

Payments for ecosystem services: Existing practices in the Balkan region



Deliverable to Project #63842 – Integrated Water Resource
Management at Dojran Lake, Macedonia

Authors: Lili Ilieva, Dr. Dragana Bojovic and Prof. Carlo Giupponi
Euro-Mediterranean Centre for Climate Change (CMCC)

December 2014

Venice, Italy



Table of contents

1. Introduction	3
2. PES concept	4
2.1 Definition and rationale	4
2.2 Structure of PES mechanism	5
3. Case studies	7
3.1 Why the Balkan region?	7
3.2 Case studies description	7
4. PES initiatives for watershed services at selected case studies in the Balkan region	9
4.1 Landscape aesthetics	10
4.2 Wildlife habitat	12
4.3 Control of erosion and sedimentation	13
5. Key obstacles for PES implementation in the Balkan region	14
5.1 Institutional and legal framework	14
5.2 Financial Framework	15
6. Lessons learned	16
References	18

1. Introduction

Ecosystem services are essential to the functioning of human society. Watershed ecosystems in particular generate abundance of services, which are fundamental to human wellbeing. Still, these ecosystems are frequently susceptible to negative impacts of human activities and changing environmental conditions, including climate change. As a milestone in defining the role of ecosystem services in supporting human well-being, the Millennium Ecosystem Assessment (MEA 2005) classified four different types of services: provisioning, regulating, cultural, and supporting. Assessments of the state of ecosystems confirm the decline in their capacity to generate goods and services necessary for sustenance of social systems. In the quest for acknowledging the benefits that humans derive from nature, payments for ecosystem services (PES) emerged as an innovative mechanism from the broad realm of market-based solutions for nature conservation.

This study looks into existing initiatives that have a common goal of supporting ecosystem services through PES-like initiatives in the Balkan region. The Balkan regions is characterized with rich biodiversity and unique ecosystems, many of them experiencing degradation. Besides, sustainable development in the studied countries still lacks behinds the European Union standards, with ample opportunities for improvements in the nature conservation and management.

The research is carried out within the project “Integrated Water Resources Management at Dojran Lake” granted by the Critical Ecosystem Partnership Fund (CEPF). Its overall aim is to present an overview of some of the scattered PES and PES-like initiatives in the Balkans, and signal what could be the best practice and key obstacles. This could inform and enhance link between future PES initiatives in the Balkans. In order to address this aim, a comparative case study analysis was conducted. Although the use of a comparative framework facilitates of the comparison of the case studies, not all of the cases had the same level of information. As the purpose of the report is to contribute to the PES feasibility study of the Dojran Lake, the choice of case studies is based on the PES schemes developed for watersheds. Data collection was managed through an analytical and detailed review of documentation for each case study and interviews with some of the initiatives’ implementers. The analysed initiatives are divided into three most common ecosystem service types: i) landscape aesthetics, ii) wildlife habitat, iii) control of erosion and sedimentation. Some of the initiatives aim as well to address bundle ecosystem services.

The report is divided into four main sections. The introductory chapter outlines the study background, the objectives of the report and methodology. The second

section briefly describes the PES concept. The third section gives an introduction to the Balkan region context and the selected case studies. The fourth section includes the description of the ES addressed by PES initiatives and examples of their application in the case study regions. Section five describes the identified obstacles for PES implementation in the case studies and section six lists the lessons learned.

This report by no means represents a comprehensive project assessment of the PES case study initiatives, neither does it aim to categorise specific initiatives in terms of their success. The report rather provides an outline of existing case studies and their specificities.

2. PES concept

2.1 Definition and rationale

Payment for ecosystem services as a policy solution pursues to integrate ecosystem services into markets reflecting their social and economic values (Wunder 2005). The concept underlines a straightforward objective to provide incentives to land stewards to undertake conservation actions resulting in improved provision of desired ecosystem services (Milder et al. 2010; Nelson et al. 2010). Compared to public policy instruments such as taxes and regulations, PES is considered a user-driven, voluntary, alternative and sustainable financial mechanism (Swallow et al. 2009). This concept is being formalised as: “A PES scheme, simply stated, is a voluntary, conditional agreement between at least one ‘seller’ and one ‘buyer’ over a well defined environmental service—or a land use presumed to produce that service” (Wunder 2005).

Although the PES mechanism is based on economic valuation of ecosystem services, it goes beyond pure economic perspective and integrates the complex aspects of ecological and socio-cultural values. Understanding the role of ecological values for ecological sustainability is an important ingredient to be considered for the maintenance of essential life support systems. Socio-cultural values refer to equity and cultural perceptions pursuing to represent the nature’s importance for religion, education or indigenous cultures. Thus far, many of these components are not comprehensively reflected in the economic valuation of ES. Another aspect is the existence of markets. While “provisioning” services are well represented, markets often do not support “regulating”, “supporting” and “cultural” services. Examples of relevant forest ecosystem services, aside from material and extractive benefits include: watershed protection; biodiversity conservation; atmospheric regulation and landscape beauty (Wunder 2005).

2.2 Structure of PES mechanism

There is no general definition of how a PES scheme should be structured and applied; rather it is categorized based on the ecosystem services of interest and the type of payments, among others. Therefore, there is a great diversity of PES models, yet the lack of a concrete identification of what is considered PES or another mechanism creates confusion in practitioners. A common objective of PES is to support ecosystem services that are at risk of degradation due to overexploitation or that are threatened by global change, using a mechanism, which enables the provision of these services at a cost-efficient manner, over a long time. In doing so, PES schemes pursue to value ecosystem services and provide a monetary value, in the attempt to contribute to behavioral changes and sustainable land use practices.

In the process of developing PES schemes, the ecosystem services need to be defined, measured and quantified, which quite often proves to be challenging (Pagiola, S. and G. Platais. 2002). The participation of stakeholders is crucial for the identification of ecosystem services, which are of interest to beneficiaries. Beneficiaries can be local, as water users in the area; national as the state or business associations; or international as multinational organisations (Barbier, et al. 1997). The identification of the beneficiaries is directly related to the ecosystem service included in the PES scheme.

A step in the design of a PES scheme involves the creation of a financial mechanism, which should properly address the value of the ecosystem service of interest. Assigning such a value is one of the most challenging tasks in the elaboration of a PES model. The valuation process consists of economic analysis and participatory involvement of stakeholders in order to establish contributions, which will be acceptable to beneficiaries and sufficient to compensate for the cost of conservation and opportunity cost taken by the service supplier.

The structure of PES schemes can be differentiated by the type of ecosystem service they are addressing, the characteristics of the buyers and sellers, as well as by the level of government intervention (Smith et al. 2006). The three general types of PES schemes are: i) Public payment schemes, ii) Private payment schemes and iii) Trading schemes. The characteristics of each type of scheme is outlined in Table 1, which presents a basic framework to be used as a guide in the designing of payment schemes.

Tab. 1 Main types of PES schemes (Smith et al. 2006).

Type of PES	Type of ES	Participants	Mechanism for payment
Public payment schemes	Public good with high value (e.g. safe drinking water; regulation of river flows)	Government-driven; Government - private; Government – Government; Government – other organization (e.g. NGOs)	User fees, land purchase and land easement
Private payment schemes	ES related to private goods (e.g. maintenance of watershed services)	Lowest level of government intervention; Private - private	Transfer payments; land purchase; cost sharing
Trading schemes	ES related to private goods (e.g. groundwater extraction; air pollution)	The Government sets the initial standards and allocation of rights; Private – private	Tradable permits or credits

In practice there is no unique model of PES scheme, rather, its applications combine these different approaches, tailored to local needs and context. The design of the mechanism needs to be adapted to the local situation, taking into account institutional constraints, stakeholders' needs and environmental conditions.

Two major criteria that describe the effectiveness and efficiency of PES schemes are conditionality and additionality. Conditionality addresses the motivating factor of the service provision and the consequences when the service is not provided. The incentives can be developed on the conditions of measuring of the service or the taken actions (Engel et al. 2008). While conditionality shows how an intervention has affected the provision of a service by complying with the conditions of the PES agreement, additionality is the other measure contributing to the overall effectiveness of PES models. Additionality demonstrates what would have occurred if the intervention does not take place.

3. Case studies

3.1 Why the Balkan region?

The Balkan region is at the crossroad between Europe and Asia, which reflects in its rich genetic, species and ecosystem diversity. Besides, it is renowned as a focus of Pleistocene glacial refugia, with particularly high level of endemism (Griffiths et al., 2004). Notwithstanding its rich biodiversity and many important habitats, there is a lack of comprehensive and systematic approach to research, nature protection and biodiversity management in the Balkan region. Limited and outdated information, together with insufficient coordination between different initiatives, many of which still in its infancy, hinder effective development of the area in the field of nature conservation. Nevertheless, all these aspects give space to a novel approach to this unique area, i.e. the possibility of enhancement of the current approach to biodiversity and ecosystem conservation.

3.2 Case studies description

The case studies selected for this report include examples of PES and PES-like initiatives taking place in countries from the Balkan region – Bulgaria, Serbia, Croatia and Albania. Taking into consideration the many characteristics describing a PES mechanism, making it hard to categorize, our case studies are not necessarily a clear representative of the implementation of PES, rather they reflect the closeness to the concept. Major criteria for case study selection are geographical coverage and information availability. Table 2 lists the target issues, which are most reflected in the case studies and the implementation stage of the PES models. The implementation stage of the schemes is categorized in i) ongoing projects and ii) proposed projects, which have baseline studies and potential stakeholder participation but are not yet implemented. The case studies presented in this report are local and most of them are operating at a watershed level.

As part of the WWF Carpathian Program initiative: *Promoting PES and other related sustainable financing schemes in the Danube river basin*, PES schemes in the Danube floodplain located in countries of the Balkan region (Bulgaria, Croatia and Serbia) explore the potential for eco-tourism and restoration of natural habitat (Sekulić, G. 2012). Relevant potential case studies for watershed PES schemes have been identified in Serbia as well, yet they are in initial phase and their feasibility is still to be assessed. Therefore, these case studies from Serbia are only to a limited extent presented in this report.

Tab. 2 Case studies of PES initiatives for watershed areas in countries from the Balkan region.

Case-study	Size	Target issue	Buyer	Seller
<i>Ongoing projects</i>				
Rusenski Lom, Bulgaria¹	3,408 ha	Biodiversity conservation through “responsible tourism”	10 small- and medium-sized enterprises and NGOs	“Friends' Club of Rusenski Lom Nature Park” – Non-profit private organisation
Persina, Bulgaria²	155.4 ha	Watershed regulating services - Regulation of carbon - Provision of biomass - Habitat maintenance	Local company interested in reed harvesting and processing into pellets and briquettes.	Directorate of Persina Nature Park
<i>Proposed projects</i>				
Ulza watershed, Albania³	122,434 ha	Sediment and erosion regulating services	Ulza Hydro-Power Plant / Local Government Unit/ drinking water enterprises and downstream villagers.	Upland farmers
Lonjsko Polje Nature Park, Croatia⁴	50 650 ha	Biodiversity conservation through restoration and management of grasslands	n/a	n/a

¹ Todorova, M. 2013. *Payment scheme for aesthetic and biodiversity values of Rusenski Lom Nature Park*. WWF Bulgaria. Sofia

² Todorova, M. and Grigorova, Y. 2014. *Market Payments for watershed restoration in Persina Nature Park*. WWF Bulgaria. Sofia

³ Meijboom, M. and Kampen, P. 2013. *Study and Analysis of Innovative Financing for Sustainable Forest Management in the Southwest Balkan: Designing potential Payment for Environmental Services (PES) schemes for watershed protection in Ulza, Albania*. Connecting Natural Value and People Foundation. Tirana

⁴ Todorovic, S.K. & Znaor, D. 2007. *Complementary Financing for Environment in the Context of Accession – Innovative Resources: National Report Croatia*. A project for the European Commission. Ecologica.

4. PES initiatives for watershed services at selected case studies in the Balkan region

Ecosystem services provided by watersheds are diverse and generate multiple direct and tangible benefits to people (MEA 2005). Fresh water is a “provisioning” service used domestically, for irrigation and power generation, thus its quality and quantity of supply is essential for human wellbeing and sustaining inland water ecosystems and biodiversity habitats. However, many of the provisioning, regulatory and cultural services are being degraded and mismanaged (MEA 2005). Economic growth, increased population and unsustainable land use practices are only few of the drivers of such changes. Examples have shown that some sustainable land-use practices can actually positively affect the provision of watershed ecosystem services. Yet, due to the characteristics of public goods (non exclusive and non rivalrous) there are few incentives for landholders, for instance upstream, to consider changing their land-use practices to contribute to a better water quality and quantity to downstream communities. Table 3 below, provides an overview of main watershed ecosystem services.

Tab. 3 Overview of watershed ecosystem services (Smith et al. 2006)

<p style="text-align: center;">Provisioning services</p> <p>Services focused on directly supplying food and non-food products from water flows</p> <ul style="list-style-type: none"> • Freshwater supply • Crop and fruit production • Livestock production • Fish production • Timber and building materials supply • Medicines • Hydroelectric power 	<p style="text-align: center;">Regulating services</p> <p>Services related to regulating flows or reducing hazards related to water flows</p> <ul style="list-style-type: none"> • Regulation of hydrological flows (buffer runoff, soil water infiltration, groundwater recharge, maintenance of base flows) • Natural hazard mitigation (e.g. flood prevention, peak flow reduction, landslide reduction) • Soil protection and control of erosion and sedi- mentation
<p style="text-align: center;">Supporting services</p> <p>Services provided to support habitats and ecosystem functioning</p> <ul style="list-style-type: none"> • Wildlife habitat • Flow regime required to maintain downstream habitat and uses 	<p style="text-align: center;">Cultural services</p> <p>Services related to recreation and human inspiration</p> <ul style="list-style-type: none"> • Aquatic recreation • Landscape aesthetics • Cultural heritage and identity • Artistic and spiritual inspiration

As conventional regulatory approaches were challenged to be effectively implemented, market-based mechanisms as PES are thought to partly be a potential solution. Markets for watershed services are mostly local and often do not involve trading of commodities such as water quantity or quality, rather generate financial resources to stimulate land use practices, which enhance watershed benefits. Examples of land use practices, which address specific ecosystem services are (Smith et al. 2006):

- Improved land management practices: improved practices in agriculture, agro-forestry and sustainable forest management are some of the land management options to improve water quality and quantity, reduce sedimentation, provide regulation of water flows, among others.
- Conservation and protection of ecosystems: protection of riparian areas and restriction of forest conversion to other land uses are options to decrease sedimentation; enhance carbon sequestration and biodiversity protection.
- Rehabilitation of degraded ecosystems: promotion of activities leading to recovery or rehabilitation of degraded ecosystems present options to improve habitat for biodiversity and regulation of water flow.

Local schemes usually target one or two of the identified watershed services to decrease complexity of the PES scheme. The PES case studies identified and presented in this report target three of the ES listed in Table 3: i) landscape aesthetics, ii) wildlife habitat and iii) control of erosion and sedimentation.

4.1 Landscape aesthetics

According to MAE framework, aesthetic and recreational services of a landscape fall under the cultural ecosystem services (MAE 2005). Many ecosystems are important as a place where people seek relaxation, refreshment and recreation away from urban areas. The aesthetic value and variety of natural and cultivated landscapes provide opportunities for nature-based activities such as walking; bird watching; fishing; swimming and hiking. The demand for such recreation activities has expanded in recent years and led to the urgent need for management solutions closely connected to natural and cultural areas (MAE 2005). Therefore, linking sustainable landscape use and conservation with tourism activities, together with acknowledging their financial aspect to protected areas and the importance of sociocultural elements, is crucial for development of a balanced and effective management solutions (Eagles et al. 2001).

Experiences show that nature-based tourism and local income flow can be combined in manner to possibly promote conservation through two different causal pathways (Wunder 2005). First, tourism can generate income, which can be an incentive for local people to protect their natural assets from possible external

threats (e.g. loggers, illegal hunters). Another possibility is that the same incomes from tourism can be an incentive for the local community to change their own practices for natural resource management towards strengthened conservation (e.g. reduce agricultural conversion, wood extraction).

If scenic beauty, wildlife viewing and serenity of a destination are prime attractions for tourists, than such natural asset is of potential economic interest and the incomes from such type of tourism will be closely related to a PES model. In this perspective it is important to consider to what extent the participation of the local population affects the environmental service of maintaining “natural beauty”. Several models for tourism-derived payments for natural beauty exist depending on their structure and stakeholders involvement. The PES mechanisms can be fully operated by a non-local commercial operator, who makes contracts directly with local communities to practice a certain action to preserve natural beauty (e.g. hunting practices; agricultural practices). Then again, it can also be a community-based tourism, where local people are employed for provision of different services and products, as well as for managing the tourism operations. These two examples are the extreme options for tourism-derived payments and PES models can range from one to the other extreme, using different components from them to answer the site-specific needs.

In the economic literature, cultural ecosystem services are included under consumptive and non-consumptive direct use values. Recreational fishing and hunting are an example of the benefits derived from the consumption of the resource. The non-consumptive use values refer to the use of natural asset in a manner that will not reduce its stock, it includes benefits from swimming, boating, sunbathing and wildlife watching (TEEB, 2010).

Sustainable tourism has the aim to contribute to biodiversity conservation and cultural diversity and support the well-being of local communities. Therefore, well-planned and managed tourism has provided evidence to be one of the effective tools for long-term conservation of biodiversity, in the presence of the right enabling conditions such as market feasibility, management capacity at local level, and clear links between tourism development and conservation goals.

An example of a market created for landscape beauty is the case of Rusenski Lom in Bulgaria. The pilot project was initiated in 2009 and aims to “address actual and potential loss of aesthetic values and biodiversity caused by unregulated tourism”. The project covers 3,408 ha of protected area and focuses on the areas most attractive to tourists – Ivanovo rock churches, Pisanovo, Chervene, Nisovo. The project is part of the WWF Carpathian Program initiative: *Promoting PES and other related sustainable financing schemes in the Danube river basin (Danube PES project)*. The buyer of the service is the tourism industry and 10 small-and-medium size enterprises and NGOs participate in the PES agreement. The seller is a non-

profit private organization “Friends’ Club of Rusenski Lom Nature Park” and is responsible for the implementation of the Nature Park management plan.

The identified tourist areas in the Nature Park are visited by nearly 20,000 people each year. These recreation activities are estimated to generate an annual income of EUR 67,000 for local economies, mainly to tourism businesses. Yet, this income has not been invested in the management of the park and conservation of the related natural assets. This was, thus, seen as a good opportunity for the development of a PES scheme. The PES-generated tools include promotion materials; add-up price of 1% to 5% over standard price to tourist services; and donations to the funds for nature conservation. In order to estimate the value of the ecosystem service subject to the PES scheme, the mechanisms included the cost of the activities necessary to mitigate the impacts from tourism on biodiversity and ecosystems. The conservation activities for the park and maintenance of tourist trails among others were estimated to cost annually EUR 46,000 for the period of 10 years. Several scenarios were explored to evaluate the net cash flow of the PES scheme, based on the proposed instruments. As a result the scenario implementing a mix of the proposed instruments showed positive net cash flow.

4.2 Wildlife habitat

The implemented pilot study in Persina Nature Park in Bulgaria has the objective to enhance habitat functionality, such as fish breeding and nursery, through restoration activities. The project is also part of the WWF Carpathian Program initiative: *Promoting PES and other related sustainable financing schemes in the Danube river basin (Danube PES project)*. Persina Nature Park, covers a territory of 21,762 ha and the pilot project is implemented on the protected site of Kaikusha marsh, which covers 1554 ha of the Nature Park. The PES scheme addresses the hydrological and functional changes of the habitat in the marsh. The major driving factor is reed overgrowth and decay of biomass, which results in deterioration of ecosystem services, such as carbon sink and spawning ground for fish. The scheme promotes the sustainable management of biomass as an economic opportunity, which will prevent the functional changes of the marsh habitat and will further enhance the ecosystem provisioning services of fish population. It should finally support overall biodiversity preservation (Todorova and Grigороva, 2014). The two main stakeholders of the PES mechanism include the organizer of the scheme – performed by the Directorate of Persina Nature Park and the user of resources – a local company interested in investing in reed harvesting for production of pellets and briquettes. In this market model, there is no transaction of cash, and it is developed from the perspective of the user of the ecosystem service. The user benefits from the provisioning service - reeds generation - and bears all the costs and business risk for its collection and processing. The financial

flows constitute the costs of the user to produce and market the good, and the revenues related to the sale (Todorova and Grigorova, 2014).

This case study is interesting for its financial model as the user of ecosystem provisioning services (biomass from the wetland) generates directly the benefits during the restoration of the ecosystem, thus playing a role of a provider of regulating services (restoration of habitat functions of the marsh and water and carbon cycles).

In Croatia, the Lonjsko Polje Nature Park is an interesting example of the potential for PES system. The area presents an inundated part of the Danube river catchment and plays a key role in flood control system for the Sava river basin. The landscape comprises of abandoned agricultural land with a mosaic of herbaceous vegetation, once presenting a home to species from these rich grasslands and open space habitat for migratory birds. A study has examined different scenarios for financial mechanisms as an efficient solution for biodiversity conservation and rural development. The potential objectives for a PES scheme were identified to be restoration and maintenance of grassland as a habitat for endangered habitat types and species (e.g. Corncrake population) (Todorovic and Znaor, 2007).

4.3 Control of erosion and sedimentation

The proposed scheme for Ulza watershed in Albania addresses increased sedimentation and erosion issues in the region. The PES model in Albania focuses on protection of Ulza watershed to reduce sedimentation and erosion, both emerging threats for the water quality in the region. Management practices, such as: sustainable forest management, sustainable agriculture and livestock practices are considered essential to minimize erosion and sedimentation. The watershed is situated in the Valley of Mati River and its territory covers 122,434 ha. The proposed PES scheme identifies the upland farmers as the potential sellers and the potential buyers to be either Ulza Hydro-Power Plant, the Local Government Unit or drinking water enterprises and downstream villagers, who use water for irrigation. The case study explores the feasibility of three different options for PES among government and user-led scheme or the development of water fund. Taking into consideration the large size of Ulza watershed and the number of communities located in the area, the development of water funds was initially proposed as the most feasible option, yet stakeholders expressed their preference for a Government-led scheme. Such a scheme could be developed through an electricity tax, based on the generated amount of electricity by the Ulza Hydro-Power Plant, or it could simply use revenues for compensation of upland farmers (Meijboom and Kampen 2013).

5. Key obstacles for PES implementation in the Balkan region

5.1 Institutional and legal framework

The major obstacles identified in the process of developing a PES system is the absence of institutions to support such financial mechanisms and the limited or non-existent normative framework to provide conditions for setting up of such a market mechanism. Yet, the limited experience in designing PES schemes in the region has shown that such obstacles can be overcome applying new approaches.

For the development of PES schemes it is crucial to understand the regulatory framework and identify how such market-based mechanisms can be successfully implemented. Depending on the role that the government plays in the PES scheme, the related legal framework for its implementation will be different (Grieber, 2009). For such PES scheme, no specific legal framework is required as long as the subject matter of the contract is not prohibited and the common law for agreements is at place. On the other hand, for the development of public PES schemes, the state itself is a market actor and acts as a ES buyer with legal authority (Salzman, 2005). In such cases the intermediaries in the form of interest groups or environmental NGOs participate in the PES scheme, which have the role to provide information and possibly minimize transaction costs. The variety of PES models and institutional settings entails and also allows for different legal frameworks.

In the case of Bulgaria, there are no legal documents or policies regulating the rights and obligations of buyers and sellers of ecosystem services. The concept of ecosystem services and PES have been mentioned in the Forestry Act so far, yet both concepts are recent and lack clear legal definitions. The case studies of Rusenski Lom and Persina in Bulgaria demonstrate how good practices can be translated into policy formulation. A major hindrance for the development of business plans was to make sure that the signing of a contract between the stakeholders would not be a violation of tax or public administration legislation. For the pilot project at Rusenski Lom, a curious aspect is that the appointed intermediary was the Directorate of Rusenski Lom Nature Park. Instead of being a seller, this institution facilitated the financial transactions between the sellers (NGO) and buyers (*Enterprises*). Due to the fact that a sound legal basis was missing, a crucial prerequisite for the establishing of the PES scheme was that the Partnership Agreement was built upon trust among all partners (Todorova, 2013).

The PES concept is also very recent in Serbia. However, recently introduced laws address the sustainable use of natural resources and allow for basic environmental economics mechanisms. Even though the Law on Forests (2010) initiated a fee for forest services as protection for watershed, it does not specify the ecosystem

services, neither ensures that the collected fees are invested in conservation of ecosystems (Sekulić, G. 2012).

Other countries from the Balkan region do not have specific policies facilitating the development of PES schemes, thus the process of incorporating the concept of ecosystem services and market mechanisms for their conservation will take time. The private PES schemes are governed by the contract law that is at place in Montenegro, Albania and Croatia to specify the rights and obligations of all market actors. The development of new legal frameworks could support such an innovative approach for the region. Financial incentives will depend both on the legal and market conditions on the ground and benefit from ongoing practices in and among the countries.

5.2 Financial Framework

The financial framework is a key element in the development of an efficient PES system. A main objective is to generate continuous flow of financial capital into the system to sustain it functioning in a long term (Greiber, 2009). The major costs involved in the financial framework include the developing of the system, payments to landowners, and on going management costs.

Throughout the preparation of the financial context for the pilot project in Rusenski Lom in Bulgaria, a leading challenge has been to define how the cash flows for both sellers and buyers will be financially approached. The legal framework does not specify how the costs for and benefits from nature management should be addressed. Therefore, the general regulation of taxation and official reporting on generated income was applied with an adaptive approach towards the revenue status, which had to be monitored for the buyers. The support of the scheme through promotion materials generated additional part of the revenues (Todorova, 2013).

In Serbia, there are traditional financial schemes incorporating the feature of natural resources use, providing a good foundation for the development of a PES scheme. However, none of these schemes addresses all of the criteria for such a mechanisms. The existent framework lacks the explicitness of internalisation of environmental costs and a clear indication of the purpose and use of generated income (Sekulić, G. 2012). An interesting aspect in the financial framework in Serbia is the existence of two Funds – Fund for Environmental Protection and Fund for Water – that generate significant revenues. Some components of these funds are based upon the concept of payments for ecosystem services – an example is the tax for use of forest non-timber products. Such funds could play a crucial role as a funding source for targeted conservation projects, however

additional analysis and steps are needed for these funds to be used for PES schemes.

In recent decades a variety of innovative financing mechanisms for nature conservation have been initiated in the Balkan region. The example of Serbia and Bulgaria are only few, which ascertain the potential of the financial framework to enable a functioning PES system. Limited information was available on experiences with the financial aspects of PES schemes in the context of watersheds in the other countries of the region.

6. Lessons learned

More than several decades of the implementation of PES systems worldwide has brought a lot of experience that generated lessons learned as what makes a successful and functioning PES scheme. This overview of case studies from selected countries from the Balkan region contributed to better understanding of the current and potential PES initiative in watersheds in this region. Despite the site-specific character of the development and implantation of PES schemes, the key messages extracted from the study are based on a range of similarities in geographical, historical, cultural, legal and institutional settings in the selected countries. Therefore the lessons learned would be valuable in the forthcoming PES feasibility study conducted for Dojran Lake. The five main lessons that came up from this study include:

1 Comprehensive baseline analysis contributes to the development of an effective and efficient PES scheme. Detailed baseline data is often not available, yet it is a prerequisite for the identification of potential PES pilot site. Using various techniques of data collection, especially incorporating spatial analysis of ecosystem services, proved to be of great importance for assessing the relation between generation of ES, on the one side, and land-use and spatial coherence between ES sellers and buyers, on the other.

2. Capacity building, information sharing and dissemination of best practices are essential components. It is important to consider that often capacity or prior experience of institutions and stakeholders to understand the PES mechanisms and thus negotiate its structure and contracts among actors is rather limited. This lack of understanding of the PES mechanism can be an impediment for interested actors in negotiating its structure and contracts conditions. Information sharing and demonstration of good practices at local, national and international scale contributes to good knowledge base and enables better cooperation and strengthening of policy integration, in particular for the cases of transboundary water resources.

3. Stakeholder participation at an early stage of the development of PES scheme is fundamental to create sense of ownership. Good communication with and involvement of target groups in all stages of the process would contribute to good negotiation process for the development of a business model of the PES.

4. Revising and amendment of excising regulations enables the advancement of PES market mechanism. As the introduction of new legal instruments is unlikely in short-term, this should not constrain the initiation of PES scheme. A major task should be to conduct a comprehensive assessment of gaps and opportunities in the legislative framework and attempt to identify enabling factors to incorporate in the regulations.

5. Accounting and revenue expertise is needed for the elaboration of a transparent and credible financial framework.

References

- Barbier, E.B., Acreman M.C. and Knowler, D. 1997. Economic Valuation of Wetlands: a Guide for Policy Makers and Planners, Ramsar Convention Bureau, Gland, Switzerland.
- Engel, S., S. Pagiola and S. Wunder. 2008. Designing payments for environmental services in theory and practice: an overview of the issues. *Ecological Economics* 65:663–674
- Gómez-Baggethun, E., de Groot, R., Lomas, P., Montes, C. (2009) The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes, *Ecological Economics*.
- Greiber, T. (Ed.) 2009. Payments for Ecosystem Services. Legal and Institutional Frameworks. IUCN, Gland.
- Greiber, T. (2011) Enabling conditions and complementary legislative tools for PES, in Payment for ecosystem services and food security, Food and Agriculture Organization of the United Nations, pp. 205-225.
- Griffiths, H. I., Kryštufek, B. , Reed, J. M. (Eds.) 2004. Balkan Biodiversity. Pattern and Process in the European Hotspot
- MEA. 2005. Millennium Ecosystem Assessment, Ecosystems and Human Wellbeing: Synthesis. Island Press, Washington DC.
- Meijboom, M. and Kampen, P. 2013. Study and Analysis of Innovative Financing for Sustainable Forest Management in the Southwest Balkan: Designing potential Payment for Environmental Services (PES) schemes for watershed protection in Ulza, Albania. Connecting Natural Value and People Foundation. Tirana
- Pagiola, S. and G. Platais. 2002b. Payments for Environmental Services. Washington, DC: The World Bank Environment Department, Environment Strategy Notes (3). p. 2.
- Sekulić, G. 2012. Analysis of PES Needs and Feasibility in Serbia. WWF Danube Carpathian Program Office, Vienna.
- Smith, M., de Groot, D., Perrot-Maître, D. and Bergkamp, G. (2006). *Pay – Establishing payments for watershed services*. Gland, Switzerland: IUCN.

Swallow, B. M., M. F. Kallesoe, U. A. Iftikhar, M. van Noordwijk, C. Bracer, S. J. Scherr, K. V. Raju, S.V. Poats, A. Kumar Duraiappah, B. O. Ochieng, H. Mallee, and R. Rumley. 2009. Compensation and rewards for environmental services in the developing world: framing pan-tropical analysis and comparison. *Ecology and Society* 14(2): 26.

TEEB (2010). The economics of ecosystems and biodiversity. Mainstreaming the economics of nature. A synthesis of the approach, conclusions and recommendations of TEEB

Todorova, M. 2013. Payment scheme for aesthetic and biodiversity values of Rusenski Lom Nature Park. WWF Bulgaria. Sofia

Todorova, M. and Grigorova, Y. 2014. Market Payments for watershed restoration in Persina Nature Park. WWF Bulgaria. Sofia

Todorovic, S.K. & Znaor, D. 2007. Complementary Financing for Environment in the Context of Accession – Innovative Resources: National Report Croatia. A project for the European Commission. Ecologica.

Wunder, S., Engelb, S., Pagiola, S. (2008) Taking stock: A comparative analysis of payments for environmental services programs in developed and developing countries, *Ecological Economics*, 65(4): 834-852.