

Biosphere Reserves for conservation and development in Ukraine? Legal recognition and establishment of the Roztochya initiative

THEMATIC SECTION
Biodiversity Governance
in Central and Eastern
Europe

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SUMMARY

The Biosphere Reserve (BR) concept is an approach that simultaneously reconciles and promotes conservation of natural and cultural diversity, environmentally and socioculturally sustainable economic development, and research. This study focuses on the legal recognition of the BR concept as a tool for sustainable development (SD) in Ukraine, and what impact legislation has had on BR implementation. The BR concept has been incorporated into Ukrainian nature conservation legislation. However, interviews with locals engaged with the Roztochya BR initiative revealed that the aim to promote sustainability through stakeholder collaboration was poorly implemented. Legislative misplacement of the BR concept created misunderstandings among local people during the emergence of the Roztochya BR initiative. BR implementation may be improved by (1) choosing national terminology describing the concept carefully, because this affects stakeholder perceptions, (2) ensuring that legislation for BRs has a multi-sectoral character, and (3) ensuring that those who implement BR initiatives have the understanding, knowledge and will to lead and facilitate SD as a collaborative social learning process towards ecological, economic, social and cultural sustainability.

Keywords: model law, Roztochya Biosphere Reserve, social learning, sustainability, sustainable development

INTRODUCTION

The term sustainability emerged with the notion that the natural resources of the Earth are not endless (see for example Hunter 1996; Ramakrishnan 2001; Norton 2003, 2005). Since the Brundtland report (WCED [World Commission

on Environment and Development] 1987), a range of international and national policies related to the sustainable development (SD) (Baker 2006) based on natural resources have been formulated (see UN [United Nations] 1992, 2004; MCPFE [Ministerial Conference on Protection of Forests in Europe] 1993). To support implementation of SD both as a societal process and a producer of sustainability outcomes on the ground, international and national concepts have been developed. These include, for example, Biosphere Reserves (BRs), Local Agenda 21, World Heritage Sites, Model Forests, the EU Leader programme and, in Poland, the Promotional Forest Complex (see Axelsson *et al.* 2011; Elbakidze *et al.* 2010; Blicharska *et al.* 2012).

The Man and Biosphere (MAB) programme and its network of BRs is a UN approach that seeks to simultaneously reconcile and promote conservation of natural and cultural diversity, environmentally, economically and socioculturally SD, related research, education and awareness, while engaging local stakeholders (UNESCO [United Nations' Educational, Scientific and Cultural Organization] 1995). The BR concept developed by UNESCO in 1974 initially had two primary goals: conservation and ecological research (UNESCO 1974; Price 2002; Bonheur & Lane 2002). However, in response to the proliferation of international policies promoting conservation of biodiversity in combination with sustainable use and fair sharing of benefits from use of natural resources (Convention on Biological Diversity 1992), the BR concept was expanded to also serve as a testing ground for new approaches to SD and sustainability (UNESCO 1995; Phillips 1995; Bridgewater 2002; Price *et al.* 2010). In 2008, the Madrid Action Plan identified BRs as the principal internationally designated areas dedicated to SD in the 21st century (UNESCO 2008).

There are at least three types of BRs: those designated to focus on biodiversity conservation; those serving as learning sites for SD (UNESCO 1995; Price 2002; Fall 2003); and those in transition from the former to the present MAB programme BR strategy (Batisse 1997; Price 2002; Ishwaran *et al.* 2008; Price *et al.* 2010; Schultz & Lundholm 2010). The

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Madrid Action Plan of 2008 recommended member states give BRs legal recognition and include provisions for BRs in their national legislation (UNESCO 2008, target 11, action 11.1). There are currently 580 BRs in 114 countries (UNESCO 2011).

However, policy implementation processes seldom work as perfectly as planned, especially when implemented top-down, with an imposition of rules and values incompatible with those at the local level (Sandström *et al.* 2009). SD policies and related legislation still garner a relatively low level of public acceptance due for example to the lack of inclusion of relevant stakeholders in the implementation process (Julien 2000; McCauley 2008; Hovik *et al.* 2010). Researchers point to a number of factors, such as no tradition of public participation, the absence of collective choice mechanisms, lack of conflict management systems and conflicts related to the ownership structure of the land (Hester & Harrison 2007).

The ‘fit/misfit’ hypothesis (Knill & Lenschow 2000) is based on the assumption that policy implementation effectiveness depends on the level of correspondence between regulatory patterns at international, national and local levels. If there is a high degree of ‘fit’, policy implementation may be expected to be smooth. A considerable ‘misfit’, for example between existing institutional arrangements at the national and international levels, could create tensions that constrain implementation effectiveness and may potentially lead to social conflicts due to different expectations among involved stakeholders. The hypothesis is based on historical institutionalism whereby institutions tend to resist change, even in a changing situation (Thelen 1999; Genschel 2002). Analysis of conflicts during implementation of policies about sustainability and SD, such as employing the BR concept, and management of natural resources have, for example also focused on constraints, due to lack of information or means to address cultural or socioeconomic issues when the rationale of nature conservation is contested (Furman *et al.* 2007).

Ukraine provides a pertinent setting to study whether the multifunctional character of the BR concept is reflected in national legislation in order to satisfy ecological, economic, social and cultural dimensions of the SD process. The MAB-Ukraine National Committee was created in 1973 and the first BR was designated in 1984, with the main goal of nature protection. In 2003, Ukrainian Cabinet Ministers adopted a comprehensive programme for the period 2003–2015, designed to implement plans approved at the World Summit on Sustainable Development. Ukraine also faces a number of challenges in realizing SD as a process and achieving sustainability on the ground, for example a high level of corruption, lack of democracy and inadequacy of institutions (Gorobets 2008). There are currently eight BRs within the country, including the bilateral Danube Delta BR along the border between Ukraine and Romania, and the trilateral Eastern Carpathian BR shared between Ukraine, Poland and Slovakia. In Ukraine, BRs total more than 300 000 ha in area (see URL <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere->

reserves/mab). There are plans to establish new BRs, including two transboundary BRs along the European Union’s eastern border and one or more at the border with the Russian Federation.

The model law of Bonnin and Jardin (2009) was developed as a response to discussions within the MAB Programme about the importance of recognizing BRs in national legislation. The model law was based on an analysis of various examples of existing legislation related to the BR concept at the national level in 30 countries, and includes the main elements of the Seville Strategy and the Statutory Framework for BRs, along with the recent recommendations from the Madrid Congress (Bonnin & Jardin 2009). We used this proposed model law about BRs and their designation because it is officially referenced by UNESCO (Bonnin & Jardin 2009).

The objectives of this study are to (1) assess whether current national legislation relevant to the BR concept, based on multi-level and participatory governance in Ukraine, addresses the diverse functions of BRs; and (2) analyse the public acceptance of BR implementation, using the emerging Roztochya BR initiative located in the Western Ukraine as a case study. The Roztochya BR initiative is the result of many years of intensive discussion and numerous attempts to promote BRs and their establishment within local communities in Ukraine. We sought to discover whether the implementation of the BR concept was a source of social conflict at the local level among actors. If so, what were the reasons for such conflicts and how did these differ between groups? Did residents in the Roztochya BR perceive the need for nature conservation in the context of economic development in their region? Was the effectiveness of BR implementation affected by existing nature conservation policy? Addressing these questions enabled us to better understand the treatment of the BR concept in Ukrainian national policy and measure local acceptance of the Roztochya BR. We also discuss the opportunities and challenges associated with implementation of BRs aimed at SD in Ukraine and how social learning could contribute to better understanding of the BR concept by different stakeholders.

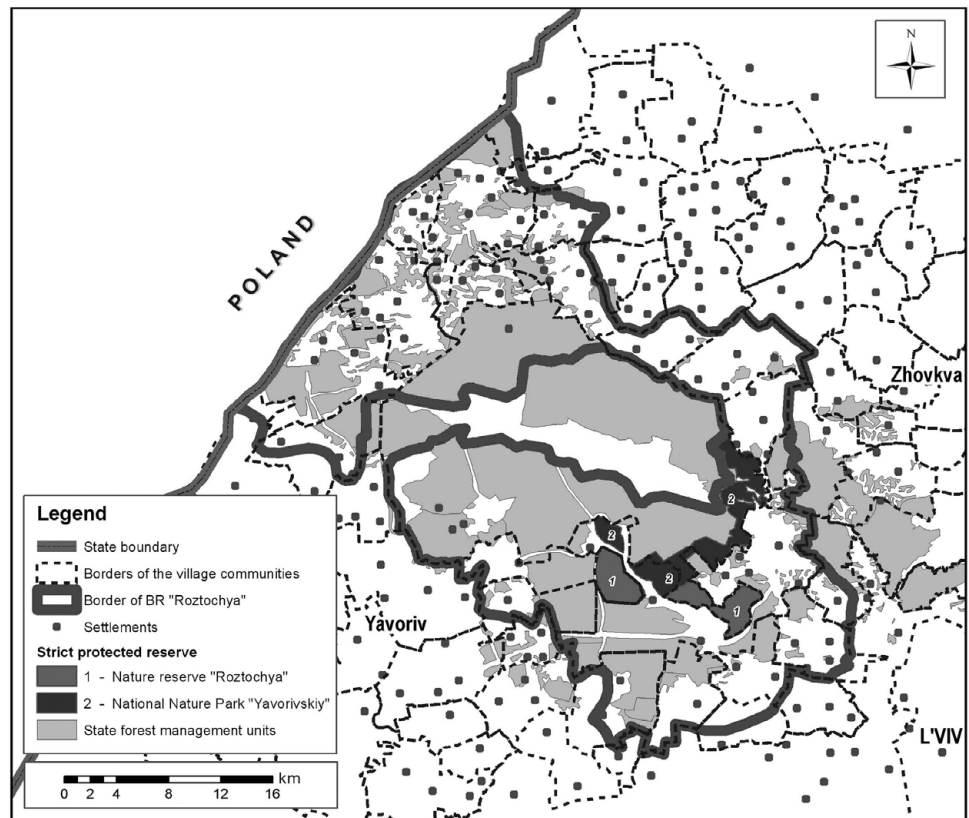
METHODS

The Roztochya BR initiative

The Roztochya region is located in western Ukraine and eastern Poland. This region serves as an important green corridor of upland forest and cultural landscape across the Eastern border of the European Union (Fig. 1). The Ukrainian part of Roztochya was approved as a BR by MAB UNESCO in 2011.

During the Soviet period (1939–1991), sulphur mining was the main industry in the Ukrainian Roztochya region. In rural villages within the region, collective agricultural enterprises were the main employers of local people. Following the disintegration of the Soviet Union in 1991, the mining

Figure 1 Location of the Roztochya Biosphere Reserve in Ukraine.



industry was closed and the collective agricultural enterprises were reorganized into small-scale private farms or abandoned due to political and economic shifts towards a market economy. As a result, a large portion of both the urban and rural population lost their jobs. Currently, the Ukrainian Roztochya region is facing a number of challenges, including high levels of unemployment, a poor health care system, lack of access to suitable markets for local products, insufficient road infrastructure and depopulation of rural areas (Anon. 2008; Stryamets *et al.* 2012).

The Roztochya BR area includes both private and public land and covers 74416 ha. The BR territory hosts 88 vascular plants listed in the Red Book of Ukraine, and two plant species listed in European Red List. BR fauna include 66 species listed in the Red Book of Ukraine, 156 species listed in the Bern Convention (Anon. 2010) and 88 species listed in the Convention on Migratory Species (CMS 2003). The BR is also home to 14 animal species listed in the European Red List (Anon. 2010). The total area set aside for nature conservation, with differing levels of restriction concerning natural resource use, is *c.* 13% of the BR's area. Many different stakeholders have legal rights to use natural resources on these lands for domestic, commercial and nature conservation purposes. The area encompasses 93 villages, which are organized into 21 administrative communities. The area also includes five state forest management units and five protected areas (Fig. 1).

The region is well situated for tourism development, with high natural and cultural landscape values and close proximity both to the large Ukrainian city L'viv and several urban centres in Poland, of which Roztochya was a part until 1939. There are also many important sites of cultural and historic importance for Jewish, Polish, German and other tourists. The BR is divided into three management zones: a core area (4.5% of the total BR area), a buffer zone (8.3% of the area) and a transition zone (87.2% of the area) (Anon. 2010).

Comparison of the national legislation and the model law

We compared Ukrainian legal provisions for BRs with Bonnin and Jardin's (2009) model law for BRs. We identified the following categories of correspondence: (1) articles in the Ukrainian law that directly corresponded to those in the model law; (2) articles that partially corresponded with the provisions in the model law; (3) articles listed in the Ukrainian law that were not covered by the model law; and (4) specific provisions for BRs in the model law that were not covered by the Ukrainian law.

The model law for BRs consists of 15 articles that define a BR (article 1), the designation process (articles 2, 3, 4), objectives (articles 5–8), territory (articles 9–11) and integrated management of BRs (articles 12–15) (Table 1).

Table 1 Comparison the content of the provisions for Biosphere Reserves in the Ukrainian law with those listed in the ‘model law’.

<i>Articles</i>	<i>Model law</i>	<i>Ukrainian law</i>	<i>Comparison</i>
Definition	<ul style="list-style-type: none"> • Terrestrial and coastal/marine ecosystems • Established to promote a well-balanced relationship between human beings and biosphere • Provide an example of this well-balanced relations 	<ul style="list-style-type: none"> • Nature conservation and research places • Designated for conservation of the most representative natural complexes of biosphere, • For studying the environment and its change under the human impact 	Does not correspond
Criteria for designation	(1) Ecological systems representative of major biogeographic regions, (2) be of significance for biological diversity conservation, (3) provide an opportunity to explore/demonstrate approaches to SD on a regional scale; (4) have an appropriate size to serve the three functions		Does not exist in Ukrainian law
Process of designation	<ul style="list-style-type: none"> • By the national administrative body • After consultation of the local authorities 	<ul style="list-style-type: none"> • By the national administrative board • After consultation with local communities 	Corresponds
National network	Integrated into a National Network of BR	Integrated into the international network of BRs	Does not correspond
Functions	(1) Conservation; (2) development; (3) logistic	(1) Conservation; (2) ecological monitoring; (3) research	Partially corresponds
Education	<ul style="list-style-type: none"> • Environmental education: (1) respect natural and cultural heritage; (2) favour responsible relationships with the environment and better land management, (3) create citizens who are aware of their responsibilities to future generations 		Does not exist in Ukrainian law
Models of SD	Use BR as sites for exploration and demonstration of conservation and SD approaches at a local scale		Does not exist in Ukrainian law
Research	<ul style="list-style-type: none"> • Interdisciplinary and innovative research tools to improve tools for adaptive management • Participate in national and local monitoring programmes 	<ul style="list-style-type: none"> • Evaluate the state of environment • Develop tools got protection and effective use of natural resources and ecological safety 	Partially corresponds
Zonation	(1) Core areas; (2) buffer zones; (3) transition zone (to contribute to the SD of local communities)	(1) Core areas; (2) buffer zones; (3) zone of anthropogenic landscapes includes areas with traditional land use and forestry etc.	Partially corresponds
Public/private sector	Can be partly or wholly a public or a private property	Can be partly or wholly a public or a private property	Corresponds
Integration to protection, development policies	<ul style="list-style-type: none"> • Into national and regional development policies; land development projects 		Does not exist in Ukrainian law
Integrated management policies (IMP)	<ul style="list-style-type: none"> • Must be developed with the aim of forming a comprehensive project of SD • Different stakeholders are informed, should participate on the procedure for the elaboration and review of IMP • Development and revision of the IMP allows the information and the participation of the different stakeholders 		Does not exist in Ukrainian law
Authority of BR	<ul style="list-style-type: none"> • An institutional structure must be developed • This structure is meant to serve as a framework for local consultation with stakeholders from civil, private and public sectors 	Administration of BRs with departments: scientific; nature conservation control; and services.	

Table 1 Continued

Articles	Model law	Ukrainian law	Comparison
	<ul style="list-style-type: none"> • Can be of public or private legal nature • Management authority, consisting of two related organs: a governing body that regroups of various stakeholders and a scientific board 		
A unified national policy	<ul style="list-style-type: none"> • A national policy must be put in place that differentiates BRs from other conservation tools 		Does not exist in Ukrainian law
Policy review	<ul style="list-style-type: none"> • All parties involved in reviewing BR objectives and translating them into zonation etc. 		Does not exist in Ukrainian law

Motivations for establishment and stakeholders' perceptions

To understand the motivations for the development of a BR in the Roztochya area and local stakeholders' perceptions during the process of its establishment, we adopted a qualitative approach. The goal was to analyse the meaning that stakeholders assigned to the BR (Denzin & Lincoln 2005) and to compare their responses with the main goals of BRs, as declared by the Madrid Action plan. We conducted semi-structured interviews (Kvale & Brinkman 2008) with the key respondents in the study area (the interview manual is provided in Appendix 1, see supplementary material at Journals.cambridge.org/ENC). The respondents represented the following groups: (1) promoters of the BR initiative, (2) heads of the ten village communities within the BR's boundaries, and (3) forest managers from the state forest enterprises located in the BR and managers of protected areas located in the BR. Group 1 (eight respondents) included individuals that worked actively to promote the BR idea in the Roztochya region and were involved in the discussions with local stakeholders about the importance of local BR establishment. Respondents were mainly researchers, identified by the respondents from groups 2 and 3 as the main promoters of the BR idea. Group 2 (10 respondents) comprised heads of ten village communities within the borders of buffer management zones, where limitations on nature resource use might be introduced after establishment of the BR. Their role in the BR development process was to describe the vision of a BR in the Roztochya area to villagers at numerous meetings. These respondents were asked to discuss both their own private perspectives and those expressed by villagers in their respective communities at the meetings concerning the development of Roztochya BR. Group 3 (seven respondents) consisted of forest managers from all five state forest enterprises in the study area (one from each enterprise) and the directors of Yavoriv National Nature Park and Roztochya strict protected reserve. In total, 25 qualitative interviews were conducted in September 2009 and in April 2010. In three village communities, the interviews were supplemented by focus group discussions with villagers attending public meetings about the proposed BR. Each

interview lasted 1–2 hours, and was recorded digitally and transcribed. From the transcriptions of all interviews, we extracted responses related to views and perceptions about the main motivations for BR establishment that we then grouped by main perception.

To understand the main intentions for the establishment and management of the BR, we complemented the results from the interviews with a review of official documents. These included the UNESCO BR nomination forms for the Roztochya BR (Anon. 2010), protocols from meetings with local communities, and the international and national documents relating to laws and formal agreements that govern the management of BRs in Ukraine.

RESULTS

National legislation for the BR concept

The National MAB Committee in Ukraine was organized under the National Academy of Sciences in 1973, when the country was still a part of the Soviet Union. This body remains responsible for implementing the UNESCO MAB Programme in Ukraine. The BR was incorporated into the Law on Nature Protected Area Fund of Ukraine (Anon. 1992), which was updated in 2010. According to this law, the main governing body for all protected areas in Ukraine, including BRs, was the Ministry of Ecology and Natural Resources. The direct translation of the international term biosphere reserve in the Ukrainian law is *biosfernnyy zapovidnyk*, or biosphere strict protected reserve. In Ukraine, strict protected reserves are established for nature protection only, and all kinds of human use are excluded. According to Ukrainian law (Anon. 1992), the main goals of BRs are to protect a network of areas representing the ecoregions of the biosphere, to conduct environmental monitoring and to study the natural environment and its changes under human impact.

Comparison of the provisions for BRs under the Ukrainian law and the model law showed that provisions from the Ukrainian law corresponded directly only to two articles and partly corresponded to six articles in the model law. These articles were related to the process of BR designation and items that dealt with the ownership of the territory within a

BR (Table 1). Almost half of the articles within the model law (7 of 15) were absent in Ukrainian law. The missing articles included criteria for designation (for example, in the Ukrainian law these were the same for all types of protected areas, with no specific rules for BRs), educational functions, the role a model for SD (the expression ‘sustainable development’ were never used in Ukrainian law), and integration with protection and development projects (Table 1).

According to Ukrainian legislation, there are restrictions on land use that could negatively affect natural, historical or cultural values and objects located within different kinds of protected areas, including BRs. Harvesting of wood and non-wood forest products, hunting, fishing and some other types of natural resource use could be conducted if such activities did not conflict with the aims of the specific protected area, including BRs. The use of natural resources within protected areas is nevertheless regulated, and land users have to apply for special permits to use natural resources, as defined by the Cabinet of Ministers of Ukraine for the protected areas of national importance, including BRs (Anon. 1992).

Motivations for the creation of the Roztochya BR

The idea of creating a BR in the Roztochya area emerged during the first World Congress of BRs in 1983 in Minsk, Belarus (S. Stoyko, personal communication 2010). The vision was to create a transboundary BR, including land in both Poland and Ukraine, with the aim of conserving natural ecosystems in one of the key biogeographic regions of land and freshwater lakes (as defined by Udvardy 1975). However, under the Soviet regime, the initiative was not pursued, due largely to security policy; a Soviet Union military training facility was located in the Roztochya area.

Interest in a Roztochya BR re-emerged after 1991, when Ukraine became an independent state. The transition from a planned system to market economy was accompanied by deep economic and political crises in the country. Meanwhile, different stakeholders on regional and local levels, such as heads of regional administrations, managers of protected areas and private businesses, explored options for regional economic development. According to the key informant interviews, transboundary cooperation between adjacent administrative regions in Poland and Ukraine located in the Roztochya region was discussed as a possible approach to promote business development and opportunities for new investments. Establishment of the transboundary Roztochya BR, with both Ukrainian and Polish portions, was a key strategy emerging from these discussions.

Based on the analysis of the interviews with those respondents directly involved in the BR planning and promotion (group 1), we conclude that the initial motivations for the establishment of a BR in Roztochya were: (1) to protect biodiversity in Roztochya as the divide between the Baltic and Black Sea catchments; (2) to address ecological issues associated with the heritage of the local sulphur mining industry; and (3) regional economic development driven by

regional and international tourism (see also Stoyko 2004). The proposed transboundary BR was also considered as an attractive tool for generating interest and investments from international and national sources.

Analysis of management regulations for BR zones (core area, buffer zone and transition zone) and related information in the UNESCO BR nomination form (Anon. 2010) showed that the main goal for the Roztochya BR initiative was nature conservation. Data for core and buffer areas were presented in 17 detailed pages, while the description of the transition zone was covered in three pages; almost 60% of the information included in the nomination form concerned rare forest ecosystems or rare species (Anon. 2010). There were neither analyses of the interests and needs of local stakeholders, nor consideration of the land-use activities that would serve as the basis of a regional development strategy focusing on SD as a societal process. According to the MAB programme’s recommendations, the detailed management plan should have addressed all stakeholders’ interests.

Perceptions of the Roztochya BR initiative

Through interviews, we identified the perceptions that the BR was: (1) an instrument for nature conservation with restrictions on use of natural resources, (2) a tool for concurrent nature conservation and tourism development, and (3) needed as an additional regional administrative body to control the use of natural resources.

The perception of the BR as an instrument for nature conservation with restrictions on nature resource use and land management was very common among both villagers and foresters (65% of respondents). Local peoples’ livelihoods depended directly on the goods provided by forest and cultural landscapes of Roztochya. Those respondents perceived that the creation of a BR would limit their access to the forests and bring new restrictions on land management practices, including use of chemicals in farming, construction of buildings and collection of non-wood forest products. Some villagers (15%) expressed fear that their private land would be seized and incorporated into the BR. In response to promoter’s explanations that the creation of a BR would not change their land use practices or ownership rights, the most common statements (*c.* 60% of respondents from representatives of local communities) were similar to the following quote ‘we received many such promises during the Soviet time, and still everything later on proved to be the opposite’. As one informant explained, ‘People do not trust the State, even if it is written in the documents that there will be no restrictions, they are not sure that it will not happen’. Six local communities out of ten located in the buffer zone of the BR refused to accept the idea of the BR creation from the beginning. This perception of a BR as an instrument to bring restrictions precipitated numerous village council meetings to discuss the location of villages within the border of a BR. One village community voted eight times against BR creation over a three-year period. The remaining

village councils gathered at least twice, eventually generating a positive decision; some villages gathered five or six times to discuss the issue. Only village communities located close to the national park and the strictly protected reserve were positive from the beginning and had expectations that creation of the BR would contribute to their livelihoods. In total, the process of obtaining permission from each of the local communities to include their land in the BR took almost eight years. Forest managers (three out of five main forest managers of the state forest management units) had similar perceptions about the BR as limiting land and resource management practices, and were thus in strong opposition to the BR. The prevailing perception among forest managers was that timber harvesting would be controlled and reduced in the BR and, in some places, logging operations would be prohibited. The foresters perceived that the BR would be similar to a strictly protected nature reserve. All interviewed foresters expressed pride in their forest management activities because they provided jobs for local people and produced value-added products for regional and local markets. The foresters' response to the proposed BR greatly influenced villagers' perceptions because the state forest enterprises were the main employers in the region. Thus, many people depended both directly and indirectly on the continued use of forests to earn their income.

The perception of the BR as an instrument for supporting both nature conservation and tourism development was shared by both the BR promoters and villagers. The BR promoters clearly stated that the creation of the BR would improve nature conservation, especially in those protected areas under the responsibility of regional administrations, and, at the same time, make the region more attractive for tourists. However, the scientists and managers of protected areas complained that the local people did not understand the value of conservation. Statements to such effect included: 'people have such a low ecological awareness' and 'the ecological ignorance is such that they did not respond well to the argument that we had to protect our nature for the future'. The promoters expected that the BR development would bring additional funding from the central state budget and international organizations, both of which would be used to develop a needed infrastructure for nature and cultural tourism and to improve roads. The villagers also expressed the view that creation of a BR would increase the opportunities for tourism and, as a result, might lead to economic development of the area. However, it seems that local people did not perceive themselves as key stakeholders and often made suggestions similar to that made by one interviewee that 'they (the BR's promoters) said that tourism will develop and bring income to us'. Five respondents stated that more than 100 000 tourists visited the region annually, most of them from abroad. However, as one informant suggested, 'all income associated with tourist activity went to the Polish companies that organized the tours'. All respondents described the area as having no tourist infrastructure, neither places for staying overnight nor eating, nor good quality roads. One interviewee said: 'Although we are so close to L'viv and located in the centre of Europe, we are

still very remote'. None of the stakeholders had a clear idea of how the BR would function or how it would be financed.

Almost 17% of respondents perceived the BR as a state organizational structure that would have the power to control land and nature resource management. These respondents stated that they would have to get permission from the BR administration, located many kilometres away in L'viv, to conduct land use activities. This, they contended, would require that they spend their time and money to go there.

DISCUSSION

In Ukraine, the BR concept is incorporated into the national legislation, as recommended in the Madrid Action Plan for BR implementation. However, our study indicates that there is a substantial gap between the requirements for BR provision in the model law and requirements under Ukrainian national law. Compared to the model law, the Ukrainian national law poorly reflects the BR concept as a tool to promote sustainability by a participatory and stakeholder-driven SD process. Rather, the BR concept is presented as a specific type of protected area of international importance. According to the Seville Strategy (UNESCO 1995), BRs are intended to be more than just protected areas and learning sites for SD. The recommendation from the Madrid Action Plan (UNESCO 2008) was to reinforce this by national legislation. In Ukraine, a large suite of laws regulates the use and conservation of natural resources and economic and social development. The existing law on BRs in Ukraine might be adequate to fulfil the ecological function of BRs, however it is not an adequate framework for the economic and social-cultural dimensions of the BR concept.

Our study shows the fit/misfit framework is a useful means to analyse the policy implementation effectiveness. In Roztochya, one of the things that severely constrained the implementation process on the ground was the 'mismatch' between the model law and existing institutional arrangements at the national level. The process in itself was thus socially constrained, since the legislative domain of the BR concept clearly impacted the perceptions of the BR concept held by different stakeholders in the case study. For example, the main promoters of BR establishment in Roztochya were ecologists and managers of protected areas. This suggests that the nature conservation domain of the BR concept in Ukraine provided professional and administrative advantages to them. Other stakeholders perceived the BR as a state organizational structure that would have the power to control land and nature resource management. In Roztochya, the promoters of the BR focused their efforts on convincing local people that the BR would be much more than just another protected area.

We contend that, in Ukraine, where rural livelihoods depend directly on use of natural resources (Elbakidze & Angelstam 2007; Stryamets *et al.* 2012), the legislative misplacement of BRs also threatens the implementation of BRs as initiatives towards collaboration to satisfy all dimensions of sustainability. For example, in our study area,

local landowners and managers of the state forestry enterprises perceived the plan to establish a BR merely as another type of protected area that would limit natural resource use and related land management. This is likely to make BR implementation challenging and result in conflict among stakeholders. This notion is also supported by studies in other countries, where the promoters of BR initiatives often meet resistance from local people, who recognize BRs as solely created for strict nature conservation (see for example, Phillips 1995; Fraga 2006; Wallner *et al.* 2007; Bosak 2008; Kusova *et al.* 2008), which imposes limitations on natural resource use and does not provide any economic benefits for local people.

In post-socialistic countries, there is also a legacy of private land seizure by the state and control of natural resources that contributes to mistrust or suspicion of the government. Such was the case under the Soviet system in Ukraine. Later, during Ukrainian independence, after 50 years under the Soviet system, some of these lands were returned to previous owners. Land ownership is a source of pride (Elbakidze & Angelstam 2007), however local people do not yet feel fully secure with their land ownership and are afraid that the government could take their property. This history, in combination with current social and economic insecurity, contributes to local stakeholder distrust towards initiatives that originate outside of their own community, such as the BR, which could potentially result in undesirable impacts on their livelihoods. Therefore, the ‘mismatch’ between the model law for BRs and existing institutional arrangements at the national level has the potential to create tensions that would constrain implementation effectiveness. This, in turn, might lead to social conflicts due to differing expectations among involved stakeholders.

Our study reveals that in encouraging implementation of BRs and local acceptance on the ground, many issues need to be considered. What are the definitions of sustainable development and sustainability? While there is a consensus about ecological, sociocultural and economic sustainability, there are different opinions about their interrelationship (see Mauerhofer 2008; Blowers *et al.* 2012). Are they equally important? Are nature conservation and economic development compatible, and, if so, in what ways? We argue that BRs as ‘learning sites for sustainable development’ could transfer these academic discussions to reality by empowering stakeholders to take part in the SD process and learn about the state and trends of different sustainability dimensions. Solutions and understanding of interrelationships among the main dimensions of sustainability and development of adaptive governance, both objectives contained in the BR concept, could be outcomes (see for example Lee 1993).

Does national legislation or policy reflect the multi-functional and multi-sectoral character of the BR concept? Our study suggests that limiting the BR concept to the nature conservation domain in Ukraine constrains the creation of BR initiatives that may generate appropriate economic and social-cultural activities and contribute to allaying local stakeholder concerns about their rights regarding use of natural resources.

Does the translation of the BR concept into the local language reflect all dimensions of SD and sustainability? The name of a concept may influence or predispose the perceptions of local landowners, politicians and key decision-makers. For example, the term Model Forest suggests that this concept is normative and concerns forests, and thus falls under foresters’ responsibility (Elbakidze & Angelstam 2008). By contrast, the Model Forest concept focuses on sustainability of forest landscapes through multi-stakeholder collaboration (the SD process) in a landscape (IMFN [International Model Forest Network] 2008) and is thus relevant for all stakeholders. Similarly, the word ‘reserve’ suggests to conservationists that the initiative should be under their jurisdiction.

Do those who promote concepts to encourage SD on the ground have the knowledge and skills to facilitate SD as a collaborative social learning process among stakeholders from different sectors and levels, including raising environmental awareness and communication of the full spectrum of sustainability dimensions?

CONCLUSION

To strengthen BR contributions to SD as a societal process and sustainability as the outcome, there is a need to integrate work among local stakeholders and develop a collaborative social learning (see McNeely 1995; Leeuwis & Pyburn 2002; Green & Chambers 2006; Schliep and Stroll-Kleemann 2010; Stroll-Kleemann *et al.* 2010) with the aim of empowering local communities to steer their own development rather than passively following external directives. This requires a careful approach to collaboration, understanding of states and trends of different sustainability dimensions and, if necessary, production of new knowledge as important components of a BR initiative. We also emphasize the importance of understanding and treating BR governance as having multiple levels, from local and regional, to national and global, and including different sectors of society (Elbakidze *et al.* 2010).

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