

Opportunities and constraints of adopting market governance in protected areas in Central and Eastern Europe

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Abstract: This article analyses the transition from the traditional hierarchical governance of natural resources in Central and Eastern Europe towards the new forms of market governance of protected areas, including the introduction of fees and compensation. Our conceptual framework suggests that markets can be effective in governing transactions that involve low asset specificity and low frequency of disturbances. However, the introduction of markets should be accompanied by appropriate rules of market organization that particularly regulate their monitoring and impose sanctions in cases of mismanagement. The analysis of market governance in Poland, the Czech Republic and Slovakia reveals that in the face of decreasing funding for biodiversity protection and state budgetary problems, markets are more a necessity than a means to improve resource management. Although markets should complement rather than substitute traditional forms of governance, for certain types of transactions, markets are useful. They can be effectively implemented, provided that property rights are recognized and legal settings that regulate the monitoring and enforcement of market rules are set up.

Keywords: Central and Eastern Europe; market governance; protected areas

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I. Introduction

Human benefits from nature and ecosystems are related to: (i) aesthetic and cultural values; (ii) provision of ecological services such as climate regulation, soil formation, and nutrient cycling; (iii) direct harvest of wild species for food, fuel, fibres, and pharmaceuticals. Most benefits provided by nature and ecosystems are not captured by conventional market-based economic activity and analysis, due to problems with their evaluation (Balmford et al. 2002). In addition, many ecosystem services and their delivered benefits operate under the characteristics of common pool resources, i.e. they are rival and non-excludable, or excludability is costly. At the same time, government agencies responsible for protected areas' management experience financial difficulties with the maintenance of conservation activities (Inamdar et al. 1999; Cashore 2002). Establishing a protected area also imposes costs on local communities and households (Ferraro 2002). The solutions to the current financial difficulties that face biodiversity institutions require them to become more accountable service providers, generating public benefits through effective regulations and market forces (Inamdar et al. 1999; Damania and Hatch 2005). The development of market instruments that capture at a private level the social and global values of relatively undisturbed ecosystems are seen as a crucial step towards sustainability (Balmford et al. 2002). Although the idea of using market governance tools is not new, recent years have shown a growing political demand for their use. Market governance is usually considered more flexible than the traditional bureaucratic command and control regulation. It also helps create a sense of partnership and shared responsibility for the promotion of sustainable development (Baker and Eckerberg 2008).

The introduction and expansion of market governance is particularly challenging in post-socialist countries, where state control and centralized economy disrupted the functioning of markets. In Central and Eastern European countries during socialism, the role of the basic institutions of capitalism such as private property was limited, and most resources were allocated from top-down in centralized administrative systems. Conditions which emerged in Western Europe between the sixteenth and eighteenth century enabled the development of market and related institutions, with parallel changes in the political organization of societies and culture as a whole. This gradual evolution of markets and surrounding institutions was handicapped in Central and Eastern Europe. Nevertheless, the transformation coincided with the peak of market ideology in Western countries. Market orientation and the privatization of state resources was the dominant approach in the transformation process. As Bromley (2000) pointed out, people believed that capitalism would appear magically from the morning mist if only the heavy hand of government would get out of the way. However, the new market

institutions did not appear in a vacuum, and were affected by previous institutions and rules (Hodgson 1998; Rammel et al. 2007).

Market governance was also very rapidly introduced to protected areas in Central Eastern Europe after the transformation. At the same time, there were many stakeholder conflicts and cases of mismanagement reported, in particular regarding the running of commercial activities on protected areas related to the sale of wood, hunting, and the utilisation of tourist fees, as well as compensation for damage made by wild animals on surrounding areas (e.g. Prieditis 2002; Matczak et al. 2004; Kluvánková-Oravská and Chobotová 2006; Otto et al. 2011). In many cases the introduction of new market instruments was not supported by a proper institutional framework and incentives to encourage the sustainable behaviour of new non-state actors. This resulted in an expansion of unsustainable economic activities such as intensive tourism and the timber industry (Kluvánková-Oravská et al. 2009). The purpose of this paper is to theoretically and empirically investigate the kinds of transactions generated by protected areas' market governance that can be beneficial, and under which institutional framework markets such can work.

Theoretically our paper is rooted in transaction costs economics that we use to define transactions as a unit of analysis, provide insights on the choice of different modes of governance for specific transactions, and to identify conditions for the functioning of market governance. The basic theoretical argument we put forward is that markets require institutional support to exist and develop, which combines complex legal, political and social factors with the enforcement of agreements among parties as a key issue (Ménard 2006). The difficult transition from a planned economy to a market economy in administrating protected areas, but also in other aspects of the post-socialist economies, provide dramatic examples of the complexity of the institutions required.

The theory is contrasted with the empirical findings on the development and problems with the emergence of market governance in protected areas in Central and Eastern European Countries. We chose Poland, the Czech Republic, and Slovakia for comparison. The three neighbouring countries were selected for their differing attitudes to private property during the socialist regime, differing paths regarding transformation and land restitution, and attitudes towards protected areas after the transformation. Poland was the most liberalized country in the region. A portion of land and real estate was privately owned within national parks in Poland, for which the owners received either compensation or exchange upon transfer. National park directorates sometimes also allowed private actors to run commercial and trade activities (Kozłowski et al. 1981). In contrast, pre-1989 Czechoslovakia had full state ownership of protected areas run by the government, with only limited private resource use for citizens. There were, however, some important differences in the historical development of both parts of the country. In the Czech part, most national park territory was subject to the displacement of the German population after the Second World War, and were subsequently used and administrated by the Czechoslovakian Army. After the transformation and split of Czechoslovakia in 1993, most national park territory in the Czech Republic

remained under state administration, although some areas were re-populated by settlers from other parts of the country, and a portion of forested land usually in the vicinity of settlements was granted to municipal ownership (Banaszak et al. 2008). In the Slovak part of the country, on the contrary, national parks were created on areas that had been appropriated by the state from local land owners without entailing compensation. After the transformation and split of Czechoslovakia, in the Slovak Republic private land ownership rights on protected areas were fully restituted, and currently protected areas in the Slovak Republic have a diversified ownership structure (Kluvankova-Oravska et al. 2010).

The empirical comparison is based on secondary sources such as a review of literature, reports, and national statistics. Furthermore, we screened source materials such as meeting minutes and progress reports of local projects, including unpublished materials. Additionally, several interviews were conducted with the authors of such reports in order to identify other important information and materials. We mainly focused on sources in national languages that are usually overlooked by the English speaking scientific community. The sources were searched through national libraries in the respective countries, as well as internet resources over 2009–2011. We strived to include all available literature published after 1990 on topics related to protected areas and the introduction and functioning of market instruments after the transformation on their territories. These procedures increased confidence in the quality of data, and improved our understanding of the problems associated with the emergence of market governance in all three studied countries.

The paper is organized as follows: section 2 presents a theoretical discussion about the transactions generated by protected areas and the choice of their governance mode; section 3 characterizes protected areas in the study countries and discusses the process of adopting market governance on protected areas and discusses the implementation of the rules accompanying market governance, and finally, section 5 concludes and discusses the implications of the research.

2. Governing transactions on protected areas

2.1. Transactions generated on protected areas

Transactions in natural resource management are mainly related to the production of natural products and services such as wildlife, biodiversity or stream flow (conservation of natural resources), and placing regulations on competing resource use such as the declaration of protected areas to conserve biodiversity (Birner and Wittmer 2004). Transactions can involve direct transfers and flows of natural resources and goods between actors. This need not be the case however, as transactions do not always imply the movement of a physical object between actors (Schmid 2004; Hagedorn 2008). This is demonstrated by the example of selling or leasing land that is not physically moved. The discussion of the rights

acquired by a purchaser can be seen either in terms of physical units (e.g. acres of land) or as a bundle of rights (Coase 1988). As put forward by Hagedorn (2008, 363): “(...) a transaction thus should be seen as a physical phenomenon that is induced by a decision of one or more actors and affects one or more actors.” Ménard and Valceschini (2005) define a transaction as the transfer of rights. A similar view is expressed by Commons (1936). However, Hagedorn (2008) argues that transactions between actors might also be indirect, have a spatial dimension, involve time lags or be hidden or unintended, and it might be difficult to identify the participating actors.

Following Dudley (2008, 8), we understand protected areas as “a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”. As protected areas place important restrictions on the use of different types of resources (such as land or wildlife), transactions within them are typically highly contested between various interest groups (Birner and Wittmer 2004). Regardless of this, such transactions involve the production of direct and indirect flows of various goods and services, which we propose to group into seven main categories (Table 1) after Dixon and Sherman (1991).

Some of the transactions related to the flow of natural goods and services are relatively simple, and involve a low number parties, e.g. buying a 1-day entrance ticket to a national park is a transaction between the national park’s administration and the visiting tourist, which starts with the tourist entering the park and ends with the park being exited on the given day. Other transactions, such as those related to the provision of watershed protection services, are much more complex, there is a higher number of parties involved, some of whom may not even be aware of it, and the transaction may be of a continuous character. In the subsequent sections, we link the various types of transactions with governance modes.

2.2. Modes of governing transactions

Williamson (1991) distinguishes three generic modes of governing transactions – market, hybrid and hierarchy. They can be distinguished by different coordinating and control mechanisms. Hierarchies integrate property rights, thus subsuming all transactions costs related to the production of goods and services involved (Ménard 2006). Hierarchies organize transactions through internal command rather than by using the price system (Coase 1988), however they involve high bureaucratic costs (Williamson 1985, 1996). Hybrid arrangements cover only a portion of the transactions in which participating parties are involved, and property rights remain distinct while joint decisions are made, requiring specific modes of mutually agreed coordination (Ménard 2006). Markets eventually refer to a mode of organizing transaction in which independent parties, that could also include hierarchies or hybrids, obtain resources through voluntary exchanges (Ménard 2006).

Table 1: Examples of natural goods and services provided by protected areas that benefit human life (adapted from Dixon and Sherman 1991, 70)

1. Recreation/tourism

Hiking
Biking
Camping

2. Consumer goods

Timber
Wildlife products (e.g. hunting, recreational fisheries)
Non-timber forest products (e.g. edible plants, mushrooms, herbs, rattan, rubber, other building materials)

3. Non-consumer goods

Provision of aesthetic and spiritual values
Provision of cultural, historical and existence values

4. Watershed protection

Erosion control
Local flood reduction
Influence on stream flows

5. Ecological processes

Fixing and cycling of nutrients
Soil formation
Circulation and cleaning of air and water
Global life support

6. Biodiversity maintenance

Gene resources
Species protection
Ecosystem diversity
Evolutionary processes

7. Education and research

Hierarchies in governing transactions generated on protected areas are quite easy to find. They include environmental bureaucracies such as national park directorates, and forestry enterprises that organize the provision of services such as biodiversity protection and watershed maintenance.

Examples of markets governing transactions on protected areas include for example payment schemes, fees, and tradable permits and quotas. Fees and charges are compulsory payments levied in proportion to the services provided. They may follow the polluter-pays principle by charging those who cause environmental damage, and generate the necessary revenues for biodiversity conservation. Tradable permits and quotas enable the trade of rights to pollute, develop or use natural resources. They are mostly used in coastal zones for tradable fishing quotas. Another example of such instruments in protected areas would be the introduction of charges for hunting licenses and fishing permits. Fees used in eco-tourism may also expand the role of markets in protected areas by generating the necessary revenues for nature protection. Other examples in protected areas are tradable hunting quotas and wetland banking (Bräuer et al. 2006). Payment

schemes are defined as voluntary and conditional transactions over well-defined ecosystem services between at least one supplier and one user (Wunder 2005). The schemes may take the form of an incentive where the issue is to vary the payment according to the level of delivery. It may, however, also be perceived as compensation for a 'good' act where the payment rewards a responsible action. The aim is to facilitate more environmentally friendly actions by paying providers for their delivery or by compensating providers for economic losses associated with their provision (Vatn 2010).

Hybrid governance structures that operate in between markets and hierarchies can, for example, include various cases of the community management of protected areas such as commons, as broadly discussed by Ostrom (1990), and other forms such as labels and certification that can be issued by national park administrations for tourism businesses operating within or nearby protected areas. Labelling and certification establish a market advantage through the recognition of those who, for example, preserve biodiversity (Bräuer et al. 2006).

2.3. The choice of governance structure

Attributes of transactions such as uncertainty, frequency, and asset specificity are variables that determine the costs of a particular transaction, and determine the effectiveness of the chosen mode of governance. Uncertainty describes unpredictable aspects of transactions which are caused either by agents' behaviour and organizational deficiencies, or by inadequate institutions and the state of nature (Ménard 2006). The higher frequency of transactions is expected to decrease costs since it facilitates the establishment of non-market governance systems (Williamson 1985). Nevertheless, the most important attribute of a transaction is asset specificity since it determines the volume of transaction costs. Asset specificity refers to the degree to which assets can be used for the production of other goods and services (Williamson 1996). If asset specificity is low, frequency and uncertainty cannot have great effects on already low transaction costs (Verhaegen and van Huylenbroeck 2002). High specificity of assets increases mutual dependence and might result in ex-post appropriation of the quasi-rent by one or more partners (Ménard 2006).

The degree of asset specificity is affected by geographical characteristics, physical specificities, temporal constraints, demand for a specific human capital, and development of reputation. Geographical characteristics are related to the accessibility of the asset, and whether it can be moved to a different location. Physical specificities represent the degree to which the asset or investment can be used for other activities. Temporal specificity relates to time constraints and means that activities must be completed in time to prevent a reduction in production volume and value. Human capital specificity refers to the degree to which the transaction requires highly qualified labour. Reputation specificity relates to the qualities and maintenance of long-term relationships between the parties subject to the transaction (Verhaegen and van Huylenbroeck 2002:

22–23). In the context of protected areas, we might suggest that asset specificity will also be affected by the complexities and interdependencies between ecological and social systems. For example, transactions involving complex systems such as watershed protection and the maintenance of ecological processes involve higher asset specificity than those involving the provision of recreational opportunities or consumer goods.

We propose that the transition from hierarchical governance to market governance will be particularly beneficial for transactions involving low asset specificity and low transaction frequency. In other cases, it might result in problems of a misfit between the governance structure and transactions governed by it, and may potentially result in resource mismanagement and overexploitation (Figure 1). In the figure we try to locate the goods and services provided by protected areas that we distinguished in Section 2.1. It is hard to exactly assess the characteristics of the involved transactions generated by the discussed goods and services. We can only estimate their approximate position on the figure, showing associated to them the asset specificity and frequency of disturbances. The frequency of disturbances refers to the degree contracts for a given type of transactions can be standardised. For transactions involving a high frequency of disturbances, the arrangements become more precarious under increased uncertainty and contractual incompleteness (Gow and Swinnen 1998).

In the left lower corner we locate provision of recreation and tourism facilities as well as the provision of consumer goods, that are characterized by relatively low asset specificity and, once the overall transaction framework has been set, low frequency of disturbances. In the middle of the figure are more complex transactions involving the provision of non-consumer goods, education

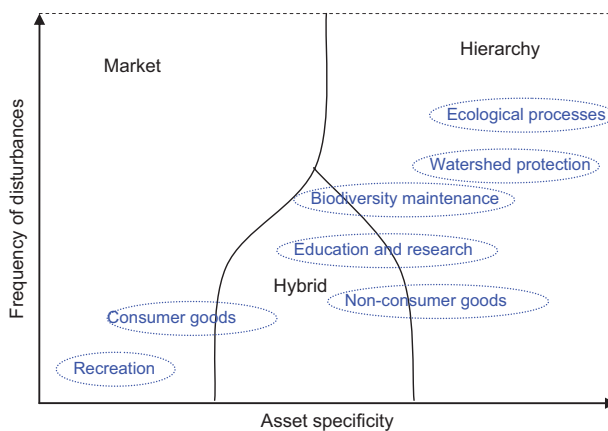


Figure 1: Location of goods and services provided by protected areas on the chart presenting organization form responses to changes in the frequency of disturbances and asset specificity (the chart of organization forms adapted from Williamson (1996, 117).

and research, and biodiversity maintenance. Their asset specificity is evidently higher, and they require more of a hierarchical coordination. We propose that these transactions will be less suitable for market governance, perhaps more for hybrid and hierarchical modes of governance. In the right upper corner are the most complex transactions, involving the maintenance of ecological processes and watershed protection. Their complexity and high degree of related to them uncertainty as well as the potentially high frequency of disturbances, requires governance through hierarchy. The fit between the type of governance structure and properties of the transaction does not guarantee sustainable resource use. Each governance mode requires different policy instruments that regulate, control, and monitor the transactions. Conditions for market governance are discussed in the following section.

2.4. Conditions for market functioning

As pointed out by Coase (1988), for their operation markets require the establishment of legal rules governing the rights and duties of those carrying out transactions. Such legal rules can be established by those organizing the markets. One of the components of the legal system regulating market functioning is the system of property rights. The role of property rights is to identify the stakeholders and their rights and duties in the use of specific resources (Rao 2003).

Beckmann (2000) argues that the evolution of markets is not an automatic and spontaneous process. Economic activity causes transaction costs, indicating that information is not freely available. Organized markets establish structures for the dissemination of information, and can therefore decrease the costs of exchange. However, they have to be consciously established and utilized (Furubotn and Richter 1998; Hurrelmann 2005, 2008). The rules of market organization which are mainly concerned with three aspects of market activity: (i) how is the information disseminated and who is responsible for it? (ii) what is the behaviour of actors supervised and who supervises them? and (iii) how is wrongdoing sanctioned, and who punishes it? (Hurrelmann 2008). A limited and directed dissemination of information about the rules, specifying the general options for trade (e.g. the opportunity of buying and selling), could exclude outsiders and constitute a barrier to entry. Control procedures specify how the market participants are informed about the relevant behaviour of other members, which is necessary to allow the imposing of sanctions, and also enables the actors to build a reputation that facilitates exchange. The enforcement mechanisms depend on the type of rules. Formal rules can be enforced with courts, while informal rules and standards rely on social sanctions or internally enforced standards of conduct based on the internalized norms and values of the actors (Hurrelmann 2008).

To sum up, market governance can work for biodiversity protection and can be used as a policy tool. However, this is not so in all cases, and the organization of the market has to be consciously designed and subsequently utilized. The insights from institutional economics suggest that a clear property rights system as well

as rules relating to transparency and information dissemination, and credible monitoring, supervision and the sanctioning of actors in the case of wrong-doing, are of particular importance.

3. Transformation of protected areas in the study countries

3.1 Characteristic of the protected areas

A protected area is land that is designated for the conservation of natural or cultural resources. It is a long-established mechanism for conserving biodiversity around the world, and these areas have increased exponentially over the past 50 years (Chape et al. 2003). It is estimated that approximately 16% of European land (in 39 European countries) is currently within nationally designated protected areas, amounting to 100 million hectares (EEA 2009).

The first nationally designated large protected area in Poland was established in 1932 and comprised the area of the Pieniny mountains on both Polish (National Park) and Slovak (Nature Reserve) sides of the border. Establishment of this protected area represented the first international/bilateral protected area in Europe. In the same year another national park in Poland, Belavezhskaya Pushcha was established. By the beginning of the Second World War, there were already six national parks in Poland, 180 nature reserves, and 4500 'nature monuments'. In 1949 the new socialistic regime launched new legislation about nature protection. This legislation regulated the establishment of national parks and other protected areas. The situation with the establishment of national parks was slightly different on the territories of the Czech and Slovak republics. The first National Park in Slovakia was established after the Second World War in 1948 (Tatra National Park) and in the Czech Republic fifteen years later in 1963 (Krkonose National Park). There are several reasons for such differences with the establishment of the first national park in those countries. Each of the above-mentioned countries have different social, natural and historical conditions, and therefore there were different needs for the establishment of national parks.

Polish nature protection associations have always been at a higher level in comparison with neighbouring countries, so its conservation activities evolved earlier. Moreover, the establishment of Belavezhskaya Pushcha National Park was driven by the endangered bison. The first idea to create a national park in Slovakia originated in 1921. But the political situation (disintegration of the Czechoslovak Republic in 1938) and the Second World War postponed it until 1947. As the Czech Republic was part of Czechoslovakia, the Tatra National Park was the national pride of both nations. The first protected area on the Czech territory was established only in 1963, the Krkonose National Park.

In 2011 there were 23 national parks in Poland with a total area of ca. 317,000 ha, representing approximately 1% of the country's area. In the Czech Republic four national parks (ca. 119,000 ha) covered 1.5% of the country's area in 2011. A very different situation applies in Slovakia. Here nine national parks covers more than 580,000 ha, representing approximately 10% of the state territory. However,

some are referred to as ‘paper parks’ – this term refers to protected areas that exist on paper but do not meet conservation objectives (Stoll-Kleemann and Job 2008). Table 2 lists all types of protected areas, as well as the size and percentage of each country’s area.

Table 2: Protected areas in Poland, Czech Republic, Slovakia in 2011, excluding Natura 2000 sites

Category	Number of sites	Area (ha)	% of the country area
Poland			
National parks	23	317,405.5	1.00
Nature reserves	1385	162,435.2	0.50
Landscape parks	121	2,517,183.9	8.10
Protected landscape areas	445	7,042,615.7	22.50
Ecological sites	6177	42,641.0	0.14
Documentary sites	115	7837	0.003
Nature and landscape complexes	177	85,329.3	0.27
Nature monuments	34,385	–	–
Total	42,828	10,168,394.3	32.50¹
Czech Republic			
National parks	4	119,489	1.51
Protected landscape areas	25	1,086,737	13.77
Nature reserves	799	38,378	0.49
National nature reserves	113	27,781	0.34
Nature monuments	1232	22,898	0.29
National nature monuments	109	4008	0.05
Small protected areas outside large protected areas	1540	42,345	0.54
Total	2282	1,248,049	15.82²
Slovakia			
National parks	9	58,8017	11.99
Protected landscape areas	14	5,22,581	10.66
Protected sites	187	7943	0.16
Nature reserves	381	13,040	0.26
Private nature reserves	2	51	–
National nature reserves	219	86,522	1.76
Nature monuments	228	1750	0.04
National nature monuments	11	85	–
Caves	44	632	0.01
Natural waterfalls	5	–	–
Small protected areas outside large protected areas	586	25,003	0.5
Total	1100	1,220,621	23.15³

Source: adapted from Walczak et al. 2001; AOPK CR 2011; Enviroportal 2011.

¹ In the table small protected areas located within large protected areas were not included in order to eliminate the double counting of one area (it pertained to approx. 1% of legally protected areas).

² 0.65% of the size of small-protected areas in the Czech Republic is in large protected areas.

³ 1.73% of the size of small-protected areas in Slovakia (Nature Reserves, National Nature Reserves, Nature Monuments, and National Nature Monuments) is located in large protected areas (National Parks or Protected Landscape Areas)

There are different categories of protected areas within the three countries. We distinguish between large and small protected areas and protected objects. National parks, protected landscape areas (Poland, Czech Republic and Slovakia), and landscape parks (Poland) are large protected areas. A Landscape Park in Poland is a protected area with regard to its scientific, natural and cultural values, and is established for the preservation and propagation of natural and cultural values under the conditions of sustainable development. It is the same type of protected area as 'protected landscape area' in the Czech Republic and Slovakia. On the other hand, Polish 'protected landscape areas' are areas with much less effective protection. In Poland the area of protected landscape constitutes a category used in physical planning rather than a nature conservation category, with an emphasis on the protection of landscape (Sienkiewicz and Niemtur 2005). Small protected areas and objects are nature reserves, nature monuments (Poland, Czech Republic, Slovakia), national nature reserves, national nature monuments (Czech Republic, Slovakia), ecological sites, documentary sites and landscape complexes (Poland), caves, natural waterfalls, and protected sites (Slovakia). Of the three countries studied, Slovakia's legislation is the only one with the prospect of establishing private protected areas in the form of private nature reserves, private nature monuments or private protected sites. In a private protected area, 100% of the land is private and the owner supports (also financially) the designation of the area. The designation is a formal procedure, and the protection is supervised by the state. In order to guarantee the official protection of the area under the Act on Nature and Landscape Protection, specifying details of territorial protection, the landowner has to prepare a proposal for the designation of a private protected area. Despite the simplicity of the idea, the actual implementation was fairly complex and bureaucratic, and the area can be declared only after several years of administrative procedures. As no human interventions are made in the area, meaning no logging, no planting of trees and no removal of dead trees, the landowners in theory have almost no long-term maintenance costs. Currently there are two private protected areas in Slovakia: Vlčia and Rysia (Table 2). As well as the size difference, these categories impose different restrictions on the activities that can take place in the protected area. These range from restrictions on the methods that can be used for economic production, to the prohibition of almost all human activity.

Additionally, all three studied countries have introduced special protection areas and special areas of conservation, which are also known as Natura 2000 (Table 3).

The majority of land in Polish and Czech protected areas such as national parks is in state ownership (Table 4). For instance, in Bory Tucholskie National Park in Poland, only 0.23% is owned by the local government and 0.045% of land was privately owned (Bory Tucholskie 2008). In Poland, the nationalization of land as such never took place. The socialist regime mostly respected private land property in protected areas, and landowners were offered limited compensation

Table 3: Natura 2000 sites in Poland, the Czech Republic and Slovakia in 2010

Natura 2000	Number of sites	Area (ha)	% of the country area
Poland			
Special protection areas	141	5,522,800	7.80
Special areas of conservation	823	3,800,300	11.00
Total	964	9,323,100	18.80
Czech Republic			
Special protection areas	41	968,400	12.30
Special areas of conservation	1087	785,400	10.00
Total	1128	1,753,800	22.30
Slovakia			
Special protection areas	38	1,223,600	25.10
Special areas of conservation	382	573,900	11.70
Total	420	1,797,500	36.80

Source: EC, 2010.

Table 4: State ownership structure in national parks in Poland, Czech Republic and Slovakia.

	Total area of National parks (ha)	State land (ha)	% of the state area in national parks
Poland	317,405.5	269,396	84.90%
Czech Republic	119,489	110,226	92.25%
Slovakia	588,017	129,364	52.00%

Source: Banaszak et al. 2008; Bochenek et al. 2010; Vančura et al. 2010.

or exchange of land. In this respect, Poland was unique among CEE countries (Banaszak et al. 2008).

In the Czech Republic as a result of historical developments, the land (including forests) within the current areas of national parks has been primarily designated as being in state ownership. The area of current national parks was subject to the displacement of the German population after the Second World War. Most local municipalities were abolished and the parks were subsequently used by the Czechoslovakian Army (Mikšiček 2007). After the collapse of socialism, most of the land in national parks remained in state ownership. For instance, in the largest Czech national park Šumava, 77% of forest land is in state ownership (Spravy NP a CHKO Sumava 2006). Consequently, very little restitution of land within national park territories was required (Banaszak et al. 2008). In the Slovak Republic land restitution was fully implemented, and currently the protected areas have a very diversified ownership structure. A large part of the land is privately owned. In one of the Slovak national parks (Slovak Paradise National Park – Národný park Slovenský – Narodný park Slovenský raj) the state owns 57% of

the area. The rest is owned by municipalities, cities, the church, communities and small private owners (SRNAP 1996).

3.2. Transactions involving market governance

In accordance with the theoretical framework presented in section 2.3, most transactions involving market governance on protected areas occurred in the provision of recreational services and consumer goods, i.e. transactions involving the lowest asset specificity and the lowest frequency of disturbances. In all analysed countries, such instruments were formally allowed as entrance fees, sale of timber and wildlife products, but there were important differences in the actual utilisation of these instruments.

In the Czech Republic the legislation allowed for the introduction of entrance fees to national parks outside built-up areas. However, this option is rarely used (with a few exceptions) with more examples being found in Poland. Kasprzak and Skoczylas (1993) show that there are various income channels for Polish national parks – including income from the central budget, and income from the park's auxiliary activities. Moreover, income can also arise from subsidies from external organizations. The national parks in Poland have some degree of freedom in their auxiliary activities, which are mostly related to forms of payment for the tourist utilization of the parks. The park directorates can regulate rules for visitors, together with entrance fees. According to the legislation, the revenues from tourist fees can be attributed to the park auxiliary holdings, with the exception of parks in mountainous areas, which have to allocate 15% of the income from tourist fees to the specialized rescue service. Since national parks as public entities financed from the State budget cannot conduct business and make profits, they create auxiliary holdings that are entitled to receive proceeds from entry fees, sale of timber, and other income generating activities. In fact in many cases, most of a park's ongoing activities are covered from the income generated by auxiliary holdings (Chojnacka et al. 2005, 9).

The Slovak legislation also allows the imposition of entrance fees by park administration (in the case of non-state ownership, the park administration needs permission from the land owner); but this approach is not widely employed. One of the few national parks in Slovakia that charges tourists a fee is the Slovak Paradise National Park. Several municipalities own the technical equipment necessary for passing through the park (wooden and iron ladders and steps, etc.) but do not necessarily own the land. However, by introducing this fee, the municipalities became the only party practically controlling access to the park (Klůvánkóv-Oravsk and Chobotov 2006; Chobotov and Klůvánkóv-Oravsk 2010).

The directors of other national parks in Slovakia agree that levying fees could play an important role in nature conservation, and providing information and education services for tourists where public money for nature conservation is very limited. However, unclear property rights and unclear responsibilities impede the implementation of entrance fees. The majority of national parks have

multiple ownership structures, where most of the land is in the hands of private owners. The park administration acts only as an advisory body to the respective authority – the Ministry of the Environment, and has no actual decision-making competences (Kluvánková-Oravská et al. 2009). According to the current legislation, the revenues generated through entrance fees do not go directly to the park administration budget, but are deposited in the centralized environmental fund. Moreover, the costs of introducing and controlling entrance fees have to be borne by the park administration, for which they do not receive adequate benefit (Chobotová and Kluvánková-Oravská 2010).

The reviewed sources frequently report that the introduction of market governance was more a necessity in the face of decreasing state financing of protected areas rather than a deliberately chosen governance mechanism. For example, in Poland from 2001 to 2005, budgetary spending for national parks decreased by 25%. In 2004 the salaries of national parks administration were on average 55% lower than the salaries of the National Forest Enterprise administration, which has a comparable level of education and competency (Chojnacka et al. 2005). National park authorities undertook activities that improved the economic situation of both the inadequately financed national parks and the local communities for which income from tourist activities surrounding national parks was often the only feasible income alternative. This included the introduction of entrance fees, the extensive sale of consumer goods (e.g. timber and wildlife products), and in some cases enlarging recreation and tourist facilities such as skiing lifts or highways (Kluvánková-Oravská et al. 2009).

A few experiments setting up private protected areas show that markets malfunction when transactions involve high asset specificity and a high degree of complexity. Biodiversity protection and securing ecological processes requires long-term commitment, which can be better secured by classic hierarchies or hybrid governance structures such as public-private partnerships that demand long-term contractual arrangements. In Slovakia the fundraising initiative of the NGO *Wolf*, called 'Buy your own tree' started in 1997 with the aim of setting up a private nature reserve. The implementation of this reserve was fairly complex and bureaucratic, as it was operating under the umbrella of a complicated legal institutional framework. The reserve area was finally declared after five years of long administrative procedures, and the costs of the direct conservation had to be paid for by those who demanded the benefits. The NGO proclaimed that there should be no human intervention in the privately protected area, and did not secure maintenance funds. Nevertheless, the current size of the reserve does not guarantee its long-term provision of ecological processes and biodiversity maintenance (Chobotová and Kluvánková-Oravská 2010).

3.3. Meeting the conditions of market governance

As outlined in Section 2.4, properly functioning markets require the establishment of a legal system including property rights identifying stakeholders and their rights

and duties to specific resources. Furthermore, in Section 2.5 we recognized that transparency in information dissemination and a viable mechanism of monitoring and rule enforcement are preconditions for the setting up of market governance.

Regarding the identification of property rights, the new environmental legislation in all the study countries recognized the property rights of land owners included in protected areas and surrounding it, as well as introducing the first compensation schemes. In Poland the environmental law passed in 1991 introduced the first compensation schemes in Eastern Europe. Restrictions on property rights could only be introduced through legal agreements requiring compensation by the owners, such as the State Treasury, for damage caused by such species as bison, bears and beavers (Kasprzak and Skoczylas 1993). Similarly, compensation schemes appeared in Czech and Slovak legislation. In the Czech Republic, reimbursement from the funds of the Ministry of the Environment can be claimed for damage caused by any of seven listed species. This law also provided for compensation for damage incurred by farmers, domestic animal breeders, fishermen, foresters, and beekeepers (Urbanová 2005). Certain regulations were, however, still missing. For example, addenda to laws on environmental services and compensation for damage caused by wild species were launched as late as in 2004, and seriously delayed the actual payment of compensation. The first documented compensation to land owners for damage caused by bison were paid in Poland in 2000, however only after 2004 was compensation for damage caused by wild animals commonly used on areas surrounding national parks (Bozik 2008).

The process of recognition of non-state property rights was more problematic in Slovakia. The Slovak Act on Nature Conservation adopted in 1995 implemented the provision of compensation for the removal of opportunities for income generation from the provision of consumer goods to private and municipal owners. This act came into force at the end of 2001. The application process was very complex, non-transparent, and lacking state support (Klůvanková-Oravská and Chobotová 2006).

Further problems occurred in defining the rules of market organization. The literature review indicates that the increasing importance of market governance in protected areas' administration is often not accompanied by the implementation of the necessary rules of market governance. In particular, the development of adequate rules of transparency, supervision and sanctions in the case of wrongdoing were missing or introduced with a delay. Such a case of transition from hierarchies towards markets without support for the rules of market governance was, for example, found in Poland, where national park directorates enjoy a high degree of management autonomy. Non-governmental organizations have been reporting cases where park directorates overuse their autonomy and, for example, undertake extensive logging in national parks (Pracownia na Rzecz Wszystkich Istot 2008). The problem is related to low wages and the reduction of public funding to national parks. Profits generated from the sale of wood belong to parks' auxiliary holdings, and as such are the most important source of the holding's revenues. According to Pracownia na Rzecz Wszystkich Istot (2008), the income from logging constitutes

about 95% of the auxiliary holding's revenues. There are practically no options to punish parks directorates for cases of overexploitation or misuse of resources. The bringing of such cases to light by NGOs, rather than by state administration, highlights the weak monitoring procedures.

Certain improvements have been achieved with the help of external funds. After the transformation of administration, the control bodies in the countries investigated were frequently not sufficiently well equipped to monitor compliance with the law. There was also strong industry pressure against the new legislation (Nowicki 1993, 146). In 1990, Poland received the first external funds from the World Bank which was spent on the modernization of environmental management infrastructure (Nowicki 1993, 164). The biggest portion of funds came from the European Economic Community, succeeded by the European Union and their funds for Central and Eastern Europe. As an example, within the first three years of the PHARE (Poland and Hungary: Aid for Restructuring of the Economies) Program (1990–1992) funds were spent, among other things, on equipping control bodies with modern measurement apparatus, and training Polish specialists in arranging investment projects (Klůvánkuvá-Oravská et al. 2009).

The key driving force for improving the rules for the supervision and monitoring of protected areas was EU integration. Although problems such as a lack of information about private land owners and local governments, associated with the implementation of the EU Habitats and Bird Directives have been encountered, the Natura 2000 sites have been designated and compensation mechanisms implemented. Currently farmers whose land is within Natura 2000 obtain 20% higher agro-environmental benefits than farmers whose land is not covered by the Natura 2000. The introduction of the Natura 2000 network certainly contributed towards the transparency of decision-making and the accountability of protected areas' authorities, since EU member states have to report the status of designated Natura 2000 sites every 6 years to the European Commission. Environmental NGOs were actively involved in the process of designating the Natura 2000 sites in all studied countries. According to Article 17 of the Habitats Directive, monitoring of the current state, and development of the Natura 2000 areas, has to be reported to the European Commission.

Nevertheless, NATURA 2000 implementation has been connected with various problems and conflicts in both old and new member states (for example Gibbs et al. 2007; Paaavola et al. 2009; Rauschmayer et al. 2009). Its implementation has increased the importance of non-state owners in negotiations but failed to provide a formal framework to protect native Central and Eastern European species underrepresented in the annexes to the NATURA 2000 (Baker 2006), as these were compiled for Western Europe. Top-down designation, ignorance of local knowledge and local stakeholders have been the main reasons for the failure to reach an agreement on NATURA 2000 sites (Klůvánkuvá-Oravská and Chobotová 2012).

Further problems are reported in the countries studied, regarding the application of the principle of the provision of consistent and fair rules that do not adversely

affect the business performance of a specific participant. In Poland, the role of national parks' auxiliary holdings is somewhat dubious. The auxiliary holdings often operate at higher costs than private firms, but they are frequently given a preferential position in transactions that could alternatively be subcontracted to external firms or farmers. Examples may include the maintenance of tourist infrastructure or trash and litter control (Chojnacka et al. 2005). Similar problems have been reported in the Czech Sumava National Park with respect to giving a preferential position to certain companies and groups of foresters in contracting seasonal maintenance work (Rezek et al. 2006).

4. Conclusions and policy implications

Market governance is receiving increasing attention in political discussions over future strategies for biodiversity conservation and sustainability. The costs of conservation are not automatically paid for through the market by those who receive the benefits. Funds for the management of protected areas primarily arises from domestic government budgets, or international assistance. However, the funding from traditional sources is not increasing in line with the expansion of protected areas (Lapham and Livermore 2003). It explains the search for alternative governance mechanisms that directly capture demand for biodiversity protection and find new sources of funding for protected areas (Mullan and Kontoleon 2008). Difficulties with the successful implementation of market governance are especially visible in protected areas in Central and Eastern European countries, where the rapid introduction of markets resulted in many cases of mismanagement and overexploitation of natural resources.

In this article we asked which transactions generated on protected areas markets can be beneficial, and which conditions have to be fulfilled for markets to function properly. These questions were first answered in the light of transaction costs economics, and then analysed empirically using secondary resources reporting the transformation of the governance of protected areas and the implementation of market instruments on protected areas in three Central and Eastern European Countries: Poland, the Czech Republic, and Slovakia.

The empirical material shows that, in line with Williamson (1996) (Figure 1), the transition from hierarchical governance that dominated natural resource management during socialism towards market governance, occurs mostly in transactions characterized by low asset specificity, low frequency of transactions, and low demand for bureaucratic control. Markets are in particular visible in the introduction of tourist fees and charges, and in the sale of timber by national park management. These transactions involve consumer goods and recreation ecosystem services with direct use values. Their roles in generating income for national park management seem to be important, provided that the revenues generated can be locally utilized, which has, however, not always been the case. Market governance was also sporadically introduced in transactions involving high asset specificity and high bureaucratic control demand, such as the establishment

of private protected areas involving complex transactions such as supporting watershed and biological processes, which resulted in serious inefficiencies.

In addition, the transition towards market governance for biodiversity protection often neglects the setting up of the rules required for good market functioning. Although in all three countries property rights to natural resources were recognized, in Slovakia compensation for the restriction of income generation to private and municipal owners was not introduced for over 10 years after the fall of the socialist regime (Klúvanková-Oravská and Chobotová 2006). Similarly, in Poland there were serious delays with the payments of compensation caused by wild animals due to a lack of addenda to the laws. Rules for information dissemination, monitoring, and sanctioning of wrongdoing within the markets were not set up and, for example, while national park directorates were granted broad autonomy, there was no law that could penalize them in cases of the mismanagement and overexploitation of resources. In addition, lack of transparency in the introduction of elements of market governance on protected areas contributed to the intensification of conflicts between the protected areas' directorates, environmental organizations and local communities.

Clearly, the EU accession, implementation of *acquis communautaire*, as well as the provision of external funds and the assistance of other international organizations improved the legal environment and the infrastructure of environmental management in the countries investigated. In contrast with countries such as Belarus where cooperation with international organizations is fragmented and based on short-term projects (Otto et al. 2011), cooperation with international organizations in Poland, the Czech Republic and Slovakia is long-term, with constant incentives for compliance with international environmental standards. To avoid so-called 'paper parks' the system of protected areas should not only be in line with national and European legislation, but there is also a need for improving the communication and participation of affected stakeholders in all decision-making processes, including the compensation of landowners in protected areas.

The review of the resources we referred to also shows that due to budgetary problems the implementation of market governance, cost-cutting, and the search for extra funding in the countries investigated is more a necessity than a means to improve resource management. Thus, the ongoing monitoring and enforcement of environmental international standards and legislation is crucial. Markets should complement rather than substitute regulatory approaches.

Our findings could also be relevant for deregulation, decentralisation and privatisation processes in natural resource management in other transition and developing countries. We show that market governance is suitable only for certain types of transactions, depending on their attributes and complexity. We point out the importance of the rules accompanying market governance. Following Hurrelmann (2008) and Beckmann (2000), the rules of market governance have to be consciously designed and implemented in order to diminish the risk of mismanagement and overexploitation of the resource, as well as to protect the

rights and duties of the resource users. The question is also who benefits and who loses with the new regulations. Igoe and Brockington (2007) point out that what often happens in institutionally weak states is that the privatisation and deregulation of protected areas expropriate local communities in favour of outside investors and big corporations. More research is needed to explore the potential of alternative forms of governance, such as community management and other forms of hybrid arrangement operating between hierarchies and markets.

Literature cited

- AOPK ČR. 2011. *Agentura ochrany přírody a krajiny české republiky [Governance of environmental protection and landscape in the Czech Republic]* (AOPK ČR). Czech Environmental Agency. Addenda Retrieved on 10 July 2011 at <http://drusop.nature.cz/ost/chrobjekty/sumarizace/index.php?frame>.
- Baker, S. 2006. *Sustainable Development. Introduction into the Environmental Series*. Abingdon: Routledge.
- Baker, S. and K. Eckerberg. 2008. *In Pursuit of Sustainable Development. New governance practices at the sub-national level in Europe*. Abingdon: Routledge/ECPR Studies in European Political Sciences.
- Balmford, A., A. Bruner, P. Cooper, R. Costanza, S. Farber, R. E. Green, M. Jenkins, P. Jefferiss, V. Jessamy, J. Madden, K. Munro, N. Myers, S. Naeem, J. Paavola, M. Rayment, S. Rosendo, J. Roughgarden, K. Trumper, and R. K. Turner. 2002. Economic reasons for conserving wild nature. *Science* 297(5583):950–995.
- Banaszak, I., V. Chobotová, T. Kluvánková-Oravská, L. Slavíková, and J. Moravec. 2008. *From Government to Governance for Biodiversity in the European Union: the Experience in the New Member States, Working Paper 1.*: Bratislava: Institute for Forecasting, SAS.
- Beckmann, V. 2000. *Transaktionskosten und institutionelle Wahl in der Landwirtschaft. Zwischen Markt, Hierarchie und Kooperation [Transaction costs and institutional choice in agriculture. Between market, hierarchy and cooperation]*. Berlin: Edition Sigma.
- Birner, R. and H. Wittmer. 2004. On the 'Efficient Boundaries of the State': The Contribution of Transaction-Cost Economics to the Analysis of Decentralization and Devolution in Natural Resource Management. *Environment and Planning C: Government and Policy* 22(5):667–685.
- Bochenek, D., D. Dziel, M. Falandysz, G. Jablonowski, K. Karczewska, A. Kielczykowska, M. Marczyk, T. Pac, T. Pawlowska, K. Wilk, and P. Wrzosek. 2010. *Environment 2010*. Warszawa: Central Statistical Office.
- Bräuer, I., R. Mussner, K. Marsden, F. Oosterhuis, M. Rayment, C. Miller, and A. Dodokova 2006. *The Use of Market Incentives to Preserve Biodiversity. Final Report. A project under the Framework Contract for Economic Analysis ENV.G.1/FRA/2004/0081*.

- Bromley, D. 2000. *A Most Difficult Passage: The Economic Transition in Central and Eastern Europe and the Former Soviet Union*. Paper presented at the KATO Symposium. Berlin, 2–4 November.
- Bozik, K. 2008. żubr w Puszczy Knyszyńskiej [Bison in Knyszyn forest]. *European Bison Conservation Newsletter* 1:125–131.
- Cashore, B. 2002. Legitimacy and the Privatization of Environmental Governance: How Non-State Market-Driven (NSMD) Governance Systems Gain Rule-Making Authority. *Governance: An International Journal of Policy, Administration, and Institutions* 15(4):503–529.
- Chape, S., S. Blyth, L. Fish, P. Fox, and Spalding, M. (compilers) 2003. *2003 United Nations List of Protected Areas*. Cambridge, UK: IUCN, Gland, Switzerland and Cambridge, UK and UNEP-WCMC, ix + 44pp.
- Chobotová, V. and T. Kluvánková-Oravská. 2010. The role of market-based instruments for biodiversity conservation in Central and Eastern Europe. In *2010: From Government to Governance? New Governance for Water and Biodiversity in an Enlarged Europe*, ed. T. Kluvánková-Oravská. Prague: Alpha Printing.
- Chojnacka, I., J. Komornicki, Z. Kotuła, et al. 2005. *Koncepcja systemu funkcjonowania parków narodowych w nowych warunkach wynikających z integracji europejskiej [The concept of the functioning of the system of national parks in the new conditions arising from European integration]*. Suwałki: Stowarzyszenie Konferencja Służb Ochrony Przyrody Zielonych Płuc Polski.
- Coase, R. H. 1988. *The Firm, the Market and the Law*. Chicago and London: The University of Chicago Press.
- Commons, J. R. 1936. Institutional Economics. *The American Economic Review* 26(1):237–249.
- Damania, R. and J. Hatch. 2005. Protecting Eden: Markets or Government? *Ecological Economics* 53(3):339–351.
- Dixon, J. A. and P. B. Sherman. 1991. Economics of Protected Areas. *Ambio* 20(2):68–74.
- Dudley, N. (ed.) 2008. *Guidelines for Applying Protected Area Management Categories*. Gland: International Union for Conservation of Nature and Natural Resources.
- EC. 2010. Natura 2000 Barometer. http://ec.europa.eu/environment/nature/natura2000/barometer/index_en.htm [20 May 2010].
- EEA. 2009. CSI 008 – Designated areas. Retrieved on 20 May 2010 at http://themes.eea.europa.eu/IMS/IMS/ISpecs/ISpecification20041007131611/IAassessment1216803252161/view_content.
- Enviroportal. 2011. State inventory of Specially Protected parts of nature and landscape. Retrieved on 10 July 2011 at <http://uzemia.enviroportal.sk/about>.
- Ferraro, P. J. 2002. The Local Costs of Establishing Protected Areas in Low-income Nations: Ranomafana National Park, Madagascar. *Ecological Economics* 43 (2–3):261–275.

- Furubotn, E.G. and R. Richter. 1998. *Institutions and Economic Theory: The Contribution of the New Institutional Economics*. Ann Arbor: The University of Michigan Press.
- Gibbs, D., A. While, and A. E. G. Jonas. 2007. "Governing Nature Conservation: the European Union Habitats Directive and Conflict around Estuary Management." *Environment and Planning* 39:339–358.
- Gow, H. R. and J. F. M. Swinnen. 1998. Up- and downstream restructuring, foreign direct investment, and hold-up problems in agricultural transition. *European Review of Agricultural Economics* 25(3):331–350.
- Hagedorn, K. 2008. Particular Requirements for Institutional Analysis in Nature-related Sectors. *European Review of Agricultural Economics* 35(3):357–384.
- Hurrelmann, A. 2005. *Agricultural Land Markets. Organisation, Institutions, Costs and Contracts in Poland*. Aachen: Shaker.
- Hurrelmann, A. 2008. Analyzing Agricultural Land Markets as Organizations: An Empirical Study in Poland. *Journal of Economic Behavior and Organizations* 67:338–349.
- Hodgson, G. M. 1998. The approach of Institutional Economics. *Journal of Economic Literature* 36:166–192.
- Igoe, J. and D. Brockington. 2007. Neoliberal Conservation: A Brief Introduction. *Conservation and Society* 5(4):432–449.
- Inamdar, A., H. de Jode, K. Lindsay, and S. Cobb. 1999. Capitalizing on Nature: Protected Area Management. *Science* 283(5409):1856–1857.
- Kasprzak, K. and J. Skoczylas. 1993. *Rozwój Ochrony Przyrody Nieożywionej i Ożywionej, Historia i Współczesność [Development of nature protection. History and Present]*. Poznan: Fundacja 'Warta'.
- Klůvánkóv-Oravsk, T. and V. Chobotov. 2006. Shifting governance. Managing the commons: the case of Slovensk Raj National Park. *Sociologia* 38:221–244.
- Klůvánkóv-Oravsk, T. and V. Chobotov. 2012. Regional Governance Arrangements. In *Global Environmental Governance Reconsidered*, eds. F. Biermann, and P. Pattberg. Cambridge, MA: MIT Press.
- Klůvánkóv-Oravsk, T., V. Chobotov, I. Banaszak, L. Slavikova, and S. Trifunovova. 2009. From Government to Governance for Biodiversity: The Perspective of Central and Eastern European Transition Countries. *Environmental Policy and Governance* 19:186–196.
- Kozłowski, J., M. Baranowska-Janota, and D. Ptaszycka-Jackowska. 1981. Ochrona srodowiska przyrodniczego oraz struktura funkcjonalno-przestrzenna w koncepcji planu Tatrzańskiego Parku Narodowego [Protection of the natural environment and the functional and spatial plan of the Tatra National Park]. In *Ochrona Tatr w Polsce Ludowej. Materialy na Sympozjum Tatry 1981 [Protection of the Tatra mountains in Poland. Materials for the Tatras Symposium 1981]*, ed. Z. Wojcik. Warszawa: Polskie Towarzystwo Przyjaciół Nauk o Ziemi. Dyrekcja i Rada Tatrzańskiego Parku Narodowego.

- Lapham, N. P. and R. J. Livermore. 2003. *Striking a Balance: Ensuring Conservation's Place on the International Biodiversity Assistance Agenda*. Washington D.C.: Conservation International, 64 p.
- Matzcak, P., I. Banaszak, and V. Takacs. 2004. *Cooperation in an environmentally protected area Drawa National Park case study*. Background paper for Social Capital, Governance and Rural Institutional Innovations Workpackage, IDARI Project.
- Ménard, C. 2006. Hybrid Organization of Production and Distribution. *Revista de Análisis Económico* 21(2):25–41.
- Ménard, C. and E. Valceschini. 2005. New Institutions for Governing the Agri-Food Industry. *European Review of Agricultural Economics* 32(3):421–440.
- Mikšiček, P. 2007. Krajina s odsunem [Landscape with deportation]. *Sedmá Generace* 5:216.
- Mullan, K. and Kontoleon, A. 2008. Benefits and costs of forest biodiversity: Economic theory and case study evidence. Final report.
- Nowicki, M. 1993. *Strategia Ekorozwoju Polski [Polish Sustainable Development Strategy]*. Warszawa: Agencja Reklamowo-Wydawnicza A. Grzegorzczuk.
- Ostrom, E. 1990. *Governing the Commons. The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press.
- Otto, I. M., Shkaruba, A., and V. Kireyeu. 2011. The Rise of Multi-Level Governance in Belarusian Biodiversity Protection Policies. *Environment and Planning C: Government and Policy* 29(1):113–132.
- Paavola, J., A. Gouldson, and T. Klumánková-Oravská, 2009. The Institutions, Ecosystems, and the Interplay of Actors, Scales, Frameworks, and Regimes in the Governance of Biodiversity. *Environmental Policy and Governance* 19:148–158.
- Pracownia na Rzecz Wszystkich Istot. 2008. Report on the Future of National Parks, Retrieved on 23.05.2009 at: <http://www.pracownia.org.pl/dz/index.php?d=archiwalne&e=artykuly&rok=2004&nr=120&id=498>.
- Prieditis, N. 2002. Evaluation frameworks and conservation system of Latvian forests. *Biodiversity and Conservation* 11:1361–1374.
- Rammel, C., S. Stagl, and H. Wilfing. 2007. Managing complex adaptive systems – A co-evolutionary perspective on natural resource management. *Ecological Economics* 63:9–21.
- Rao, P. K. 2003. *The Economics of Transaction Costs. Theory, Methods and Applications*. New York: Palgrave Macmillan.
- Rauschmayer, F., A. Berghöfer, I. Omann, and D. Zikos. 2009. Examining Processes or/and Outcomes? Evaluation Concepts in European Governance of Natural Resources. *Environmental Policy and Governance* 19:141–147.
- Rezek, M., Z. Stoufova, and J. Blaha. 2006. Forest of the Czech Republic. A Fern Briefing Note/EU Forests, Friends of the Earth Czech Republic, Retrieved on 20.10.2011 at http://www.fern.org/sites/fern.org/files/media/documents/document_3682_3692.pdf.

- Schmid, A. A. 2004. *Conflict and Cooperation: Institutional and Behavioural Economics*. Oxford: Blackwell.
- Sienkiewicz, J. and S. Niemtur. 2005. Country Report – Poland. In: *Protected Forest Areas in Europe – Analysis and Harmonisation (PROFOR): Reports of Signatory States*, eds. J. Latham, G. Frank, O. Fahy, K. Kirby, H. Miller, R. Stiven COST Action E27, retrieved on 20.06.2011 at <http://www.gbv.de/dms/goettingen/502606231.pdf>.
- SRNAP 1996. SRNAP Program until 2006. Ministry of the Environment.
- Sprawy NP a CHKO Sumava. 2006. *Roceny spravy narodniho parku a chranene krajinne oblasti Sumava 1999–2006 [Yearbooks of The National Park and Protected Landscape Area Sumava 1999–2006]*. Sprava Narodniho Parku a CHKO Sumava. Vimperk.
- Stoll-Kleemann, S. and H. Job. 2008. The relevance of effective protected areas for biodiversity conservation: An introduction. In: *GAIA 17/S1:86–89*.
- Urbanová, T. 2005. In *Environmental Protection Costs – Concepts, Effectiveness & Optimization*, eds. P. Šauer, A. Dvořák, E. Geuss, J. Klusák, J. Kovář, A. Lisa, M. Medková, J. Prchal, T. Urbanová and O. Vojáček. Prague: Oeconomica.
- Vančura, T. J. Švajda, Hynek V., Utinek D., and M. Tóth. 2010. *Analýza národných parkov v českej republike [Analysis of national parks in Czech Republic]*. Unpublished manuscript.
- Vatn, A. 2010. An institutional analysis of payments for environmental services. *Ecological Economics* 69:1245–1252.
- Verhaegen, I. and G. van Huylenbroeck. 2002. *Hybrid Governance Structure for Quality Farm Products. A Transaction Cost Perspective*. Aachen: Shaker.
- Walczak, M., J. Radziejowski, M. Smogorzewska, J. Sienkiewicz, E. Gacka-Grzesikiewicz, and Z. Pisarki. 2001. *Obszary chronione w Polsce [Protected areas in Poland]*. III ed. Warszawa: Institute of Environmental Protection, p. 311.
- Williamson, O. E. 1985. *The Economic Institutions of Capitalism. Firms, Markets, Relational Contracting*. New York, London: The Free Press.
- Williamson, O. E. 1991. Comparative Economic Organization: The Analysis of Discrete Structural Alternatives. *Administrative Science Quarterly* 36(2):269–296.
- Williamson, O. E. 1996. *The Mechanisms of Governance*. New York: Oxford University Press.
- Wunder, S. 2005. *Payments for Environmental Services: Some Nuts and Bolts. CIFOR Occasional Paper, vol. 42*. Bogor, Indonesia: Centre for International Forestry Research.