

## New challenges

Although there are impressive achievements today, there are still huge challenges ahead of us. One priority will be the conservation of marine biodiversity because up to now the protection of the oceans is fragmentary. It is necessary to counter the decline in fish stocks and the predicted impacts of climate change



Photo © Gertrud Hein

on marine ecosystems and on the millions of people living in coastal areas.

Therefore, biosphere reserves should become models for the implementation of mitigation and adaptation strategies which address the threats of climate change. In a world that is increasingly affected by armed conflicts and intolerance, biosphere reserves could help to promote intercultural exchange between nations and peoples, thus also becoming a tool for conflict-resolution and peace-keeping efforts. These are difficult challenges but it is essential to address them in order to build a better world. In my opinion, there is little doubt that biosphere reserves have been, are and will continue to be a powerful tool for achieving IUCN's vision of "A just world that values and conserves nature."

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# MAB – Man and the Biosphere

## In retrospect

UNESCO's Man and the Biosphere (MAB) Programme was established in 1970. The idea originated at the 'Biosphere Conference' in September 1968 in Paris, the official title of which was 'Scientific basis for Rational Use and Conservation of the Resources of the Biosphere'. It was organised by UNESCO in cooperation with the World Conservation Union (IUCN) and the International Biological Programme (IBP). As the IUCN was more or less founded at a UNESCO conference in 1948 and IBP was UNESCO's research programme on natural resources (1964 – 1974), the 'Biosphere Conference' really is an offspring of UNESCO.

Still this was an innovative conference considering that during the first years of UNESCO's existence, its focus was very much on supporting individual research institutes such as projects for the protection of the Amazon Basin or the Galápagos Islands whereas during the fifties, individual climate zones such as the humid tropics and arid environments were the focus.

The 'Biosphere Conference' was inter-governmental; however, the delegations were mostly made up of experts. As many as 236 delegates from 63 countries took part as well as 88 representatives from international organisations such as the United Nations and its specialised agencies for food (FAO) and health (WHO). Discussions were primarily about the increasing global significance of environmental problems which mankind has to face. The term 'biosphere' became integrated into international vocabulary; formerly the term, which was introduced by Eduard Suess in 1883 and made popular by Vladimir L. Vernadski, was only familiar in specialist circles. The groundbreaking achievement of the conference was to declare for the first time on an intergovernmental level that the issue of protection and use of natural resources, the fact that they must go hand in hand and that interdisciplinary approaches are necessary. The 'biosphere conference' was therefore the first intergovernmental

forum to delve into sustainable development – 24 years before the conference of the United Nations on Environment and development (UNCED) in Rio de Janeiro.

### Impetus from Germany

The Federal Republic of Germany contributed significantly to this 'Biosphere Conference'. Experts from the German Commission for UNESCO (DUK) tabled a resolution at the General Conference in 1964 to strengthen nature conservation at UNESCO, which was adopted and reconfirmed in 1966 – the decision to hold the 'Biosphere Conference' was also made there. The DUK conference on the harmonisation of protection and use of nature took place in 1966 on the island of Mainau in Lake Constance and another in April 1968 in Berchtesgaden. The long-standing member of DUK, Dr. Magda Staudinger presented the final address, the focus of which was on man as a part of the biosphere with a 'biological' conscience and a new partnership between man and nature. She continued to promote these ideas throughout the next two years at various UNESCO meetings, with success. At one conference of the European national commissions for UNESCO in June 1968 in Monaco, she was able to inspire the UNESCO Secretary General, Renè Maheu.

### From the Biosphere Conference to the creation of the MAB programme

One of the 20 resolutions of the 'Biosphere Conference' addressed UNESCO, calling upon it to initiate an 'international research programme on man and the biosphere'. As an interdisciplinary international programme, it was to deal with social, economic and cultural aspects as well as environmental issues and was to concentrate on the problems of developing countries. There was no mention of 'biosphere reserves' at that time. The 15th General



Conference of UNESCO in 1968 adopted the resolution to a large extent.

During the course of 1969, extensive consultations took place to finalise the framework of the planned MAB programme. The term 'man and the biosphere' is due to Edgar Barton Worthington, the director of the IBP. The term was meant to enhance the 'human dimension' of ecological research. At the same time, Worthington related the acronym MAB to the midwife of the same name, who is referred to in the first act of Shakespeare's *Romeo and Juliet*. In 1969 the vague idea of a network of national parks, nature reserves and protected areas was born, which would promote protection, research and education. The term 'biosphere reserve' was, still very tentatively, used for the first time. It was included in the resolution for the proclamation of the MAB-programme, as a description of operational research sites.

On 23 October 1970 'Man and the Biosphere' was on the agenda of the 16th General Conference of UNESCO. The programme was not without controversy: some of the delegates were vehement that the issue should be left to the International Council for Science (ICSU), which had just founded the

Scientific Board for Environmental Problems (SCOPE). A whole day was taken up with heated discussions, the Director General spoke up for the programme with insistence: "I want to have this programme!" In the end a vote had to be taken (which is rather unusual at UNESCO). Five minutes before midnight the MAB Programme was born.

### Biosphere reserves come into play

The goal of the MAB Programme was, right from the start, that of interdisciplinary research. Scientists from a variety of disciplines were to work on specific recommendations for modern environmental politics on an international level, based on an ecosystem-approach. The recommendations for the protection of ecosystems and for the sustainable use of resources were to be implemented at the national level. Each country was invited to set up a National Committee, in order to guarantee as intense a collaboration as possible.

MAB was and still is an inter-governmental programme. States form the membership of its most important body, the International Coordinating Council (ICC). In 1971 the ICC assembled for the first time, the most significant outcome of that meeting being the establishment of 14 thematic 'project areas', which were to reflect the diversity of the programme. From tropical rainforests to arid deserts

and mountain ranges to coastal landscapes and islands, the whole spectrum of ecosystems was represented. The 14 project areas MAB-1 to MAB-14 remained in effect up to the nineties. In 1969 there had been 31 individual research areas and the reduction led to MAB becoming more coherent. Nevertheless the work suffered during the first few years due to the lack of project schedules and the fact that there was no real funding source to support local work – thus the individual MAB projects were rather isolated, their results could hardly be consolidated.

At this stage, the concept of biosphere reserves was taken up. Regions were needed to implement research results in practice. The political context was helpful: In 1972 the UN Conference on the Human Environment took place (the content of which was very much influenced by the 'Biosphere Conference'), this led to the founding of UNEP at the end of 1972. In 1974 a special work group of the MAB programme got together with UNEP and substantiated the goals and features of the biosphere reserves. The three 'functions' were roughly drafted: Protection of natural resources and ecosystems as well as the preservation of biological diversity (protective function); development of an international network for research, monitoring, education and information exchange (logistical function); development and implementation of concepts in order to bring economic development and the protection of the environment

and nature together (development function). The draft of a system of zoning was adopted in 1974. IUCN was to be involved in the selection process of representative sites with regard to protection.

### From a great beginning to the first crisis

The interest in the new concept was immediate and surprisingly widespread in some countries. The summary statement of the Moscow summit in 1974 specified that according to Breschnev and Nixon, both sides agreed to identify biosphere reserves for protection and research as a contribution to the MAB programme. A wave of suggestions for new regions followed, simply too many for the not yet defined processes of the MAB programme. The Bureau of the MAB-ICC founded the World Network in 1976 to improve the effectiveness of individual biosphere reserves by exchanging experiences and cooperation. Furthermore it recognised the first 57 biosphere reserves in mid 1976 and at the beginning of 1977 a further 61 sites were identified. The most important selection criteria were the protective function and the existence of basic research facilities. In 1978 the MAB-programme was divided into four individual programmes for a period of two years. In 1980 this was reversed. By 1981, 208 areas in 58 countries were already designated as UNESCO biosphere reserves. However central emphasis was placed on protection; the development function was ignored. Nearly all sites had previously been national parks or had been otherwise protected; the new designation did not make any difference to these functions. Research was mostly academic, results were not exchanged, and the 'network' consisted of the MAB secretariat at UNESCO.

A MAB National Committee was founded in 1972 in the Federal Republic of Germany, which published a comprehensive series of research reports in the seventies and eighties. In 1972, the year after the GDR joined UNESCO, a MAB National Committee was also established there. It made recommendations for



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the first German biosphere reserves; in 1979 the Vessertal and the Steckby-Lödderitzer Forest (today a section of the Elbe River Landscape) were designated followed by the Bavarian Forest in 1981 (which again was withdrawn from the list in 2007). They remained the only biosphere reserves in Germany until 1990.

### The subsequent progress

Despite all the esteem given to the MAB programme worldwide, all those involved were aware of the imbalance of the three functions in the first biosphere reserves at the beginning of the eighties. The 14 years up to 1995 were a consolidation phase in which the different functions of a biosphere reserve became more and more concise and were filled with detail. The advantage of an approach other than that of national parks and other conventional protected areas became more and more clear. The network's growth slowed down; at the end of 1990 there were 293 regions. The following events of that period are particularly significant:

- The first World Congress of biosphere reserves took place in October 1983 in Minsk; it was organised by UNESCO and UNEP together with FAO and IUCN. The Action Plan for biosphere reserves was a result of this meeting and was confirmed by MAB-ICC in 1984. It emphasised the multiple functions of the biosphere reserve.
- The Action Plan proposed an International Advisory Board, which met on an informal basis twice, in 1985 and in 1986 and set the selection criteria for new areas. Officially, the board convened in 1991 for the first time – its main objective to define a clear-cut application procedure.
- Two evaluations (1981 and 1991) established clearer processes.
- The UNCED conference in 1992 started a lot of activity within the MAB-programme: for example stronger cooperation with the committees of the Conventions for World Heritage, Wetlands as well as with the new Conventions on Desertification and Biodiversity.

### Model regions for sustainable development

Above all the UNCED and the Report of the Brundtland Commission, dated 1987, made the inherent strength of the biosphere reserves apparent: realising sustainable development and implementing Agenda 21. The breakthrough came about at the International Conference on Biosphere Reserves held between 20 and 25 March 1995, in Seville. 387 specialists from 102 countries as well as 15 international and regional organisations took part in the conference. Based on the knowledge gained from the implementation of the Action Plan adopted in 1984, the role of the biosphere reserve in the 21st century was defined. The subdivision into three zones and the requirement of fulfilling three fundamental functions were the prerequisite for designating new biosphere reserves. Furthermore a system of evaluation was introduced; biosphere reserves were to be assessed every ten years to see if they had fulfilled the criteria. In November 1995 the General Conference of UNESCO adopted these documents.

Many countries evaluated their biosphere reserves as a result and increased the quality of the world network significantly by doing so. Many areas were extended; others were removed from the list. The conference 'Seville + 5' 2000 in Pamplona confirmed this distinctive progress. After a series of biosphere reserves had been founded anew in the nineties in Germany – and after four years during which the MAB National Committee was suspended, the evaluation was pressed ahead with as from 2000. A Catalogue of Criteria for the Designation and Evaluation of biosphere reserves in Germany was adopted in 1996, which was, in fact, the implementation of the 'international guidelines' in this country. This Catalogue of Criteria was completely revised between 2004 and 2007, as a result of the findings of more than 10 comprehensive evaluations.

After Minsk and Seville, the third World Congress of Biosphere Reserves will take place in Madrid in 2008 – the next step in the continuing success story of the UNESCO MAB programme is about to take place.

*This summary by Dr. Lutz Möller and Eva Kammann (German Commission for UNESCO) is based on the following publications:*

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Natarajan Ishwaran

## Biosphere Futures

*“Sustainable development requires diverse and life-long learning” this is emphasized on page 39 of the 2005 publication “Full of Life: UNESCO Biosphere Reserves – Model Regions for Sustainable Development”, which has been a German contribution to the “Man and the Biosphere” Programme of UNESCO. In answering the question why they chose the word “learning” instead of “education”, the authors of the essay, Gertrud Hein and Lenelis Kruse-Graumann, emphasize that “learning” much more so than “education” refers to the process of actively changing patterns of behaviour, values, attitudes, motivations and future orientation of people – people being a dominant factor in influencing biosphere futures.*



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Since the eighteenth session of the International Coordinating Council (ICC) of the MAB Programme held in October 2004, the MAB Secretariat of UNESCO, in line with this spirit, has been emphasizing the potential role of UNESCO biosphere reserves as learning laboratories for sustainable development. At the nineteenth session of the MAB/ICC convened in October 2006 in Paris, this notion of learning laboratories received further support from all delegates and observers. The twentieth session in Madrid, Spain from 4 to 8 February 2008, together with the third International Conference on Biosphere Reserves is themed “Biosphere Futures, UNESCO Biosphere Reserves for Sustainable Development.” In preparation of this session the MAB/ICC requested the Secretariat to prepare a working document on the following: What are the policy and political initiatives needed to articulate and confirm the niche of biosphere reserves as learning laboratories for sustainable development?

In its wish to articulate the biosphere reserves as local, national and global laboratories for sustainable development, both the MAB/ICC and the Secretariat

aim to enable biosphere reserves to become places where conservation and development are reconciled and pathways towards sustainability are demonstrated. Global change has a deep impact on people, societies and nations. Sustainable development accommodates environmental, economic and social dimensions of global change. It is important to note that the implementation of the global principle of sustainable development depends on the specific context and therefore must be formulated differently according to specific temporal or local needs. The science of sustainability therefore depends on the availability of observations and reports of such context-specific sustainability scenarios. Biosphere reserves are predestined for that particular task.

### UN Decade of Education for Sustainable Development

Analysing efforts to demonstrate sustainable development in biosphere reserves comparatively, based on internationally agreed upon methodologies could be a significant contribution of the MAB Programme and the biosphere



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reserves to the UN Decade of Education for Sustainable Development (DESD).

In UNESCO's internal plan for the implementation of the DESD, the Division of Ecological and Earth Sciences, which is home to the MAB Secretariat, has been identified as the theme leader for Decade activities related to ecosystems and livelihoods. Biosphere reserves are apt places for the implementation of Decade activities anchored on this theme and designed and implemented by all Sectors of UNESCO. The MAB Secretariat collaborates closely with the DESD Secretariat of UNESCO; together they prepared to present the principle of biosphere reserves as learning laboratories for sustainable development to the UNESCO Executive Board and General Conference in the fall of 2007. In addition, MAB prepares joint intersectoral action with other relevant UNESCO Programmes, such as MOST (Management of Social Transformations) focussing on the learning laboratories theme.

The German Government and the German National Commission for UNESCO are

strong supporters of both, the DESD and the MAB Programme. German biosphere reserves may take a lead in experimenting with the learning laboratories idea. The German MAB National Committee is invited to work even closer with the Secretariat at UNESCO, Paris, to connect German biosphere reserves with those in other selected countries to build international co-operation around the learning laboratories theme.

The DESD period 2005-2014 coincides with the international community's commitment to meet several global targets such as reaching the Millennium Development Goals by 2015 and the Convention on Biological Diversity target of minimizing the loss of biodiversity by 2010. Through UNESCO-wide intersectoral and interdisciplinary initiatives during the next medium-term strategy of UNESCO (2008-2013), biosphere reserves as learning laboratories could provide significant experimental momentum for getting closer to sustainable development. The results and outcomes of such joint initiatives could strengthen the contributions of UNESCO to attain

such global targets as mentioned above.

Biosphere reserves are the only internationally designated areas whose explicit mission it is to build context-specific and long-standing relationships between conservation, development, learning and practical knowledge. They are therefore the primary sites for UNESCO-wide action, experimentation and learning on sustainability.

Hopefully this publication will attract a wide range of readership including the Delegates and Representatives who will participate in the 34th session of the General Conference of UNESCO during October-November 2007. I hope that they may wish to consider the important role biosphere reserves could play in the activities of UN DESD.

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## UNESCO Biosphere Reserve Wadi Allaqi

### Egypt

The biosphere reserve Wadi Allaqi is situated 180 km south of Assuan in the midst of the Nubian Desert, which is an extreme desert with approx. 4 mm of rainfall per year. The area spans 2,380 km<sup>2</sup>; it was included into the world network of biosphere reserves by UNESCO in 1993. Right at the frequently flooded Wadi the vegetation consists of shrub groves of tamarix, acacias and tumble weeds, of groves of tooth brush trees and desert dates as well as of agro ecosystems.



Photo © Flickr Creative Commons: Iain Pitcairn

The population consists, in the main, of nomads. They use the natural resources of the biosphere reserve for livestock transhumance, charcoal production, the collection of medicinal plants and small-scale cultivation. Resource conservation has been a concept inherent to the Bedouin's livelihood and value systems. Their views, aspirations and accumulated knowledge are taken into account in the decision-making processes within the biosphere reserve.

The large-scale, multidisciplinary research at the South Valley University in Assuan which maintains partnerships with numerous foreign universities is worth mentioning. Its support comes from UNEP, UNESCO and the British Council. An exchange programme was established for young Egyptian scientists with Great Britain and the USA in line with the Seville Strategy. In return many students from European universities carry out research on the ecology

of arid regions and resource use, in areas such as hydrology, biodiversity, sustainable agriculture and soil science.

Recently, tourism has gained ground in this still very underdeveloped desert. Ecotourism is being promoted in the area in the form of desert safaris, excursions with a scientific or an educational focus as well as workshops and seminars.

*Further information:*

<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=EGY+02>



Photo © UNESCO / Alexis N. Vorontzoff

Werner Konold

## Dynamism and Change of Cultural Landscapes

What can biosphere reserves accomplish?

*When developing perspectives for cultural landscapes/cultural spaces a general framework of values is needed. In that context, the question of which visionary model of the landscape is appropriate, comes up. Such a framework of values and such a vision can relate directly to the Seville Strategy of the MAB programme. Biosphere reserves are ideally suited for combining types of traditional and modern cultural landscapes as well as for further developing them in a modern approach.*



Photo © Werner Konold

### Cultural landscapes: The essence

Cultural landscapes are human-modified environments; human modification or use transforms the natural landscape into a cultural landscape. Man formed nature according to his needs, what his livelihood depended on and what his creativity and technical means made possible at any one time. He had to adapt or even bow to the natural scheme of things: to the rocks, the ground, availability of water and natural nutrients, flow of waters and the altitude. Cultural landscapes have or had – apart from the specific use of the area – a specific cultural geomorphology. These are for example, walls, tree rows, waling, scarps, fences, tree-lined roads, individual trees, pits and marshes. At the same time they possess many non-functional or useless coincidences, by-products or refuse-products resulting from human economic activity, like shrubberies, small fallows, gorges and much more. The remains of 'natural' nature can be found at best where cultivation was not worthwhile, where it is too wet, too steep, too dry or too stony. This assessment was, of course, always relative. The general economic conditions for establishing many elements of the cultural geomorphology, for example boulder walls, today are no longer given. These forms are, as such, relics of economic history; nevertheless they can shape the face of a landscape, even today.

The traditional cultural landscape was mostly used polyculturally, i.e. there were numerous ways of use in one area. Fur-

thermore there were clear use-gradients involved from the settlement down to the district boundary. There was no conservation, only movement, dynamics, progressive and regressive succession (i.e. sequences of plants and animal societies at one location), a pulsation between forest and non-forest. This dynamism had, as a whole, the effect of preserving habitats.

All cultural landscapes, also those, which to us appear to be old-fashioned, were and still are subjected to dynamism, they demonstrate movement on a time axis. There were and are delayed and almost stagnating, as well as accelerated phases. These processes run differentially, in a special sense: here – batches of change, there – stagnation, perhaps under the pressure of economic distress and migration. The relationships and dependencies between the political and socio-economical framework conditions and the picture and state of the landscape have not really changed over the years. The dynamism, which is inherent to these relations, is something we have to face up to and also shape.

Change in the cultural landscapes has speeded up considerably in the last decades, accompanied by a dramatic increase in developed and especially covered areas and the well-known negative effects on habitats, flora and fauna and on the geomorphology. Individual facial features of the cultural landscapes, their value and character were often obliterated or removed. Landscapes have been designed in many so-called 'favoured areas' in such a similar way that they ap-

pear exchangeable to a large extent. Trans-regionally there is a remarkable levelling of standards in the areas of building construction, landscape gardening, types of settlements, route planning and the arrangement of roads and paths, equipping the landscape with noise-insulation measures, dumpsites or leafy slopes along motorways. Energy landlines are ever-present, the landscape is being torn up to a frightening extent, forestation engulfs hillsides and valleys, use-gradients only exist locally. We are in a dilemma: on the one side, such change is a characteristic of the cultural landscape; on the other hand we do not know how all-encompassing change can be so that people can cope with it mentally or at least accept it and so that a sustainable landscape development is not prevented.

A complimentary aspect: The preservation of ecological, aesthetic and social qualities of our cultural landscapes cannot mean that landscape is 'frozen' and that landscapes turn into museums. Landscape must definitely be able to develop further. On the one hand, typical attributes and identification marks have to be preserved, and on the other hand new ones should be defined and consciously created. Also the process element of landscape and the characteristics and ageing of landscape elements must be considered in the way we act nowadays.

The resulting fundamental question is as to what a modern cultural landscape should look like, a landscape with its own profile, which shows continuity, whose parts are also established in functioning relationships. What is, in the broadest sense, a functioning modern cultural landscape, which is, at the same time, home?

## Framework of values

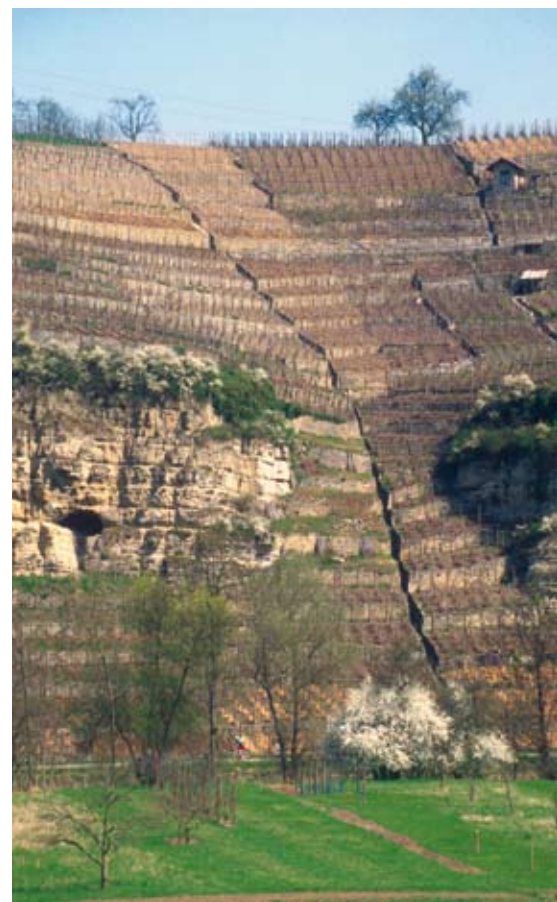
When it comes to developing perspectives for cultural landscapes/cultural spaces, we must focus on a general framework of values. Connected to that is the question, which visionary model of a landscape, in which we plan, decide and shape, is fitting? A framework of values and a vision could almost seamlessly latch onto the Seville Strategy of the MAB programme and also to the conventions of the World Summit of Rio:

- The development of landscape is to follow the concept of sustainability in a consistent manner.
- The respective identity of the landscape must remain intact or be replaced by another unmistakable identity.
- Diversity, typical for a specific natural and cultural space should be aimed for in space and time, which includes an optimal, regional biodiversity.
- Cultural landscapes should not be dependent on maintenance measures and landcare.
- Important landscape functions should be re-established, for example flood and mass containment in floodplains.
- Burdening mass transfer is to be kept to a minimum.
- The 'use' of areas and the dissection of the landscape are to be minimised.
- Allowing natural processes to unfold without interference should be encouraged on limited areas, without setting targets of trajectories.
- Acutely endangered, recently overhauled cultural landscape should be protected and maintained. Thus they can be secured for some time, until they become useful again.
- All goals should be realised with as little interference as possible and also with a minimum of energy expenditure.

If we compare these goals with the state of our landscapes today then it is obvious that stronger efforts are required; new proportions of use and protection are needed. A more specific version of these goals can only be agreed upon on the basis of actually existing landscapes, at the regional or communal level. To work out such more specific goals publicly conducted discussions on landscape planning and regional development have to take place.

## Instruments and ways

Considering the above mentioned principles, biosphere reserves are absolutely ideal for combining traditional and modern cultural forms of landscapes and for developing these appropriately, in other words, controlling the inherent dynamism of the cultural landscape. The concept of zoning of biosphere reserves could lead to the interpretation that trusted, traditional cultural landscapes be placed primarily in the buffer zone and newer, modern cultural landscapes in the transition area. One



**Traditional vineyards are the most impressive cultural landscapes in Central Europe. They often stem from the middle ages and were formed by significant interference with the landscape. They were mostly re-allocated or completely closed down. The remaining vineyards must be preserved and maintained in the long-term, for example in buffer zones of biosphere reserves.**

Photo © Werner Konold

should however, consciously decide against such a straight interpretation of zones. One should get away from formal, established segregation of old/traditional and new/modern and follow integrative concepts, which use the character and distinctiveness of the region.

New landscapes can be for example: extensively used half-open landscapes, which consist of a mosaic of grasslands, shrubberies, pioneer forests and smaller forest resources created by different wild and domestic animals such as sheep, goats, cows, horses, koniks, red deer, elks or bison; agroforensic systems, like trees planted at a distance for wood production and for parallel use of pastures and meadows; forestry for energy production; flood control areas used for the production of biomass as well as others.

In concrete terms, what can be achieved in biosphere reserves?

- What is urgently needed is an open and public discussion on the future of our cultural landscape. All stakeholders, such as communal umbrella organisations and clubs for preserving local traditions should be involved by the biosphere reserve administration. Some important points of discussion are briefly outlined here: Amount of retention and amount of change; shaping change; actors to be involved in change and the speed with which they are realised. How much change can we cope with? What is it that makes a place home? What are regional and local solutions?
- Local clubs and associations are highly important and indispensable players in

the field of maintenance and development of cultural landscapes and home-landscapes. This includes clubs for preserving local traditions, hiking clubs and associations connected with nature conservation and preservation of historic monuments. For their work, which partly covers state obligations, they will need political acknowledgement in future as well as financial support. They are obvious partners of biosphere reserve management.

- In order to bring the meaning of cultural landscape home to people and to organise nature and landscape maintenance in a citizen-oriented and democratic manner, concentrated educational efforts about cultural landscape and home country are of utmost importance. These educational efforts need to be carried out by the communal um-

**In the Southern Black Forest we find regular terrace structures interspersed amongst the distended, undivided common acreage. These 'land strips' go back to the 19th century. The landscape is increasingly threatened by the tread of grazing animals.**

Photo © Werner Konold



brella organisations, by schools, higher education institutes, adult education institutes, the media as well as interdisciplinary groups – bringing together the fields of agriculture, nature conservation, preservation of historic monuments, water management, forestry and also hiking and tourist associations. The biosphere reserve administrations can be the driving force and the mediator of educational efforts. They can organise cultural landscape schools.

- Knowledge on the genesis of cultural landscapes/home-landscapes enables the local community to become actively involved in planning processes, supplementing civil commitment with sound arguments. The best suited ‘peculiar’ local solutions can thus be found. Such peculiar, special solutions will in turn contribute to the diversity and beauty of culture landscapes at the large scale.

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## UNESCO Biosphere Reserve Schleswig-Holstein Wadden Sea and Hallig Islands

Next to the summit areas of the Alps, the Wadden Sea on the North Sea coast is the last large-scale wilderness area in Europe. The biosphere reserve in Schleswig-Holstein spans 4,431 km<sup>2</sup> and is for the most part a national park – the largest in Europe. The salt marshes along the Wadden Sea coasts represent a special feature of this natural habitat. Resident there are 250 species of animals and there are globally unique ecosystems. The Wadden Sea boasts more birds than any other region in Europe. Just the Schleswig-Holstein part is targeted by more than two million waders and water birds in spring and late summer, who breed on the arctic coasts.

Apart from the birds, humans also like to use the North Sea coast in Schleswig-Holstein. Every year 500,000 holiday-makers take part in mudflat hiking or other nature study activities. Despite the tourism, nature and culture remain unspoiled. The Hallig islands Langeneß, Oland, Gröde, Nordstrandischmoor and Hooge, the home of around 300 people, joined the biosphere reserve, previously designated in 1990, in 2005 at their own request. This area now comprises the transition area. Farming, coast guarding and tourism are their livelihood. Their economies are sustainable and today use a coherent marketing in order to raise the quality of the goods on offer



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and to encourage new guests to visit the Hallig islands and experience life there.

In order to raise acceptance for the nature conservation measures the ‘Brent Goose days’ are celebrated each year. In 2007 this event took place for the tenth time and as a result of the varied activities on the programme and the excursions not only birders were attracted to the Hallig islands.

*Further information:*  
<http://www.wattenmeer-nationalpark.de> and  
<http://www.halligen.de>

Photo © Archiv NPA Stock



Lenelis Kruse-Graumann

## Education for Sustainable Development in German Biosphere Reserves

*Education for sustainable development is a central task for the German biosphere reserves. Their function is not only to explain the goals of sustainable development to the people living in biosphere reserves but to guide them towards changing their way of life, for example their consumer habits. Illustrated by exemplary projects, the following article portrays how the holistic approach 'learning sustainability' can be implemented through new learning forms, playing role games at school, in the 'inter-generation café' or while 'sustainably shopping' at such unusual learning sites as a market place.*



Photo © Lenelis Kruse-Graumann

Equal opportunity and/or equitable distribution

UNESCO's decision to establish the programme 'Man and the Biosphere' (1970) and to develop biosphere reserves (1976) was, at the time, both ground-breaking and clear-sighted; the reciprocal interaction of man and nature, or rather man and the environment were the central focus. The necessity of carefully balancing the protection of nature and the use of natural resources by people was an issue, long before it became known worldwide as the vision of sustainable development after the Rio conference in 1992.

A central objective of the MAB programme from its outset and thus a task for all the biosphere reserves was to promote 'environmental education'. Each German biosphere reserve was and is obliged to work out criteria and content for educational projects and to implement them; this obligation derives from the 'framework concepts' and takes into account the particular structures of the respective region (German National Committee 1996). Thus nature studies, excursions and seminars, nature experience programmes, project days, nature trails and information centres with exhibitions offering comprehensive information are available for the population as well as for visitors. All sorts of interested parties can obtain comprehensive information on the natural resources of the area and on the objectives and tasks of biosphere reserves.

### Education for sustainable development: An ambitious programme

The Seville Strategy (1995) led to extending the MAB programme's objectives: UNESCO biosphere reserves were to become model regions for sustainable development. Nature and resource conservation as well as the preservation of ecosystems should now be seen in context and weighed up against human economic interests, against establishing equal opportunity and/or equitable distribution and against preserving cultural identity for present and future generations. Education for sustainability thus becomes an ambitious programme, where ecological, economic and socio-cultural aspects should be discussed, negotiated and, finally, implemented.

This means that many educational and learning processes must be initiated in every biosphere reserve for the people who live and work there, for children and young people who grow up in the biosphere reserve – and who want to earn their living there in the long run – for visitors and tourists who have maybe only seen the 'beautiful nature' in the past but have not really thought about how it came about and what role it may play above and beyond the local level for the global situation of the earth system.

The successful advancement of a biosphere reserve depends on the extent to which the population identifies with the guiding principles of sustainable development and can be motivated to participate in shaping the biosphere



reserve. Each individual has to become aware that he or she takes responsibility for the present and future generations and for the environment with every action but also every non-action.

Not only in biosphere reserves - but perhaps more frequently there because of the enhanced awareness - people decide over and over again for or against regional and sustainably produced products at the market, at the grocery store or in restaurants. But the decision to buy and consume something specific, the choice of a mode of transport (be it bus or rail, own car or bike) or the decision to build a low-energy house hardly depend on information alone (e.g. from brochures, presentations, press articles). Decisions of this kind are usually influenced by many other factors, like motives, attitudes, knowledge levels and financial and social frameworks. We know that the results of such decision-making processes are seldom environmentally friendly, rather aimed at maximising profits in the short term, at the same time not socially viable or in other words not sustainable. Sustainable development calls for the change of a cluster of cultural and life style-specific action patterns and decision-making processes.



Photo © Gertrud Hein

The UN-Decade of Education for Sustainable Development (2005-2014) leads to grasping and appreciating the subject of education as an important (political) instrument. Thus education is propelled to a similar significance as the development of energy-efficient technologies or CO<sub>2</sub> reduction certificates, needed in order to achieve and to shape the global goal of sustainable development. As model regions for sustainable development, biosphere reserves are almost

obliged to point out specific possibilities and trajectories, which lead to a sustainability-oriented awareness and are suitable for motivating people towards a sustainable way of life, using the example of concrete projects. To broaden the traditional environmental education towards an 'education for sustainability', new concepts and projects are needed whereby beyond the ecological dimension, economic and socio-cultural requirements are also taken into account.

Furthermore, education for sustainability must be given a completely new significance within the functions of biosphere reserves; education and life-long learning are not only a means to an end for shaping sustainable development ('logistical' function). They are fundamental components of sustainable development, a process in which the global guiding principle of 'sustainability' is constantly newly defined and implemented by new local and regional (derived) objectives. An educational and learning process of this kind must be supported continuously and in a participatory manner by the stakeholders in a biosphere reserve in their different roles and functions, but also across generations.

## Discover the future! UNESCO biosphere reserves in Germany



The Federal Ministry for the Environment has published an educational project on sustainable development, dedicated to the biosphere reserves. Entitled "Entdeckt die Zukunft!" (Discover the future! UNESCO biosphere reserves in Germany), it presents diverse topics specifically addressed to youth such as renewable energies, student companies, or sustainable forestry. The project's result is a folder with more than 20 master copy documents for the class-room, a multi-use poster and instructions for teachers. The folder has been distributed free of charge to several thousand German schools and may be downloaded (in German) from: [www.bmu.de/publikationen/bildungsservice/unesco\\_biosphaerenreservate/doc/39838.php](http://www.bmu.de/publikationen/bildungsservice/unesco_biosphaerenreservate/doc/39838.php)

### Learning for sustainability: Basic principles

With the target of developing an 'alliance for learning sustainability', the UN-Decade of Education for Sustainable Development will form the basis for getting away from the frequently narrow-

### Education becomes a political instrument

mindful limitation of 'education' to the context of formal educational institutions, particularly of 'school'. The focus will shift towards long-term changes in patterns of everyday behaviour (e.g. in consumption, production, mobility, building and living) and towards the underlying values, motives, future orientation, competences but also the social and physical-material contexts in which changes take place. Sustainable, but also non-sustainable behaviour patterns are not innate; they are learned and acquired from a very young age and are constantly reinforced culturally and socially. Up-bringing, education and learning are very important here, with as much attention having to be paid to relearning as to new learning.

The term 'learning for sustainability' also makes it clear that new forms of learning,

new learning sites and fields of action are required: Not only schools, nursery schools or other dedicated educational establishments are suitable as learning sites, but also many other spheres of life such as the home, the workplace, and the sports club. In biosphere reserves, information centres are not the only learning sites, but also the market place or the local crafts enterprise.

A visit to a local council meeting, to the inter-generation café or simply preparing meals can all, directly or indirectly, contribute to learning processes and to gaining skills useful for shaping sustainable development. For these more general types of learning situations, new forms of learning, new learning media and also new partners must be sought for 'teaching' purposes.

## UNESCO Biosphere Reserve Upper Lausitz Heath and Pond Landscape

This biosphere reserve, northeast of Dresden, represents the largest connected pond region in Germany. The rather small area is characterised by a vast diversity of ecosystems such as ponds, moors, heathland, pinewoods and flood plains. Animals and plants to be found here are otters, wolves, the white headed eagle, cranes, wild gladioli and water lilies. This region, spanning 301 km<sup>2</sup>, was designated by UNESCO in 1996.

This region has been inhabited by the Sorbs since the 6th century, today a

nationally recognised minority. These settlers have kept up their traditions and their Slavic language to this day. Carp have been kept in the ponds since the 13th century and, inter alia, bred for the Saxon court. One of the aims of the biosphere reserve is to conserve this cultural landscape and the biodiversity created over the centuries by sustainable use, so that it remains intact for future generations. That is why the administration works closely with individual fishers and farmers. In parallel, it supports the Sorb culture; an example of this is the



Photo © Ralf M. Schreyer

extensive Sorb cultural programme regularly launched on the occasion of the spring and autumn nature markets.

Environmental education plays a major role in the work of the biosphere reserve, not only, but primarily for children and teenagers. A wide range of activities are on offer such as excursions, seminars or holiday camps arranged with different target groups in mind. 'Village children' is, for example, aimed at teenagers living in the immediate neighbourhood of the biosphere reserve.

Further information:

<http://www.biosphaerenreservat-oberlausitz.de>

Photo © Ralf M. Schreyer



Learning for sustainability presupposes that staff involved in biosphere reserves see their task as also contributing to making their biosphere reserve into a 'learning landscape', developing new teaching and learning methods and processes. Learning for sustainability must be designed holistically in the sense that it must mirror ecological, economic and socio-cultural frameworks and interactions to make a subject or a problem tangible. Learning processes of this kind should be supported by integrated research approaches, whereby natural and social sciences interact in an interdisciplinary manner.

### Learning for sustainability: Examples from German biosphere reserves

#### (1) Breakfast at the Rhön biosphere reserve

The initiative of the Bavarian Rhön biosphere reserve entitled 'breakfast: healthy – regional – sustainable' has already been awarded the title of 'project of the UN Decade'; this initiative pursues a number of goals. Firstly children (from year 3) learn about the groceries they consume on a daily basis; they learn about their contents and how to assess them according to their nutritional value. Secondly they find out about the groceries' regional origin or, alternatively the vast distance of the import route. Thus the children develop an understanding for the importance of consuming locally produced food and how this can contribute to climate protection and new employment in the region. Last but not least, by preparing the breakfast together and taking time to enjoy their meal, they learn the value of a harmonious family meal, rounded up with playful physical exercise. This project is a child-oriented method and a 'fun' way of bringing various dimensions of healthy eating, social (family) aspects of eating as well as a contribution to the local economy together. The action-oriented part of the initiative tells the children that to know is not sufficient.

#### (2) 'The forest and I' – role game in the Schorfheide-Chorin biosphere reserve

This project gives (town-) children the opportunity to get to know certain deci-

sion-making processes, which often lead to conflicts when, for example, a forest is about to be sacrificed for an 'amusement park' (i.e. a job opportunity and a tourist attraction). A number of days are spent learning about various aspects of the biosphere reserve; how it came about, which different types of forest, which biodiversity and which functions it contains. Subsequently the children are divided up into four groups for the role game of a municipal council meeting; the groups represent the positions of the investor, the building contractor, the owner of the forest land and the nature conservationist (or a nature friend from a hiking or riding club). The preparation within the groups as well as the representation of opposed viewpoints, the acceptance of other viewpoints, and negotiating compromises develop awareness for coping with difficult situations between different stakeholders, which are to do with 'sustainable decisions'. The role game also serves to convey skills like competence of participation and being able to solve conflicts without violence.

Learning sustainability focuses  
on long-term changes in  
patterns of everyday behaviour



Photo © Biosphärenreservat Vessertal-Thüringer Wald / K.-H. Bock



Information centre at the Rhön biosphere reserve

Photo © Lutz Möller

### (3) Leisure-time groups for primary school children in the Upper Lausitz Heath and Pond Landscape biosphere reserve

This project addresses a biosphere reserve's function, however in this case unusual aspects are dealt with and brought over in an unusual way. Leisure-time groups, which have existed for a long time, consisting of 4 to 13 primary school children, get together once a week and learn about the biosphere reserve. They not only spend time talking to the project personnel, they also talk to inhabitants and residents in their various roles and positions, who in turn give the children an insight into the special features of the biosphere reserve, the history and various stories, thus providing possibilities for the children to identify with their biosphere reserve. The communication between the generations develops on both sides and leads to a feeling of belonging and, in the case of the children, possibly to a lasting bond with the region. The project staff can derive benefits for themselves since their own increased communication with the inhabitants and that of the children, leads to the philosophy of the biosphere being spread.

This casual and voluntary communication between the generations, during which

the roles of those teaching and those learning may very well interchange, leads to an interesting approach to the development of identification with the region, which can only be of advantage for a sustainable, and that means long-lasting development of the biosphere reserve.

### The future of education for sustainable development in biosphere reserves

With their concept of the various zones (from the strictly protected core area, to the often traditional and carefully treated buffer zone to the transition area, where sustainable economic development is possible), biosphere reserves offer outstanding possibilities for creating learning sites and even learning landscapes. Here learning about sustainability can be made attractive, using different learning methods for different target groups every other day.

In the biosphere reserve, the village church, the environmentally friendly B&B and the market place can become learning sites just as much as the classic educational institutions (school, higher education establishment, and adult education centre). Administrative entities, craft enterprises or other

businesses can be addressed to create even further opportunities for learning. Relations to such new partners certainly need to be strengthened in future.

For the advancement of these learning landscapes outside of the traditional, formal educational institutions, it would be an advantage if approaches and their results could be assessed more than just quantitatively. This would not only benefit the World Network of Biosphere Reserves but could also aid the development of new learning cultures in other settings.

Sustainable development should be seen to be a process involving comprehensive, worldwide and permanent changes. These changes are repeatedly reflected in the specific patterns of behaviour of individuals, groups and societies, in lifestyles, patterns of production and consumption, which are directly or indirectly environmentally relevant. To shape these processes of change, many instruments (e.g. financial incentives or levies, laws and administrative rules) must be used; but just as important are education and learning.

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Carlo Jaeger

## The Challenge Climate Change

*In the era of globalisation, the local and regional environment becomes increasingly important. Biosphere reserves are sites for social learning in the local community; without a sense of responsibility in the neighbourhood, solidarity on a global level will never be reached. Through information exchange and cooperation in a worldwide network, biosphere reserves can also help to promote collective action in the battle against climate change.*

In the debate on climate change two worlds, having had too little contact with each other in the past, collide: nature conservation and industry. Scientists are involved with both worlds. Industry is very much dependent on the results of scientific research. Nowadays nature conservation cannot be thought about without referring to science.

The hole in the ozone layer cannot be seen with the naked eye. It can only be recognised with the use of special instruments. Climate change will be visible to the human eye in due course – however, when that happens, it will be too late. In order to be able to detect it early on, we are also dependent on science.

Nowadays, we live in a completely new dimension of globalisation. There have been processes of globalisation for some centuries; however they have only recently started to affect everyone's daily life. With globalisation in mind, many people consider local and regional environmental issues to be less important. However, even more so in the era of

globalisation, the neighbourhood takes on a whole new importance, in as far as global reasoning has to be turned into local action. Biosphere reserves play an important role in this process: as laboratories for social learning.

### The social product of the planet will increase sevenfold

Currently around six billion people are emitting around seven billion tons of carbon dioxide annually. By the end of the century it is very likely that the world population will increase to nine billion people. The social product of Germany enables its population to enjoy a high quality of life. Today this is not the case in many other parts of the world. Yet, the social product of the entire planet is expected to increase sevenfold by the end of this century.

When will global emissions decrease under these circumstances? Some electricity companies forecast not before



Photo © Gertrud Hein



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Without neighbourhood  
no sense of civil responsibility

Climate change makes global  
interconnectedness visible

2100. Many specialists, however, say that emissions must decrease significantly before 2030, to counteract drastic consequences of climate change.

We must, without doubt, do something for our planet very soon. However people do not live in global community; they live in local neighbourhood, without which there would be no awareness of civil responsibility. Collective action on a global scale is not possible in a society where there is no solidarity on a local scale.

The world map of biosphere reserves is made up of hundreds of spots – spots where people live and build neighbourhoods. The biosphere reserves are established locally on the one side and are an integral part of a global network on the other side. They are places where experience can be exchanged in all sorts of ways, by doing something about climate change and protecting the environment, be it in Germany, South America, Africa or China. This makes them into laboratories of social learning.

Photo © Lutz Möller

### Firm local establishment is crucial

A study carried out at the Humboldt-University in Berlin examined the factors, which led to success or failure of a biosphere reserve (featured in this journal). It appeared that the most important success factor is the degree of establishment in the region. Is the population involved in the founding process? Can the reserve spur economic interests of the population in the long-term existence of the biosphere reserve?

Experts consider capacity-building to be a significant factor for successful management. Yet today, the most relevant capacities are no longer related to book knowledge but to practical knowledge.

The mentioned study also dealt with the question of how important the biosphere managers consider climate change to be for their reserves. Most of them considered climate change to be only one of many important problems. This is possibly realistic taking into account the current situation. What is crucial however is whether this attitude will change or not. Still, climate change should not only be regarded as a problem for biosphere reserves; it also presents an opportunity for making the global network visible.

### No climate protection without changing consumer patterns

We will only be able to reduce emissions and cope with climate change, if we make significant changes in our day to day lives. We must, for example, start to use different types of cars in future. We must change our consumer habits.

An important issue is how much time will elapse. Ice is melting – it is melting in Greenland and in the Antarctic. Climate change is changing the world we live in, right at this moment. Sea levels are rising, slowly at first, just a few millimetres, then a few centimetres. In the coming centuries giant ice blocks could come loose and cause sea levels to rise by a couple of metres very rapidly. Consequently, underwater archaeologists may in future find themselves studying the remains of Hamburg, New York and Shanghai.



Whether or not we can avoid a climate disaster is, not least, dependent on whether places exist, which are setting new trends. One example is California, a place which inspires collective creativity, for example by passing the recent powerful climate protection law.

There have to be places where new transport-technologies are tested and developed which in turn, encourage the use of such technologies in other parts of the world. In this regard, the German automotive industry definitely was too passive for too many years while others successfully took up the challenges of the future.

### Stop the meltwater

Biosphere reserves could become trendsetters, being just the places, which spread the idea of provision for the future and of a sustainable development across the entire planet. Yet, ideas do not suffice, appropriate institutions are needed. Many public pension schemes and health care systems are not effective because

we do not seriously address the issue as to which institutions are best suited to deal with such complex long-term issues; the same applies to climate change.

Biosphere reserves can become institutions, which take on the tasks of sustainable development. They can become places for social learning. They are already education sites for sustainable development, which could have a far-reaching effect – from the neighbourhood to the global network. In this way, each individual biosphere reserve can make a contribution by making sure that the meltwater in Greenland and the Antarctic in time ceases to flow.

We need places to set trends

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Photo © Flickr Creative Commons: Frans Neve



Thomas Schaaf

## Detecting Signals of Global Change

International scientific cooperation using mountain biosphere reserves

*Contemporary global environmental change, which is much more than climate change, affects all ecosystems. Mountain areas as fragile ecosystems are particularly susceptible as they are subject to both natural and anthropogenic drivers of change. Thus they play an important role for studying and monitoring global environmental change.*

Past studies have shown that global warming is affecting mountains by: Accelerated glacial melt; increased erosion and land-slides; migration of warmer temperature tolerant species to higher

elevations and thus replacing other, often rare and endangered species; increases of wild fire frequencies; reduced snow cover periods affecting tourist resorts; and modified growing periods in the agri-

cultural calendar. It is obvious that global change will seriously impact on mountain environments and their economies, and the livelihoods of people.

### A global network for global data

In this context, mountain biosphere reserves play an important role as monitoring and study sites. They have been designated the world over, and can be used to assess the impact of global change on mountains and their related economies. As biosphere reserves include protected areas in their core zones, the effects of global warming can be studied in natural or near-natural environments, such as the change of composition of plant and animal species over time.

Most biosphere reserves dispose of long term series of climate data (temperature, precipitation) and species lists which can be monitored over time and correlated with global warming. Moreover, biosphere reserves also include areas where people live and make a living in the transition zones, hence the repercussions of global warming can be assessed on local mountain economies and people's livelihoods.

### The GLOCHAMORE project

This was the starting point for the international project on "Global Change and Mountain Regions (GLOCHAMORE)" which uses biosphere reserves as testing sites for global change studies in mountains throughout the world



Mount Denali in the Denali Biosphere Reserve (USA)

Photo © Flickr Creative Commons: Giant Gingko



(including the German Berchtesgaden Biosphere Reserve). Scientists from various disciplines, including ecologists, hydrologists, glaciologists and socio-economists worked with 25 biosphere reserve representatives to prepare a Research Strategy to detect signals of global environmental change. The project also aimed at evaluating the consequences of global change for mountain regions as well as for lowland systems that depend on mountain resources (highland-lowland interactions). In this vein, the development of sustainable land, water, and resource management strategies for mountain regions can be explored.

For the project, biosphere reserves were selected as representative sites of major mountain ranges in all continents (see box on page 32). Site managers of the mountain biosphere reserves met with global change researchers at five international workshops:

- “Global Change in Mountain Biosphere Reserves” (Sörenberg, Entlebuch Biosphere Reserve, Switzerland, November 2003);
- “Global Environmental and Social Monitoring” (Vienna, Austria, May 2004);
- “Projecting Global Change Impacts in Mountain Biosphere Reserves” (Gran Sasso National Park, Italy, November/December 2004);
- “Sustainable Land Use and Natural Resource Management in Mountain Biosphere Reserves” (Granada, Spain, March 2005);
- “Process Studies along Altitudinal Gradients” (Samedan, Switzerland, July 2005).

Each of these thematic workshops contributed to the development of the

GLOCHAMORE research strategy. Presented at the Open Science Conference on “Global Change in Mountain Regions” in October 2005, which was organized by the Centre for Mountain Studies at Perth College (United Kingdom), the draft strategy was reviewed and discussed in the concurrent sessions. The research strategy is available in hard-copy as well as at the UNESCO-MAB website.

### The research strategy

The research strategy is built on the assumption that sustainable management can only be achieved with stakeholder involvement. Stakeholder involvement will not only increase the clarity of the research, but also enhance its relevance and acceptability, and thus the efficiency and impact of the research project. Consulting local people and the managers of mountain biosphere reserves is

## UNESCO Biosphere Reserve Berchtesgaden

Berchtesgaden is unique among the German biosphere reserves in that it is the only alpine landscape. The mountain landscape of the north limestone Alps with differences in height of more than 2,000 metres offers a rich diversity of habitats such as alpine mixed forests, alpine meadows and pastures. There are many endangered species to be found here such as the marmot, snow grouse, edelweiss and gentian. This area, in the farthest south-eastern part of Germany, was designated by UNESCO in 1990 and spans 467 km<sup>2</sup>. The national park of the same name makes up the core area and buffer zone of the biosphere reserve.

The topography and climate make agriculture and landcare difficult. The landscape is structured by the small farmsteads, which are in need of further development to be sustainable. The pristine nature and fascinating mountain scenery make this biosphere reserve a magnet for tourism, which accounts for 70 percent of local revenue. The healthy mountain climate is an important factor for marketing the region, especially for people suffering from allergies. The development of sustainable concepts for winter tourism against

the backdrop of climate change counts as one of the greatest challenges in the coming years.

*Further information:*  
<http://www.regierung-oberbayern.de/Bereich5/5wirueberuns/5sgvorstell/5Biosphaerenreservat/biosbgl.htm>



Photo © Flickr Creative Commons: jackdornnothing

therefore central to the implementation of future GLOCHAMORE projects.

This research strategy is organized according to our current understanding of the main axes of causality. It focuses first on drivers of global change, then on the impacts of global change on ecosystems, then on the subsequent impacts on ecosystem goods and services, regional economies, and health, and finally on institutional arrangements. Placing the human dimension in the second half of the list emphasizes mountain and lowland people's dependence on mountain goods and services that are affected by both indirect and direct impacts of global environmental change.

The GLOCHAMORE project, a consortium of 14 research institutions, was funded by the European Commission's Sixth Framework Programme and UNESCO's MAB programme from 2003 to 2005. Several regional workshops (Mendoza, Argentina, March 2006; Almaty, Kazakhstan, November 2006; Kampala, Uganda, 2007) now aim at the implementation of the Research Strategy, especially to work out adaptation schemes to cope with climate change. Indeed, mountain sites of the World Network of Biosphere Reserves prove to be important in promoting international scientific collaboration.

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The GLOCHAMORE research strategy online:  
<http://unesdoc.unesco.org/images/0014/001471/147170E.pdf>.



**Mountain meadows in the Berchtesgaden Biosphere Reserve**

Photo © Biosphärenreservat Berchtesgaden, Regierung von Oberbayern

## Mountain biosphere reserves in the GLOCHAMORE project:

- Australia:  
Kosciuszko Biosphere Reserve;
- Austria:  
Gossenköllesee Biosphere Reserve and Gurgler Kamm Biosphere Reserve;
- Canada:  
Mount Arrowsmith Biosphere Reserve;
- Chile:  
Araucarias Biosphere Reserve;
- China:  
Changbaishan Biosphere Reserve;
- Colombia:  
Cinturón Andino Biosphere Reserve;
- Germany:  
Berchtesgaden Biosphere Reserve;
- India:  
Nanda Devi Biosphere Reserve;
- Kenya:  
Mount Kenya Biosphere Reserve;
- Kyrgyzstan:  
Issyk Kul Biosphere Reserve;
- Mongolia:  
Uvs Nuur Basin Biosphere Reserve;
- Morocco:  
Oasis du Sud Marocain Biosphere Reserve;
- Peru:  
Huascaran Biosphere Reserve;
- Russian Federation:  
Katunskiy Biosphere Reserve; Sikhote Alinskiy Biosphere Reserve and Teberda Biosphere Reserve;
- South Africa:  
Kruger to Canyons Biosphere Reserve;
- Spain:  
Sierra Nevada Biosphere Reserve;
- Sweden:  
Lake Torne Biosphere Reserve;
- Switzerland:  
Entlebuch Biosphere Reserve and Swiss National Park/Biosphere Reserve;
- United States of America:  
Denali Biosphere Reserve; Glacier Biosphere Reserve and Niwot Ridge Biosphere Reserve.

Claudia Neu

## Citizens' Involvement – Success Factor for Rural Areas

*All the biosphere reserves existing today in Germany are situated in rural areas. They are, to a greater or lesser extent, affected by demographic developments such as ageing, migration to cities and decline in birth rates. Throughout Germany, increasing support for the economy is usually proposed as the only solution to such demographic problems. That this approach falls short of the actual requirements is shown by a survey carried out in demographically successful villages in Mecklenburg-Western Pomerania.*

The rural areas in East Germany – above all in Mecklenburg-Western Pomerania – have not had a good press in the past months. Articles on empty, albeit beautiful landscapes appeared again and again – landscapes with few women, children and well-qualified people, but rich in elderly citizens. These scenarios of decline were accompanied by descriptions of rural melancholy and social apathy.

Indeed weak economic structures and an accelerating demographic development combine in an unfortunate manner in rural areas. Jobs are rare, small and mini businesses in the industries and the services sector dominate. Even the economically successful agricultural businesses which used to provide hundreds of people with jobs can only offer a handful these days (Neu 2004). Unemployment numbers of 30 percent are not unusual in many districts in the North East.

The dismal economic situation of these regions causes many to 'flee' to West German federal states, above all young women between 18 and 25 years of age, as well as highly qualified people. Selective migration and birth deficits already indicate a loss in population of up to 35 percent in individual districts by 2020. Furthermore there is a distinct change in the age structure of the population. Even taking into account a forecasted slight increase in birth rate, the number of children and young people in nearly all Mecklenburg-Western Pomerania will decrease significantly, while the percentage of over-sixties will increase. In many districts this age group will grow to over 40 percent of the population (Ministry of Labour, Building and Development 2005). Economically underdeveloped

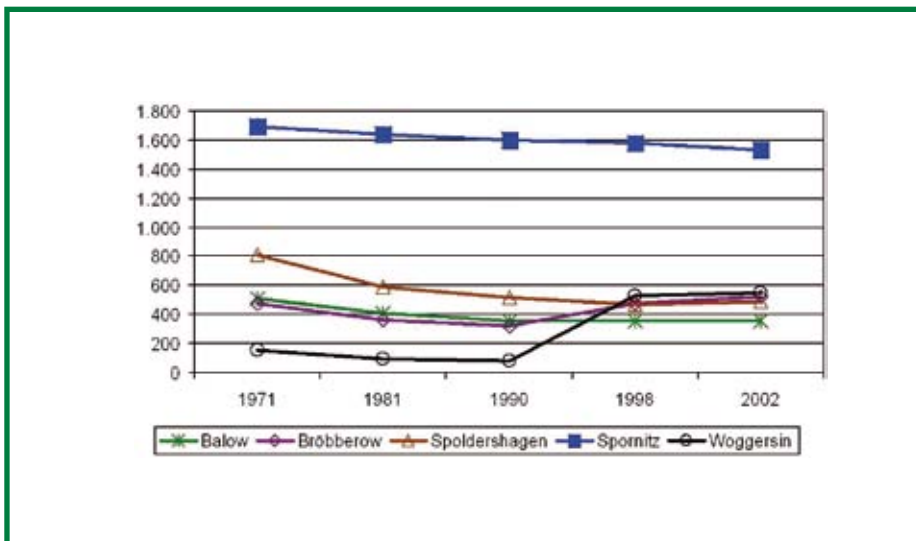


**Villages taking part in the study**

© Claudia Neu

rural regions will end up in a vicious circle of unemployment, migration and ageing, which, in turn, leads to empty treasuries and a cutback in infrastructure. The peripheral rural areas lose their socio-economic links to the urban centres even more (Barlösius/Neu 2007).

This trend is, without doubt, the case for many villages and communities in the most rural of areas. However, at the same time, we are observing municipalities, which resist the seemingly unrelenting trend of draining, shrinking and apathy. In these places activity and social commitment are the order of the day. In the following, these places are the focus of our attention. Why have they developed differently to other villages with similar conditions? What are their success factors?



Population development in the five villages

© Claudia Neu

### Economy alone cannot explain the positive outcome

This question was dealt with in the study 'The active and social village' in summer 2005. The study was a joint effort of the then Ministry of Food, Agriculture, Forestry and Fishing of Mecklenburg–Western Pomerania, the University of Rostock and the Institute of Higher Education Neubrandenburg. The goal was, on the basis of selected exemplary villages, to investigate how and why precisely these municipalities, being offered the same funding and support programmes as their neighbour communities, developed positively. Those involved in the study were: two villages in urban outskirts, Bröbberow (250 inhabitants) and Woggersin (530 inhabitants), two villages in the periphery, Divitz-Spoldershagen (490 inhabitants) and Balow (355 inhabitants) as well as the 'industrial village' Spornitz (1,051 inhabitants). The study was based on interviews carried out with inhabitants of these villages in 2005/2006 as well as on group discussions with central stakeholders.

Economic success cannot explain what makes these villages more overall successful than other places in Mecklenburg–Western Pomerania. The rate of unemployment lies between 13 (Woggersin) and 31 percent (Spoldershagen). With the exception of Spornitz there is hardly any established business of note. Agriculture – with the exception of Spornitz – does not play any role with regard to job opportunities in the villages either. Tourism, which was Mecklenburg–Western Pomerania's greatest hope, is as good as non-existent. At last, not all

places have had the advantage of farm or land consolidation or village rehabilitation.

The reason for their success lies in the cultural and social strengths of the villages. They succeed because of their active community. The community makes the places attractive for people to move to – above all for families with children – and gives reasons for staying, for example, for commuters. The five very different villages examined have succeeded in decreasing or even stopping the decline in population despite significant differences in the initial economic situation, in the location (suburbs vs. most rural areas) and in population numbers (between 355 and 1,051).

This relative demographic stability was achieved by an active population policy. This includes the designation of building land, the restoration of historical buildings but also the active fight to retain schools (as in Balow or Spornitz). Of vital importance is the tremendously diverse and vibrant community life in all places.

Associations and clubs – especially sport clubs and the auxiliary fire brigade, are responsible for the social life in the villages. In Balow over 80 percent of the 355 inhabitants take an active part in the local clubs. In Spoldershagen a traditional annual cultural highlight is the riding competition 'Tonnenabschlagen' at Whitsun, whereby riders knock a hanging barrel until it shatters. In Bröbberow and Woggersin the focus of club activities is on the maintenance of the historic village buildings.

In places where the inhabitants are involved in activities, there is always a core of players, who are involved in several clubs and who initiate numerous activities. It also appears to be crucial to have 'front men'/'front women'. These are often mayors who go out of their way to fill in all necessary forms, regardless of their complexity, in order to obtain funds. These representatives of community life have good contacts with the administration and know where to get help. Their distinct activities do not lead to less activity amongst the remaining inhabitants. All five villages are distinguished by a distinctive 'culture of individual responsibility'. The inhabitants have understood that the choice of social services depends on their own personal commitment.

These observations and the recipes of the five villages are not easy to transfer. Each community has its own set of historical conditions and other constellations of stakeholders leading to different forms of commitment. Thus the 'active and social village' cannot be planned nor ordered; nevertheless strengths can be identified in each community. Then all it takes is the realisation that to approach, motivate and involve others is for free. Local strengths and ideas may be turned into local economic services, which could lead to added value and job opportunities locally.

Nonetheless the limits of the citizens' contribution must be clearly defined. The withdrawal of the state from infrastructural activities on large parts of the territory already leads to large gaps in social structure, which the commitment of citizens cannot close. The current fashion to stress the importance of neighbourhood aid and solidarity in peripheral rural areas should be observed with great care.

Many success stories with regard to the villages mentioned above are unfortunately already endangered again due to the strained budgetary situation and the requirement of local co-financing. This all the more underlines the importance of stable institutional frameworks and the need for ideal as well as financial support in order to stabilise the widespread citizens' commitment. More commitment can be raised through:

- better public acknowledgement;
- closer cooperation between administration and local stakeholders;
- cross-village/community planning of infrastructure;
- consideration of social issues in the planning of public areas and
- the inclusion of local stakeholders in rural development projects.

"A culture of responsibility"

## UNESCO Biosphere Reserve South-East Rügen

The South-East of the Baltic island of Rügen was designated by UNESCO in 1991. The entire diversity of Mecklenburg-Western Pomeranian coastline landscapes can be found in this area spanning 235 km<sup>2</sup>. The Bodden, inland saltwater bay areas, with late ice-age island cores and bluffs, offer a multitude of habitats including: shallow waters with seaweed meadows and kelp forests and mudflats in sheltered bays. On this side of the coast there are beech forests, 'neglected grassland' and salt marshes. The wide salt reed banks of the inland saltwater bays offer an ideal breeding territory for waterbirds.

The project 'Job-Motor Biosphere' was founded in 1999; its objective is to reduce the high unemployment in the area by supporting start-up companies. The role model is the Job-Motor of the Schaalsee biosphere reserve (featured in this journal). More than one hundred participants were supported through individual and group coaching over a number of weeks as well as during regular meetings of working groups. Start-up companies were founded in branches such as

tourism, IT-services, crafts and culture. One example of a start-up company is 'Seeadler Touring' which organises package tours for young tourists such as sea-kayak excursions and sailing trips. In collaboration with the biosphere reserve a network of businesses aiming at sustainability in their operations was created. In addition, the 'Junior Job-

Motor Biosphere' is targeted at young people with the aim of preventing their emigration, introducing business studies to schools as an optional subject.

*Further information:*  
<http://www.biosphaerenreservat-suedostruegen.de>

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### Supporting citizens' commitment

Investment in the social and cultural infrastructure must enable citizens to continue to act on their own responsibility and to continue cooperative relationships, thus forming a functioning civil society.

The results of our study disclose that migration from rural communities and cultural decline of the countryside is not an inevitable fate. Through their commitment, citizens do not only create contacts, leisure time activities and culture, but also identity and a quality of life, which, in turn, make their communities attractive and liveable – for new citizens as well.

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### Spring market at the Upper Lausitz Heath and Pond Landscape Biosphere Reserve

Photo © Bodo Hering



Susanne Stoll-Kleemann

## Success Factors for Biosphere Reserve Management

*Today the UNESCO MAB programme boasts an impressive network of 529 biosphere reserves in 105 countries. Does this increase in numbers go hand in hand with an increase in quality though? Are the institutions responsible for the management of biosphere reserves able to implement the objectives of the biosphere reserve concept on-site? This is the issue under consideration in a research project based at the Humboldt-University in Berlin entitled 'Governance of Biodiversity' (GoBi).*

The biosphere reserves pursue numerous and complex goals with a great deal of conflict potential: conserving nature, encouraging economic activities and standards of life which are socially-cultural and ecologically sustainable, promoting environmental education, carrying out training, research and monitoring related to conservation and sustainability issues against the local, regional, national and global backdrop.

The success of biosphere reserves is determined by ecological as well as by socio-economic factors. Thus the GoBi research team combines natural and social science concepts and methods to examine the effectivity of management approaches with which protection and development goals are supposed to be reached.

The most important objective of the GoBi research team is to assess factors in the management of biosphere reserves leading to success or failure (see table). The project aims to be able to make general recommendations for the biosphere reserves. The project also aims to provide a comprehensive analytical tool identifying factors of an effective biodiversity and biosphere reserve management.

In 2006 the research team GoBi carried out a survey of 211 of the, at that time, worldwide 507 biosphere reserves. The results showed that the following factors are particularly important for biosphere reserves: Environmental education, cooperation with local authorities, long-term research and monitoring, modern nature conservation programmes and laws, financing guaranteed in the long-term and involvement of local communities in the management of the reserve.

In addition, there is the factor 'leadership' which describes the qualification of the key persons within a biosphere reserve for just these central positions. The field of duty of heads of biosphere reserves is very complex, particularly as a result of the objectives formulated since the mid-nineties on the socio-economic level. They have to be able to deal with conflicts between different stakeholders in the same way as with long-term financial issues and invasive species. Excellent leadership skills are necessary

Leadership skills are needed

Photo © Mirko Pannach



The population must be able to earn a living

and in a 'best case' scenario the key persons should have a deep affinity with the region and the people living there.

With regard to the success factor participation, many of the heads of biosphere reserves interviewed by the GoBi research team point out that the local population should not only be involved in management processes. Actually their need to be able to earn a living should be a primary consideration. A stable economic existence of those residents in the environment of biosphere reserves is the best way of gaining acceptance of use-restrictions induced by nature conservation measures. The development of alternative sources of income can take on different forms, for example the introduction of new economic

activities in the agricultural sector or better job opportunities in tourism.

The results of GoBi show that the management of biosphere reserves has to be adapted to local conditions as well as to global, national and regional developments in order to be able to use or preserve nature and biodiversity successfully and sustainably. Biosphere reserves should ultimately lead to stability and intactness of ecosystems; they are in need of a differentiated and challenging management for the complex demands made on them. The staff and land users in biosphere reserves must also be better qualified so that the biosphere reserve management of the future will do justice to ecological, economic and social realities. This has hardly been the case so far.

## Selection of factors influencing the success or failure of biosphere reserves

Management Activities	Governance factors	External Threats
Rural regional development measures	Political support at the regional level	Climate change
Environmental education	Appropriate funding	Invasive species
Research and monitoring (long-term)	Absence of corruption	Poverty
Locally adapted involvement of the population	Modern nature conservation programmes and laws	Change of lifestyle and consumption patterns
Practical nature conservation measures like reforestation or the fight against erosion	Absence of counterproductive and competing governmental programmes	Commercial exploitation of natural resources (mines etc.)
Evaluation for an adaptive management	Adequate institutional design; precise distribution of responsibilities between authorities	Conflicts between different population groups
Good working relations/cooperation with authorities	Compensation for use restrictions	Population growth
Law enforcement (inter alia use of sanctions)	Clear demarcation of borders	Proximity to cities
'Leadership'	Local communities supporting the biosphere reserve	
Sufficient (qualified) staff in the biosphere reserve		



The values and advantages of biosphere reserves must, in future, be more convincingly put over to decision-makers and their consultants. Scientists and managers must make politicians understand the capital that biosphere reserves represent in particular for communities directly concerned and in general for entire economies.

*Dr. Susanne Stoll-Kleemann is a lecturer at the Institute of Agricultural Economics and Social Sciences at the Humboldt-University in Berlin, where she heads the research team GoBi. The project (duration 2004 - 2009) is financed by the Robert-Bosch-Foundation.*

*Further information:  
<http://www.biodiversitygovernance.de>*

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## UNESCO Biosphere Reserve Danube Delta

Transboundary, Romania and Ukraine



Photo © Flickr Creative Commons:  
Mugur Paun

The largest wetland in Europe is a labyrinth of countless lakes, channels, islands and canals. In 1991 this second largest river delta in Europe was simultaneously designated as a biosphere reserve and as a World Heritage Site by UNESCO. The biosphere reserve core area comprises almost 12 percent of the 6,264 km<sup>2</sup> total area. The delta is renowned for its variety of bird species: 312 bird species use this wetland as a habitat, breeding or resting place while migrating to the South. The waters offer a home to 90 fish species, to monk seals and otters.

On land it offers one of the last refuges for the European mink and the wildcat.

Not only is the animal world diverse, but also the human population. Romanians, Ukrainians, Russians, Lipovans, Moldavians, Turks and Gagauz people are all resident in this biosphere reserve. The unemployment is high; sources of income are fishing, hunting, stock farming, subsistence farming, reed harvesting and tourism. The increase in agriculture is a threat to the ecological balance. The impact of the opening of the Ukrainian Bystre-Canal in 2004 cannot yet be assessed.

Since the designation of the biosphere reserve many of the destroyed or drained

flood plains in the delta have been successfully renatured. This motivated the renaturing programme 'green corridor', the largest transboundary project of this kind so far. It was signed by the Ministers for the Environment from Romania, Bulgaria, Moldova, and the Ukraine and should protect the wetlands situated at the delta of the lower Danube. In addition to its multiple research and monitoring activities, the biosphere reserve is also supposed to make a contribution to solving mutual socio-economic problems.

*Further information:  
<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=ROMUKR+01>*



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Mugur Paun

Armin Kullmann

## Regional Marketing in German Biosphere Reserves 2007

*Regional marketing in Germany is booming. Over 500 regional marketing projects are registered on the database maintained by the German Association for Landscape Conservation; more than half have a focus on agriculture. Regional products in the retail food trade are just as common these days as farmers' markets and regional produce shops, as well as gastronomy projects of the tourist industry. Many projects are located in the model regions of the UNESCO biosphere reserves. These regions develop own brands and coordination centres or marketing organisations, which organise functional logistics and distribution.*

Spree Forest cucumber  
and eco-carp

The status of regional marketing in the biosphere reserves was investigated between 2001 and 2003 within the framework of a research and development (R&D) project commissioned by the Federal Agency for Nature Conservation (BfN) and financed by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). Since then, regional marketing has developed further in some biosphere reserves. Examples of current developments are presented in a brochure produced by EUROPARC Deutschland and the BfN in 2006. For the purposes of this journal a survey was carried out at all the remaining biosphere reserves.

Photo © Gertrud Hein

In the biosphere reserve Schorfheide-Chorin, the former marketing logo was developed into a regional quality brand using the framework of the programme 'Active Regions'. This serves, above all, to extend the admissible origin of the products. Individual projects were also promoted, such as a franchising concept for regional retailers or a brand name for game products.

Endogenous potentials were made use of in an exemplary fashion in the Spree-wald biosphere reserve. After German unification, the survival of the traditional cucumber industry was seriously threatened. They were supported by the biosphere reserve establishing the over-arching economic area 'Wirtschaftsraum Spreewald'. A 'Protected Geographical Indication (PGI)' issued by the European Union today ensures that famous Spree Forest cucumbers predominantly originate from this region.

'Biosphere innkeepers' is a key project of the Upper Lausitz Heath and Pond Landscape biosphere reserve. Following many years of experience in marketing Christmas geese, the local important pond industry is to be involved in the future as a potential partner; possibly marketing eco-carp.

The regional brand of the Schaalsee biosphere reserve is already being used by about 60 businesses. The famous German movie director Detlev Buck was awarded with the regional brand for his most recent film 'Hands off Mississippi' – a clever PR-event! Farmers' markets regularly take place at the information centre 'Pahlhuus'.



The Elbe River Landscape biosphere reserve also organises an annual farmers' market and promotes the marketing of fruit juice produced in traditionally managed orchards. A feasibility study for a regional brand was carried out and an application was submitted to the European Union funding scheme LEADER for the purpose of introducing the regional brand.

The Franco-German Pfälzerwald/Vosges du Nord transboundary biosphere reserve commissioned a feasibility study for a transboundary regional brand in 2006/2007. Approximately 35 partner businesses and the 30 suppliers of the successful German-French farmers' markets (about 10 to 12 events per year) are to be integrated under this brand.

In the Rhön biosphere reserve a new, uniform brand was developed, which is now being used by 125 businesses. The focus is on meat and its products. The twelve partner businesses of the biosphere reserves use a joint eco-regional brand. More and more processing and retail businesses from the region are using the association with the biosphere reserve for their own marketing purposes.

In the Berchtesgaden biosphere reserve there are even three organisations promoting regional marketing today.

Following the R&D project 'Sustainable Management in Biosphere Reserves' in 2007 and 2008, regional marketing will also gain greater in importance in the

Lower Saxon Elbe River Landscape and the Upper Lausitz Heath and Pond Landscape biosphere reserves. The Wadden Sea of Lower Saxony biosphere reserve as a 'Sustainable Region' is to receive increased European Union funding.

In the Bliesgau biosphere reserve (currently being founded) regional marketing is actively being put into practice with the Bliesgau-Regal, a rack with a set range of regional produce. Eleven suppliers currently market around 50 different products in 25 supermarkets. Special action weeks, for example to promote beer, game and lamb as well as 'products of the month', are an integral part of the marketing strategy.

Some of the mentioned projects and regional brands from biosphere reserves are well known today at the national level. In other biosphere reserves, regional marketing is less well developed. There, the topic is either not considered to be a central item for the purposes of sustainable economies; instead there is stronger focus on tourism and environmental education. Other biosphere reserves do not see any possibility to spur on regional development due to their size, their geographical structure or their staff resources.

### Success factors

The following aspects are important success factors for a regional marketing conception for biosphere reserves:

### Strengthening regional brands

### Increasing national significance

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Photo © Lutz Möller

- a) Size of the region. Many biosphere reserves are too small for effective and efficient projects. In these cases, involving the administrative district as a whole could be useful.
- b) Criteria of production. Conventional production is not sustainable, ecological production usually results in too limited production. An appropriate criterion could be 'ecological plus extensive'.
- c) Involvement of local businesses. Not only farmers and craftsmen, but also the production and retail industries should be approached.
- d) Political support by politicians, above all by the ministry in charge at federal state level.

Within the framework of the above mentioned R&D project, 20 success factors were identified, by which the strengths and weaknesses of regional marketing can be assessed efficiently.

### Competition for the biosphere reserves

These days, the biosphere reserves are no longer the only model regions aspiring to sustainable development. Sustainability is also aimed at by nature parks in the PLENUM-regions in Baden-Württemberg or in the project 'Active Regions' (2001-2007) defined by the Federal Ministry for Food, Agriculture and Consumer Protection (BMELV). In addition European Union governance structures such as ILEKS and LEADER play a role. All these backdrops for activity either overlap or end up in competition with each other.

In regional development and regional marketing there is a definite trend towards large territories with regard to admissible origin of products like the (entire) Rhön, the Eiffel, the whole of Ostfriesland or the Bodensee region. New over-arching regional brands serve as umbrella brands, for non-food products as well as for integrated location-marketing.

This is definitely appropriate for making marketing projects economically viable. With a larger backdrop for business the number of farmers, medium-sized production and retail businesses grows; the distributed amounts grow with the number of customers. In that way piece prices decrease, the organisation pays off sooner and becomes less dependent on subsidies. Yet also larger regions are, for the most part, reliant on subsidies for the first three to five years.

As a result regional brands from different regions now compete for scarce rack space in the supermarkets of large cities; also the respective governance-structures are in competition. Competition will require increasingly professional structures as well as different production and distribution scales in future.

On the other hand, the food retail industry is now more easily accessible for regional products. In the federal state of Hesse for example the supermarket chain REWE is increasing its range of regional products on offer. EDEKA Südwest, another grocery store chain, is already copying the 'regional marketing strategy', developing a regional retail brand of its own. Middle-sized branches such as Tegut in Fulda and Feneberg in Kempten use marketing of eco- and regional products in order to enhance their company profile. The economic success of marketing projects more and more depends on the retail food industry. It is the driving force for new scales, structures and levels of professionalism of regional marketing projects.

### The need for further research

After the BMU paved the way, the BMELV is supporting the regional movement and regional marketing throughout Germany more actively. For example, it supports the internet platforms [www.tagderregionen.de](http://www.tagderregionen.de) and [www.reginet.de](http://www.reginet.de). However research is being neglected at present and it is no longer keeping up with the changes occurring in practice. There are still no cost-benefit analyses available for regional marketing projects, neither for entire projects nor for the individual farm, the middle-sized business or for trade. There is an urgent need for research, as the presumed results will almost certainly be suitable for attracting further businesses.

Research is also lacking on the more ambitious intention of some model regions to support sustainable economic development. This relates to, above all, the UNESCO biosphere reserves, but also the PLENUM-regions in Baden Württemberg and future LEADER projects. The development of regional added value chains is often fundamentally important. However what does sustainable economic development mean beyond typical regional development projects? Can biosphere reserves offer more business-oriented support for sustainable economy? What do the businesses need and what do they expect? An R&D project addressing these very questions 'Sustainable Economic Development in Biosphere Reserves' is currently being commissioned by the BMU, exemplary in two of the German biosphere reserves.

### A match to this challenge?

The association of German protected areas, EUROPARC Deutschland poses some fundamental and critical questions in a new guideline on regional

marketing. The catalogue of demands put on the biosphere reserves has expanded drastically over the last decades, while the human resources and budgets have hardly changed to this day. Human and other resources as well as insufficiently qualified staff mean that professionalism is sadly lacking with regard to tackling regional development and regional marketing.

Some projects in the biosphere reserves, even more so in other regions such as 'Active Regions', PLENUM or 'Our Country' (Unser Land) however show that large, ambitious as well as economy-oriented projects can be organised. Thus in the biosphere reserves, structures as 'intermediary organisations' have to be created, which allow for entrepreneurial action in regional or marketing management. Such intermediary structures have successfully been put into place in the case of the LEADER or PLENUM programmes for regional management. Such concepts were in effect already encouraged for the biosphere reserves by the National Guidelines. The support of decision-makers in higher-ranking

authorities and ministries as well as in the administrative districts involved is also necessary. However, how can such support be systematically improved?

A handle is to regularly check customer satisfaction. The image and performance of regional management are regularly checked, for example, in the PLENUM programme by the self-assessment method of the EFQM model (European Foundation for Quality Management). Additionally, an external assessment is carried out through consulting regional key persons. Coaching for specialist and executive staff is also becoming increasingly established in regional development. Systematic instruments such as these can also serve to optimise organisational structures, leadership, strategies and marketing for achieving sustainability goals in the biosphere reserves.

*Armin Kullmann is an Agricultural Engineer and works for the Institute for Rural Development Research in Frankfurt am Main (IfLS). For references, consult the German version of this journal: [www.unesco.de/uh2-2007.html](http://www.unesco.de/uh2-2007.html)*

Photo © Gertrud Hein



Martin Kremer

## Marketing Local Produce in the Rhön Biosphere Reserve

*The Rhön, with its three parts in the three federal states Hesse, Bavaria and Thuringia was designated and honoured as a UNESCO biosphere reserve in 1991. The Rhön biosphere reserve, a product of German unification had set itself numerous goals: The marketing of local products; the revival of regional economic cycles and close cooperation with local farms. The focus on regional development was the decisive factor in gaining public acceptance of this initially controversial project.*

Close cooperation across the federal states was agreed upon right from the start. Sponsoring agencies have accompanied and supported the governmental participants involved. This is especially the case in Hesse, where a sponsoring agency had already been founded in the very early nineties. As a regional-development-forum attracting European Union subsidies to this day, the sponsoring agency has been able to promote a consistent and focussed regional development with the mission statement "protection through utilisation".

Photo © Flickr Creative Commons: chrish ffm



### At the beginning there was the Rhön sheep

One of the first projects, which, looking back was particularly exemplary, was the Rhön sheep project. In the 18th century hundreds of thousands of sheep could be seen grazing in the Rhön; however sheep farming suffered heavy losses after the Second World War. In particular, the small farmed country breeds could hardly compete with the modern meat breeds. Towards the end of the seventies the Rhön sheep was almost extinct. In the eighties private people and the Bavarian nature conservation NGO 'Bund Naturschutz' began to look into the studbook breeding of this robust country breed, which is especially appropriate for landscape conservation. There were also enthusiasts in Thuringia who secured the survival of the Rhön sheep despite the adverse regulations in the former GDR. The Rhön biosphere reserve has been organising extensive marketing measures, culinary events for gourmets, excursions for shepherds and has been in dialogue with retailers since it was founded. Bit by bit the stock of Rhön sheep was able to be increased to about 4,000 ewes. In fact, the Rhön sheep has been the mascot of the Rhön, as well as an advertising icon, for some time.

Rhön sheep flocks are put to use in all three federal states for the purpose of landscape conservation. Locally produced meat is marketed in bio-quality via baby-food manufacturers and chain stores. Also the other sheep-farming businesses in the Rhön have been profiting from a marketing collaboration with the 'tegut' retail chain for quite some time. In 2006, 5,000 animals were marketed with this partner. Today there are 20,000 ewes of

various breeds in the Rhön. Those shepherds, who have committed themselves to ecological animal husbandry, have been able to find important and trustworthy partners via the marketing initiative.

### Rhön apple initiative

The 'apple initiative' is another successful project in the Rhön biosphere reserve. Nobody in their right mind would refer to the rather rough mountain range of the Rhön with altitudes of up to 950 metres as an apple-growing region. Nevertheless numerous traditional types of fruit have survived. Pomologists talk of around 400 types of apples. The biosphere reserve recognised this potential very early. During the mid-nineties the Rhön apple initiative, which is an association of apple farmers, started to harvest apples from traditional Rhön orchard meadows and marketed them in bio-quality. Local fruit crushing and pressing plants, like the medium-sized Elm plant, have specialised in the production of top-quality apple juices, cider and sparkling apple wine. Products from the Rhön are already listed in the delicatessens of Berlin and contribute to the economy of the region. The Rhön apple beer, produced by the eco-brewery Rother-Bräu, apple chips from the centre for the disabled Antoniusheim and top-quality jellies from smaller producers represent further products, which emanate from the Rhön apple initiative and are now a standard product in the regional supermarkets.

## Protection of the European crayfish

The Rhön biosphere reserve crayfish project, started up as a species protection project in 2000, is supposed to benefit the local catering industry in future. A part of this project was to plot and analyse the watercourse. European crayfish were counted in ten streams. Also present in four of the major stretches of water are American signal crayfish, which may spread the crayfish plague and thus may endanger the crayfish stocks. Currently there is a move towards marketing the American signal crayfish for introduction to the local crayfish trade. At the same time crayfish are being bred in specially designed ponds for future upscale marketing. Stock protection measures carried out annually since 2004 are proving to be successful. Volunteers are involved in the project, which is being implemented

in close cooperation with fishing clubs, the fishing authority and fish farms.

## Rhön umbrella brand – top-quality gastronomy

Many further regional development projects can be added. The 'Rhön biosphere cattle' and the 'Rhön goat project' are today promoters of the biosphere reserve. Both projects are also making a significant contribution to landscape conservation. Important markets for these top-class food products could be entered. Similar developments are occurring for rapeseed oil and honey from the biosphere reserve. The brown trout from the Rhön is established as a top-quality product within the local catering industry. Many products from the biosphere reserve, marketed under the 'Rhön umbrella

brand' are either certified bio-products or in other cases certified as corresponding to conventional quality standards.

The biosphere reserve is highly accepted by the local population, which is, in the main, due to the successful marketing of regional products and to the consequent safeguarding of the existence of local farms. The high acceptance is a fact, supported by representative surveys. It is important to be aware that marketing projects take up to ten years in order to establish their niche in the market. Such long-term processes are impossible without motivated partners, creative staff and a great deal of patience. In this way success can be achieved on a much larger scale than initially imagined.

*Martin Kremer is head of the department 'biosphere reserve und nature park' in the Hessian Rhön and Manager of the Association 'Natur und Lebensraum Rhön'.*

## UNESCO Biosphere Reserve Rhön

The Rhön is representative of the landscape of the low mountain ranges in central Germany. It is situated in the triangle across Bavaria, Hesse and Thuringia and spans around 1,850 km<sup>2</sup>, 42 km<sup>2</sup> of which comprise the core area and 675 km<sup>2</sup> the buffer zone. Each federal state has established an administration for its part of the region. The region was designated by UNESCO in 1991.

The isolated location, particular natural features and the firmly rooted agricultural tradition have led to a cultural landscape and rural settlement structures, which are, for the most part, intact still today. The Rhön boasts a variety of landscapes: the 'Hohe Rhön' is a plateau, which was kept open due to traditional human use and is thus covered by 'neglected grasslands'. The extensive views which can be admired led to the tourist slogan 'land of open distances'. The Hessian Rhön is characterised by the striking cone-shaped mountains and a park-like appearance, the Thuringian Rhön by unique lime neglected grassland connected over large areas and by agriculture dominated by large concerns. The Bavarian Rhön is characterised by open, unsettled meadows and a vegetation rich in flowers. Here the predominant occupation is farming, more often than not in the form of a secondary

occupation. The core zone is made up of beech forests and high moors. The diversity of species in the protected habitats is very high; living conditions for many threatened species such as the black grouse, the corncrake, the black stork and the kingfisher, are favourable. The living conditions for black grouse have continuously been improved during the last 25 years in the largest non-alpine nature reserve in Bavaria. This has been achieved by keeping the landscape open by landscape planning, hunting natural enemies and keeping tourists informed.

The three administrations of the biosphere reserve focus on differ-

ent aspects due to their different local structures. They have, however, mutually succeeded in developing the Rhön into a 'role-model' biosphere reserve. The economic and demographic development is better than in comparable areas, the identification with the biosphere reserve is high; the marketing of regional products is an important factor. The development of regional supply chains contributes to the image and creates new jobs in the Rhön. Environmental education and research are a further focus of the work in the biosphere reserve.

*Further information:*  
<http://www.biosphärenreservat-rhoen.de>

### Rhön shop selling local ecological produce /Photo © Gertrud Hein



# Criteria for Biosphere Reserves in Germany

*In the spring of 2007 the German MAB National Committee adopted the revised 'Criteria for the Designation and Evaluation of UNESCO Biosphere Reserves in Germany'. Below we are publishing this new catalogue of criteria as well as some extracts from the introduction, with kind permission of the MAB National Committee. The elaborate explanations relating to the criteria are not included here. The authoritative version of these criteria will be published in the near future by the Federal Agency for Nature (BfN).*

## Introduction

In order to do justice to its international commitments the German MAB National Committee adopted 'Criteria for Designation and Evaluation of UNESCO Biosphere Reserves in Germany' in 1996. With the help of these criteria, in line with the international guidelines, several new applications for biosphere reserve designation have been assessed, as well as for changes in existing biosphere reserves. The national criteria implement a clear-cut international assignment, with the goal of developing a network of exemplary areas in Germany. At the same time the criteria contribute towards safeguarding and developing the quality of German biosphere reserves.

Ten years after the adoption of these first national criteria, the MAB National Committee in cooperation with the 'Permanent Working Group of the German Biosphere Reserves' (AGBR) decided that the time had come for a revision. The 'Working Group on Nature Conservation, Landscape Management and Recreation of the Federal States' (LANA) played a part in the process, resulting in a formal statement issued in autumn 2006. As before, the criteria are supported by scientific results and incorporate technical requirements on the one hand; on the other, they are based on extensive experiences made during the course of the regular evaluation of biosphere reserves in Germany to date.

Applications for designation of a region as a biosphere reserve are to be filed by the Ministry in charge at the respective Federal State. The application should be agreed upon by all Federal State Ministries or similarly confirmed by an overarching cabinet decision, in order to guarantee that, in future all biosphere reserve conservation and development goals are formulated and implemented in agreement. Three copies of the application are to be sent to the chairman of the MAB National Committee at the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

The Secretariat of the German MAB National Committee at the BfN will check the application for accuracy and completeness. This being the case a technical assessment, carried out by the German MAB National Committee, will follow, carried out on the basis of the mentioned criteria. Assessing the area specified in the application in depth at the location itself is an essential method of work of the German MAB National Committee. It makes a reasoned decision regarding the application and whether to forward it to the Director General of UNESCO. According to UNESCO rules, three copies of the 'Biosphere Reserve Nomination Form'

are forwarded to Paris following a positive vote. UNESCO can request additional information from the German MAB National Committee or from the respective Federal State.

The highest ranking decision-making body of the MAB programme, the International Coordination Council (ICC) makes a decision on the application during one of its bi-annual meetings as does the so-called 'Bureau' in the interim. The decision is based on a professional vote by the International Advisory Committee for Biosphere Reserves after which the ICC may make a recommendation to the UNESCO Director General regarding designation.



**Core area of the Vessertal-Thüringen Forest Biosphere Reserve**

Photo © Lutz Möller



## Legal framework of Biosphere Reserves in Germany

Nature conservation and environmental protection in Germany are under the responsibility of the federal states. The statutory regulation for biosphere reserves varies from federal state to federal state. The framework of nature conservation is fixed in accordance with the federal authorities. Since 1998 biosphere reserves have been a category of protected areas of the Federal Nature Conservation Act.

According to § 25, para. 1, Federal Nature Conservation Act, the biosphere reserves are „areas designated on a legally binding basis as areas to be protected and developed on a uniform basis, that meet the following criteria:

1. the area concerned is of major size and shows the characteristic features of specific landscape types,
2. the criteria defined for 'nature conservation areas' are met in es-

sential parts of the area concerned, and the greater part of the remaining area meets the criteria defined for landscape protection areas,

3. the area serves the primary purpose of preserving, developing or restoring landscape shaped by traditional, diverse forms of use, along with its historically evolved diversity of species and biotopes, including wild forms and formerly cultivated forms of commercially used or usable animal and plant species, and
4. the area concerned serves as a model for the development, practical application and testing of particularly sustainable cultivation and management methods, taking account of vulnerable natural resources.”

§ 25, para. 2, Federal Nature Conservation Act obliges the federal states to

“ensure that biosphere reserves are developed progressively via core areas, buffer zones and transition areas, while allowing for the exemptions required in view of the size of the area and existing human settlements in the area, and that biosphere reserves receive the same level of protection as that afforded to nature conservation areas or landscape protection areas.

This lawful regulation of protected areas makes no explicit reference to UNESCO. Several federal states have passed laws to establish biosphere reserves in accord with federal law. Some federal state regulations require the designation as a UNESCO biosphere reserve whereas others differ from the MAB international guidelines. Many federal states had already laid down biosphere reserves in their own Nature Conservation Acts before this framework legislative regulation.

The Catalogue of Criteria consists of the 'application criteria' (A), which must already be fulfilled at the time of application on the one hand. The 'evaluation criteria' (B) on the other hand, need to be fulfilled imperatively, but after a grace period. Both types of criteria together describe the full set of goals of the biosphere reserve. The division of criteria into two categories does not place any particular emphasis on either of the individual criteria with regard to the goals of UNESCO biosphere reserves in Germany.

### Catalogue of Criteria

#### Structural Criteria

##### Representativity

- (1) The biosphere reserve must contain landscapes and habitats that, to date, are not well-represented by the biosphere reserves in Germany and which, as a result of their natural, cultural, as well as social aspects, are particularly appropriate for implementing UNESCO's MAB programme in Germany in an exemplary fashion, and for representing it internationally. (A)

##### Size of the area

- (2) The biosphere reserve should, as a rule, comprise at least 30,000 ha and should not be larger than 150,000 ha. Trans-federal-state biosphere reserves may have a total area

larger than this, if appropriate administrative resources are provided. (A)

##### Zonation

- (3) The biosphere reserve must be divided into core areas, buffer zones and transition areas. (A)
- (4) The core area must take up at least 3% of the total area. (A)
- (5) The buffer zone shall take up at least 10% of the total area. (A)
- (6) The core area and buffer zone, together, shall account for at least 20% of the total area. The core area shall be surrounded by the buffer zone. (A)
- (7) The transition area must take up at least 50% of the total area; in marine areas, this requirement applies to the land area. (A)

##### Legal Protection

- (8) The biosphere reserve's protective purpose, and its maintenance and development goals, both for the entire area and within the individual zones, must be safeguarded by legal ordinances – or through federal state and regional planning and programmes. On the whole, the majority of the area



Photo © Karl-Friedrich Abe

must be under legal protection. The status of already existing protected areas must not be downgraded. (B)

- (9) The core area must be legally protected, as a national park or nature reserve or by similar lawful means safeguarding the goal of natural evolution. (A)
- (10) The buffer zone shall be legally protected as a national park or nature reserve or by similar lawful means if seen as being worthy of such protection or appropriate to its requirements, especially for reaching the goal of protecting biodiversity, in particular with regard to the genetic or biological and structural diversity as well as the diversity of use. (B)
- (11) Those parts of the transition areas that are worthy of protection shall be legally protected. (B)

#### Administration and Organisation

- (12) The biosphere reserve must be equipped with a capable and effective administration within three years of the designation of the biosphere reserve by UNESCO. Its set-up must be across scientific and administrative sections according to the three functions of the biosphere reserves. It must be equipped with the appropriate technical and administrative personnel as well as with the appropriate funds and equipment for carrying out its tasks. The application must include a commitment to provide the required institutional budgetary funds. (A)
- (13) The administration of the biosphere reserve must be organised as a part of the appropriate intermediate, higher, or highest Federal State Authority. The competencies of the biosphere reserve's administration and its cooperation mechanisms with other administrative entities should be dealt with at federal state-level. (B)

- (14) The area must be overseen by a full-time administration. (B)
- (15) The local population, the on-site responsible organisations and the stakeholders of the region must be involved as active partners in forming the biosphere reserve as an area for living, working and for recreation. (B)
- (16) In order to support the administration, suitable non-governmental structures and forms of organisation should be developed and involved as partners. (B)

#### Planning

- (17) A concerted 'framework concept' must be drafted and presented three years after the biosphere has been designated by UNESCO. The application must contain a commitment to provide the required budgetary funds. (A)
- (18) For those areas in the buffer zones and transition areas that are in particular need of maintenance and protection, maintenance and development plans shall be prepared within five years after designation of the biosphere reserve. Similarly, special planning schemes for the sustainable development of tourism, transport and settlement in the transition area shall be prepared within five years. The basis for these instruments shall be the 'framework concept' for the biosphere reserve. (B)
- (19) The goals of the biosphere reserve and the 'framework concept' shall be integrated as fast as possible within the federal state and regional planning and within landscape and urban land use planning. (B)
- (20) The goals for the protection, maintenance and development of the biosphere reserve shall be taken into account when updating other sectoral technical planning. (B)

## Functional Criteria

### Sustainable economic use

- (21) Sustainable forms of economic use and sustainable development of the biosphere reserve and of its surrounding region should be promoted and supported in all economic sectors and areas of life, in keeping with regional and inter-regional possibilities and resources. Relevant administrative, planning and financial measures shall be identified and listed. (B)
- (22) Ecologically sustainable forms of land use shall be developed on a long-term basis within the primary economic sector (farming, forestry, fishing and mining). In particular, land use must take the zonation of the biosphere reserve into account. (B)
- (23) In the secondary economic sector (crafts and industry) energy consumption, use of raw materials and waste management, amongst others, shall be geared towards the vision of sustainable development. (B)
- (24) The tertiary economic sector (services, inter alia in retail, transport and tourism) shall be geared towards the vision of sustainable development. Biosphere reserves must rise to this challenge, not least because of their significance as target areas for tourism. (B)
- (25) The public authorities are particularly called for to act as role models with regard to sustainable development. (B)

### Ecosystems and landscape maintenance

- (26) Goals, concepts and measures for the protection, maintenance and development of landscapes and habitats, as well as for regeneration of impaired areas, must be spelled out and implemented. (B)
- (27) Animal and plant biocoenoses and their habitat locations must be documented, taking into account species and biotopes listed in Red Data Books. Species and biocoenoses typical for specific ecosystems should be particularly considered. (B)
- (28) When interventions are made in ecosystems or in a landscape and when compensation and replacement measures are carried out, applicable regional visions and environmental quality targets and standards must be properly taken into account. (B)

### Biodiversity

- (29) Important sites for floral and faunal genetic resources must be specified and described; suitable measures must be designed and implemented for conserving these resources at the sites where they were discovered. (A)

### Research

- (30) Applied research targeted at implementation shall be carried out in biosphere reserves; basic research would also be considered. The focus fields of planned research shall be

## A Transboundary Biosphere Reserve for Korea?

The demilitarised zone separates North Korea from South Korea since the ceasefire in 1953. The 4 km wide and 248 km long buffer zone resembles the former inner-German border. The area has not been exposed to human influence of any kind for more than 50 years. Today it is a natural treasure trove with many rare species such as the red-crowned crane and the Eurasian black vulture.

This makes the demilitarised zone unique and particularly worth protecting. The Republic of Korea has looked at various international programmes; a biosphere reserve appears to be especially suitable. Since 2001 South Korean authorities, with the Ministry of the Environment in the fore, have been developing specific strategies and schedules for a 'Biosphere Reserve Demilitarised Zone Korea'. As a go-between, UNESCO and the MAB programme introduced the project to the People's Republic of Korea. North Korea has thus far rejected the suggestion be-

cause of the military situation; the South Korean government is nevertheless in favour of the project and last stated this long-term commitment in 2005.

An internationally recognised protected area scheme serves as a key for the demilitarised zone, as the ecological value has international implications and as it could support peace in the area. A biosphere reserve is appropriate in that conflict resolution and protection are important in and around the demilitarised zone and local communities should be able to develop in a sustainable fashion.

Compared to other transboundary biosphere reserves, the states of the formerly unified Korea have many things in common. However the political situation makes it improbable that the biosphere reserve can be established in the near future. The South Korean side continues to work on solid action plans and is taking possible one-sided

steps, in order to be able to take advantage of unexpected possibilities.

*This information was supplied by Suk Kyung Shim. She is in charge of the MAB programme at the South Korean National Commission for UNESCO and is currently doing her PhD in Berlin on the subject of the inner-German Green Belt and the Korean Demilitarised Zone.*



**The demilitarised zone at the inner-Korean border.**

Photo © Flickr Creative Commons: Daniel Brennwald

documented in the application for designation and also in the 'framework concept'. The research relevant to the biosphere reserve should be coordinated by the administration of the biosphere reserve, adjusted and documented with the researchers. The application must include a commitment to provide the required budgetary funds; alternatively, it must substantiate other sources of research funding. (B)

### Monitoring

- (31) The necessary qualifications for carrying out monitoring in the biosphere reserve, in terms of staffing, technical equipment and budgetary funding must be fulfilled. (A)
- (32) Ecological environmental monitoring in the biosphere reserve shall be adjusted to the general approaches to monitoring in the biosphere reserves in Germany, in the programmes and concepts of the European Union, of the federal government and of the federal states as well as with the existing routine monitoring programmes of the federal government and the federal states. (B)
- (33) Data relative to the establishment and operation of national and international monitoring systems, whose collection is required by the MAB programme, must be made available by the administration of the biosphere reserve free of charge to institutions named for this purpose by the federal government and the federal states. (B)

### Education for Sustainable Development

- (34) The content and structure of education for sustainable development as one of the central tasks of the administration should be laid down in the 'framework concept'

taking into consideration the specific circumstances of the biosphere reserve. Resulting measures should be implemented in the biosphere reserve on a long-term basis. (B)

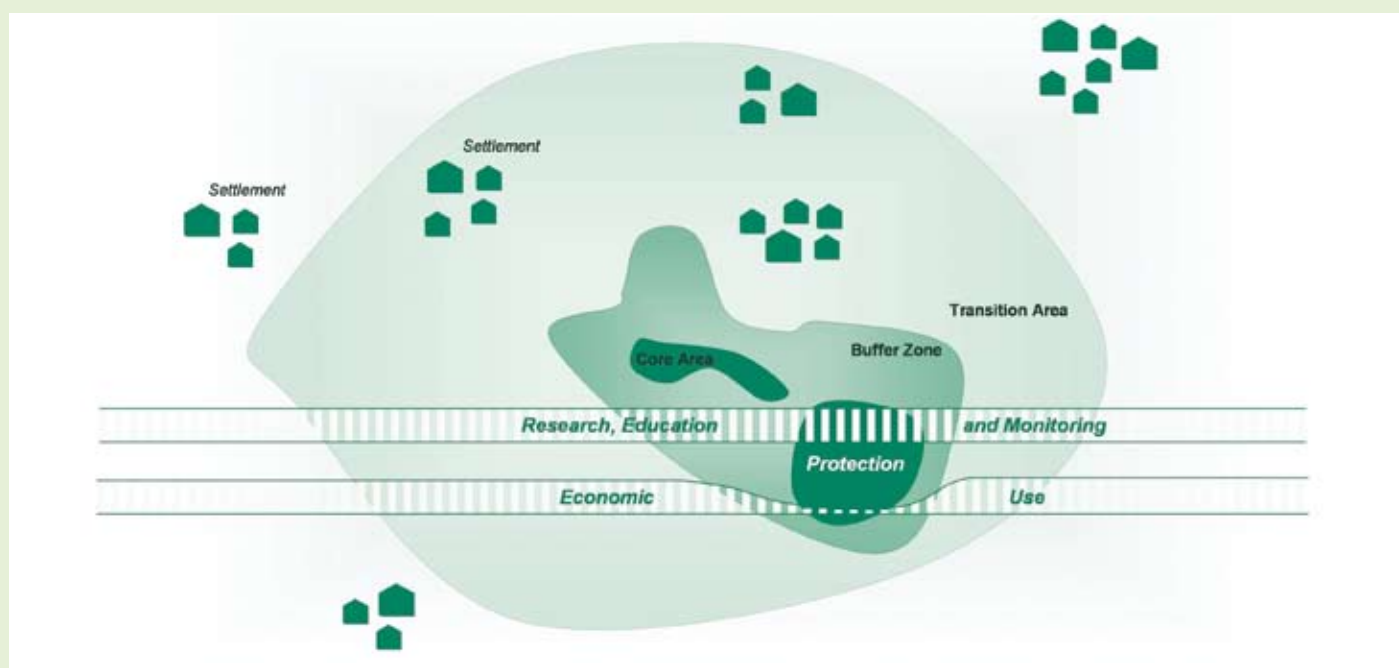
- (35) Each biosphere reserve must have at least one information centre with full-time staff present throughout the year. The information centre should be supplemented by non-central information offices. (B)
- (36) Close cooperation should be sought with existing educational institutions. (B)

### Public relations and communication

- (37) The German biosphere reserves appear in public under the umbrella brand 'National Natural Landscapes'. (A)
- (38) The biosphere reserve must do public relations according to an expert concept. Partners, from all walks of life, should be involved in the implementation of the MAB programme as a result of public relations activities of a biosphere reserve. (B)
- (39) Regional networks should be established to encourage communication and to facilitate the balancing of interests. Consultants or moderators can be installed as supervisors. (B)

### Cooperation with the World Network

- (40) Biosphere reserves shall make their contribution to the World Network according to the Seville Strategy and the international guidelines. Technical and funding qualifications for appropriate activities of the biosphere reserves must be fulfilled. (B)



### Zonation of a Biosphere Reserve

© DUK, inspired by a figure of the MAB National Committee /Ad Das Werbeteam

Klaus Jarmatz

## The Framework Concept: a Chance for Integrative Nature Conservation

*The Seville Strategy for the programme 'Man and the Biosphere', which was adopted in 1995, recommends concrete strategies for biosphere reserves in the 21st century. Above all, it deals with their role as model regions for the implementation of important aspects of the Agenda 21. Devising local consultative frameworks (subsequently called framework concepts) for biosphere reserves is an important recommendation of the Seville Strategy.*

Framework concepts are strategies adapted to special regional features, which serve as central instruments for implementing the highly ambitious tasks of the biosphere reserves, both at the regional and the local level. The multiplication effect into the regional and national political scene, on neighbouring regions and other stakeholders may not be underestimated. Taking up this responsibility to benefit an entire region is a challenge for the administration of the biosphere reserve, in cooperation with its partners.

In the Schaalsee biosphere reserve, which was designated by UNESCO in 2000, the framework concept instrument was taken up quickly in order to meet internationally and nationally required targets and simultaneously accommodate regional requirements. On the initiative of the administration, the decision was made not to develop the framework concept internally, in contrast to the specialist plans which usually have been drafted for protected areas. The planning process was to remain open as a Regional Agenda

21 process and was to use a cooperative and consensus-oriented approach.

The concept should point out the chances for a sustainable, i.e. ecologically, economically and socially viable regional development, based on the requirements of the Mecklenburg-Schaalsee region; drafting the concept should already contribute to solving the upcoming tasks. The concept should not only be developed in a professional planning office but also in work groups,

Photo © Biosphärenreservat Schaalsee / Erhard Schade



## UNESCO Biosphere Reserve Schaalsee

This biosphere reserve spans an area of 309 km<sup>2</sup>; it is located between the cities Hamburg, Lübeck and Schwerin. It stretches around the Lake Schaalsee, which spans 24 km<sup>2</sup>. This landscape, with its many lakes and riparian forests and tightly networked, mosaic-type biotopes was created by the forces of the ice age. The Schaalsee area was designated by UNESCO in 2000. The variety of species, the huge beech groves and old tree-lined roads, the calcareous lakes, moors and marshes give this area a unique character.

Next to the exemplary establishment of a framework concept and the successful development of the 'Job-Motor Biosphere' (featured in this journal), a focus is the promotion of environmentally friendly tourism under the umbrella

of the regional brand. For example six observation platforms for field observations were constructed and more than 150 km of cycling and hiking paths were signposted and partly built afresh. The information centre 'Pahlhuus', hiking tours and excursions contribute to environmental education. Eighteen on-going monitoring projects serve to record the breeding activities of the white-tailed eagle and the cormorant or to control the efficiency of extensive grasslands.

*Further information:*  
<http://www.schaalsee.de>

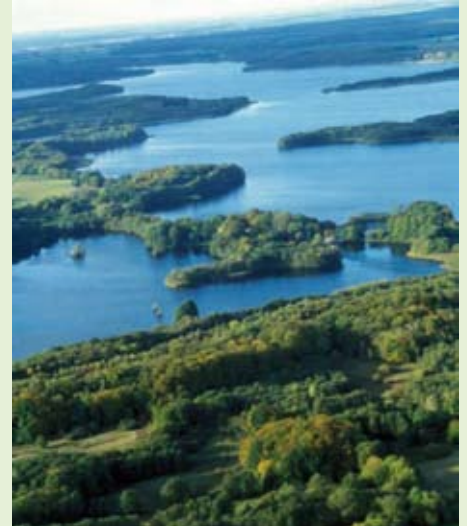


Photo © Biosphärenreservat Schaalsee / Klaus Jarmatz

open to everyone. Citizens should have the opportunity of becoming involved in all sorts of ways; their interests should be integrated into the regional objectives by use of a 'bottom up' approach.

A circle of local moderators was established to agree on compromises acceptable to everyone; external moderators were also hired. The administration of the Schaalsee biosphere reserve set up a co-ordination office. A specifically designed model of involvement made it rather easy to reach interested citizens, economic developers, local stakeholders, associations and members of parliament. As a result of the involvement model, the network of those responsible for the biosphere reserve became a permanent fixture and consensus building processes were encouraged far beyond the drafting phase.

The board of trustees for the Schaalsee biosphere reserve and the 'regional Board', founded in 2000, served as consultants for the process. The body in charge of the project was the 'Steering Committee' made up of representatives from the municipalities, the sponsoring association 'Biosphere Schaalsee e.V.', the heads of five thematic working groups and an official in charge of land use planning. When the working groups

had prepared projects and these were agreed upon via a dialogue forum, this committee made the decisions about the projects. The working groups were headed by interested citizens; they met regularly and formed the activity focus for developing the content and up-dating the framework concept in future.

The framework concept has a modular structure. The printed version is divided into three volumes, which are constantly up-dated. The volume 'Visions and Objectives' is the result of the cooperative dialogue with the local players. The volume 'Analysis of Status Quo' lays out the legal and planning guidelines, lists ecological, economical and social data and analyses strengths and weaknesses. The volume 'Action Plan/Project Overview' contains recommendations for concrete measures and characterises ongoing projects. This list of projects is constantly supplemented and documents the development of the biosphere reserve.

Since then the visions and objectives formulated in the Regional Agenda 21 process have been the means to measure the success of all regional activities and projects. Yet, the process has been able to achieve much more: different regional interests were harmonised and a culture

to handle conflicts in the region was developed; the regional identity of the biosphere reserve Schaalsee was strengthened; an open network of stakeholders was established and communication and cooperation strengthened; and honorary work was encouraged. Another tangible success was the qualification as a self-contained region for the European Union regional funding programme LEADER+. This programme is enabling ecological, economical and social projects to be carried out on a sound financial basis. The integrated approach will also be used in the case of the European Agricultural Fund for Rural Development (EAFRD).

*Klaus Jarmatz is head of the authority of the Schaalsee biosphere reserve.*

Johannes Treß

## A New Framework Concept for 'Vessertal – Thüringen Forest'

*Compiling and drafting locally consultative frameworks (hereafter framework concepts) is stipulated by the Seville Strategy and is a rigorous application criterion for new biosphere reserves in Germany. In one of the oldest German biosphere reserves, Vessertal – Thüringen Forest, a framework concept was finalised in January 2007.*

It defines the major objectives of the biosphere reserve on the way to becoming a model region for sustainable development. Its focus is on active, competent support for the structural change taking place in the region, which is a result of the demographic development and that of climate change.

The public was substantially involved in this process during the summer of 2006. The draft was displayed for the public in 15 municipalities and was available on the website of the biosphere reserve. Fifty statements were submitted in writing. The content was presented to the citizens in eleven information events, which also offered the opportunity for discussion. All in all, the framework concept was amended in over 100 points as a result of the involvement of the public.

### Some core statements taken from the framework concept:

- Nature oriented silviculture should improve the stability and structure of forest stand in the long-term; the percentage of spruce should be reduced in favour of beech.
- Agriculture is the economic branch traditionally shaping the landscape. In order to preserve it, environmentally friendly, non-intensive production practices and the marketing of regional products should be further encouraged.
- Regionally adapted offers to tourists should make the region more attractive and contribute to tourists prolonging their stays. The biosphere reserve administration should be better integrated in the local tourist marketing.

- The standard and extent of public transport should be maintained, optimised and more strongly integrated into the tourist offers. It should become an attractive alternative to individual motorised transport. Public transport systems should be better coordinated, the transport networks of road and rail should be better inter-connected.
- As a contribution to climate protection, renewable energies should be encouraged in the biosphere reserve and the

potential of saving energy by insulating buildings and installing modern heating plants should be taken advantage of.

- In order to preserve the landscape, the mountain grassland should be preserved, current forest should be converted to mixed forest and the typical overall appearance of the villages should be reconstituted, with care.
- The continuity of flowing waters and the valley areas should be

Photo © Biosphärenreservat Vessertal-Thüringer Wald / K.-H. Bock



improved. For example, piping or weirs should be eliminated or made to be more permeable.

- Moors play a role in preserving the unique animal and plant life, thus moor renaturing should continue. For that purpose dikes will be constructed and spruces removed.
- Existing large undivided regions should be safeguarded to help preserve species which need large-scale habitats such as the red deer and the black stork.
- Public relation and environmental education activities will be improved. The focus is a new information centre at the Rennsteig Station run by a private operator and sponsor.

*Johannes Treß is head of the Administration of the Vessertal – Thüringen Forest biosphere reserve.*

*The framework concept of the biosphere reserve Vessertal – Thüringen Forest contains 135 pages with 100 pictures and six maps as well as a CD-ROM with in-depth portrayals of the region. It can be ordered online at [www.biosphaerenreservat-vessertal.de](http://www.biosphaerenreservat-vessertal.de) at the price of 10 euros plus postage and packing costs.*

## UNESCO Biosphere Reserve Utwe

### Federated States of Micronesia

The Utwe biosphere reserve, which was designated as recently as 2005, is located in the southwest of the small volcanic island of Kosrae in the South Pacific. While the interior of the island is rough and rugged, the coastal areas consist of lush tropical rain forests and white sandy beaches. This rather small biosphere

reserve has an area of 17 km<sup>2</sup> but nevertheless boasts a variety of ecosystems like swamps and mangrove forests, coral reefs and sea grass beds.

Modern development and industry have scarcely touched Kosrae as the island state is located 300 sea miles away

from its nearest neighbour. Despite the isolation, even here the stock of marine animals has been decimated. The impressive giant clams as well as turtles, lobsters and types of coral are all threatened with extinction.

Therefore conservation is the priority of this biosphere reserve. In the core area made up of mangroves and marine areas any use of natural resources is prohibited. The terrestrial buffer zone protects the core area against external pressures; this is also protected as a no-take zone. The people living in Utwe use the transition area for agricultural activities, fishing and tourism, which are the main sources of income. A plan for land use propagates sustainable economic systems in the transition area.

*Further information:*

*<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=MIC+01>*





Eberhard Henne

## National Natural Landscapes

Communication project boosts biosphere reserves

*In 2005 EUROPARC Deutschland, the umbrella organisation of the German protected areas initiated the project 'innovative communication strategies for protected areas'. As a result, the umbrella brand 'National Natural Landscapes' was introduced. It gives a new and common profile to the German national parks, biosphere reserves and nature parks in order to heighten the awareness of the public.*

The German press usually refers to national parks when actually biosphere reserves are meant. This is always annoying for the administration, whose time-consuming PR efforts simply appear to be in vain. The general public in Germany hardly ever actually uses the word biosphere reserve or does not pronounce it properly. A 'biosphere reserve' is for many just a cluster of letters.

EUROPARC Deutschland had commissioned a survey at the beginning of the project 'innovative communication strategies', which was carried out by the prestigious company Emnid. According to this survey, 88 percent of the German population consider protected areas to be important. 83 percent would even be prepared to make a financial contribution to them in the form of a nature tax. 71 percent would like to spend their vacation in one of these regions. However, only 6 percent are aware of the differences between a national park, a biosphere reserve and a nature park. Most people do not know where these protected areas are situated. Although the German protected areas advertise using a range of well-designed information materials, more often than not they do not get through to the public. The many different logos confuse and hardly give the impression of a network.

Because of these precise facts EUROPARC Deutschland, as the largest association of protected areas in Germany, initiated the above mentioned communication project. The aim was to develop an easily recognisable, modern umbrella brand for national parks, biosphere reserves and nature parks. Many successful examples have been around for a long time abroad. Whether 'National Park Service' in the USA or 'Parcs Nationaux de France' in France



**The biosphere reserve Schorfheide Chorin**

Photo © Flickr Creative Commons: webinteger

or the 'National Trust' in England, all of them communicate their protected areas worldwide under a well-known logo – representing different protection categories in parallel. Similarly, the most spectacular German landscapes, the core of the national natural heritage, should appear under a joint umbrella brand.

A first workshop in Berlin resulted in an agreement on the following basic principles for the umbrella brand:

- Using a lively picture language, the authenticity and the fascination of the landscapes should be underlined.
- Presenting harmony of nature, the materials produced with the umbrella brand should be inspiring for the beholder.

- The colour palette of the umbrella brand should re-emphasize the verbal message.

Involved in the discussions about the umbrella brand were the Federal Ministry for the Environment, ministries of the federal states, heads of the protected areas, nature conservation associations, sponsoring agencies, foundations and the association of German nature reserves. Already in this first workshop, it was resolved that the umbrella brand was to be called 'National Natural Landscapes'.

### To the point: The logo

The logo of the National Natural Landscapes consists of two design elements: a dot with three differently coloured

## Nationale Naturlandschaften



**The brand-new exposition on the German UNESCO biosphere reserves sponsored by EUROPARC Deutschland is already using the new Corporate Design. The exhibition with around 30 panels was displayed for the first time in June 2007 at the occasion of the 67th General Assembly of the German Commission for UNESCO.**

Photo © EUROPARC

rings, allowing for various associations such as the arrival point on a map, a globe or the human eye. The second design element is a symbolic path to entice the viewer into the natural environment on the photograph behind it. Both elements combined with friendly, light colours help give National Natural Landscapes an inviting touch.

Despite the necessary uniformity of certain design elements, equally important was that each area should have its own PR appearance. This is achieved by the multiplicity of possible colour combinations of the three-coloured dot, which indicate the diversity of nature. To assign an individual dot for each German conservation reserve was the goal. Today, over 100 dots have already been assigned; almost every German protected area has its own.

Thus nature has a new name in the medial landscape and a visual identity which is easy to communicate. It only took a short time for the umbrella brand to be accepted and applied by most of the federal states. Within a year it was used for all types of promotional media from large posters to stickers. A first study carried out at the end of 2006 showed that more than 4 million publications with the new design elements were on the market. The umbrella brand was attracting a great deal of attention: While during 2005 only 6 percent of the population were aware of the differences between the different categories of protected areas, a recent survey showed that already over 30 percent knew about the umbrella brand National Natural Landscapes.

### Together into the future

The degree of awareness has been successfully increased, at least in a first step. The German parliament has decided to support this subject: Following a positive cross-party debate, a decision was made to generally support

the National Natural Landscapes. The umbrella brand is to become a quality attribute for the German tourism industry and establish itself in Germany's presentation to the rest of the world.

Now it is the task of the individual protected areas to continue developing their own profiles under the umbrella brand and to work out and portray the specific aspects of the respective categories (national park, biosphere reserve and nature park) through quality projects. Across the categories, EUROPARC Deutschland makes an important contribution with projects like 'Volunteers in Parks', the 'Junior Rangers' or the 'Internship for the environment', which is funded by the company Commerzbank. An additional task for each region is to work towards making the National Natural Landscapes, the particular category of protection and also specific local features an experience on-site, both for inhabitants and for visitors.

### Model regions with a global reputation

The biosphere reserves have taken up the challenge successfully, for example with a new touring exhibition in the design of the National Natural Landscapes. The Potsdam Climate Conference on 8 November 2006, partnering with Honda Europe North was also a good and expandable example for raising awareness of the meaning of biosphere reserves and their capacities as model regions. The Potsdam Climate Conference will be followed up by similar conferences in future (the 2007 conference taking place on November 15). In the current discussion on measures for avoiding climate change, the German biosphere reserves are able to make a significant contribution. Whether environmentally friendly land-use methods, regional marketing or regional alternatives of renewable energy production – these are all activities of the German biosphere reserves which

directly relate to climate protection. A successful communication strategy highlights these activities, backs them up with examples thus sharpening their profile – and the reference to the National Natural Landscapes boosts the umbrella brand. The current topical status of climate change in politics is a productive challenge for the biosphere reserves.

The marketing strategy of the umbrella brand is, inter alia, focussed on tourism. In many biosphere reserves, environmentally friendly tourism is an everyday issue. Defining environmentally friendly and regionally adapted forms of tourism, create attractive offers to be implemented with the regional tourism industry. Thus another relationship to the National Natural Landscapes can be forged; the qualities of biosphere reserves can be highlighted and consequently the category biosphere reserves strengthens

the National Natural Landscapes which in turn becomes easier to grasp for citizens.

The subject of regional marketing plays a special role in some German biosphere reserves. Some particularly advanced examples are Schorfheide-Chorin, Rhön and Schaalsee having sustainable networks of primary producers, processors, marketing companies and tourist service providers. It could be assumed that a regional approach using regional brands and the brand National Natural Landscapes contradict each other. Actually, the opposite is the case; these initiatives can be interpreted as being good examples for sustainable economics in the National Natural Landscapes and used for the characterisation of the category biosphere reserves.

Biosphere reserves are places for learning sustainability. Their multifaceted

educational activities for sustainable development are a significant contribution to the National Natural Landscapes. Biosphere reserves can be examples for delivering the qualities of the National Natural Landscapes. The umbrella brand helps to heighten the awareness for biosphere reserves and makes them easier to appreciate. At the same time, the biosphere reserves boost the National Natural Landscapes in Germany with their specific profile.

*Dr. Eberhard Henne is the head of the biosphere reserve Schorfheide-Chorin and has been Head of the Board of EUROPARC Deutschland since 2000. He was Minister for the Environment of the federal state Brandenburg in 1998/99.*

## UNESCO Biosphere Reserve Schorfheide-Chorin

Schorfheide-Chorin, designated by UNESCO in 1990 is situated 75 km northeast of Berlin and spans an area of 1,292 km<sup>2</sup>. The biosphere reserve has a richly structured landscape; habitats are ice age moraines, outwash plains, forests, wealds, fens and lakes. There are few settlements so that numerous species of animals and plants are provided with a habitat. Organic farming preserves threatened agricultural crops such as old grain, potato, vegetable and fruit varieties and the produce is marketed in the region.

A regional brand, today developed onwards into the 'quality mark' of the biosphere reserve, is the result of a research project to reinforce regional economic processes. In 1998 it was developed as a regional certificate of origin for guaranteed healthy and sustainably produced products and services. It supports the regional value added and the nature conservation goals of the biosphere reserve, using the slogan 'Natur setzt Zeichen' ('nature sending a signal').

Awarding the quality mark is based on criteria such as regional origin, meeting quality standards and an environmentally friendly production. Among the 85 users

of the quality marks are farmers, food processing plants, caterers, hoteliers and retailers. 'Living off the land': the unique landscape is in this way associated with attractive tourist offers and the regional product palette. This makes up the core of the marketing strategy for products

and services from the region under the quality mark with the logo of the reserve.

*Further information:*  
<http://www.schorfheide-chorin.de>

Photo © Gertrud Hein



Christine Kehl / Elke Baranek

## Information and Emotion

### Creating a brand image for the Spreewald Water Edge Project

*The protection of nature and resources plays a leading role in biosphere reserves. In the Spreewald biosphere reserve, the Spreewald Water Edge Project is the most important project. This major conservation project is supported within the framework of a programme of the Federal Ministry of the Environment with the objective of ensuring that large areas of natural or close-to natural landscapes of outstanding trans-regional importance are secured against risks on a permanent basis. This type of projects is often not well received by the local inhabitants. Thus public relations and image-building activities are all the more important.*

#### SPREEWALD WATER EDGE PROJECT



The project is making 12,3 million euros available to the Spreewald biosphere reserve up to 2013. The measures taken will help to improve the capacity of the landscape to store water, revitalise fen areas and to improve the living conditions of flowing water bodies. Examples:

- To increase the structural diversity, seven large oxbow lakes have been reconnected and many smaller oxbow lakes partly opened, water bodies have been desilted and natural bank structures encouraged.
- To ease the migration of fish, over 50 barrages have been equipped with ascent supports and obsolete water management constructions have been removed. Water bodies are enabled to flow again.
- By holding back water and remodelling ditches, moors can be protected and revitalised.

The onset of the project in the year 2000 was preceded by a heated discussion in the municipalities and among individual stakeholders in the biosphere reserve. This discussion led to the conclusion that participation and involvement of the community is a prerequisite for the success of the project. Therefore the conservation project was accompanied by a procedure of moderation and delivery of comprehensive information with the objective to create a positive image for the Spreewald Water Edge Project. Professional support was available to boost this public relations work right from the start.

The target groups  
are crucial

#### Delivering information and creating an image

The approach can be compared to that of marketing of brand products. What epitomises a 'brand' is affected very much by subjective impressions and perception of people. Unfortunately the public perception of conservation projects is more often than not hardly positive and conflicts are often in the foreground. Thus conservation projects are often plagued with image problems. The project in the Spree Forest however shows that public relations do have an influence on public perception and that a positive image can be accomplished.

Image creation is very closely connected to the attributed identity of a product or project. This identity is initially very sketchy and must first be developed. The creation of an identity for the nature conservation project in the Spree Forest was stimulated by communication processes within the framework of the moderation and participation procedure; by communication processes within the strategy group, the internal decision-making body; by agreeing on rules of the game; by situation analysis; by specialist and regional working groups; by numerous information events for the general public and by press relations.

Measures for communication and information must be embedded in an overall structure that continually examines the target groups: Who are we trying to reach anyway? Suggestions for the 'correct' questions and structures are offered by marketing theories for brand products, for example, the 'brand steering wheel'

developed by Prof. Franz-Rudolf Esch of the University of Giessen (cp. illustration).

The analysis referring to the central 'project competence' focuses on the question which core competences the nature conservation project has? Positive aspects worth mentioning are that only trans-regionally representative regions can profit from funding of the Federal Government; that federal states have to contribute and that the projects need to be regionally embedded. A rather negative aspect is the perception that such projects are above all initiated and supported politically rather than economically.

'Special features' of the Spreewald Water Edge Project are that its regional sponsor is an administrative union of municipalities, that it is planned for the long-term, is financially secure and organised in a participatory manner. This results in transparent decision-making processes, a focus

on precise project goals and measures as well as an integration of the measures into an overall conservation concept.

### Conveying the benefits transparently

The next step in the analysis concerns the 'benefits', which target groups gain from the project's 'special features'. A much differentiated outlook is particularly necessary in this case. The main benefit of the project is the stabilisation of the landscape in the Spree Forest. This is of significance for nature conservation but also for land users. The conservation of rare animal and plant species is of particular significance for conservation. Economic value creation and impulses for regional development are meaningful across the board. With regard to that, political and economic alliances can be



## UNESCO Biosphere Reserve Spreewald

The Spreewald was designated by UNESCO as a biosphere reserve in 1991. It is situated one hundred kilometres southeast of Berlin. It is a large inland delta of the River Spree and consists of meadows with a finely structured network of small water channels, forests on

wetlands, riparian forests and extensive wet meadows. The area spans 475 km<sup>2</sup> and its character has, for centuries, been stamped by human use in the form of small farmsteads distributed in a mosaic-like pattern. Today, it still is to a large extent in close touch with nature. It is hardly

dissected by roads and offers numerous rare species of flora and fauna a habitat, for example storks, otters or dragonflies.

An important objective of the biosphere reserve is to preserve forms of use typical for this region. Agriculture as a sole source of income for the small farmsteads is no longer profitable against the backdrop of contemporary agricultural politics; therefore most of the homesteads, without external support, would have to be given up. The biosphere reserve is aiming at reliable and stable funding models for the farmers, for example via a foundation model, with the goal of preserving the cultural landscape.

Other focus issues of the biosphere reserve are the large-scale nature conservation projects for water retention, for renaturing canals and land-improvement; in addition, there are considerable efforts in innovative environmental education using modern media and new nature-tourism offers.



Photo © Biosphärenreservat Spreewald

Further information:  
<http://www.mluv.brandenburg.de/cms/detail.php/lbm1.c.323683.de>

established with stakeholders, who regard the nature conservation project from the point of view of contracting parties and investors. Apart from these functional benefits, the psychosocial benefit should not be underestimated. The project offers the opportunity to make a commitment, thereby making a mark in the region.

### ‘Tonality’ and ‘picture’

The communication of ‘core competencies’, ‘attributes’ and ‘benefits’ can only succeed when it is clear how the project identity fits into the interaction context of the respective target groups. The attributes ‘authentic’, ‘cooperative’, ‘ability to learn’, and ‘modern’ were chosen for

the Spreewald Water Edge Project. These need to be experienced and have to be visible – for example through choosing an individual communication structure and a distinctive corporate design. In the Water Edge Project, these elements and formats were worked out early on and were pursued continually. The most important identification mark is the logo for recognition of all information media. The burbot was chosen as a logo because this fish has played an important role in the region and is, nowadays, threatened with extinction. The project’s website <http://www.grps.info> is a central communication element, because of the unequalled access possibilities and the topicality of the information. Furthermore, exhibition and information leaflets were created to present and explain individual measures; the resulting feedback was substantial.

In summary, it can be said that effective communication demands a concept regarding its content and design, a clear profile and a clear sender. The instruments and media applied require continuity and must be adapted to specific situations and requirements. The experiences of the Spreewald Water Edge Project show that communication under these circumstances can contribute to the creation of a positive image for nature conservation.

The project has, meanwhile, established itself as a regional stakeholder. Public information events are regularly attended by hundreds of inhabitants of the Spree Forest, who are keen to learn about the progress of the project.

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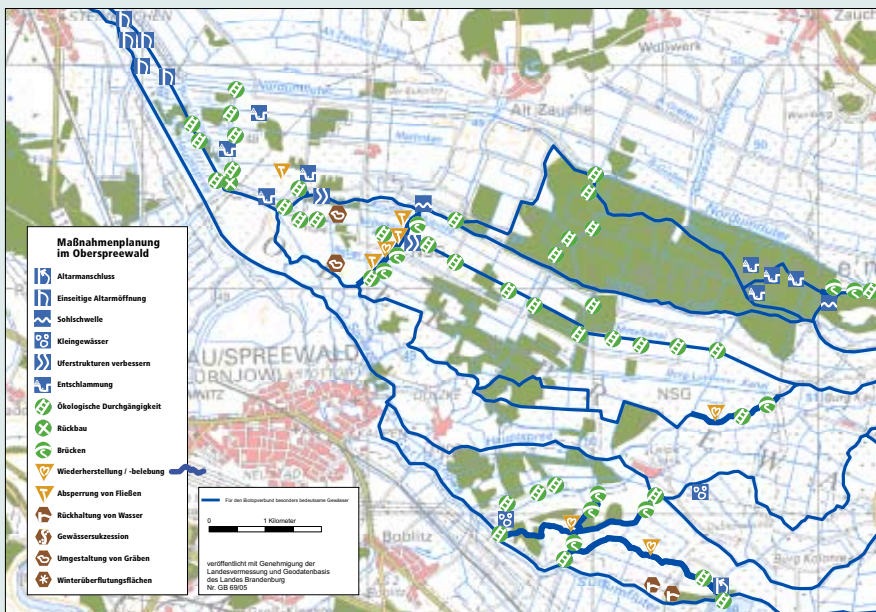


## Full of Life

*UNESCO Biosphere Reserves – Model Regions for Sustainable Development*

This English language volume of 180 pages published in 2005 by the German MAB National Committee represents another up-to-date overview of the MAB Programme in Germany.

Springer-Verlag Berlin Heidelberg,  
ISBN: 3-540-20077-0



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Further information: [www.grps.infov](http://www.grps.infov)

Rainer Mönke

## Nature Conservation Creating Employment

'Job-Motor Biosphere' in the UNESCO biosphere reserve Schaalsee

The Job-Motor Biosphere is a joint initiative of the authority of the biosphere reserve Schaalsee and the sponsoring agency 'Förderverein Biosphere Schaalsee e.V.' as well as the Federal Employment Office. The objective of the initiative is to promote start-up companies and sideline income in line with the philosophy of the biosphere reserve. The idea was born in the mid-nineties; the first concrete step was taken in the form of a brain-storming session in Roggendorf in northwest Mecklenburg in 1998. All relevant stakeholders from the region, including local politicians, companies and farmers and even artists got together in an animated 'round table' discussion.

This exchange of ideas resulted in the initiation of very diverse projects for the regional development of the reserve. In order to ensure quality standards for the astonishing number of business start-ups, the Job-Motor Biosphere came to life. It was inaugurated in August 1998 on a day dedicated to business start-ups, which took place in the information centre of the biosphere reserve, the 'Pahlhuus'. Around 80 potential candidates for start-up businesses presented their ideas and received answers to their questions from the newly founded advisory board of the Job-Motor Biosphere, comprising of competent representatives from the employment offices Hagenow and Gadebusch, the local savings bank Ludwigslust, the Chamber of Crafts and the Chamber of Commerce and Industry Schwerin, a state health insurance company and the association for promoting businesses Ludwigslust. While aimed at supporting people in setting up their own companies, the event also established important contacts amongst all those participating. The patron of this 'business start-up day' was Dr. Till Backhaus, then Minister of Fishing, Agriculture, and Forestry of Mecklenburg-Western-Pomerania.



Photo © Gertrud Hein

The second event of this type took place in March 1999; this time representatives of the Federal Association of the Small and Medium-Sized Businesses as well as the Ministry of Economics were also included on the advisory board. Thirteen projects were selected from a wide range of areas, which were supported by a two-phase model during their start-up phase: A three month educational phase in business administration and issues concerning the reserve was carried out by the Advanced Training Academy for Economics GmbH in Ratzeburg, the institute for Networked Environmental Planning in Pinnow and both the authority and the sponsoring agency of the biosphere reserve. A subsequent six-month coaching phase served to ensure the success of the planned start-up companies.

The approach of the project Job-Motor-Biosphere was successful and was consistently copied. By April 2003, the fifth 'business start-up day' had taken place in Zarrentin. Within five years, 29 start-up companies were established creating a total of 50 permanent jobs, most noticeably in the area of sustainable services, proving that jobs based on respect for the basic principles of ecology, can be

created in nature reserves. The Job-Motor Biosphere in the Schaalsee biosphere reserve not only sends out signals to the labour market but also contributes significantly to regional development and enables the biosphere reserve to develop its own identity. Recently the Job-Motor Biosphere has increasingly developed business partnerships and strengthened existing networks. Thus it has significantly contributed to the success of the local brand 'Schaalsee Biosphere Reserve – for Body and Soul'.

This pilot project for creating functioning small businesses in the biosphere-reserve region was soon taken up in other reserves in Mecklenburg-Western Pomerania, for example in the biosphere reserve South-East Rügen and in the Müritz region.

The framework conditions for the promotion of job creation have changed throughout Germany since 2003. This has made it necessary to integrate the activities of the Job Motor-Biosphere into the coordination project 'ProReg-MV', run by the association for the promotion of the integration of Mecklenburg-Western Pomerania in the civil society of the EU, 'EuroReg e.V.'. This amended organisational structure by no means reduces the active participation of the biosphere reserve and its sponsoring society and does not affect the continuing success of the project in promoting start-up companies in the biosphere reserve.

*Rainer Mönke is responsible for basic principles and international projects at the authority of the Schaalsee biosphere reserve.*

Marcus Lämmle

## Changes Lead to New Perspectives

The Swabian Alb prepares its application as a UNESCO biosphere reserve

*The expected designation as a biosphere reserve represents a great opportunity for managing the structural change in the Swabian Alb region. This article portrays the eager preparations, which have been going on in preparation for the application to UNESCO in 2007.*

The German Federal Government announced the closure of the Federal Armed Forces location in Münsingen, Swabian Alb in 2001. At first only the Herzog-Albrecht barracks were mentioned, however, at the beginning of 2002 it appeared that the military training ground 'Gutsbezirk Münsingen' and the 'Alter Lager', a collection of over 130 mostly listed buildings were also to be vacated by the end of 2005. This former training ground is one of the largest undivided areas in the federal state Baden-Württemberg. The region is rich with nature and has a unique landscape. It was therefore registered, in its entirety, for acceptance to the European network of protected areas 'Natura 2000'.

The federal state Baden-Württemberg faced up to its responsibility to help accomplish the necessary structural changes in the region, particularly in the town of Münsingen, a small town made up of 13 sub-municipalities with around 14,000 inhabitants. Prime Minister Günther H. Oettinger repeatedly declared his government's intention of initiating a 'biosphere region' – such is the term used in the federal state's Nature Conservation Act – around the former military training ground. Right from the start, the clear objective of all municipalities involved was the designation of the biosphere region as a biosphere reserve by UNESCO's 'Man and the Biosphere' (MAB) programme. The demarcation

process and the legal preparations at the federal state level will very soon be finished successfully.

### From the first demarcation draft to the current regional setting

In July 2005 the district of Reutlingen submitted an initial demarcation draft to become a biosphere region. To save time, the discussion was initially based on the demarcations of the towns of Bad Urach and Münsingen, the municipality of Römerstein and the independent Gutsbezirk Münsingen; further municipalities were not considered. Within the setting of this initial demarcation draft, areas had to be identified as being suitable for core area or buffer zone. Even then it appeared realistic that the minimum area of 30,000 hectares could be exceeded due to the willingness of bordering municipalities to come on board.

A significant prerequisite for the acceptance of the idea of establishing a biosphere region in the district of Reutlingen were the impulses given by the 'federal state project for the preservation and development of nature and environment' (PLENUM) and by the programme 'active regions'. Since April 2001 around 300 projects for sustainable, regional development were realised with the help of 8,7 million euros of funding from PLENUM and 'active regions'; 77 of these projects were in the low-impact tourism sector. Numerous product and marketing innovations are nowadays well-known, at least in Baden-Württemberg. These projects pave the way towards showing the region that nature conservation is worthwhile, both for individuals and for communities. At the same time the

Photo © Kurt Schlünkes







### The planned biosphere reserve Swabian Alb

Photo © Maichle & Schmitt, Münsingen-Bremelau

region's efforts with regard to sustainable development aim to achieve outstanding and long-term results for nature and the environment; the extent of the fixed-term funding depends on just these outcomes.

It was clear right from the start that the biosphere region could only be developed successfully if the greatest possible transparency prevailed and all stakeholders could be successfully involved. The ministry responsible, the Ministry for Food and Rural Development of Baden-Württemberg, therefore opted for a three-level governance structure:

- The 'operational working group' in which the local stakeholders play a role is located at the Regierungspräsidium (governmental entity in charge of several districts) Tübingen.
- The 'permanent advisory board' headed by Minister Peter Hauk enables an effective exchange between nature protection associations, farming associations, the Chamber of Industry and Commerce Reutlingen and the regional associations.
- The 'steering committee', headed by the official of the Ministry for Food and Rural Development in charge makes functional decisions and prepares political decisions.

The decision to utilise this structure was, in retrospect, fully appropriate. To include all stakeholders at the appropriate level into the governance structure contributed significantly to the enormous degree of acceptance of demarcating the biosphere region.

Another fully appropriate decision, in retrospect, was the decision to be physically present in the biosphere region early on. In June 2006 a 'start-team' was established for that purpose, a highly motivated group of six representatives from the Regierungspräsidium Tübingen, the district office of Reutlingen as well as the Federal Agency for Property Issues, the owner of the former military training ground. The start-team keeps up the dialogue with all those involved in the biosphere region and all those who want to become actively involved. The current focus is on the preparation of the application to UNESCO, on the creation of a network of information centres and on the establishment of a website. The initial scepticism of many of those involved – from the local authorities as well as from economy – was soon replaced by a growing interest. Now these very stakeholders have understood that demonstrating commitment for a future UNESCO biosphere reserve could represent a great opportunity.

The first demarcation draft was mainly based on factors of nature conservation. The elaboration was carried out by the Regierungspräsidium Tübingen. The demarcation and zoning was thoroughly discussed with many municipalities located outside of the area of the first draft. The opportunities arising from a reasonable demarcation of the transition area for all those concerned were stressed then. The municipalities concerned had to weigh this up with regard to the demand of the federal state that they have to cover 30 percent of most costs as from the year 2011. All the municipalities and districts agreed on the principle of an allocation formula.

The planned biosphere region Swabian Alb now spans a total area of 80,000 hectares – a considerable size. It reaches across 28 municipalities in the three districts of Reutlingen, Alb-Donau-Kreis and Esslingen and the two administrative districts Tübingen and Stuttgart as well as the independent Gutsbezirk Münsingen. Of this total area about 3,2 percent make up the core area. It comprises of slope and canyon forests, which are no longer used in any way and have been allowed to develop naturally. The towns and municipalities contribute to the core area with 1,000 hectares of municipal forest-land. In this way the UNESCO criterion of a minimum of

3 percent of core area is fulfilled. The core areas are enclosed by buffer zones, which account for 37 percent of the planned biosphere region. The transition areas make up around 60 percent.

In December 2006, the steering committee agreed to the demarcation and zoning. The text of the governmental decree, which was developed in an exemplary participatory manner is virtually completed today. The decree was drafted taking into account the suggestions, ideas, and doubts of all the municipalities and associations concerned.

The steering committee also decided on a location for an administrative and information centre. It is to be located at the military training ground Münsingen in Alter Lager in two of the listed buildings. This administrative and information centre should incorporate a network of all the existing contact points, for example the nature protection centre Schopfloch, the Federal State stud Marbach, Bad Urach and the centre for environmental education Listhof in Reutlingen. A communi-

cation concept for this network will be developed including made-to-measure solutions with individual focuses; additional information measures are also planned.

### What happens next?

The Council of Ministers of Baden-Württemberg approved the demarcation and zoning of the region, the financial framework and the draft decree at the end of April 2007. The draft will be submitted for the official hearing so that the decree can be passed in autumn at the latest. Only then will the biosphere region Swabian Alb really exist. This is a significant prerequisite for further steps, ranging from making the necessary arrangements for the administration and information centre to the upcoming personnel decisions. Furthermore the application to UNESCO for designation as a biosphere reserve has to be worked out. Dependent on the way that those bodies involved work, the designation by UNESCO should be possible by the end of 2008, in 2009 at the latest.

With the decision to become a UNESCO biosphere reserve, the Swabian Alb took up the opportunity of developing into a pioneer region and playing high up in the 'champions league' of cultural landscapes. To the public authorities, sustainability means putting all decisions to the ecological test. Independent of the scientific verdict on the demarcation and the zoning of the region, just the debate on the subject of sustainability should have a positive effect on this region mid-term. For many of those concerned, it may not always be easy to personally relate to all principles and specifications of a biosphere region, or rather – depending on the hoped-for designation by UNESCO – a biosphere reserve. Anyhow, time has come to fill them with life.

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*Further information:  
<http://www.biosphärengbiet-alb.de>*

## How can a Biosphere Reserve in Darfur Save the Remaining Wildlife?

The biosphere reserve Radom is situated in the south of the crisis region Darfur in Sudan, close to the border of the autonomous Southern Sudan and the Central African Republic. Since the rebellion in 2003, especially West Darfur has been the scene of cruel and scarcely manageable hostilities. Within the context of this difficult situation young scientists in Radom have spent three years carrying out comprehensive research work with the help of the 'Young Scientist Award' granted by the MAB programme. The goal of these studies was to record the status of the ecosystems, of the flora and fauna as well as the socio-economic development of the park. Based on that data, recommendations for the government authorities were compiled and regulations drafted to improve the management of the park and to involve the local inhabitants.

This study represents a detailed analysis of the manifold problems of the region. After the end of the civil war in South-

ern Sudan in 2005 and the Darfur-crisis, hundreds of thousands of people were left homeless. This resulted in a rapid increase in population in Radom due to the fertile land there. Illegal settlement and cultivation was a result. The new settlers compete with the traditional nomad-tribes in the region for water and land. Exploitation of the land and firewood felling increase the danger of desertification.

These factors put a burden on flora and fauna. Additionally illegal arms dealing and the lack of controls lead to an increase in poaching. The stock of big game is greatly depleted; elephants, the white rhinoceros and buffalos have disappeared.

The study makes it quite clear that research in biosphere reserves goes much further than nature conservation alone. The recommendations of the research team aim to end activities, which have not only resulted in the wiping out of wild animals but, if continued, will make

Radom inhabitable very soon. For instance, it is high time to inform the inhabitants to disband certain settlements and to improve the infrastructure.

*Detailed Information is provided in an article in the magazine „A World of Science“ (Vol.5, No.2) released by UNESCO's sector for Natural Sciences, [www.unesco.org/science/edito\\_en19.shtml](http://www.unesco.org/science/edito_en19.shtml).*



**Gamekeepers in the Radom biosphere reserve**

Photo © Wildlife Research Centre in Sudan

Hubert Farke/Peter Südbeck

# Biosphere Reserve – National Park – World Heritage Site

The Wadden Sea has a lot to offer

*Biosphere reserve, national park, world heritage site – three prominent seals for only one habitat. Can this collection of seals be sensibly animated or does it remain a heap of labels without content? It is indisputable that the Wadden Sea is an exceptionally special area, land nor sea, one of the last intact nature landscapes in Europe. Its geomorphic genesis as a highly dynamic post ice-age type of landscape and its biological structures and ecological functions are unique worldwide. The latter have impacts far beyond the Wadden Sea. Many of the fish breeding here later colonise the North Sea. The Wadden Sea also has worldwide significance as an indispensable stepping stone for migrating birds.*

The German federal states neighbouring the Wadden Sea, i.e. Lower Saxony, Hamburg, and Schleswig-Holstein, declared it as a national park 20 years ago. This was a significant step forward for the preservation of the area. In this way, the three federal states confirmed their will to preserve the original nature of this habitat by law. Thus they also made a significant contribution to the international protection of the Wadden Sea, which has been agreed upon by the Netherlands, Germany and Denmark and is coordinated and further developed by regular intergovernmental conferences.

## Ecosystem research in the Wadden Sea area

Against the background of the network project 'Ecosystem research in the Wadden Sea Area', carried out by the Federal Government together with Schleswig-Holstein and Lower Saxony (1989-1999), the Wadden Sea national parks were designated as biosphere reserves within the framework of the programme 'Man and the Biosphere' in the early nineties. The goal of the network project was, next to the investigation of ecological correlations, to describe the man-environment relations in the Wadden Sea area in more detail and to develop recommendations for further development of the protection concepts as well as a sustainable management scheme.

The results of the network project have been integrated into the revised version



Photo © Archiv NPA Stock

of the Schleswig-Holstein and Lower Saxony national park law (1999, resp. 2001). The identity of the biosphere reserve and the national park, in relation to size and zoning, remained unchanged. The Wadden Sea biosphere reserves exhibit large core areas and buffer zones. Transition areas, which, because of their function, would have to be situated outside the national parks, are still largely non-existent. This circumstance was a significant point for criticism at the time of the 10 year evaluation, which was carried out for the Wadden Sea biosphere reserves in 2004/2005. A first step to make up for the deficit was made when the Hallig Islands decided to join the biosphere reserve Schleswig-Holstein Wad-

den Sea in form of a transition area. The application for extension was accepted and welcomed by UNESCO in 2004.

## Evaluation of the biosphere reserve

There are also numerous initiatives and projects in the Wadden Sea area of Lower Saxony, which deal with sustainable forms of economic activity, especially tourism and agriculture. The 2004 evaluation showed that this local and partly regional development corresponded to the activities expected in a UNESCO biosphere reserve and that the integration of a transition area in the biosphere reserve,

## UNESCO Biosphere Reserve Wadden Sea of Hamburg

The biosphere reserve Wadden Sea of Hamburg, which was designated by UNESCO in 1992, is, at the same time, a National Park. The area comprises of the Wadden Sea surrounding the estuary of the Elbe River. Of the total area of 117 km<sup>2</sup>, 105 km<sup>2</sup> is core area, the rest is buffer zone. Representative ecosystems are the Wadden Sea, tide-ways, dune islands, dunes, salt marshes and 'binnengroden', which are marshes behind dikes usable for farming. The Elbe estuary is a rich source of nutrients and boasts a diverse world of fish and birds. There are only around 40 inhabitants of the Hamburg Wadden Sea, namely on the island of Neuwerk. The biosphere reserve protects the natural dynamics in the habitat Wadden Sea, based on the European Union's Habitats and Birds Directives.

The biosphere reserve encourages extensive field and grassland cultivation in order to preserve the small-scale farming structures in the 'binnengroden'. This also has the advantage of successfully protecting the stock of grassland birds. Numerous solar plants, thermal collectors as well as photovoltaics sustainably provide energy. In the future, a particular energy concept will make it possible to largely supply the biosphere reserve with renewable energy. Environmental monitoring is an integral part of the work of the biosphere reserve within the framework of the transboundary Wadden Sea Monitoring, and in cooperation with the Wadden Sea biosphere reserves and national parks in Lower Saxony and Schleswig-Holstein.

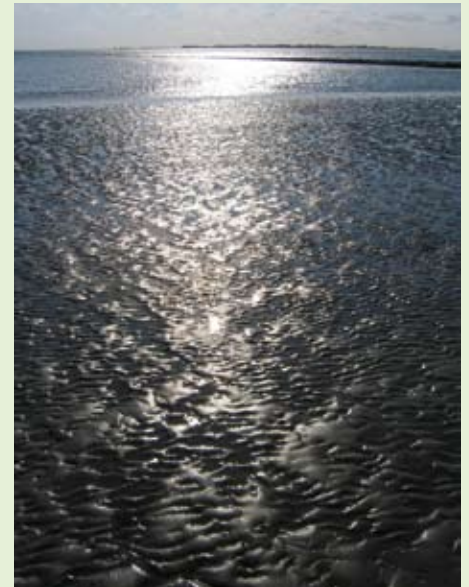


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Further information:

<http://www.nationalpark-hamburgisches-wattenmeer.de/>

as a model region for sustainable economical activities, could only be of advantage for all concerned. In 2006 the administration of the biosphere reserve devised the necessary organisational preparations and initiated discussions with the coastal communities, umbrella associations and individual initiatives. The discussions resulted in a great deal of interest on the part of these target groups. Next to support with moderation, the administration of the biosphere reserve sees its main task in the transregional coordination and realisation of sustainable projects. In order to comply with the requirements as a model region, a further goal is the transfer of findings and methods in bordering regions. In the meantime the development of a transition zone in the biosphere reserve Wadden Sea of Lower Saxony has made significant progress.

### Nomination for the world heritage list

The uniqueness of the Wadden Sea lies in the pureness of its nature, in the highly dynamic and unique landscapes resulting from the changes in sea-level and in its transregional ecological significance. This is why during the sixth Trilateral Governmental Conference on the Protection of the Wadden Sea, it was decided to work

towards a nomination for inscription in UNESCO's list of cultural and natural world heritage sites. After comprehensive preparations and intensive discussions with the population, the German and Dutch Governments decided to prepare the application in 2005. Although around 10 percent of the Wadden Sea area is Danish, Denmark has not been involved in the application process because of the negative result of a vote by the Danish people from the coastal region. The draft prepared by Germany and the Netherlands was expected to pass through the public discussion process in summer 2007. UNESCO will make a decision about the inscription in the world heritage list, as the case may be, in 2009 or 2010.

National park – biosphere reserve – world heritage site Wadden Sea: these seals are not just labels, which are stuck onto one and the same thing. This is reflected just by the very complex application and admission procedures. The seals are rather awards and responsibilities, each having a value of its own. They each require a different focus for the management of the region. They also compliment each other in many ways. One thing that all three seals have in common is the fact that the preservation of the ecosystem and the exceptional natural landscape is central. The goal of the national parks is

the preservation of the natural range of species, the natural functions and the landscape picture of the Wadden Sea as a nationally significant nature landscape. The designation as a world heritage site raises this significance from the national to the global level and acknowledges the Wadden Sea as being a worldwide unique and, to a large extent, untouched area, whose structures and functions have to be preserved; that task is then acknowledged to be of global significance.

Compared to the designation as a national park, the recognition as a world heritage site does not represent a new or extended protection category. The existing national park legislation is enough for fulfilling the strict requirements of UNESCO with regard to the protection of the areas. In a nutshell, the designation as a world heritage site is a paramount title. However it comes hand in hand with the responsibility, to secure the Wadden Sea as a common heritage of man for the future.

### Preservation and use by people

While in the case of the national park and the world heritage site the preservation of the natural habitat, its range of species and its functions are central, the concept of the biosphere reserve

also includes the use by people. The Wadden Sea region has been populated for centuries and the Wadden Sea has always been used by people: in the main, however, the forces of nature only allowed for a non-extensive use.

The building of dikes has, in fact, shaped the transition between land and sea by human hand. The Wadden Sea itself has, however, not been influenced in its integrity. The protection of the people living in the Wadden Sea region is beyond all question, in the same way as their right to work and to make a living. Therefore coastal protection measures and economic use are integrated into the protection concept.

The aspects which challenge the Wadden Sea region to provide protection and regional development on a sustainable basis are: the future developments of coastal protection with rising sea levels, the ongoing economic changes, the growing importance of tourism particularly the wish to 'experience nature', the development of ports and shipping along with the development of renewable energies .

The MAB programme and the biosphere reserve follow an integrated approach and as such, promise to be successful, as the welfare of the region is dependent on the combination of many factors: intact nature as a basis for quality of life and attractive offers for tourists, fishing and agriculture, the retail business and also job opportunities. The

goal of the biosphere reserve is to guarantee sustainable development.

National park, biosphere reserve, and world heritage site are approaches which are built upon each other and complement each other; they highlight the excellent standing of the Wadden Sea and preserve this landscape in its original purity while simultaneously making a holistic development approach possible.

*Dr. Hubert Farke is responsible for the biosphere reserve at the administration of the National Park Wadden Sea of Lower Saxony.*

*Peter Südbeck is head of the administration of the National Park Wadden Sea of Lower Saxony.*

## UNESCO Biosphere Reserve Wadden Sea of Lower Saxony

This biosphere reserve, which was designated by UNESCO in 1992, spans 2,400 km<sup>2</sup> along the Lower Saxony North Sea coast. The bulk of the area is made up of core area and buffer zone, which also represents the national park. The

biosphere reserve is situated facing the sea side of the dike sluice up to the East Frisian Islands, between the Rivers Ems and Elbe. The tide dynamics of the Wadden Sea create extreme living conditions, which change twice daily. Thus only a

few, specialised animal species such as seals and birds live there; these, however, in large numbers. Next to the mudflats further habitats such as salt marshes, sand dunes and dune islands exist.

With only one inhabitant, at the ornithological station on the island of Memmert, the Wadden Sea of Lower Saxony is the German biosphere reserve with the smallest population. After a decision by the cabinet of the federal state in 2005, the possibility of an extended transition area is being discussed on-site.

Nevertheless the coastal area is an area of economic activity for the people. Yet, the agricultural areas today are used more and more environmentally friendly. On 66 percent of the salt marshes in the core area and buffer zone, cultivation has been abandoned and compensation offered to the farmers. The Wadden Sea has also been a recreation area for more than 150 years; the visitors are informed of the significance of protection through information boards along the nature paths and in leaflets.

*Further information:*

*<http://www.nationalpark-wattenmeer.niedersachsen.de>*

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## The World Network of UNESCO Biosphere Reserves

### The List

*The International Co-ordinating Council (ICC) of the MAB programme and its 'Bureau' are responsible for adding new areas to the World Network of UNESCO Biosphere Reserves as well as giving approval to extensions or other modifications. During its most recent meeting from 18 to 20 September 2007 in Paris, the Bureau of the ICC added 23 new biosphere reserves to its global network. As Germany had filed the proposition for removing the Bayerischer Wald biosphere reserve from the list, the world network today numbers 529 reserves sites in 105 countries. The following list was last updated at the end of September 2007.*

#### ■ Algeria

Tassili N'Ajjer, 1986  
El Kala, 1990  
Djurdjura, 1997  
Chrea, 2002  
Taza, 2004  
Gouraya, 2004

#### ■ Argentina

San Guillermo, 1980  
Laguna Blanca, 1982  
Costero del Sur, 1984  
Ñacuñán, 1986  
Pozuelos, 1990  
Yabotí, 1995  
Mar Chiquita, 1996  
Delta del Paraná, 2000  
Riacho Teuquito, 2001  
Laguna Oca del Río Paraguay, 2001  
Las Yungas, 2002  
Andino Norpatagonica, 2007  
Pereyra Iraola, 2007

#### ■ Australia

Croajingolong, 1977  
Kosciuszko, 1977  
Macquarie Island, 1977  
Prince Regent River, 1977  
Unnamed, 1977  
Uluru (Ayers Rock-Mount Olga), 1977  
Yathong, 1977  
Fitzgerald River, 1977  
Hattah-Kulkyne and Murray Kulkyne, 1981  
Wilson's Promontory, 1981  
Riverland, 1977 (originally Danggali Conservation Park; extended and re-named Bookmark in 1995; renamed as Riverland in 2004)  
Mornington Peninsula and Western Port, 2002  
Barkindji, 2005  
Noosa, 2007

#### ■ Austria

Gossenköllesee, 1977  
Gurgler Kamm, 1977

Lobau, 1977  
Neusiedler See, 1977  
Großes Walsertal, 2000  
Wienerwald, 2005

#### ■ Belarus

Berezinskiy, 1978  
Belovezhskaya Pushcha, 1993  
Pribuzhskoye Polesie, 2004

#### ■ Benin

Pendjari, 1986  
W-Region (cp. Benin/Burkina Faso/Niger – transboundary)

#### ■ Benin/Burkina Faso/Niger – transboundary

W-Region, 2002 (established in Niger in 1996, extensions in Benin and Burkina Faso in 2002)

#### ■ Bolivia

Pilón-Lajas, 1977  
Ulla Ulla, 1977  
Beni, 1986

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## ■ Brazil

Mata Atlântica (including Sao Paulo Green Belt), 1993 (extension 2002)  
Cerrado, 1993 (extension 2000/2001)  
Pantanal, 2000  
Caatinga, 2001  
Central Amazon, 2001  
Espinhaço Range, 2005

## ■ Bulgaria

Steneto, 1977  
Alibotouch, 1977  
Bistrichko Branichté, 1977  
Boitine, 1977  
Djendema, 1977  
Doupkata, 1977  
Douпки-Djindjiritza, 1977  
Kamtchia, 1977  
Koupena, 1977  
Mantaritza, 1977  
Ouzounboudjak, 1977  
Parangalitzta, 1977  
Srébarna, 1977  
Tchervenata Sténa, 1977  
Tchoupréné, 1977  
Tsaritchina, 1977

## ■ Burkina Faso

Mare aux hippopotames, 1986  
W-Region (cp. Benin/Burkina Faso/  
Niger – transboundary)

## ■ Cambodia

Tonle Sap, 1997

## ■ Cameroon

Waza, 1979  
Benoué, 1981  
Dja, 1981

## ■ Canada

Mont Saint Hilaire, 1978  
Waterton, 1979  
Long Point, 1986  
Riding Mountain, 1986  
Charlevoix, 1988  
Niagara Escarpment, 1990  
Clayoquot Sound, 2000  
Redberry Lake, 2000  
Lac Saint-Pierre, 2000  
Mount Arrowsmith, 2000  
South West Nova, 2001  
Thousand Islands – Frontenac Arch, 2002 (extension 2007)

Georgian Bay Littoral, 2004  
Fundy, 2007  
Manicouagan Uapishka, 2007

## ■ Central African Republic

Basse-Lobaye, 1977  
Bamingui-Bangoran, 1979

## ■ Chile

Fray Jorge, 1977  
Juan Fernández, 1977  
Torres del Paine, 1978  
Laguna San Rafael, 1979  
Lauca, 1981  
Araucarias, 1983  
La Campana-Peñuelas, 1984  
Cabo de Hornos, 2005  
Bosques Templados Lluviosos de los Andes Australes, 2007

## ■ China

Changbaishan, 1979  
Dinghushan, 1979  
Wolong, 1979  
Fanjingshan, 1986  
Xilin Gol, 1987  
Wuyishan, 1987  
Bogeda, 1990  
Shennongjia, 1990  
Yancheng, 1992  
Xishuangbanna, 1993  
Maolan, 1996  
Tianmushan, 1996  
Fenglin, 1997  
Jiuzhaigou Valley, 1997  
Nanji Islands, 1998  
Shankou Mangroves, 2000  
Baishuijiang, 2000  
Gaoligong Mountain, 2000  
Huanglong, 2000  
Baotianman, 2001  
Saihan Wula, 2001  
Dalai Lake, 2002  
Wudalianchi, 2003  
Yading, 2003  
Foping, 2004  
Qomolangma, 2004  
Chebaling, 2007  
Xingkai Lake, 2007

## ■ Colombia

Cinturón Andino, 1979  
El Tuparro, 1979  
Sierra Nevada de Santa Marta, 1979  
Ciénaga Grande de Santa Marta, 2000  
Seaflower, 2000

## ■ Congo

Odzala, 1977  
Dimonika, 1988

## ■ Democratic Republic of Congo

Yangambi, 1976  
Luki, 1976  
Lufira, 1982

## ■ Costa Rica

La Amistad, 1982  
Cordillera Volcánica Central, 1988  
Agua y Paz, 2007

## ■ Côte d'Ivoire

Taï, 1977  
Comoé, 1983

## ■ Croatia

Velebit Mountain, 1977

## ■ Cuba

Sierra del Rosario, 1984  
Cuchillas del Toa, 1987  
Península de Guanahacabibes, 1987  
Baconao, 1987  
Ciénaga de Zapata, 2000  
Buenavista, 2000

## ■ Czech Republic

Krivoklátsko, 1977  
Třebon Basin, 1977  
Lower Morava, 2003 (established as Palava 1986; extended and renamed in 2003)  
Sumava, 1990  
Bílé Karpaty, 1996  
Krkonoše (cp. Czech Republic/  
Poland – transboundary)

## ■ Czech Republic/Poland – transboundary

Krkonoše/Karkonosze, 1992

## ■ Denmark

North-East Greenland, 1977

## ■ Dominican Republic

Jaragua-Bahoruco-Enriquillo, 2002

## ■ Ecuador

Archipiélago de Colón (Galápagos), 1984  
Yasuni, 1989  
Sumaco, 2000 (extension 2002)  
Podocarpus-El Condor, 2007



### ■ Egypt

Omayed, 1981 (extension 1998)  
Wadi Allaqi, 1993

### ■ El Salvador

Apaneca-Llamatepec, 2007  
Xiriualtique Jiquitizco, 2007

### ■ Estonia

West Estonian Archipelago, 1990

### ■ Finland

North Karelian, 1992  
Archipelago Sea Area, 1994

### ■ France

Commune de Fakarava, 1977 (Atoll de Taiaro, extended and renamed in 2006)  
Vallée du Fango, 1977 (extension 1990)  
Camargue (delta du Rhône), 1977 (Camargue, extended and renamed in 2006)  
Cevennes, 1984  
Iroise, 1988  
Mont Ventoux, 1990  
Archipel de la Guadeloupe, 1992  
Luberon, 1997  
Pays de Fontainebleau, 1998  
Pfälzerwald/Vosges du Nord (cp. France/Germany – transboundary)

### ■ France/Germany – transboundary

Pfälzerwald/Vosges du Nord, 1998 (Vosges du Nord established in 1988 and Pfälzerwald in 1992)

### ■ Gabun

Ipassa-Makokou, 1983

### ■ Germany

Flusslandschaft Elbe, 1979 (extension 1997)  
Vessertal-Thüringen Forest, 1979 (extension 1987/1990)  
Berchtesgaden Alps, 1990  
Wadden Sea and Hallig Islands of Schleswig-Holstein, 1990 (extended and renamed in 2004)  
Schorfheide-Chorin, 1990  
Spreewald, 1991  
South-East Rügen, 1991  
Rhön, 1991  
Wadden Sea of Lower Saxony, 1992  
Wadden Sea of Hamburg, 1992  
Upper Lausitz Heath and Pond Landscape, 1996  
Schaalsee, 2000  
Pfälzerwald/Vosges du Nord (cp. France/Germany – transboundary)

### ■ Ghana

Bia, 1983

### ■ Greece

Gorge of Samaria, 1981  
Olymp, 1981

### ■ Guatemala

Maya, 1990  
Sierra de las Minas, 1992

### ■ Guinea

Mont Nimba, 1980  
Massif du Ziama, 1980

Badiar, 2002  
Haut Niger, 2002

### ■ Guinea-Bissau

Boloma Bijagós, 1996

### ■ Honduras

Río Plátano, 1980

### ■ Hungary

Aggtelek, 1979  
Hortobágy, 1979  
Kiskunság, 1979  
Lake Fertő, 1979  
Pilis, 1980

### ■ India

Nilgiri, 2000  
Gulf of Mannar, 2001  
Sunderban, 2001  
Nanda Devi, 2004

### ■ Indonesia

Cibodas, 1977  
Komodo, 1977  
Lore Lindu, 1977  
Tanjung Puting, 1977  
Gunung Leuser, 1981  
Siberut, 1981

### ■ Islamic Republic of Iran

Arasbaran, 1976  
Arjan, 1976  
Geno, 1976  
Golestan, 1976  
Hara, 1976  
Kavir, 1976  
Lake Oromeeh, 1976



Miankaleh, 1976  
Touran, 1976

### ■ Ireland

North Bull Island, 1981  
Killarney, 1982

### ■ Israel

Mount Carmel, 1996

### ■ Italy

Collemeluccio-Montedimezzo, 1977  
Circeo, 1977  
Miramare, 1979  
Cilento and Vallo di Diano, 1997  
Somma-Vesuvio and Miglio d'Oro, 1997  
Valle del Ticino, 2002  
Tuscan Islands, 2003  
Selva Pisana, 2004

### ■ Japan

Mount Hakusan, 1980  
Mount Odaigahara and  
Mount Omine, 1980  
Shiga Highland, 1980  
Yakushima Island, 1980

### ■ Jordan

Dana, 1998

### ■ Kenya

Mount Kenya, 1978  
Mount Kulal, 1978  
Malindi-Watamu, 1979  
Kiunga, 1980  
Amboseli, 1991  
Mount Elgon, 2003

### ■ Kyrgyzstan

Sary-Chelek, 1978  
Issyk Kul, 2001

### ■ Democratic People's Republic of Korea

Mount Paekdu, 1989  
Mount Kuwol, 2004

### ■ Republic of Korea

Mount Sorak, 1982  
Jeju Island, 2002

### ■ Latvia

North Vidzeme, 1997

### ■ Lebanon

Shouf, 2005  
Jabal Al Rihane, 2007

### ■ Madagascar

Mananara Nord, 1990  
Sahamalaza-Iles Radama, 2001  
Littoral de Toliara, 2003

### ■ Malawi

Mount Mulanje, 2000  
Lake Chilwa Wetland, 2006

### ■ Mali

Boucle du Baoulé, 1982

### ■ Mauritania

Delta du Fleuve Sénégal (cp. Mauritania/  
Senegal – transboundary)

### ■ Mauritania/Senegal – transboundary

Delta du Fleuve Sénégal, 2005

### ■ Mauritius

Macchabee/Bel Ombre, 1977

### ■ Mexico

Mapimí, 1977  
La Michilía, 1977  
Montes Azules, 1979  
El Cielo, 1986  
Sian Ka'an, 1986  
Sierra de Manantlán, 1988  
Región de Calakmul, 1993 (Calakmul,  
extended and renamed in 2006)  
El Triunfo, 1993  
El Vizcaino, 1993

Alto Golfo de California, 1993  
(extension 1995)

Islas del Golfo de California, 1995  
Sierra Gorda, 2001  
Banco Chinchorro, 2003  
Sierra La Laguna, 2003  
Ría Celestún, 2003  
Ría Lagartos, 2004  
Arrecife Alacranes, 2006  
Barranca de Metztlán, 2006  
Chamela-Cuixmala, 2006  
Cuatrociénegas, 2006  
Cumbres de Monterrey, 2006  
Huatulco, 2006  
La Encrucijada, 2006  
La Primavera, 2006  
La Sepultura, 2006  
Laguna Madre y Delta de Río Bravo, 2006  
Los Tuxtlas, 2006  
Maderas del Carmen, Coahuila, 2006  
Mariposa Monarca, 2006  
Pantanos de Centla, 2006  
Selva El Ocote, 2006  
Sierra de Huautla, 2006  
Sistema Arrecifal Veracruzano, 2006  
Volcán Tacaná, 2006  
Sierra de Alamos - Río Cuchujaqui, 2007

### ■ Federated States of Micronesia

Utwe, 2005  
And Atoll, 2007

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### ■ Mongolia

Great Gobi, 1990  
Boghd Khan Uul, 1996  
Uvs Nuur Basin, 1997  
Hustai Nuruu, 2002  
Dornod Mongol, 2005  
Mongol Daguur, 2007

### ■ Montenegro

Tara River Basin, 1976

### ■ Morocco

Arganeraie, 1998  
Oasis du Sud Marocain, 2000  
Intercontinental biosphere reserve of the Mediterranean (cp. Morocco/Spain – transboundary)

### ■ Morocco/Spain – transboundary

Intercontinental biosphere reserve of the Mediterranean, 2006

### ■ Netherlands

Waddensea Area, 1986

### ■ Nicaragua

Bosawas, 1997  
Río San Juan, 2003

### ■ Niger

Aïr et Ténéré, 1997  
W-Region (cp. Benin/Burkina Faso/ Niger – transboundary)

### ■ Nigeria

Omo, 1977

### ■ Pakistan

Lal Suhanra, 1977

### ■ Palau

Ngaremeduu, 2005

### ■ Panama

Darién, 1983  
La Amistad, 2000

### ■ Paraguay

Bosque Mbaracayú, 2000  
El Chaco, 2005

### ■ Peru

Huascarán, 1977  
Manu, 1977  
Noroeste, 1977

### ■ Philippines

Puerto Galera, 1977  
Palawan, 1977

### ■ Poland

Babia Gora, 1976 (extension 1997/2001)  
Bialowieza, 1976 (extension 2005)  
Lukajno Lake, 1976  
Slowinski, 1976  
Puszcza Kampinoska, 2000  
West Polesie, 2002  
East Carpathians (cp. Poland/Slovakia/ Ukraine – transboundary)  
Tatra (cp. Poland/Slovakia – transboundary)  
Karkonosze (cp. Czech Republic/Poland – transboundary)

## UNESCO Biosphere Reserve Mata Atlântica

### Brazil

Mata Atlântica, meaning the Atlantic Forest was designated as biosphere reserve in 1992; it was the first to be established in Brazil. It spans 3,000 km along the Brazilian Atlantic coast and with an area of almost 300,000 km<sup>2</sup>, it is almost as large as Germany. The region boasts an enormous diversity of species and also of ecosystems, from various types of forest to mangroves, salt marsh scrublands to dunes and grasslands. Magnificent instances of the very rare 'Atlantic Forest' can be found in the two UNESCO World Heritage Sites 'Discovery Coast Atlantic Forest' and 'Atlantic Forest South-East Reserves'.

The biosphere reserve is under the pressure of the largest cities and the most densely populated areas of the country. Almost 100 million people live in the Mata Atlântica area, about 70 percent of Brazil's total population. The São Paulo City Green Belt is part of the biosphere reserve. An uncontrolled development of the cities poses an enormous threat to the forests and their biodiversity. Many plant and animal species are becoming

extinct before they have even been discovered. In order to respond to the special need for large-scale ecosystem conservation and management, organisations from the areas of science, administration and municipalities have jointly set up the 'Mata Atlântica Biosphere Reserve System'. Almost all federal states concerned have installed subcommittees. The main aim is to conserve and restore ecological corridors between the remains of the 'Atlantic forest'.

The 'Eco-Job Model' is an example of a project in São Roque, a typical small town in the São Paulo Green Belt. There are few schools; unemployment, violence and poverty are widespread. The project has been qualifying young people for professions in the protection and sustainable use of the biodiversity of the region since 1996. In a well-equipped ecological farming business, subjects such as agriculture, forestry, refuse-recycling and ecotourism are taught. The project is supported by the State Government of São Paulo, the University of São Paulo, UNESCO's MOST

programme and various NGOs. With financial assistance from the United Nations Foundation, the 'Eco-Job Model' was able to be extended to other cities.

*Further information:*  
<http://www.rbma.org.br>



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Ruy Salaverry

## ■ Poland/Slovakia – transboundary

Tatra, 1992

## ■ Poland/Slovakia/Ukraine – transboundary

East Carpathians (East Carpathian/  
East Beskid, established 1992)

## ■ Portugal

Paúl do Boquilobo, 1981

Corvo Island, 2007

Graciosa Island, 2007

## ■ Qatar

Al-Reem, 2007

## ■ Romania

Pietrosul Mare, 1979

Retezat, 1979

Danube Delta (cp. Romania/  
Ukraine – transboundary)

## ■ Romania/Ukraine – transboundary

Danube Delta, 1998 (Danube Delta Roma-  
nia established 1979, extended 1992,  
Dunaisky Ukraine established 1998)

## ■ Russian Federation

Kavkazskiy, 1978

Okskiy, 1978 (part of Oka River Valley  
until 2000)

Sikhote-Alin, 1978

Tsentral'nochernozem, 1978

Astrakhanskiy, 1984

Kronotskiy, 1984

Laplanskiy, 1984

Pechoro-Ilychskiy, 1984

Sayano-Shushenskii, 1984

Sokhondinskiy, 1984

Voronezhskiy, 1984

Tsentral'nolesnoy, 1985

Baikalskiy, 1986 (part of Lake Baikal  
until 2000)

Tzentralnosibirskii, 1986

Chernyje Zemli, 1993

Taimyrskiy, 1995

Ubsunorskaya Kotlovina, 1997

Daurskiy, 1997

Teberda, 1997

Katunskiy, 2000

Prioksko-Terrasnyi, 1978 (part of  
Oka River Valley until 2000)

Barguzinskiy, 1986 (part of  
Lake Baikal until 2000)



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Nerusso-Desnianskoe-Polesie, 2001

Visimskiy, 2001

Vodlozerskiy, 2001

Commander Islands, 2002

Darvinskiy, 2002

Nijegorodskoe Zavolje, 2002

Smolensk Lakeland, 2002

Ugra, 2002

Far East Marine, 2003

Kedrovaya Pad, 2004

Kenozerskiy, 2004

Valdaishy, 2004

Khankaiskiy, 2005

Raifa Forest, 2005 (Unit of The  
Great Volzhsko-Kamskiy)

Sarali Land between Rivers, 2005

(Unit of The Great Volzhsko-Kamskiy)

Middle-Volga Integrated, 2006

## ■ Rwanda

Volcans, 1983

## ■ Senegal

Samba Dia, 1979

Delta du Saloum, 1980

Niokolo-Koba, 1981

Delta du Fleuve Sénégal (cp. Mauritania/  
Senegal – transboundary)

## ■ Serbia

Golija-Studenica, 2001

## ■ Slovakia

Slovenský Kras, 1977

Polana, 1990

Tatra (cp. Poland/Slovakia - transboundary)

East Carpathians (cp. Poland/Slova-  
kia/Ukraine - transboundary)

## ■ Slovenia

Julian Alps, 2003

The Karst, 2004

## ■ South Africa

Kogelberg, 1998

Cape West Coast, 2000 (extension 2003)

Waterberg, 2001

Kruger to Canyons, 2001

Cape Winelands, 2007

## ■ Spain

Grazalema, 1977

Ordesa-Viñamala, 1977

Montseny, 1978

Doñana, 1980

Mancha Húmeda, 1980

Las Sierras de Cazorla y Segura, 1983

Marismas del Odiel, 1983

La Palma, 1983 (extended and renamed  
in 1997 and 2002)

Urdaibai, 1984

Sierra Nevada, 1986

Cuenca Alta del Río Manzanares, 1992

Lanzarote, 1993

Menorca, 1993 (change in zonation  
2004)

Sierra de las Nieves y su Entorno, 1995

Cabo de Gata-Nijar, 1997

Isla de El Hierro, 2000

Bardenas Reales, 2000

Muniellos, 2000 (extension 2003;  
part of Gran Cantábrica)

Somiedo, 2000

Redes, 2001

Las Dehesas de Sierra Morena, 2002

Terras do Miño, 2002

Valle de Laciana, 2003  
(Part of Gran Cantábrica)

Picos de Europa, 2003  
(part of Gran Cantábrica)

Monfragüe, 2003

Valles del Jubera, Leza,  
Cidacos y Alhama, 2003

Babia, 2004 (part of Gran Cantábrica)

Área de Allariz, 2005

Gran Canaria, 2005

Sierra del Rincón, 2005

Los Valles de Omaña y Luna, 2005  
(part of Gran Cantábrica)

Alto de Bernesga, 2005  
(part of Gran Cantábrica)

Los Argüellos, 2005  
(part of Gran Cantábrica)

Os Ancares Lucenses y Montes  
de Cervantes, Navia y Becerreá,  
2006 (part of Gran Cantábrica)

Los Ancares Leoneses, 2006  
(part of Gran Cantábrica)

Las Sierras de Béjar y Francia, 2006

Intercontinental biosphere reserve  
of the Mediterranean (cp. Mo-  
rocco/Spain - transboundary)

Río Eo, Oscos y Terras de Buron, 2007

## ■ Sri Lanka

Hurulu, 1977

Sinharaja, 1978

Kanneliya-Dediyagala-Nakiya-  
deniya (KDN), 2004

Bundala, 2005

## ■ Sudan

Dinder, 1979

Radom, 1979

## ■ Sweden

Lake Torne Area, 1986

Kristianstad Vattenrike, 2005

## ■ Switzerland

Swiss National Parc, 1979

Entlebuch, 2001

## ■ United Republic of Tanzania

Lake Manyara, 1981

Serengeti-Ngorongoro, 1981

East Usambara, 2000

## ■ Thailand

Sakaerat, 1976

Hauy Tak Teak, 1977

Mae Sa-Kog Ma, 1977

Ranong, 1997

## ■ Tunisia

Djebel Bou-Hedma, 1977

Djebel Chambi, 1977

Ichkeul, 1977

Iles Zembra et Zembretta, 1977

## ■ Turkey

Camili, 2005

## ■ Turkmenistan

Repetek, 1978

## ■ Uganda

Queen Elizabeth, 1979

Mount Elgon, 2005

## ■ Ukraine

Chernomorskiy, 1984

Askaniya-Nova, 1985

Carpathian, 1992

Shatskiy, 2002

Dunaisky (cp. Romania/Ukraine  
- transboundary)

East Carpathians (cp. Poland/Slova-  
kia/Ukraine - transboundary)

## ■ United Arab Emirates

Marawah Biosphere Reserve, 2007

## ■ United Kingdom

Beinn Eighe, 1976

Braunton Burrows, 1976 (extension 2002)

Cairnsmore of Fleet, 1976

Dyfi, 1976

Loch Druidibeg, 1976

Moor House-Upper Teesdale, 1976

North Norfolk Coast, 1976

Silver Flowe-Merrick Kells, 1976

Taynish, 1977

## ■ United States of America

Aleutian Islands, 1976

Big Bend, 1976

Cascade Head, 1976

Central Plains, 1976

Channel Islands, 1976

Coram, 1976

Denali, 1976

Desert, 1976

Everglades & Dry Tortugas, 1976

Fraser, 1976

Glacier, 1976

H.J. Andrews, 1976

Hubbard Brook, 1976

Jornada, 1976

Luquillo, 1976

Noatak, 1976

Olympic, 1976

Organ Pipe Cactus, 1976

Rocky Mountain, 1976

San Dimas, 1976

San Joaquin, 1976

Sequoia-Kings Canyon, 1976

Stanislaus-Tuolumne, 1976

Three Sisters, 1976

Virgin Islands, 1976

Yellowstone, 1976

Beaver Creek, 1976

Konza Prairie, 1978

Niwot Ridge, 1979

University of Michigan Biological Station,  
1979

Virginia Coast, 1979

Hawaiian Islands, 1980

Isle Royale, 1980

Big Thicket, 1981

Guanica, 1981

California Coast Ranges, 1983

Central Gulf Coast Plain, 1983

South Atlantic Coastal Plain, 1983

Mojave and Colorado Deserts, 1984

Carolinian-South Atlantic, 1986

Glacier Bay-Admiralty Islands, 1986

Golden Gate, 1986

New Jersey Pinelands, 1988

Southern Appalachian, 1988

Champlain-Adirondak, 1989

Mammoth Cave Area, 1990  
(extension 1996)

Land between the Lakes Area, 1991

## ■ Uruguay

Bañados del Este, 1976

## ■ Uzbekistan

Mount Chatkal, 1978

## ■ Venezuela

Alto Orinoco-Casiquiare, 1993

## ■ Vietnam

Can Gio Mangroven, 2000

Cat Tien, 2001

Cat Ba, 2004

Red River Delta, 2004

Kien Giang, 2006

Western Nghe An, 2007

## ■ Yemen

Socotra Archipelago, 2003

Guido Puhmann / Susanne Reinhardt

## Partnerships between River Biosphere Reserves

*The administration of the biosphere reserve at the Middle Elbe works very closely with reserves with comparable natural landscapes in other countries. The objective is to constantly assess and improve aspects of the work, including practical action, right up to the management of the entire region. Large-scale projects can be implemented more effectively when many experienced and, better still, international partners, collaborate. This is especially important with regard to the acquisition of funding. Ideally, experiences should be exchanged in both directions.*

Cooperation in the world network of biosphere reserves is a significant criterion for the designation and during the regular evaluation by UNESCO. Up to the year 2006, the administration of the Middle Elbe biosphere reserve worked with international partners within the framework of individual projects, for example in 'Wetlands I and II' with Poland, Italy, Albania and Slovenia; among them were regions, which are not designated as biosphere reserves. A long-standing cooperation between biosphere reserves in the sense of the Seville Strategy was as yet not established.

### Initiation of new contacts

In the framework of the EUROMAB conference in October 2005 in Austria, the German MAB National Committee organised a workshop for establishing international partnerships for German biosphere reserves. During this workshop initial talks between the administrations of the biosphere reserve Middle Elbe and the Russian biosphere reserve Great Volzhsko-Kamsky as well as the Austrian biosphere reserve Lobau took place. Professional contacts at the individual level had already been made with both reserves in the previous years.

Both biosphere reserves represent the Eastern and Central European river landscapes on the Volga and the Danube. Great Volzhsko-Kamsky is situated in the river basin area of the Volga. Parts are also situated in the river basin areas of the rivers Raifa and Sarali Unit. The administration is located in Sadovy in the Zelenodolsky district. The biosphere reserve Lobau is situated in Vienna and

is part of the National Park Donauauen, its administration is located in Groß-Enzersdorf.

The Austrian colleagues and those from the Russian Federation were interested in the extensive experience of the administration of the Middle Elbe with regard to river and floodplain management,

development of relations and the identification of similar objectives and structures while implementing the MAB programme.

After internal approval processes in the three countries, cooperation agreements were signed in October 2006. The Russian partners plan a return visit to the Middle Elbe in



**Visitors from the biosphere reserve Lobau at the Middle Elbe**

Photo © Mirko Pannach

especially in projects concerning back-water restoration, relocation of dikes and development of riparian forests.

Upon the suggestion of the German MAB National Committee, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety financially supported the visit of representatives of the biosphere reserve Middle Elbe to the reserves Great Volzhsko-Kamsky and Lobau in August and September 2006. The visit of several days served to improve the devel-

2007; the partners from Lobau visited the Elbe in 2006 for the first time.

### First results

The general consensus among all those involved is that these international contacts are extremely useful for gathering momentum for one's own work. The following future joint activities were worked out:

## Cooperation between UNESCO-designated sites in Saxony-Anhalt

Saxony-Anhalt is rich in UNESCO-designated sites representing unique human cultural achievements and landscapes of exceptional significance: Dessau and its Bauhaus, the Elbe River floodplains, Germany's oldest biosphere reserve and, nestling between Dessau and Wörlitz, the 'The Garden Kingdom of Dessau-Wörlitz'. Also fascinating are the Luther Memorials, the place of his birth and death in Eisleben and where he worked on the reformation in Wittenberg; not far away is the middle-age old town of Quedlinburg.

Four closely cooperating institutions are responsible for protecting, maintaining, developing and communicating these landscapes and buildings as well as the exceptional value and brilliant concepts that they embody: the Bauhaus Dessau Foundation, the Luther Memorial Foundations Saxony-Anhalt, the

Cultural Foundation DessauWörlitz and the Administration of the Middle Elbe biosphere reserve. Networking and joint marketing measures have been implemented by the four institutions for some time. Cultural politics and area marketing need a common voice, which can be heard. Therefore the four UNESCO-designated sites regularly coordinate at executive level, organising joint events such as the annual 'Day of the Garden Kingdom' (Gartenreichtag) as well as work together on tourism-programmes of the federal state Saxony-Anhalt.

This cooperation first became tangible and evident to the public in 2001 by the conference 'Silence'. High level events have been taking place every year since then; some examples of the themes of these events are 'Genius loci', 'Time', and 'Memory'. Most

recently in June 2007, the theme was 'Myth'. These two-day conferences were each documented in a book.

The foundations and biosphere reserve administration have the same goals: Improving Saxony-Anhalt's and Dessau's external and internal perception, encouraging sustainable tourism as well as preserving and developing natural, cultural and ecological basic resources on which life depends. Tying the possibilities and contents of each institution makes it possible to attain these goals. The core objective is to realise the value of the cultural and natural potential of this region – not only the economic value. Despite there being need for further development of our inheritance, it must first of all be handed over to future generations unscathed.



- Waterway maintenance and development;
- Involvement of park rangers in tourist management, in public relations and district supervision;
- Beaver management and beaver research;
- Monitoring and measures for the European Union programme NATURA 2000 and
- Involvement of land-users and the population in the process of the development of reserves.

*Guido Puhmann is Head of the Administration of the biosphere reserve Middle Elbe, at the Administration of the Federal State Saxony-Anhalt's part of the UNESCO Elbe River Landscape Biosphere Reserve.*

*Susanne Reinhardt is staff member for public relations at the administration of the Middle Elbe biosphere reserve.*

## UNESCO Biosphere Reserve Elbe River Landscape

The floodplain landscape of the biosphere reserve along the Middle Elbe spans 3,428 km<sup>2</sup>. It covers the area from the Middle Elbe lowlands in Saxony-Anhalt to the north German lowlands in Schleswig-Holstein in its entirety. The region was designated by UNESCO in 1997. Its area called Steckby-Lödderitzer Forst in Saxony-Anhalt was one of the first biosphere reserves in Germany to be designated. The course of the river Elbe is bordered by natural floodplains, the largest floodplain forests in central Europe, adjacent deciduous and mixed forests as well as extensively used grassland. This biosphere reserve extends over five federal states; each federal state has established an own administration: Schleswig-Holstein, Lower Saxony, Mecklenburg-Western Pomerania, Brandenburg and Saxony-Anhalt.

The Elbe valley floodplain is an important resting and wintering area for swans and geese. Many farmers consider the birds to be a threat to their harvest. The Lower Saxony biosphere reserve administration has introduced a 'guest bird management' procedure for the purpose of keeping conflicts with farmers to a minimum and thus retaining the

Photo © Lutz Möller



Photo © Biosphärenreservat Niedersächsische Elbtalaue

significance of the Elbe valley floodplain as a bird-resting area. Contractual nature conservation secures undisturbed resting areas, extensive cultivation methods are supported and, where possible, power supply lines are installed underground. Areas of unharvested cereals are left untouched to distract birds from the 'actual'

cultivated areas and whatever losses are made by the farmers are reimbursed. This cooperation programme goes to show that despite the high numbers of geese using the region as a resting and feeding area, losses for farmers can be kept low.

An important focus of the work in the part of the biosphere reserve in Saxony-Anhalt is the management of wetlands. One of the most comprehensive projects, boasting over five million Euros in funding, was the reconstruction of the lake 'Kühnauer See', an oxbow lake now disconnected from the Elbe. Through an over-supply of nutrients it threatened to fill up by sedimentation and some species had already disappeared. The lake was thoroughly desilted and a dam was removed so that today many species have become established again in the lake. The Elbe beaver was threatened with extinction up to the fifties; it found its last retreat in the biosphere reserve. The stock was able to increase up to 1,200 animals.

Further information:

<http://www.elbtalaue.niedersachsen.de>

<http://www.mittellelbe.com>

<http://www.elbetal-mv.de>

[http://www.grossschutzgebiete.](http://www.grossschutzgebiete.brandenburg.de)

[brandenburg.de](http://www.grossschutzgebiete.brandenburg.de)

Peter Heyne

## Partnering with Camili Biosphere Reserve

*Camili is the first biosphere reserve in Turkey. It is situated in the northeast of the country on the border to Georgia. In 2005 UNESCO included it in the world network of biosphere reserves. The Upper Lausitz Heath and Pond Landscape biosphere reserve has supported the Turkish colleagues right from the onset.*

The partnership came about as a result of a conference in the southern Turkish town Adana in 2004. EUROPARC Deutschland, the German association of protected areas, initiated the participation of a fair number of representatives from German biosphere reserves at this conference; they were able to report on their experiences in implementing the MAB programme to local politicians and stakeholders. A central focus was on the cooperation with the population and the integration of sustainable development in the management of protected areas.

The Turkish colleagues showed great interest in close cooperation. In 2005 a delegation of Turkish scientists and nature conservationists visited some German reserves. In the same year cooperation between the Turkish MAB

National Committee and the Upper Lausitz Heath and Pond Landscape biosphere reserve was agreed upon at the EUROMAB conference in Vienna.

Since 2006, this partnership has come to life. Local officials of the seven villages of the Camili biosphere reserve visited Upper Lausitz in November for a week and used the opportunity for in-depth discussions with the inhabitants and farmers of the Upper Lausitz Heath and Pond Landscape. Local problems and solutions like the disposal of sewage or the winter road service, the consequences of demographic change or the acceptance of non-usage in the forest were discussed. Visits were made to fishermen and farmers initiating discussions about economic development and how this could be integrated into the conservation strategy of this young Turkish biosphere reserve. This productive exchange of views also showed that the idea of 'Man and the Biosphere' is about dialogue and friendship between nations. The people in Upper Lausitz have come a long way towards realising this idea through the partnership with the Turkish biosphere reserve Camili. The staff of the biosphere reserve administration is looking forward to a return visit in Turkey, which is scheduled to take place in late 2007; this will serve to intensify the cooperation even more.

*Peter Heyne is Head of the Administration of the UNESCO biosphere reserve Upper Lausitz Heath and Pond Landscape.*



**Pond Landscape Gutttau**

Photo © Matthias Höhne



# “Our New National Parks Are actually Biosphere Reserves”

Interview with Michael Succow

*Prof. Dr. Michael Succow has been involved in the establishment of numerous large-scale protected areas in the transformation countries of East Europe and Central Asia since 1990. He was awarded the Alternative Nobel Prize for his achievements in 1997. Prof. Dr. Michael Succow was Professor for Geobotany and Landscape Ecology at the University of Greifswald from 1992 until 2006. In 1990 he was Deputy Minister of the GDR; he paved the way for the Cabinet decision to designate 7 percent of the area of the GDR as national parks or biosphere reserves. Since 1991 he has been a member of the German MAB committee. In the following interview he gives insights into his international projects. The questions were put by Dr. Lutz Möller, Head of the Section for Science of the German Commission for UNESCO.*

**UNESCO today:** Mr. Succow, since the nineties, you have advised many governments in East Europe and North and Central Asia on the development of large-scale nature conservation projects as well as supporting them through research and procurement of funds. Which countries were you active in and who were your partners?

**Succow:** The region that we are talking about here is that of the transformation countries of East Europe, such as Russia, Kazakhstan, Uzbekistan, Tajikistan, Kyrgyzstan and the Caucasus Republics, as well as Mongolia and China. This is where we offer our experience and our support capacities. When talking in the plural, I mean the Michael Succow Foundation, the Institute for Botany and Landscape Ecology of the University of Greifswald with its motivated young scientists, which I was Head of until my retirement in late 2006, as well as the NABU, a large German Nature Conservation NGO whose Board of Trustees I am Head of and was Vice President of for many years.

The focus of the activities is, at present, Azerbaijan. Soon we will focus on Turkmenistan. The first expert from our Foundation is there just now. I also supported projects in Belarus; these were financed by the Michael Otto Foundation for Environmental Protection. As a non-governmental organisation, our work can be quite effective, which is a result of long trustful relations combined with scientific and social competence.

**UNESCO today:** As a result of your international projects, numerous World Heritage sites, national parks and biosphere

reserves have emerged. How do you use the instruments of World Heritage, national park and biosphere reserve?

**Succow:** All three categories occur in our work; the most valuable certificate for a nature area certainly is inscription on the list of the UNESCO World Heritage. In the transformation countries, we were able to help create a great many World Heritage sites. They are very different to the early protected areas created in North America, for which I have a great deal of esteem. The only thing is that there the indigenous population was frequently almost completely wiped out before an area was designated as a national park. In contrast the World Heritage sites being established in Russia, Kyrgyzstan, Kazakhstan and Azerbaijan protect the surviving indigenous cultures. All in all we were involved in the nomination process of ten to twelve World Heritage sites; among others, the Lena-Delta, the volcanos of Kamtschatka, parts of the Northwest Caucasus, the Hirkan Forests and currently parts of the Tarim-floodplain at the edge of the Taklamakan desert in Northwest China.

The second category is that of the national parks. Many governments in our target countries are in the process of building up a network of national parks. During the socialist period this protection category did not exist. These newly created national parks – I was able to be involved in 20 to 30 projects – are actually biosphere reserves! They are zoned, they do public relations and environmental education, they allow tourism in some parts and they have buffer zones where the popula-



Photo © Michael Succow

The most valuable certificate is the UNESCO World Heritage

### Eight large-scale conservation areas have been established in Mongolia

tion can and must make a living. All these new projects in Southwest and Central Asia and in the Caucasus have strictly protected areas not used by humans in any way. As a rule, they are based on 'Zapovedniki', which are conservation areas from the time of the Soviets. The new national parks play an important role for the regional development.

The idea of biosphere reserves was our approach for going to these countries at first, as we considered it to be an ideal concept for a sustainable way of handling landscapes: core areas with unaffected nature – nature with its own momentum – next to which areas with sustainable uses of nature; all in all similar to the biosphere reserves, which we were able to create in the final phase of the GDR.

**UNESCO today:** Was the biosphere reserve approach successful in these countries?

### During the period of socialism, national parks did not exist

**Succow:** Partly. In Kyrgyzstan we helped to develop the large biosphere reserve in central Tian Shan around Issyk-Kul Lake. Its area comprises almost a quarter of that of the entire country. The project was, inter alia, financed by the German Technical Cooperation Agency GTZ. Meanwhile we have realised that because of the economic constraints and the hardship in this country, it is difficult to manage such an enormous biosphere reserve according to the UNESCO guidelines. In addition, changes in government and corruption caused problems. All of this does not make the idea of biosphere reserves in post-communist countries a utopia but does make their implementation extremely difficult. The largely missing infrastructure and the extent of poverty make a modification necessary.

Today, I am of the opinion that it would be better to implement the concept of UNESCO biosphere reserves in the transformation countries via national parks. A national park is seen to be a national heritage and enjoys a very high standing, the areas are also smaller and easier to manage. Apart from that the national parks are taking up the concept of the UNESCO biosphere reserves more and more. A sound buffer zone management is today seen to be essential for every modern national park.

A further example: In 1992 at the UNCED conference in Rio de Janeiro, the then

Prime Minister of Mongolia declared that the entire Mongolian Republic actually earned the status of a biosphere reserve. Two months later I travelled to Mongolia with my friends Matthias Freude and Hans-Dieter Knapp. Funded by the WWF, we identified eight large 'biosphere regions', containing all the landscape zones of this wonderful country. With the help of German bilateral development aid, this led to the creation of eight large-scale conservation areas. Officially they are usually called national parks; the concept behind them is, however, rather that of a biosphere reserve.

**UNESCO today:** Why are national parks particularly attractive for these countries?

**Succow:** In the transformation countries there is the need to catch up with regard to national parks. In the Soviet Union – apart from Estonia – and in the GDR, there were no national parks, as this was an idea perceived to be originating from capitalism. However, the Academy of Sciences in the Soviet Union did have a well-developed system of high-quality conservation areas: the Zapovedniki. People were strictly kept out though; there was therefore no acceptance amongst the population for them. We are now helping to convert some of these conservation areas into national parks. This usually means a marked increase in area and a buffer zone management. These regions should also be used for tourism.

The most successful country in this respect is Azerbaijan; within the last five years, seven national parks have been developed from Zapovedniki.

**UNESCO today:** In other words the new national parks are based on the concept of biosphere reserves; the existing Zapovedniki are used as core areas, which are supplemented by additional buffer and transition areas?

**Succow:** This is indeed correct: Many of the new national parks originate from the Zapovedniki, which were solely used for research purposes. These once well-guarded conservation areas are nowadays equipped with an appropriate administration, they are no longer guarded and research no longer takes place. Their natural resources are often robbed, for example by poaching, illegal grazing and illegal forestry use. It is

### The 'Zapovedniki' were solely for research purposes

essential to secure these Zapovedniki as core areas and to develop further valuable areas as buffer zones. Azerbaijan is a good example of this. In this case former Zapovedniki were extended by twice to four times their original size and transformed into national parks. The larger part of the new national parks is open for development plans and tourism. These areas are gaining more and more acceptance within the population.

**UNESCO today:** Is the focus of the economy in the buffer zone of these national parks on low-impact tourism or, as in the case of German biosphere reserves also on environmentally friendly cultivation and sustainable forestry? Which development concepts are, for example, of significance in Azerbaijan?

**Succow:** The concepts are the same as those here: on regional development, the preservation of established, traditional sources of revenue. Azerbaijan is a country in the Great Caucasus, where transhumance is still alive, which is a

special form of pastoralism; the herds spend the summer above the tree line in the subalpine and alpine pastures and the winter in the steppes of the lowlands. In Azerbaijan, transhumance is still very successful, whereas in Spain or in the Alps it has to be subsidised considerably. Transhumance is an integral component of the protection areas of the lowlands as well as the high mountains, whose protection and preservation we are working for. My institute was able to acquire support from the Volkswagen Foundation for a research project whereby young scientists from both countries investigate the sustainability of meadows within the ecosystems of Azerbaijan. Landscape ecologists and resource economists examine the local conditions and the ecology of these pastures, their productivity and the socio-economic conditions: How many people can live there, what is their income, do they earn their living both ecologically and economically reasonably, are the incomes also sustainable in the future?

How many people can earn their living?

## UNESCO Biosphere Reserve Issyk Kul

### Kyrgyzstan

Surrounded by the glaciated Tian Shan mountain range, the Issyk Kul biosphere reserve reaches an altitude of more than 7,000 meters above sea level. With an area of 43,115 km<sup>2</sup>, it covers 20 percent of the national territory of Kyrgyzstan. In the middle is the lake of the same name, which is 180 km long and 60 km wide; thus it is the second largest high-altitude lake in the world. It appears like an oasis in this arid landscape and is held to be sacred by the residents.

From desert landscapes to the Siberian tundra, Issyk Kul represents an amazing range of ecosystems. Many threatened species such as the snow leopard, the Marco-Polo sheep and the Siberian ibex look for refuge in this thinly populated area. In the biosphere reserve there are eight specially protected zones. They are used for research on the genes of local flora and fauna and for the protection of the typical ecosystems.

Since 1995, the German Federal Ministry for Economic Cooperation and Development has supported the further development of the biosphere reserve. The project is headed by the GTZ (German Technical Cooperation Agency) and its aim is to preserve the unique mountain landscape and to promote sustainable development. The first priority was to establish a legal basis for the biosphere reserve, which was achieved in 1998 by a government decree and a regulation for an administrative structure in 2000.

Maps were produced for the zoning of the reserve and plans for a sustainable use of land. More recently the focus has been on increasing administrative effectiveness to promote sustainable tourism and agriculture. Public relation activities such as the production of a regional magazine and the installation of an information centre should convince the local population of the objectives of this biosphere reserve.

*Further information:*

<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=KIZ+02>

Photo © Flickr Creative Commons: melitta





### Overview over the Hirkan National Park

Photo © Michael Succow

The protection of natural resources ensures future livelihoods in Azerbaijan

Photo © Flickr Creative Commons: Sergey Yeliseev



**UNESCO today:** Do you consider the legal and administrative set-up of these regions, if we keep the Caucasus examples in mind, to be sufficient to survive potential drastic, political and economic revulsions in future?

**Succow:** A good question. Today these projects require a great deal of improvisation. I believe however that the conditions are favourable. Azerbaijan has a sound and dynamic economy because of the oil and gas reserves. President Ilham Aliyev knows that in 15 years the oil reserves of the country will be depleted. The protection of the natural resources is therefore necessary to ensure future livelihoods in Azerbaijan.

At the moment our foundation is working on a project for the protection and preservation of forests. The forests of Azerbaijan are in a state similar to those in Germany 250 years ago. Here traditional, devastating methods of use like coppicing, management of pastures in the forests and uncontrolled firewood production are still common. 'High forests' only exist far away from settlements; at distances too far for cows. At the moment scientists from the Michael Succow Foundation, financed by foundations from Switzerland and Liechtenstein study and record the as-is state of forests on-site and develop concepts for their future use and the protection. The aim is to preserve, or rather to develop 'high forests', to separate forests from pastures. We help to develop what was already successfully carried out in Germany during the first half of the 18th century in the Prussian forestry: the development of high forest.

**UNESCO today:** You have made clear that you do not necessarily recommend biosphere reserves to the governments of transformation countries in the context of your current projects. Which factor predominates your considerations: would the biosphere reserves in the transformation countries account for areas, which are simply too large; or is it the term 'national park' that implies a national heritage, in other words represents a higher value?

**Succow:** In these formerly socialist countries, biosphere reserves actually did exist, they were used for the implementation of purely scientific programmes – in the way, which was, at first, common worldwide. The term biosphere reserve was attached to selected Zapovedniki as an additional, international certification. The concept that biosphere reserves are only meant to be for research purposes is still widely prevalent.

For me the idea of biosphere reserves is fundamental. It does, for pragmatic reasons however, make more sense to put this idea into practice in the transformation countries via national parks. The local partners want national parks, also because they justifiably think in terms of tourism. I feel that this is a sensible adaptation of the idea of biosphere reserves to the general scheme of things in the transformation countries. In West European countries, the concept of biosphere reserve has become firmly established. Here the categories national park and biosphere reserve can be kept apart. A problem is rather that in West Europe some of the national parks aspire the certificate of a biosphere reserve in addition. In my view, it is correct that the German Federal Nature Conservation Act includes both categories: the national park with the focus on nature's own dynamics, the biosphere reserve for the preservation of historical culture landscapes and with the focus of motivating sustainable land use.

**UNESCO today:** Based on your experience in the MAB National Committee, do you consider the implementation of the biosphere reserve programme in Germany to be a success?

**Succow:** I was able to become acquainted with different countries in the East and the West and have worked in the German MAB National Committee since 1991. Germany is, with regard to its biosphere reserves, certainly one of the leading

countries. With our national criteria, compiled in an exemplary fashion in the mid-nineties under Wilfried Goerke, Germany has proved to be a pioneer. These criteria are applicable worldwide: what is necessary is an administration, an infrastructure, an information centre, a ranger service; absolutely necessary are buffer zones, so that tourists can be supplied with locally and ecologically produced food.

Additionally, I would like to point out two terms, which we have used in the transformation countries since the nineties, starting in Georgia: the 'national park region', embracing the surrounding land of a former Zapovednik. In other words, a biosphere reserve. The second term was coined in Kyrgyzstan; there, in the same way as in Germany, the term 'reserve' arouses negative associations: here we talked about 'biosphere regions' or 'biosphere territory'. The term 'biosphere territory' was eventually introduced by a decree of the Kyrgyzstani President.

**UNESCO today:** We have spent a lot of time talking about your current focus, Azerbaijan. Which other projects are you preparing for at the moment?

**Succow:** We are currently carrying out a project in the Tarim basin in Northwest China, in order to preserve the last large 'Tugay forests'. These riparian forests in the winter-cold deserts are, from my point of view, a miracle of nature, a magnificent treasure. We are supported by the Volkswagen Foundation and the Louisoder Foundation for establishing a sound scientific basis, which is of course absolutely necessary. With the support of the DBU, the German Federal Foundation for the Environment we are currently working on a project for the regional development of a 'biosphere region' in the Kaliningrad Oblast. A substantial area of forest extending into Poland and Lithuania is supposed to be certified with an international conservation status. A future focus will be on transboundary conservation areas in the Caucasus, potentially encompassing Azerbaijan, Georgia and the Russian Republic Dagestan. It is high time implementing the idea of developing 'peace parks' like these!

**UNESCO today:** In February 2008, the third World Congress of biosphere reserves is to take place. Where, in your opinion, should the UNESCO biosphere reserve programme go from here?

**Succow:** A most fundamental demand is: Every economic use of a given area must preserve the ability of its ecosystems to function. We cannot accept any land use in future, which destroys this ability. As an example: Moors must not be drained, but left as carbon dioxide sinks be able to form peat. If we want to use moors, then in the form of semi-aquatic ecosystems; on re-flooded moors, reeds and alderwood can be harvested, peat can form – protection and use are combined. Second example: Steppes are, due to the formation of black earth, extremely valuable carbon dioxide sinks. We must not overly exploit the steppe by introducing intensive cultivation methods, destroying the black earth and releasing carbon dioxide into the atmosphere. Third example: Mangroves have a great many ecosystem functions and offer a lot of economic options. They act as a protective shield for tropical coasts, as sediment stops and represent an important habitat. They lose their entire productive capacity as ecosystems when transformed into shrimp cultures.

Mankind cannot exist without using the landscape; thus we must find ways, which preserve the ability of ecosystems to function on the places where we use the landscape. The individual species is not paramount, but the ecological balance, a prerequisite of mankind's survival. That is why the biosphere reserves play such an important role, to put new, alternative ways of use into practice. New ways of reasoning are necessary; much needs to be changed at the global scale, also at the national scale, as in Germany.

#### **Mud volcano in the Shirvan National Park**

Photo © Michael Succow



It is high time for developing 'peace parks'

We need to protect the ecological balance

Roland Stein

# Transboundary Biosphere Reserves

*Eight biosphere reserves designated in the world today are transboundary. Two are situated in Africa, five in Europe and there is one that counts as being 'intercontinental' involving Spain and Morocco. In addition there are a number of already advanced initiatives for establishing transboundary biosphere reserves, above all in Central, Eastern and Southern Europe as well as in Africa.*

The only German part of a transboundary biosphere reserve is the nature reserve Pfälzerwald (Palatinate Forest), which looks back on 24 years of successful cooperation with the French Parc Naturel Régional des Vosges du Nord. The region was designated by UNESCO as a transboundary biosphere reserve in 1998. The designation criteria provide for a periodic evaluation after 10 years; thus one is scheduled for 2008. This will be the first time that two MAB National Committees cooperate on the evaluation of a transboundary biosphere reserve. This is a milestone for the world network of biosphere reserves.

In 1999 the biosphere reserve Vosges du Nord/Pfälzerwald carried out a 'goal-oriented project plan' with financial support from UNESCO. The focus was on analysing cooperation problems between the various stakeholders as well as determining mid and long term goals. Furthermore a joint concept and a transboundary action plan were developed for this region, which spans more than 310,000 hectares.

In 2004 the Franco-German biosphere reserve organised the first world conference of transboundary biosphere reserves in the border area of the Palatinate Forest. Representatives of initiatives for establishing future transboundary biosphere reserves were also invited. The expert workshop 'Following-up on Seville + 5' took place subsequently. Over 150 experts from 25 countries from Africa, Asia, Latin America and Europe developed further the recommendations of the MAB Programme International Co-ordination Council.

## The Franco-German protected area as a model region

Forest areas are being destroyed to a dramatic extent in the tropics and in boreal areas, but just as much in North America and Southern Europe. The Franco-German biosphere reserve is the largest contiguous forest area of Western Europe and demonstrates sustainable forest cultivation on large areas on both sides of the border. This proves that large-scale use of forest resources may go hand in hand with the preservation of biodiversity and respect for the interests of the local population. At the same time peace and understanding among the nations may be promoted.

Government delegations from countries with strict borders such as the Republic of Korea or Belarus frequently visit the biosphere reserve Vosges du Nord/Pfälzerwald in order to learn about its activities, the successes and challenges of transboundary cooperation. Other transboundary world heritage sites such as 'Mont Perdu – Tres Serols' on the border of France and Spain quote the Franco-German biosphere reserve as a role model and value our advice.

## Added value of the transboundary cooperation

The Franco-German biosphere reserve carries out many different activities. Among them those projects should be emphasized, which are successful precisely in that they have managed to become self-containing after initial financial support, and have meanwhile developed sound structures. Some of our projects meeting these criteria are

even more distinct: they would not have been possible on a national level.

- Transboundary farmers' markets offer sustainably produced agricultural products, near-natural forestry products and creative craftsmanship from the region, attracting thousands of visitors from both countries.
- Hunters, forest rangers, scientists, environmental educationalists, representatives of the authorities and nature conservation associations cooperate in a transboundary network for the protection of the lynx.
- The transboundary nature forest reserve 'Adelsberg-Lutzelhardt' is the first Franco-German core area. It is supported by a joint research programme, by monitoring and environmental education. It is accompanied by a committee, made up of, inter alia, local stakeholders from neighbouring municipalities and the forest management.

## A new dimension in the world network

Transboundary biosphere reserves have aspects and problem constellations, which open a completely new dimension in contrast to solely national areas. If they are dealt with correctly, they can have many benefits, which can only be achieved through cooperation and not by either of the partners on their own.

On either side of a border there are sometimes significant differences with regard to communication, the prevention and solution of conflicts, to hierarchical structures, to decision-making mechanisms and to perceptions of space.



Photo © Roland Stein

## UNESCO Biosphere Reserve W-Region

Transboundary, Benin, Burkina Faso and Niger

The 'W-Region' is the first transboundary biosphere reserve in Africa. The part in Niger was designated by UNESCO in 1996; after a long process of negotiation, the area was extended to Burkina Faso and Benin in 2002. Today the reserve spans an area of 31,223 km<sup>2</sup>,



Photo © Flickr Creative Commons: 10b travelling

whereby approx. half is identified as transition area and a third as core area. The name comes from the river Niger, which flows here in the shape of a 'W'.

Settlers shaped the landscape of this region, as early as the Neolithic. Collecting and cultivating wild flowers plays an important role in land use of the local population to this day. The effect on the biodiversity was a reason why the W-National Park in Niger, which represents the core area, was declared as a World Nature Heritage Site by UNESCO in 1996. The W-Region is considered to be a bastion against desertification.

The transboundary area is a model region for testing sustainable economies while integrating the local communities. The

three countries are currently developing a coordination structure for the joint administration of the area, with the support of the European Union. Major problems such as poaching, illegal fishing and clearing should be easier to cope with as a result. The W-Region was the first concrete result of the New Partnership for Africa's Development (NEPAD) environmental initiative, which was resolved at the World Summit on Sustainable Development in 2002.

*Further information:*

<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=BEN++BKF++NER+01>

There are also the different interpretations and implementation of international conventions and regulations of the European Union. There are different approaches to environmental disaster mitigation, to border and security policies, and to resource management. Lastly, considerable deviations between scientific systems and research methods as well as differing nature conservation legislation and zoning concepts can occur.

A transboundary biosphere reserve can therefore offer many opportunities for harmonising these different systems. This is necessary as large-scale, transboundary complexes of ecosystems and the organisms living there do not respect political borders. Therefore we must protect the common natural heritage through a multiply sustainable development, in active cooperation with the local population – across boundaries and cultures.

### Transboundary challenges

In transboundary biosphere reserves, solutions are worked out and collectively implemented; as every other biosphere reserve, they address the local, the regional, the national and the international level through the world network; but at the same time they directly address the international level – and also contribute

these experiences to the world network.

In the biosphere reserve Vosges du Nord/Pfälzerwald we consider our current and future challenges to be, above all:

- climate change and its consequences;
- promotion of biodiversity by networking and defragmenting habitats;
- the protection of life-sustaining systems from the impact of genetically modified organisms;
- water and resource management;
- soil conservation and decreasing the use of area;
- promotion of renewable energies and consequences for forestry;
- transboundary regional development and demographic development;
- taking care of visitors;
- intercultural dialogue;
- promotion of traditional knowledge and cultural diversity;
- education for sustainable development and

- creation of sustainable alternatives to solely market-oriented use and valorisation strategies.

The significance of transboundary cooperation and transboundary large-scale reserves has been explicitly recognised by numerous international bodies, for example by the seventh Conference of the Parties of the Convention on Biological Diversity and the World Parks Congress in 2003.

The President of the German Commission for UNESCO emphasized the significance of these 'other' biosphere reserves in his foreword to the documentation of the World Conference of transboundary biosphere reserves in 2004: "They add a new quality in the dialogue between nations and people. They tackle the challenge to implement sustainable development and at the same time to contribute substantially to transboundary dialogue and to establish a culture of peace through collaboration and co-habitation."

We hope that this view will be shared by others, particularly with regard to the upcoming UNESCO biosphere reserve conferences such as the EUROMAB conference in 2007 or the World Congress in 2008. The initiative of the German MAB National Committee to carry out the periodic evaluation of Vosges du Nord/Pfälzerwald together with the French sister-committee deserves special attention at the international level.

*Roland Stein coordinates the Franco-German cooperation at the Vosges du Nord/Pfälzerwald biosphere reserve and other international cooperation projects. He is chairman of the European working group 'Transboundary Nature Conservation' based at the World Commission for Nature Reserves (WCPA) of IUCN.*





# The 3<sup>rd</sup> World Congress of Biosphere Reserves

*The World Congress of Biosphere Reserves hosted in Madrid, Spain, from 4 to 8 February 2008 is only the third of its kind. Entitled 'Biosphere Futures, UNESCO Biosphere Reserves for Sustainable Development', it follows two massively influential conferences in 1984 in Minsk, Belarus and 1995 in Seville, Spain.*

One of the major tasks of the World Congress is to stress the progress made since 1995 in biosphere reserves with respect to biodiversity conservation, sustainable development, human migration, economic sustainability, and the role that biosphere reserves can play as learning laboratories.

The following main themes are considered: Evaluation of the 'Millennium Ecosystem Assessment' with regard to the zonation of biosphere reserves; exchange of experiences with regard

to the theme 'learning laboratories' and possibilities of initiating political and public relations to that effect; improvement of regional networking. In the 'Madrid Action Plan (2008–2012)' the congress will eventually define the role of biosphere reserves in the 21st century.

*Details about the World Congress are available at <http://www.unesco.org/mab/madrid/congress2008.shtml>*



## UNESCO Biosphere Reserve Can Gio Mangrove

### Vietnam

As the name already indicates, mangrove forests are the most important vegetation in this Vietnamese biosphere reserve. The territory, which covers 757 km<sup>2</sup> of salt water and brackish water mangroves, spans the area from the coast of the South China Sea to Ho Chi Minh City. The mangrove area is known as the 'green lung' of this huge industrial metropolis; it boasts a high biodiversity with over 200 species of plants.

The destruction caused by the wars of the last century had a drastic effect on the ecosystems in Vietnam; Can Gio was no exception. Rehabilitation and reforestation of the mangroves were already underway in the early seventies. Can Gio is one of the largest rehabilitated mangrove regions in the world today

due to the commitment of the local population. The impact gradient from the city to the sea is of special interest to scientific nature conservation.

A major challenge for the biosphere reserve these days is to combine the reforestation programme with the fishing industry and aquaculture in a sustainable manner. Some of the 58,000 inhabitants use their land for aquaculture and salt production, other families with no land must earn their living by catching crabs and collecting firewood. The biosphere reserve intends to examine and solve the conflicts between the residents on the one hand and between the economic use and nature conservation on the other. The protection of spawning areas and the development of tourism should

also be considered. Success stories along the way make Can Gio a model region for sustainable economic activities.

*Further information:*  
<http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&Code=VIE+01>



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# UNESCO's „Man and the Biosphere“ programme in Germany

*Resolution of the 67th General Assembly of the German Commission for UNESCO, Dessau, 28 June 2007*

## **The German Commission for UNESCO**

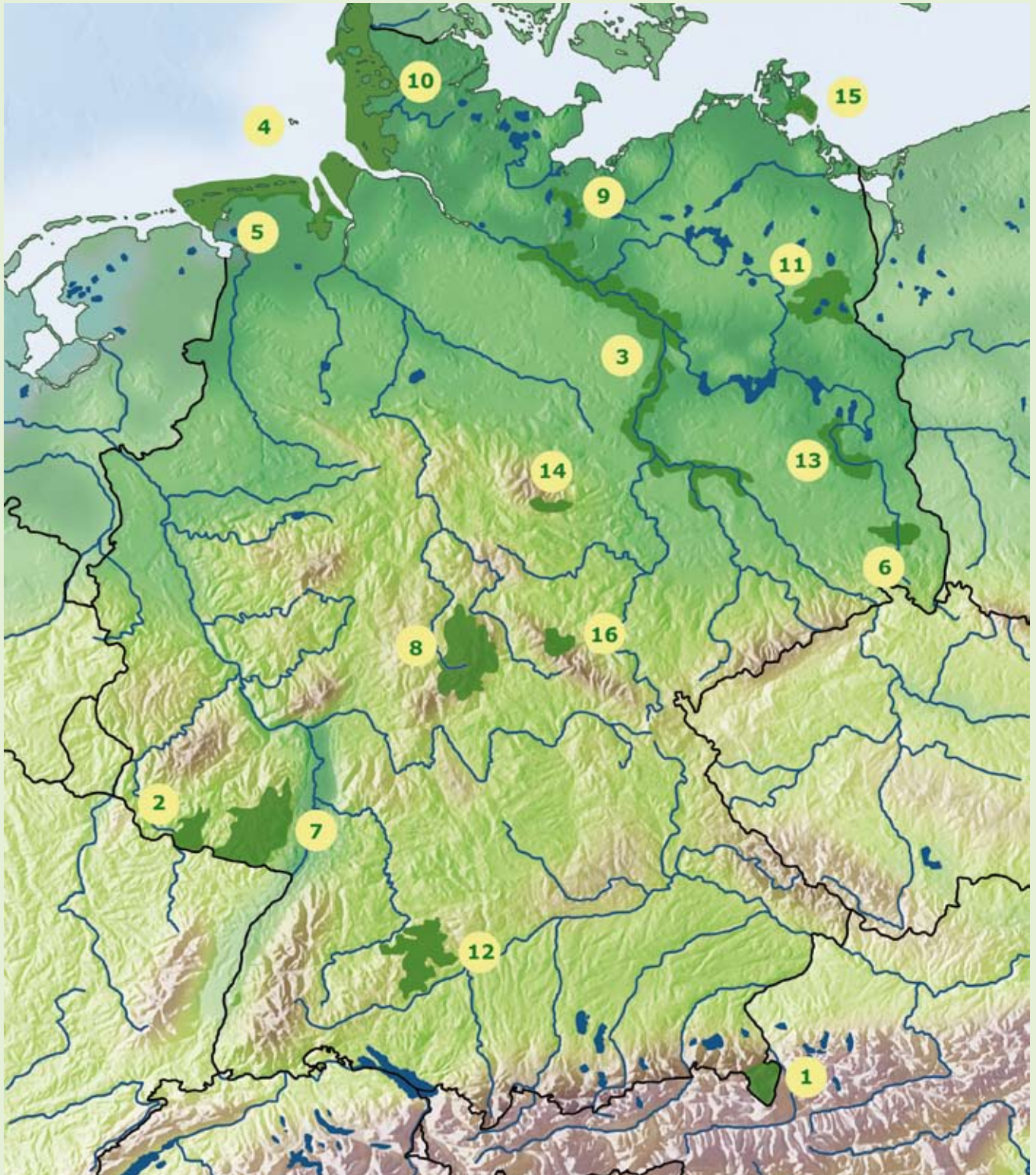
1. **recognizes** that UNESCO's "Man and the Biosphere" programme has made an important contribution since 1970 to shaping and directing the relationship of man and the environment towards the future,
2. **underlines** the significance of the World Network of Biosphere Reserves for solving global environmental problems, for equitable development throughout the world and for preserving sustainable ecosystems as a precondition for the sustainability of society,
3. **states** that the Biosphere Reserves are particularly apt for local implementation of the Agenda 21, adopted at the UN Conference on Environment and Development in 1992,
4. **welcomes** the German Biosphere Reserves' active participation in implementing and advancing the programme,
5. **expresses** its gratitude to the MAB National Committee for its work as a link between the biosphere reserves, the federal states (Länder) responsible for their establishment and UNESCO.
6. **The German Commission for UNESCO calls on all politically responsible institutions and experts in Germany:**

**To recognize and utilize the opportunities provided by the MAB programme for all aspects of regional development, and for shaping the necessary structural transformations; and, to that end,**

- a) to shoulder the responsibility for biosphere reserves across departments at the level of Länder governments,
- b) to pool administrative activities at the level of biosphere reserves and to enable them to play a key role in the integrated development of the region,
- c) to use funding programmes provided by the Länder government to create models for self-supporting regional development in biosphere reserves and their surroundings,
- d) to use the distinctive designation as a UNESCO Biosphere Reserve in order to build identities in competition between regions,
- e) to promote the participation and identification of the population with the objectives and measures of the biosphere reserve as part of a world network,
- f) to recognize biosphere reserves as an especially apt instrument for implementing the UN Convention on Biological Diversity,
- g) to ensure that German biosphere reserves are cooperating in the world network,
- h) to support international, comparative research projects in and about biosphere reserves, to recognize biosphere reserves as especially suitable sites for research projects and to make the knowledge generated through research and monitoring in biosphere reserves internationally accessible, as an important contribution to solving the problems of the environment and of international development,
- i) to make the establishment of new biosphere reserves dependent on what these territories can contribute to the German and the worldwide networks,
- j) to promote the establishment of transboundary biosphere reserves using integrated management of protected areas and local development,
- k) are able to perform the functions specified by UNESCO for a biosphere reserve in a comprehensive manner – protection and sustainable use as well as research, education and public relations,
- l) are able to draw up and continuously advance a "framework concept" in order to meet the international and national criteria,
- m) are able to contribute to developing transferable strategies for coping with climate change and for protecting biological diversity,
- n) are able to initiate regional development processes and to establish themselves as competent permanent contacts for these processes,
- o) are able to utilize the content of the MAB programme for interdisciplinary educational programmes in the framework of the UN Decade of Education for Sustainable Development.

**to provide the administrations of biosphere reserves with such personnel and such funding that they**

**to shoulder Germany's responsibility as a member state of the MAB programme, in particular**



## UNESCO Biosphere Reserves in Germany:

- |  |  |  |
|--|--|--|
| 1. Berchtesgaden (Bavaria, since 1990)   | 7. Pfälzerwald (Part of the Franco-German transboundary reserve Vosges du Nord/Pfälzerwald; Rhineland-Palatinate, nationally since 1993, transboundary since 1998) | 12. Swabian Alb (Baden-Württemberg, preparing its application)                 |
| 2. Bliesgau (Saarland, preparing its application)  | 8. Rhön (Bavaria, Hesse, Thuringia, since 1991)  | 13. Spreewald (Brandenburg, since 1991)  |
| 3. River Landscape Elbe (Brandenburg, Mecklenburg-Western Pomerania, Lower Saxony, Saxony-Anhalt, Schleswig-Holstein, in 1979 Saxony-Anhalt, trans-federal-state since 1997) | 9. Schaalsee (Mecklenburg-Western Pomerania, since 2000)   | 14. Southern Harz (Saxony-Anhalt, preparing its application)                   |
| 4. Wadden Sea of Hamburg (Hamburg, since 1992)   | 10. Wadden Sea of Schleswig-Holstein and Hallig Islands (Schleswig-Holstein, since 1990, extended 2004)  | 15. South-East Rügen (Mecklenburg-Western Pomerania, since 1991)               |
| 5. Wadden Sea of Lower Saxony (Lower Saxony, since 1993)   | 11. Schorfheide-Chorin (Brandenburg, since 1990)   | 16. Vessertal-Thüringen Forest (Thuringia, since 1979, extended 1986 and 1990) |
| 6. Upper Lausitz Heath and Pond Landscape (Saxony, since 1996)   |  |  |