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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

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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.

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

Literature

Susanne Stoll-Kleemann. Voices for Biodiversity Management in the 21st Century. Environment, 10: 24–36.

UNESCO Biosphere Reserve Danube Delta

Transboundary, Romania and Ukraine



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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 km² 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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