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# Assessing governance of biosphere reserves in Central Europe

Rainer Schliep*, Susanne Stoll-Kleemann

*Ernst Moritz Arndt University of Greifswald, Institute for Geography and Geology, Friedrich-Ludwig-Jahn-Str. 16, D-17487 Greifswald, Mecklenburg-Vorpommern, Germany*

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ABSTRACT

The biosphere reserve (BR) concept, developed within UNESCO's Man and the Biosphere (MAB) Programme, represents a hallmark in seeking to reconcile conservation and sustainable use of biodiversity. The MAB Programme functioning mechanisms leave the responsibility for the translation of its BR objectives to the management authorities of the participating countries. While a shift to broad social and livelihood perspectives is emerging in the BR Programme, reflecting contemporary requirements for the sustainable management of larger territories including protected areas, it suffers from implementation deficits at the local level.

This study analyses BR governance structures to highlight the relevance of social and institutional interaction for the successful application of the BR concept. We assess BRs from Central Europe using qualitative interviews with stakeholders and relevant local actors. The purpose is to test the effectiveness of the MAB vision and business plan at the local level. Data were systematised to identify strengths and weaknesses as well as opportunities and threats pertinent to the institutional and management arrangements for the case studies.

The assessment shows that institutional and structural flaws in the system of MAB institutions are amplified by governance weaknesses in the three case study countries. The governance deficits revealed the relevance of national governance matrices, professional expertise, national communication efforts and active participation for successful BR management. There is a lack of both vertical integration regarding the MAB institutions and national authorities, as well as sufficient and appropriately trained personnel, funding and political back-up in local implementation.

We conclude that existing weaknesses in the implementation of the BR concept in the three case study regions can be corrected by enhancing communication among stakeholders, fostering active participation and pushing capacity development. Despite these efforts in the national context, the MAB Programme should consider to strengthen the role of MAB National Committees as communication hub and facilitator of a national dialogue on sustainable development.



## Introduction

### *The evolution of the Man and the Biosphere Programme*

In the early-1970s, the United Nations Educational Scientific and Cultural Organization (UNESCO), in order to reconcile biodiversity conservation and human development, initiated a programme entitled 'Man and the Biosphere' (MAB). The primary objective of the programme is the careful management of the biosphere, integrating nature conservation and sustainable use. A worldwide network of interlinked natural and cultural landscapes known as biosphere reserves (BRs) was launched for the further refinement and implementation of the concept. The function of the BRs within the context of the programme is threefold: conservation, international research and monitoring, and sustainable development (Batisse, 2001; Price, 2002; Ishwaran et al., 2008).

One of the programme's outstanding features is the flexibility of its implementation mechanism: article 2, paragraph 3 of the Statutory Framework for BRs specifies that "individual biosphere reserves remain under the sovereign jurisdiction of the States ... States take the measures which they deem necessary according to their national legislation" (UNESCO, 1996: 16). This regulation allows participating countries to tailor BRs to their national institutional conditions, but it also opens the door for national 'solutions' that do not fit the vision of the MAB Programme (Ishwaran et al., 2008).

As BRs are part of a nested system (ecologically, institutionally, legally, and socially) described as "fundamentally cross-scale in space as well as in time" (Holling et al., 1998: 355), cross-level and cross-sector issues such as compatibility of rules, communica-

* Corresponding author. Tel.: +49 03834 864686; fax: +49 03834 864683.
*E-mail address:* schliep@uni-greifswald.de (R. Schliep).

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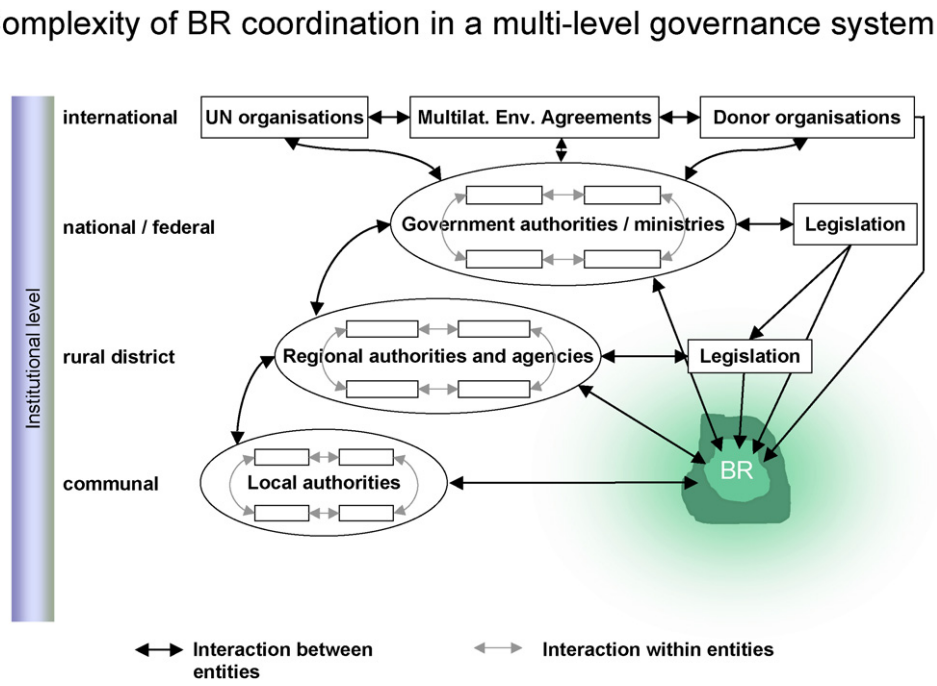


**Fig. 1.** Complexity of BR coordination in a multi-level governance system as a potential source of weakness in national MAB implementation (likelihood of multiple government agency coordination both nationally and regionally, leaving local manager with confused management signals and resulting in disorganised funding).

tion, and coordination become crucial for BR coordination (Berkes, 2007). The complexity of social and ecological systems requires institutions (i.e., structures and mechanisms of social order and cooperation that govern the behaviour of individuals) which are capable of linking the various levels of social and political organisation because "Complexities of this multi-level world introduce additional challenges in reconciling local and global objectives of conservation" (Berkes, 2007: 15193).

The central role of governance-related factors as critical aspects of the further development of the World Network of Biosphere Reserves (WNBR) and implementation of the BR concept has been acknowledged by UNESCO-MAB's, 2008 Madrid Action Plan (UNESCO-MAB, 2008).

In our analysis, we concentrate on the cross-sector integration of BRs at the regional[1] (rural district) and local (communal) level, as well as on the vertical interplay between the MAB institutions and national institutions (see Fig. 1).

### *The significance of the biosphere reserve concept for integrated ecosystem management*

According to the Seville Strategy (UNESCO, 1996), BRs are expected to fulfil three main roles: (1) *in situ* conservation of natural and semi-natural ecosystems and landscapes, (2) demonstration of ecologically and socio-culturally sustainable use, and (3) logistic support for research, monitoring, education, training, and information exchange. The BR concept recommends the realisation of the combination of these different roles through a zonation system that includes one or more core areas, buffer zones, and transition areas. The core areas have to be strictly protected in order to meet the conservation objectives, the buffer zone should be clearly delimited for management purposes, and the transition area can extend over the territory where cooperation with local people for sustainable development can be organised (UNESCO, 1996). The core-area concept requires full-hearted sustainable development coordination with coordinated administration and cooperative funding schemes.

The BR concept represents a hallmark in the reconciliation of conservation and sustainable biodiversity use (UNESCO, 2000). The current understanding of BRs is commented upon by Bridgewater (2001), who states, "The new generation of BRs is a precursor of the types of flexible, large-scale co-management systems, seen by IUCN's World Commission on Protected Areas as an imperative for viable protected areas in the future". Lessons learned from BRs are to be considered in the design of protected areas (PAs) as well as in their integration into the broader landscape (IUCN, 2005).

### *Governance of biodiversity in the biosphere reserve context*

Environmental[2] and development issues in the context of BR coordination are subject to different levels of governance: whereas, for example, land use is connected to the specific local conditions, other issues such as watershed management exhibit regional structures or are even of national concern (Stoll-Kleemann, 2005; Von Moltke, 2006; Borrini-Feyerabend et al., 2006).

Young (2002) uses the term 'interplay' when referring to the spatial dimensions of biodiversity governance. 'Vertical interplay' is the interaction of institutions across scales from the interna-

[1] In the terminology of the MAB Programme, the term 'regional' covers more than one country to denominate a supra-national level. In this paper, we use the term 'regional' to describe the sub-national rural district level in order to distinguish it from the local level.

[2] In the present document, "governance" is defined as "the interaction among institutions, processes, and traditions that determines how power is exercised, how decisions are taken on issues of public and often private concern, and how citizens or other stakeholders have their say". Fundamentally, governance is about power, relationships, and accountability: Who has influence? Who decides? How decision makers are held accountable? The term "governance" can be used in different contexts: global, national, and local, as well as social and institutional. Governance is present wherever people organise themselves (both formally and informally) to develop rules and relationships with each other in pursuing their objectives and goals (Institute on Governance, 2002).

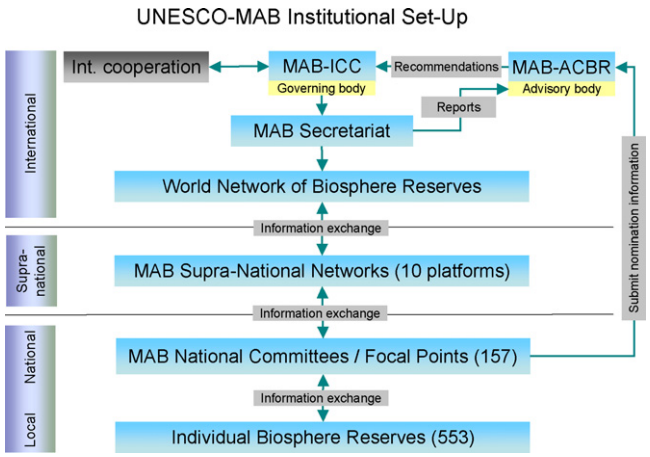


**Fig. 2.** Institutional set-up of the UNESCO-MAB Programme and its World Network of Biosphere Reserves.

tional down to the local level, and 'horizontal interplay' is the linkage of institutions across sectors at one of these levels. Just like community-based biodiversity conservation, BR coordination not only depends on local actors – with their norms and existing regulations – but also on superordinate national, institutional, legislative and strategic frameworks: "It is governance that starts from the ground up and involves networks and linkages across various levels of organization" (Berkes, 2007: 15188).

Thus, active support from the superordinate governance levels must be seen as a vital interest for the management of BRs. The MAB Programme anticipated this need for higher scale support by establishing the MAB International Coordinating Council (ICC), with its scientific advisory body (the International Advisory Committee for Biosphere Reserves—ACBR), which operates according to the respective Statutes (UNESCO-MAB, 1996; UNESCO-MAB, 2001). Fig. 2 shows the institutional set-up for the implementation of the MAB Programme's objectives: the ICC is responsible for guiding and supervising the successful implementation of the programme, including its modification. In between Council sessions, the authority of the ICC is delegated to the MAB Bureau, composed of the ICC chair and his deputies. The International ACBR examines proposals for new BRs, considers periodic review reports for BRs, and gives recommendations on these to the ICC. The MAB Secretariat is attached to UNESCO's Division of Ecological and Earth Sciences in Paris (France) and services the ICC and its Bureau. The World Network of Biosphere Reserves is the central instrument of the programme; it is organised in 10 supra-national networks (AfriMAB, ArabMAB, EuroMAB, etc.). The MAB National Committees and Focal Points should ensure the presence of the programme at the national level and the sufficient awareness of the programme within governmental agencies and among researchers (UNESCO-MAB, 2007). The individual BRs should implement and demonstrate innovative approaches to conservation and sustainable development and are recognized under the MAB Programme.

Thus, Member States and individual BRs have various options in regard to participation in the further refinement of the programme and to learning from others' experience. They are encouraged to do so by Articles 7 and 8 of the Statutory Framework (UNESCO, 1996). Biodiversity governance requires active participation of all stakeholders: it is a democratic necessity, legitimates management activities, and facilitates sharing of knowledge and understanding (O'Riordan and Stoll-Kleemann, 2002). In the beginning of the 1990s, when a more collaborative approach to environmental policy emerged, consultation and negotiation, flexible, power-sharing arrangements, and a concerted search for better information and win–win outcomes became widely accepted in environmental-protection efforts. Weber (1998) gives examples of this in regard to pollution control in the United States. In fact, a participatory approach to biodiversity governance requires a democratic framework.

It is suggested that two antipodal processes have to be considered. The first is the diffusion of the programme and its objectives top down, from the international level down to the national, regional, and local level. The other is the bottom-up movement of participatory biodiversity governance, which seeks to adapt the programme to local needs and national frameworks.

This, in turn, raises two questions:

1. How can MAB institutions and national frameworks best foster the diffusion of the programme objectives down to the sub-national levels (regional and local)?
2. How can MAB institutions and national frameworks enable active participation in the MAB Programme?

Regarding the first question, the diffusion of the MAB Programme objectives depends essentially on the experts involved in its follow-up process. Zürn (1998) analysed international environmental regimes (e.g., the CBD) and their associated follow-up processes, scrutinising their potential for successful environmental governance at a supra-national level. He found that expert communities (generally affiliated with secretariats, scientific advisory boards, or international monitoring mechanisms) are able to help increase pressure on national governing bodies and administrations in the effort to get them to agree to international binding regulations.

Therefore, intergovernmental endeavours like the MAB Programme have the potential to serve as positive stimuli for national policies on the integration of biodiversity conservation with sustainable use activity options. Technical information or scientific evidence provided by experts can have important impacts on policy by altering the views of key individuals such as influential government officials (Sabatier and Jenkins-Smith, 1993). Thus, effective communication of the MAB Programme's objectives and its empirical underpinnings can make a difference in a multi-stakeholder decision-making process if key people who have an understanding of both the political and technical implications of the objectives act as proponents of the BR concept and support the implementation of its objectives.

In regard to the second question, according to Pierre and Peters (2000), participation (considered a prerequisite for a collaborative multi-stakeholder approach to BR management) is based on policies characterised by decentralisation of control over sub-national governing bodies, which creates a pattern of multi-governance. Political objectives to be addressed by the state are then to be seen as a complex trade-off between different policy objectives of the societal groups involved (Pierre and Peters, 2000). Participatory governance is site-specific and dependent on both political culture and socio-economic development (Getimis and Kafkalas, 2002). It is associated with risks and opportunities when taking into account the various stages of socio-economic development (O'Riordan and Stoll-Kleemann, 2002).

Based on the above, it can be contended that biodiversity governance in the context of BR coordination is highly dependent on the ability of experts to communicate the programme's objectives to all concerned. Furthermore, effective governance requires active participation that, in turn, depends greatly on political culture and socio-economic development.

Given these facts, we have concluded that our assessment of individual cases of BR governance has to consider the extent of the diffusion of the MAB Programme's objectives and institutional and

management environments at the national and sub-national levels. This is necessary in order to identify those governance factors that have a positive impact on the successful implementation of the BR concept at site level.

In the present study, we assess governance structures in three case study sites in the context of the T4N (Tourism for Nature[3]) Project, which is dedicated to strengthening the protection of globally significant mountain ecosystems in selected BRs of Central and Eastern Europe. The project was commissioned by UNESCO-MAB and Ecological Tourism in Europe (ETE) and funded by UNEP's Global Environment Facility (GEF). The results from the three case study sites in the Czech Republic, Hungary, and Poland were reviewed by both by national experts and by experts from the UNESCO Regional Bureau for Science and Culture in Europe in Venice (Italy).

## Materials and methods

The methods applied in the research under discussion follow a qualitative social research approach and assess the current situation at the case study sites on the basis of empirical evidence. Qualitative data from interviews were augmented by data from a comprehensive review of existing literature and legal texts. For further details, please refer to Schliep et al. (2007).

### *Tools employed*

Techniques employed include observation (field visits), interviews, questionnaires, and an analysis of the literature. The basic tools with which answers were solicited from respondents at the local, regional, and national level were structured and semi-structured interviews. Interviews were formulated that addressed the following topics: conservation, socio-economic issues, BR management, institutional interplay, and the local legal framework.

### *Selection of interview partners and data collection*

The stakeholders targeted included BR managers, staff, local community members, regional authorities, national governmental representatives, as well as external experts and members of national and international NGOs. About 10–25 contacts per case study were contacted. This procedure ensured a triangulation of stakeholder perspectives on the issue of successful implementation of the BR concept. Beyond this, the data was scrutinised against the literature reviewed in order to achieve triangulation of this data as well. Methodological triangulation is well established in social scientific studies to increase the reliability of the data.[4]

The data was collected in face-to-face and telephone interviews. The UNESCO-MAB website was also assessed in order to complement information about the general situation of BRs, national strategies, programmes, and legal texts, as well as to gather national level governance data.

### *Data analysis*

Interview records were transferred to digital media and analysed following the analytical framework elaborated by the T4N Project (see Schliep et al., 2007). The results of the case studies were categorised using the SWOT approach,[5] which was developed in the 1960s as a strategic planning tool to evaluate the internal and external factors that are favourable and unfavourable to achieving the objectives of a business venture or a project. We applied the approach to the BR management with a special focus on the relevant governance systems.

From the SWOT categories of the case studies, it was possible to develop proposals for actions whose aim is to *build* on strengths, *eliminate* weaknesses, *exploit* opportunities, and *mitigate* the effects of threats (Dealtry, 1992). The key points to evaluate the SWOT boxes are:

i. National coordination around biodiversity and sustainable development.
ii. Cooperative links between economic, social, and environmental agencies.
iii. Adequate resourcing and management skills.
iv. Integration of actions for maintenance of local livelihoods with sustainability.

**Table 1**
Šumava Biosphere Reserve: general information (source: Urban, 2006).

| | |
|---|---|
| Size | 167,117 ha |
| Year of designation | 1990 |
| Other designations | National: NP, PLA<br>EU: Natura 2000 (SPA)<br>International: Ramsar, IUCN Red List of Ecosystems |
| Governance type | Government management |
| Coordinating body | Non-existent; BR is administrated by the Šumava NP and PLA administration |
| Management plan | Non-existent, only NP management plan |

## Results

### *Case study 1: Czech Republic—Šumava Biosphere Reserve*

#### *General information*

The Šumava Biosphere Reserve is located at the western border of the Czech Republic, a high-income OECD member country (World Bank, 2009). It is the largest of six biosphere reserves in the small country (see Table 1) and – together with the German National Park Bavarian Forest – covers a substantial part of the low mountain range that defines the region's topography. Due to the peripheral location of the region, the population density is low. The main ecosystem is temperate broad-leaf and mixed forests, which cover two thirds of the mountains and highlands.

Pressures on biodiversity within the borders of the Šumava Biosphere Reserve originate mainly from developments driven by tourist activity. The industry has become a two-edged sword, generating badly needed income in an economically weak region, but simultaneously destroying the commodity it exploits through the steadily accelerating growth in the number of visitors (Urban, 2006, unpublished).

#### *Governance situation*

*National level.* The Czech Republic has adopted a consistent legislative and administrative framework for ecosystem management, defined in the Czech State Environmental Policy and the State Nature Conservation and Landscape Protection Programme (Schliep et al., 2007). The 1998 State Nature Conservation and Landscape Protection Programme is the Czech Republic's main

[3] For more information, please visit the T4N website: http://www.tourism4nature.org.

[4] For a detailed description of triangulation in social scientific research, please see e.g. Flick (2004).

[5] The acronym "SWOT" is derived from the qualitative categories the approach provides: strengths, weaknesses, opportunities, and threats.

programme for protecting biodiversity The Czech State Environmental Policy 2001–2010 (SEP), the principal document for Czech environmental policy, includes nature and biodiversity protection among its top priorities. A National Biodiversity Strategy was put in place in 2006. A new State Nature Conservation and Landscape Protection Programme is still under preparation (OECD, 2005).

BRs are legally not included in the national nature conservation law and its set of protected area categories. At the national level, cooperation in BR-related efforts is organised in annual meetings between the Czech National MAB committee and representatives from organisations responsible for the reserves' management. Collaboration with national parks does not exist, as there are no separate coordinating bodies for biosphere reserves with the exception of the Lower Morava Biosphere Reserve. The Šumava Biosphere Reserve's management tasks are performed by the staff within the facilities of the Šumava National Park, which overlaps with the territory of the BR.

*Regional level.* The Šumava BR's realm is part of the Šumava EUROREGION, including communities, cities, and administrative districts along the borders of the German state of Bavaria, the Czech Republic, and Austria. The establishment of the Šumava EUROREGION substantially facilitates cross-border cooperation and supports an ecologically and economically integrated perspective of the region. The regional level of integration for sustainable use and conservation is considerable.

The Šumava Regional Development Agency (RDA), located in Stachy, is dedicated to supporting the socio-economic transformation of the region through the coordination of projects by, e.g., providing information services or participating in the development of a regional policy. The transboundary RDA is responsible for South and West Bohemia and collaborates with the NP administration in the development of tourism and other endeavours. However, this collaboration is not yet backed by official agreements due to the current political situation: a Memorandum of Understanding (MoU) on the roles and tasks of the NP administration and the regional development agency has been prepared but is awaiting approval by the national ministry (personal communication, Stemberk, 2009). Financial resources are provided by the European Union's assistance funds, the national government, as well as by districts, communities, and private investors. The RDA plays a central role in supporting and enhancing cooperation among the region's various interest groups. The director of the RDA is a key person in the regional development process and very motivated; however, his resources are limited. The communities within and adjacent to the Šumava BR have formed what are termed 'micro-regions' in order to coordinate development efforts and to foster cooperation on strategic planning (Urban, 2006, unpublished).

*Local level.* The considerable pressure resulting from the growth of tourism is a particular challenge, and to the management of the Šumava NP in particular. This can be seen as a direct effect of the parallel decline of agriculture and forestry in the region, which has narrowed the economic expansion options and turned tourism into the major driver for regional development. Tourism and recreational use generate substantial revenues; nonetheless, the share of sustainable tourism is still rather low (5–10%) (Schliep et al., 2007).

Significant problems have emerged at the interaction between the NP administration and neighbouring communities. Although a series of roundtable discussions have allowed municipalities situated within the BR (but outside the National Park) to be involved, a congruent approach based on broad societal support from local stakeholders is lacking. The Management Plan of the Šumava NP, which will expire in 2010, has proven a highly controversial undertaking: it has been accepted hesitantly by some communities and has faced rejection by the majority. The regional authorities in Plzen and České Budejovice have repeatedly expressed their objections to the extension of the NP's core zone.

A new post of coordinator of the BR has been established, with the focus of the incumbent's task being the improvement of collaboration with the regional development agency. According to the draft MoU, the NP staff will be responsible for scientific expertise, while support for activities including LEADER, PHARE, and INTEREG 3a project administration will be provided by the RDA (personal communication, Stemberk, 2009). This new structure is based on the example of the Lower Morava BR, which is coordinated by a public benefit organisation.

Some observers of the situation on the ground contend that the present zonation of the BR is outdated (personal communication, Braun, 2007).

*Results of SWOT analysis*

Summarising the governance situation (see SWOT evaluation in Fig. 3), an integrated perspective on regional development of the Šumava NP administration can be attested, and considerable achievements with regard to the integration of sustainable use with nature conservation have been made on the territory of the Šumava NP.

The management of the Šumava NP is embedded in a consistent national administrative and legislative framework for ecosystem management, and the requisite regional administration is in place. However, the Šumava Biosphere Reserve cannot be regarded in this context because there is no coordinative body for the BR: it is the NP administration that represents the BR in communication with the surrounding communities, and it has not been able to convince the representatives from the communities to adopt the revamped layout of the BR that has been planned. Furthermore, communal economic interests currently focus on tourism development because revenues from traditional land use are declining. This increases pressure on biodiversity from tourism activities. As resources at the regional level and for the Czech MaB National Committee are limited, the NP administration lacks the necessary support for the implementation of its management objectives in a highly conflict-laden environment.

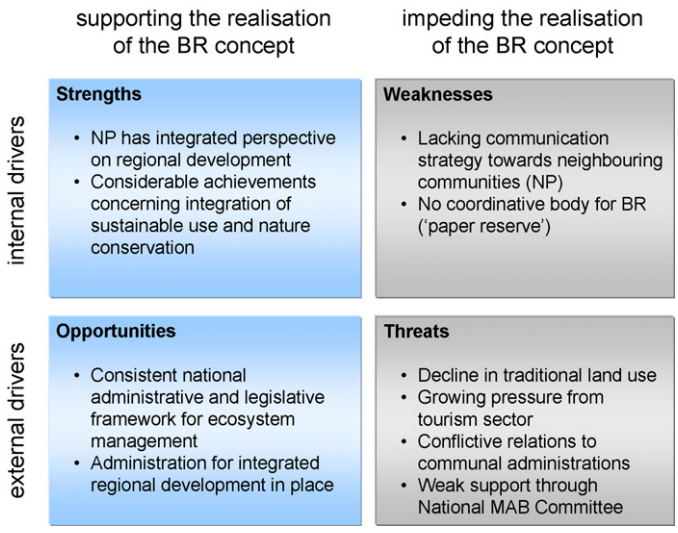


**Fig. 3.** SWOT analysis of the Šumava BR case study.

**Table 2**
Aggtelek Biosphere Reserve: general information (source: Kovácz, 2006).

| | |
|---|---|
| Size | 20,187 ha |
| Year of designation | 1979 |
| Other designations | National: NP<br>EU: Natura 2000 (Special Protection Area, European Commission Birds Directive)<br>International: WHC[a] (natural: caves of Aggtelek) |
| Governance type | Government management |
| Coordinating body | Non-existent; BR is administrated by the Aggtelek NP administration |
| Management plan | Non-existent, only NP management plan |

[a] WHC: World Heritage Convention.

*Case study 2: Hungary—Aggtelek Biosphere Reserve*

*General information*

The Aggtelek BR and National Park at the Hungarian-Slovak border represents one of the smallest sites among the Hungarian BRs and national parks (see Table 2). The major ecosystem type is temperate broad-leaf forest. The Aggtelek NP has been inscribed in the UNESCO World Heritage List, together with Slovak Karst National Park, due to its unique cave system and karst landscape.

Hungary is an upper-middle-income country according to World Bank (2009) classification. The main pressures on the BR territory are closely linked to demographic dynamics in the region as well as to economic factors. The region around the Aggtelek BR suffers constant demographic erosion. Its unemployment rate is high (10.6% in 2005, according to the Regional Development Agency of Northern Hungary, http://www.norda.hu) and young people in particular leave the area because of the lack of employment opportunities.

The abandonment of traditional farmland such as orchards and vineyards is threatening biodiversity values, and poverty among local people can be considered the main reason for unlicensed wood extraction from the NP forests. There are only two small villages in the territory of the BR. Neither has a population of more than 950 people (2005), the residents engaging in forestry, agriculture, and livestock breeding. When conditions justify, they also practice mining or commute to industrial areas (Kovácz, 2006, unpublished). The following Table 1 summarises some general characteristics of the Aggtelek BR.

*Governance situation*

*National level.* The government of Hungary has a comprehensive system of environmental legislation underpinned by a broad and mostly coherent system of strategies, programmes, and action plans for sustainable development integrating biodiversity conservation and the sustainable use of natural resources (OECD, 2000). With the second National Environmental Programme for the period of 2003–2008, Hungary tried to strengthen regional integration of environmental policy.

The Hungarian Nature Conservation Act does not include BRs as a specific protected area category. However, the Act defines the planning and organisation system of nature conservation and its relationship to regional planning (Kovács, 2006, unpublished).

Despite undeniable legislative and institutional achievements in the 1990s, the enforcement of environmental laws and regulations at all administrative levels, as well as the capacity of the respective administrative bodies and authorities, needs to be strengthened. "The challenge is (. . .) to implement environmental policies and to strengthen environmental infrastructure (. . .)" (OECD, 2000: 19).

Members of the Hungarian MAB National Committee (MAB-NC) are representatives of scientific institutions and environmental authorities, as well as directors of national parks. The interests of residents from areas within the BRs are not represented. In general, the MAB-NC has become less active due to increasingly restricted resources.

The Aggtelek BR is represented by the Aggtelek National Park Directorate, an independent legal entity under the supervision of the Hungarian Ministry of Environment and Water. The NP budget is defined by the Ministry of Environment and Water based on the general economic situation.

*Regional level.* The country has seven planning and statistical regions controlled by regional development councils with their regional development agencies. The Regional Development Council of the region Northern Hungary is responsible for the planning, preparation, and implementation of various EU and national programmes and projects, the coordination of partnerships and expert networks, and the support of local project ideas. The role of the counties is significantly diminishing, although they are the only elected bodies that provide a link between local authorities and the national Parliament. The level of sub-regions has received stronger political support in the recent past. The territory of the Aggtelek BR and National Park is actually part of two sub-regions: Kazincbarcika and Edelény (Schliep et al., 2007).

*Local level.* The NP Directorate is a relatively large organisation, with 73 permanent employees according to Kovács (2006, unpublished). The Aggtelek NP is the smallest in Hungary, fulfilling roles in nature conservation, research, and education and acting as a tourism enterprise. In the latter role, the NP generates considerable revenues in a region that is otherwise characterised by social deterioration and economic depression. In contrast and due to the lack of BR staff and corresponding management activities, the BR is not perceived as a significant actor in the local governance context in local stakeholders' point of view (Kovács, 2006, unpublished).

About 80% of the forest or 60% of the NP territory is state owned and managed by the North Forest Company, a governmental enterprise that pursues active forest management on a for-profit basis, which has lead to a major conflict within the NP borders (Kovács, 2006, unpublished).

Law enforcement at the local level is constrained by a lack of funds and a shortage of skilled personnel in communal administrations.

Some local initiatives are trying to revive traditional land use and trade. The Cultural and Tourism Institute of Borsod-Abaúj-Zemplén County is investigating the situation of local communities and has initiated a development programme involving local players who 1 day might be able to assume roles as the local community development agents in their communities. However, local civic movements (as an indicator for civic engagement) are poorly developed, and involvement of stakeholders in communal decision-making is rather low. No forums for participation and civic involvement have been established, but the NP Director regularly participates in local council meetings. The local population displays low awareness of environmental issues (Kovács, 2006, unpublished).

**Table 3**
Babia Góra Biosphere Reserve: general information (source: Dabrowski, 2006).

| | |
|---|---|
| Size | 11,829 ha |
| Year of designation | 1976 |
| Other designations | National: NP<br>EU: Natura 2000 |
| Governance type | Government management |
| Coordinating body | Non-existent; BR is administrated by the Babia Góra NP administration |
| Management plan | Non-existent, only NP management plan |

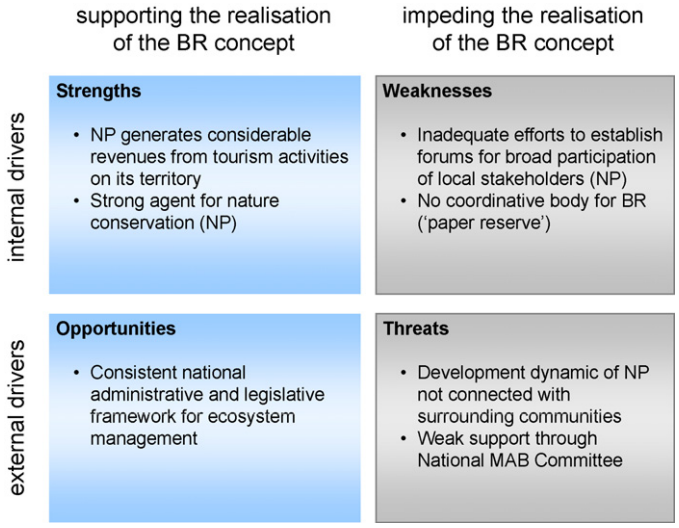


**Fig. 4.** SWOT analysis of the Aggtelek BR case study.

The Hungarian nature conservation policy generally neglects the interests of small local communities within or in the vicinity of protected areas. While the Aggtelek National Park management is fully aware of the relevance of local people for nature conservation, it simply does not have the appropriate legal instruments or the material and financial resources to achieve the objectives defined in the Seville Strategy.

*Results of SWOT analysis*

The result of the SWOT evaluation of the overall governance situation is depicted in Fig. 4. When assessing the management framework that embodies the translation of national policy at the regional and local level, two different trends can be observed. The strategic and legislative framework at the national level, and even most of the necessary institutions have been established, but the regional planning process through the Regional Development Plans does not seem to exhibit a proper connection to its local socio-economic environment. In addition to the causes described above, the following factors inhibit the implementation of the Seville Strategy at the local level: the absence of a coordinative BR body and a communication strategy, low recognition of the principles of the Seville Strategy among members of the NP administration, and a lack of support from the MAB National Committee due to shortages of both funds and personnel.

*Case study 3: Poland—Babia Góra Biosphere Reserve*

*General information*

The Babia Góra mountain ridge forms the natural border between Poland and the Slovak Republic. Poland is an upper-middle-income country according to the classification of the World Bank (2009). The mixed mountain and highland ecosystems of the Babia Góra Biosphere Reserve include four habitats, changing with altitude: the lower and upper forests (up to 1390 m), the dwarf pine belt (up to 1650 m), and the alpine habitat (up to 1725 m). Tourism development plays a growing role and increasingly challenges the BR management. Furthermore, pressure from "urbanisation of the countryside" is increasing. Nevertheless, the social structure in the region is comparatively stable, and the main economic activities are agriculture, cattle breeding, forestry, carpentry, and agro-tourism. The BR has some 6000 inhabitants, with around 25,000 people living in its vicinity (Dabrowski, 2006, unpublished; see Table 3 for further information on Babia Góra BR).

*Governance situation*

*National level.* The Constitution and specific national policies and strategies elaborated under the umbrella of the "Sustainable Development Strategy for Poland up to 2025" (*Polska 2025*) define the framework for the Polish nature conservation policy, extending the perspective of nature conservation and biodiversity policy beyond protected areas. According to the Polish nature conservation policy, biodiversity should not only be conserved in specific protected areas but also be fully integrated into activities that involve other sectors (OECD, 2003).

The Polish Nature Conservation Act of 2004 is the basic regulation defining the state organisation of nature conservation and the system of protected areas, including *inter alia* national parks and Natura 2000 sites (Dabrowski, 2006, unpublished).

At present, BRs are not a protected area category within the Polish legislation, and no mechanism is foreseen for their management. Against the background of the legislative framework, regulations concerning legally protected areas are most relevant for the management of BRs. However, this requires each part of the BR to be protected as a national park, landscape park, or nature reserve. National parks are created at the national level; the *voivodships* (provincial authorities), *poviats* (county authorities), and *gminas* (communal authorities) are not involved in this process. The Babia Góra Biosphere Reserve covers the Babia Góra National Park with its buffer zone; the BR's transition area lies outside the NP borders.

Due to its voluntary character, the work of the Polish UNESCO-MAB Committee is limited to consultations and facilitation of cooperation with other partners. It is in general based on voluntary work, with the Polish Academy of Sciences providing some administrative support. In case of the Babia Góra National Park, the National Park administration represents the BR in meetings and conferences organised by the Polish UNESCO-MAB Committee.

*Regional level.* Nature conservation responsibilities at the regional level are linked to the *voivodships* (provinces), which designate landscape parks and nature reserves; these functions are supported by regional nature conservators (OECD, 2003). In accordance with the stipulations of the Polish Act on Planning and Spatial Management, the regional authority of the Malopolskie *voivodship* prepared a Spatial Management Plan, which was approved by the regional parliament in 2003. It specifies the Natura 2000 protected areas and outlines general principles for regional development, e.g., in agriculture and tourism. Although the Plan does not mention the Babia Gora BR directly, it is decisive for BR management because its specifications have to be included into the spatial management plans of the *gminas* (municipalities) (Dabrowski, 2006, unpublished).

*Local level.* Successes at the local level have been limited due to capacity deficits regarding nature conservation, land-use planning, and implementation at the level of the *gminas*. This is of specific significance, as the spatial management plan of the *gmina* must have the agreement of the NP authority as far as it concerns NP territory (e.g., in case of the BR buffer zone).

All state property within the NP boundaries is managed by the NP administration. Private land use is very traditional, extensive, ecologically sound, and maintains a diverse landscape that includes fields, meadows, and forests. The average farm size is very small. There are about 900 farms between 1 and 2 ha, and no farm is bigger than 10 ha, and the number of farmers is decreasing annually. Tourism development increasingly challenges the BR management through pressure from urban sprawl (Dabrowski, 2006, unpublished).

The NP administration has a series of instruments to implement and communicate its objectives. Command-and-control instru-

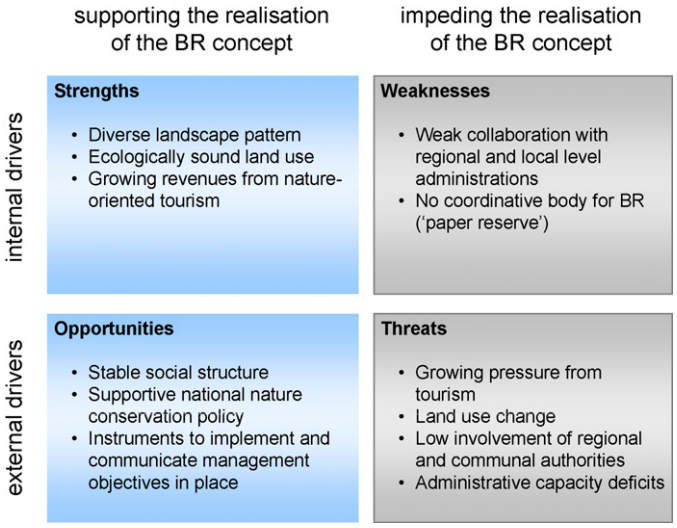


**Fig. 5.** SWOT analysis of the Babia Góra BR case study.

ments are based on the Polish Nature Conservation Act and the NP management plan. Market-related instruments are employed when giving out licenses for tourist guides, etc. Information-related instruments comprise the participation of the NP administration in the NP scientific council and frequent meetings with representatives of the *gminas* and their departments for the environment. It is obligatory that the spatial management plans of the *gminas* (10-year periods) must be approved by the nature conservation officers of the *voivodships*.

*Results of SWOT analysis*

The Babia Góra Biosphere Reserve is embedded in a diverse landscape with ecologically sound, small-scale farming, growing revenues from nature tourism, and a stable social structure. The Polish government has adopted a supportive national nature conservation policy, and the necessary instruments for implementing and communicating the management objectives are in place.

However, this case study exhibits some of the same local level characteristics seen in the two preceding ones: lack of a coordinative body, weak collaboration with communal authorities, and inadequate support from the MAB National Committees due to shortages of funds and personnel.

Against the background of gradual urban sprawl and the increasing tensions caused by attempts to implement large-scale tourism investment projects (Dabrowski, 2006, unpublished), the capacity deficits at the local administration level must be taken seriously. The ongoing land-use change and the concentration process in the agricultural sector require strong communal planning expertise to counteract threatening processes at the landscape level. However, the requisite administrative capacities and expertise do not exist. The result of the SWOT evaluation of the overall governance situation is summarised in Fig. 5.

## Discussion

The SWOT analyses of the three BRs taken as case studies unveil a striking resemblance in their overall governance situations: all manifest a substantial gap between the degrees of implementation of national biodiversity-related policies at the national and local levels.

On the national scale, the three countries where the parks are located can be said to have a generally coherent strategic and legislative framework for integrated biodiversity policy. In contrast, scrutiny of the situation in the local regions of the reserves reveals that all three lack coordination bodies, and thus suffer from miscommunication due to an absence of communication strategies; poor recognition of the BR concept in the NP administrations is also problematic.

This pattern of implementation disparity is a well-known phenomenon to practitioners of regional sustainable development in many parts of the world (see O'Riordan and Stoll-Kleemann, 2002) and has obvious implications with regard to the understanding of the BR concept at the local level. Although it impacts regional sustainable development efforts in general, this flaw particularly affects the MAB Programme as an international approach in national multi-level governance systems. Furthermore, the inadequate implementation of the MAB Programme with its Seville Strategy obviously has similar causes at the national level and below within the MAB institutional system itself, namely, weak national committees and coordinative bodies at the BR level.

In summary, two divergent trends can be observed at the three BRs assessed: whereas successes in biodiversity conservation and progress in the implementation of international agreements and the adoption of the EU environmental *acquis* at the national and regional levels can be acknowledged, economic development and policy implementation on the regional and local level, respectively, is distinctly deficient. When viewed against the standard of BRs truly capable of acting in the regional development context to which he Seville Strategy aspires, unfortunately, the BRs examined in the case studies have to be assessed as 'paper reserves'.

The differences among the respective socio-economic environments do not seem to influence the overall effectiveness of BR governance. In all three case study regions, agricultural land use is declining. Forestry is still a strong player in the Hungarian and Polish cases, where conflicts regarding forestry can be traced back to unresolved differences in nature conservation and forestry policies of the governmental actors. Considerable pressure on biodiversity is generated by tourism and in particular by the related urban sprawl in the Polish case. Generally speaking, all three case studies are more or less affected by a transformation of the regional economies.

However, we suggest that it is not the impact of economic transformation but rather the way it is dealt with that constitutes the root cause of inadequate implementation. This assumption will be discussed from three perspectives:

(1) with a view towards the political, management, financial, and administrative mechanisms put in place to reach the goals of the Seville Strategy (policy mechanisms);
(2) with reference to the processes by which stakeholders make decisions (decision processes); and
(3) with regard to the political organisation of the stakeholders involved in BR governance (political organisation).

*Policy mechanisms*

There is a broad and mostly coherent system of strategies, programmes, and action plans for sustainable development integrating biodiversity conservation and the sustainable use of natural resources (OECD, 2000, 2003, 2005). Ambitious goals have been formulated for integrated development at the regional and local levels. In Poland, nature conservation policy even extends beyond protected areas. In the Czech case, integration for sustainable use and conservation is considerable at the regional level. However, when assessing the management framework embodying the translation of national policy at the regional and local level, the overall picture is less positive. There has been inadequate consideration of the Seville Strategy principles in the national park manage-

ment policies. Off the record, protected area managers confess that the MAB label is just a cosmetic add-on without content in most national parks. We follow Nolte's (2007) suggestion that this points towards a deeper misunderstanding: the MAB logo is misinterpreted as a label; however, through the participation in the MAB Programme, the participating countries pledge their intention to comply with the objectives of the Seville Strategy. Against the background of this central misunderstanding, it is not surprising that there are no serious attempts to communicate the goals of the Seville Strategy to stakeholders and the broader public. The countries assessed have neither set-up nor implemented national strategies for the diffusion of the Seville Strategy. BR communication plans or strategies with respect to regional or local level integrated development are lacking. In the case study from Hungary, the design of the BR zonation even excludes settlements of residents from the biosphere reserve territory, with a view to gate out local interests.

*Decision processes*

When turning to the procedural aspects of BR governance, we find a rather low participation of stakeholders in communal decision-making. Pretty (1995) offers a systematisation of participatory efforts ranging from type 1, where participation is only a pretence, to type 7, characterised by self-mobilisation of stakeholders independently of external institutions. Following this typology of participation, all three case studies indicate only weak active participation: stakeholders do not have control over structures or processes; the management of the BR territory is mostly in the hands of government-led bodies (NP management, forest service, etc.). An early recognition of the positions of interest groups and individual landowners was not the rule.

Stoll-Kleemann and Welp (2008) propose a scheme for management types that reflects the degree and emphasis given to participation and inter-sector cooperation in BRs. All three examples from the Czech Republic, Hungary, and Poland are characterised by routine management or social and environmental engineering, i.e., participation does not play a central role in BR management independent of the degree of cross-sector collaboration, and expert knowledge is only rarely transmitted in the ordinary language of local people. The case studies reveal that participation is often understood as a formal process of downward vertical information transfer. The participatory process gives the impression that it is not really accepted, for negotiation and stakeholder interests are not taken into account.

Low environmental awareness and weak civic engagement aggravate the problem. It must be noted that participation that balances multiple stakeholder interests is an extremely difficult process, as case studies from England (Milligan et al., 2008) and Germany (Hartje et al., 2002) have pointed out. Developing a shared vision requires an early reconciliation of interests that takes all relevant stakeholders into consideration; building trust among them also requires time. The findings of Dawkins & Colebatch (2006) concerning the relevance of sustained commitment by stakeholders to the success of multi-stakeholder governance and reflecting the vision of the CBD's Ecosystem Approach support this view.

The described deficits in the areas of outreach and communication have resulted in low BR involvement in rural development activities, e.g., the Hungarian BR is not perceived as a significant player in the local governance context. The regional planning process of Spatial Management Plans (Poland), Regional Development Plans (Hungary), and territorial plans (Czech Republic) seems to function without proper connection to its local socio-economic environment.

*Political organisation*

As is the case with the respective strategies, programmes, and action plans, there is a consistent legislative and administrative framework for integrating biodiversity conservation and sustainable development at the national level: the governments of the Czech Republic, Hungary, and Poland have a comprehensive system of environmental legislation and have even established most of the necessary institutions. However, compliance with the objectives of the Seville Strategy is perceived as being solely in the hands of MAB organs (i.e., the MAB Secretariat and UNESCO offices, the supra-national BR networks, the MAB National Committees, and the BRs, often represented by other protected area types). Thus, biosphere reserves are not a legal protected area category in all three countries, which is perceived as a problem in the reserves. Examples from the Lower Morava Biosphere Reserve in the Czech Republic (personal communication, Cupa, 2007) and other biosphere reserves in countries such as Mexico (Bertzky, 2008) show, however, that strong support from a multi-stakeholder management is able to compensate for this institutional flaw.

This leads us to the problem of resources: as the BRs assessed gain little or no political support from the government to comply with the Seville goals, they are severely affected by staff capacity problems. The case study BRs are represented by national park management bodies, i.e., institutions that represent nature conservation interests, but are not targeted towards the design and implementation of regional development strategies. The Czech case illustrates the resulting conflicts in the interaction between the NP administration and neighbouring communities.

Although the Statutory Framework for the network of BRs and the Seville Strategy clearly identify the number and variety of tasks to be performed by BR's employees, the amount and breadth of their work is frequently underestimated. It could, however, be significantly reduced through improved environmental awareness and better understanding of sustainable land use, which, in turn, could be fostered and supported by the existing governance context. But collaboration with communal authorities is oftentimes weak, and not only in this regard.

This is due to the fact that the administrative counterparts suffer from a lack of funds and skilled administrative personnel. Professional expertise for integrative protected area management seems to be a highly volatile resource at the local level. Governmental administrative capacities are generally lowest at the local level, while success and failure of the collaborative BR management approach depend heavily on strong and skilled 'key actors' and partners. This is exemplified by the Polish case study, where capacity deficits regarding nature conservation, land-use planning, and implementation characterise the level of the *gminas*.

In a nutshell, there are several underlying reasons for the lack of professional expertise at the community level. These include, *inter alia*, that the generally low remuneration of experts in communal administrations and the volunteer nature of the work of local NGO members lead to high staff fluctuations. Furthermore, the usually short lifespan of international development projects thwarts efforts towards achieving long-term objectives in sustainable development. Another influence is the fact that in transition economies, local administrations have been the target of frequent institutional reforms and do not offer the stability needed for trustful long-term cooperation. Finally, the lack of political support and resources also prevails among the MAB National Committees: they turn out to be negligible as promoters for BR management objectives and even fail as facilitators of information sharing and a continuous dialogue between the reserves and stakeholder groups or political decision-makers.

## Conclusion

The MAB Programme understands BRs as embedded in a wider regional ecological, cultural, and socio-economic context. The stimulation of efforts towards sustainable rural development and improved community participation is a central element of its concept (UNESCO, 1996). However, the structural administrative gap between the national and the local levels is a huge stumbling block for implementation and is aggravated by the fact that it is replicated by the MAB institutional structure. The BRs in this study are still predominantly isolated entities, inadequately linked to the various spatial (regional to national to international) and temporal (short to long-term) policies, socio-economic processes, and cultural traditions.

The major task for each of the assessed biosphere reserves is to become an accredited coordinator and facilitator in the regional development process. It is thus crucial to connect the different stakeholder groups in the region and to demonstrate the benefits that arise from the biosphere reserve concept. Three strategic issues – communication, participation, as well as capacity building, education and public awareness – should be approached to bridge the governance gap between national and local levels and to generate support for the regional development process.

### *Communication*

The MAB National Committees should be enabled to promote better communication and information sharing as well as to support individual BRs regarding their coordination functions, to encourage and enable fundraising activities, to promote effective participation in the development of regional development strategies and programmes, and to extend participatory management approaches and international exchange as their most prominent tasks. If BRs are to be learning sites for better regional development following the principles of sustainability, then the MAB institutions should provide a best-practice example of improved vertical, cross-level cooperation in BR governance. This requires effective communication of the objectives of the MAB Programme.

### *Participation*

It is a fact that the assessed biosphere reserves do not have the necessary resources to fulfil their tasks defined through the Seville Strategy's objectives. However, examples such as the Lower Morava BR demonstrate that it is possible to make stakeholders participate in the regional development process despite unfavourable institutional conditions for biosphere reserves. The government management approach, connected with sparse resources for the coordinative BR bodies and a lack of political support, have clearly failed to comply with the requirements of the Seville Strategy. The multi-stakeholder management approach, with a coordinative body that is supported or even run by local stakeholders, seems to be a more adequate answer to the governance context of the three assessed case studies: if resources are scarce, pooling tasks is a sound strategic approach.

### *Capacity building, education and public awareness*

Multi-stakeholder management needs both trained staff in the BRs and informed and skilled partners. The biosphere reserves assessed (and of the respective MAB National Committees) are not able to mediate between the various levels of social and political organisation and thus need to improve their communicative and educational skills.

To achieve the necessary improvement of stakeholder skills and to increase the general appreciation of the necessity of the work, BR staff should concentrate on efforts such as environmental education, learning, and raising public awareness. There are numerous resources that could support this effort, *inter alia*:

- The United Nations Decade of Education for Sustainable Development (2005–2014) includes various themes, one of which is rural development with the Food and Agriculture Organization of the United Nations (FAO, Sustainable Development Department) as lead partner. The FAO is inviting member countries, international agencies, and civil society to join the partnership on Education for Rural People (ERP), which is targeting the educational needs of rural people.
- Further support may be provided by the CBD's Programme of Work on Communication, Education, and Public Awareness (CEPA), which aims at assisting parties, educators, and civil society to provide knowledge on the importance of biodiversity for a variety of audiences.

The analysis of the case studies demonstrates that the biosphere reserve concept of the MAB Programme is in a jam. On the one hand, the international acceptance of the programme strongly depends on the flexibility that is given to the participating countries in establishing BRs on their territory, as well as other factors. On the other hand, economic pressures, the identified governance gap between national and local levels, the lack of professional expertise and adequate funding, as well as missing active participation of local stakeholders, compromise the programme and its goals per se at the local level of active implementation. Most importantly, the programme has failed to generate the necessary active support from the superordinate governance levels. An international programme with a strategy that cannot be successfully implemented at the national and local levels due to its own provisions seems to be acting at cross-purposes.

The idea of 'learning sites' for sustainable solutions in regional development is highly appropriate for the current sustainable development perspectives for BRs and deserves much more support from the governments of the participating countries. It appears clear that some participating countries use the BR concept as an additional label for already existing protected areas and for fundraising purposes. However, the medal should be awarded to members who actively strive for the achievement of the objectives laid down in the Seville Strategy. Today, the BR label is something that is given away after a rather bureaucratic application process. In the future, the BR label should be awarded to regions or sites that provide excellent solutions for sustainable regional development. In terms of support, the role of the MAB National Committees should be strengthened in order to improve the diffusion of the MAB Programme's objectives at the national and sub-national levels. Other goals should include facilitating information exchange among national biosphere reserves and within the WNBR and initiating a broad societal dialogue on sustainable development and the role of the biosphere reserve concept in the process.

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