



Innovative Financing Mechanism for Environmental Protection: Applying PES in a Watershed Area in Albania

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Abstract

This paper aims at the discussion of innovative environmental financing mechanism developed throughout the world and in Albania. The premise of the paper is the fact that government financing and international assistance are not sufficient anymore to address global environmental and biodiversity protection issues. Therefore, new mechanisms, based on the active involvement of the private sector, need to be developed and implemented. The paper focuses on one particular financial mechanism to argue upon the role of private sector: Payment for Ecosystem Services. Based on the "beneficiary pays" principle, upon which PES is conceived, the paper discusses a possible implementation of PES in one study area: Bovilla watershed. This case study analysis identifies the cost and benefits of the scheme in the study area and gives an overview of the design of the scheme. Other innovative instruments are discussed, giving some insights on their use in the Albanian context.

Keywords: *payment for ecosystem services, environmental financing, innovative environmental financing, ecosystem services*

1. Introduction

Environmental degradation, biodiversity loss and climate risk are among the main issues that require attention at international level. Many instruments have been developed with the aim to protect the environment, from traditional regulatory measures implemented by the government, to the use of market instruments, the most known of which are environmental taxes. Nevertheless, today, relying on government and international support is no longer deemed sufficient, as these funds does not meet the increasing financing requirements for achieving biodiversity conservation. Therefore, the development of new financing means is essential.

The main purpose of this paper is to discuss innovative financial strategies for environmental protection. The implementation of a sustainable financing strategy for conservation purposes, is based on the investigation of the rationality of such mechanisms and careful evaluation of arrangements and actors involved in respective schemes. Particular attention is given to the Payment of Ecosystem Services, as a new instruments based on the "beneficiary pays" principle, developed for the implementation of a sustainable environmental financing strategy.

This paper is organized as follows. The first part of the paper offers a review of the financial instruments, traditional and innovatory, used for environmental protection. The second part of the paper discusses the possibility and the potential problems arising from introducing some new environmental financing mechanisms in Albania. The remaining part of the paper is dedicated to the investigation of the potential of introducing PES schemes in Albania. For achieving this purpose, a case study of a watershed area was used, analysing the possible arrangements of a PES agreement within that context. The paper concludes with a very first overview of what a PES scheme would look like in the chosen study area.

2. Literature Review

2.1 Innovative Financing Mechanism for Environmental Protection

While environmental degradation, along with the climate risk, are becoming the most salient issues in current international debates, the role of developed and developing countries in these matters differ. While coordinated action is needed both in developed and developing countries, the focus of national governments in the developing world is on lowering poverty and improving living conditions for their citizens, rather than employing massive measures toward lowering emissions of GHGs (Lattanzio, 2012). Consequently, international support in these countries is critical and indispensable. The Global Environment Facility (GEF) was created as an independent and international financial organization that provides grants, promotes cooperation, and fosters actions in developing countries to protect the global environment (Lattanzio, 2021). It has long been a means of financing for many environmental projects in the developing countries, which rely in financial international assistance in pursuing their environmental goals. However, despite their core scope, the funding from the GEF and other bilateral and multilateral development assistance have been insufficient relative to the global demands for conservation of environmental services (Panayotou, 2002). In addition, as the main scope of the GEF is to finance projects that offer global benefits, the potential of using the GEF for local projects, such as for example climate change adaptation project which provide mainly local benefits, has been dropping (Lattanzio, 2021). Therefore, the need for developing new, sustainable financing means for environmental protection is becoming a necessity in the developing world (Gutman, 2003).

Recent years have witnessed significant raise in awareness in relation to ecosystem services and environmental protection. This has led to the improvement of the ways the environmental issues are treated and reflected in decision-making. Traditionally governments have taken the lead in the environmental protection sector. The reason why governments are the main providers of financial resources for the purposes of environmental protection is the public good nature of most environmental services as well as the environmental externalities produced by industry and other economic sectors (Panayotou, 2002). The most common instruments used by Governments are the so-called command and control measures, which aim to put in place the environmental quality objectives, creating the regulatory framework in the environment field (Lo, 2019; Xu, 2020). Fiscal instruments, such as environmental taxes, are another tool used by governments to control the behaviour of economic actors towards the environment. The use of environmental taxes is thought to create incentives for reducing the level of pollution by the emitters (Bluffstone, 2003). However, despite their popularity, there are a number of cons arguments in relation to environmental taxation. The market imperfections and criticism toward environmental taxes, together with the increasing research on the monetary value of ecosystem services, have led to the development and implementation of innovative environmental financing means (Xuan To et al, 2013; Redford and Adams, 2009). Today a strong emphasis is rather posed to the involvement of the private sector for conceiving new, innovative environmental financing means. The acknowledgment of both the positive and negative aspects of an environmental policy framework is at the core of these discussions (Panayotou, 2002; Epstein et al., 2015; Xu & Liu, 2019; Hirunyawipada & Xiong, 2018; Muhammad et al., 2015).

Several of these new environmental financing means are again market-based instruments that create economic incentives for protecting environmental resources. Trading systems for instance are one of this innovative means that have been in place for several years now, based on the principle of clearly defining property rights (ELC, 2007). The premise of this mechanism is that damage caused in a region by an actor, is compensated by improving the environmental conditions elsewhere. The best known in these schemes is the carbon market born in the 2000s. In fact, the 2005 EU emissions trading system represents the underlying policy of the EU for addressing climate change (European Commission, 2021). The success of the carbon market has inspired other countries and regions to launch their trading schemes. Earlier forms of tradable permits to pollute also existed (Gómez-Baggethun et al., 2009).

Entry fees are another example of instruments used mainly as a financing source for parks, protected areas and other similar recreational sites. Usually the value of the entry fee is defined as a result of a willingness to pay survey of visitors of these areas. Ideally, the funds collected from entry fees, should be allocated for the maintenance of the environmental resources used for recreational purposes. Alternative forms of entry tariffs are fees for diving or sailing, license fees for tour operators, fees for passengers on cruise ships, as well as airport taxes and hotel room taxes (Miles, 2005). However, different studies recognize that the amount of entry fees around the world do not reflect the true value of the willingness to pay of visitors of protected areas. Surveys in Thailand, Zambia, Barbados, Chile (see TDRI, 1996; Thapa & Brijesh, 2020; Schuhmann et al, 2019; Gelcich et al, 2013) have calculated the willingness to pay of visitors in national parks and marine areas which currently are free of charge or apply very low entry fees. While such areas in

these countries remain underfinanced and under-protected, the implementation of appropriate levels of entry fees would give a major impact in nature conservation, provided that the collected revenues are dedicated to park management through a trust fund (Panayotou, 2002).

The concession model is another mechanism used for achieving conservation objectives in protected areas. It is based on the successful cooperation between public authorities, NGOs and the private sector. This mechanism has been used successfully in Kruger National Park, South Africa, and Liwonde National Park, Malawi (Fearnhead, 2003; Mauambeta, 2003). The main idea behind such schemes is that a concessionary contract between public authorities and a private investor defines several conditions posed to the private investor in relation to its obligations toward the environment, such as payment of concession fees, and fulfilment of the environmental and social objectives set to them by the public authority. If the concessionary conditions are met, they were allowed to develop private activities within the area.

Debt for Nature Swaps are a financial mechanism designed to generate funds for environmental protection through the purchase of external debt. They were conceived in 1980 with the aim of achieving two goals: reducing the debts of developing countries and increasing environmental protection activities (Webb, 1994). An example of how this mechanism works is the negotiation between the Philippine government, the WWF, and multinational commercial banks, which financed \$ 27.3 million in nature conservation. In this transaction, the WWF bought the \$ 19 million debt owed by the Philippine government to commercial banks, for a purchase price of US \$ 13 million. The agreement between the WWF and the government provided that the debt would be written off if the government spent an equivalent amount of \$ 17 million on nature conservation. The Central Bank of the Philippines paid this amount to the Philippine Environment Foundation, which in turn used the funds to set up an environmental fund, which funded hundreds of projects by local NGOs and community groups involved in establishing environmentally sound practices (Spergel and Moye, 2004). Costa Rica is another country where the debt-for-nature swaps was implemented and enabled the country to capture part of the global non-use value and to generate substantial financial revenues for environmental protection (Panayotou, 2002). The mechanism has had its critics. The main concerns raised were that this financial agreement was equivalent to eco-colonialism, which included a loss of state sovereignty, higher external control of the economy, and the deformation of internal monetary systems, with the potential to cause inflation, or rising interest rates (Miles, 2005).

Entry permits, development approval and the provision of conditional loans are other tools used for environmental financing. The approach of all these mechanisms is simple but effective: if a company makes a request, either for an entry permit, or for a project approval or funding, it must meet the conditions set at the required level in order to complete its development proposal (Foloni Ferraz, 2003; Spergel, 2001). Finally, certification schemes, bioprospecting contracts, and Payment for Ecosystem Services (PES) schemes are other market based instruments aiming at achieving sustainable financing goals (DEFRA, 2013; Panayotou, 2002). The last mechanism, PES, is at the focus of the next session.

2.2 PES as an Instrument for Environmental Protection

Payment for environmental services is becoming an increasingly widespread instrument among businesses. The private sector prefers this instrument when they recognize the values of ecological services provided by environmental assets, including: flood prevention and land stabilization, biodiversity conservation, quality and water flow, sedimentation reduction, and carbon reserve (Miles, 2005). A widely used definition of PES is "...a voluntary transaction where a well-defined ecosystem service (or a land-use likely to secure that services) is 'bought' by a (minimum of one) ecosystem service buyer from a (minimum of one) ecosystem service provider; if and only if the ecosystem service provider secures ecosystem service provision (conditionality)" (Wunder, 2005). The basic idea behind PES is that those who provide ecosystem services should be compensated for doing so. In practice, PES often involves a series of payments to providers of ecosystem services, with the expectation that they would provide the ecosystem service in question over-and-above what would otherwise be provided in the absence of payment. PES therefore provides an opportunity to put a price on previously un-priced ecosystem services like climate regulation, water quality regulation and the provision of habitat for wildlife and, in doing so, brings them into the wider economy. Payments are made by the beneficiaries of the services in question, for example, individuals, communities, businesses or government acting on behalf of various parties. The novelty of PES arises from its focus on the '*beneficiary pays principle*', as opposed to the '*polluter pays principle*' applied for justifying the use of taxes or tradable pollution permits (DEFRA, 2013 and Gómez-Baggethun et al., 2009).

PES policies may be funded by taxes, non-governmental organization (NGO), direct fees on service consumers, or through other mechanisms (Jack et al, 2008). Despite this variation, PES policies share a common element: as with other

incentive-based approaches, PES policies work by changing incentives rather than by making explicit rules or directives. In fact, one of the factors to the success rate of PES schemes is that they have had strong support from business sector (Miles, 2005).

There are several examples of development and implementation of PES scheme, both in the developed and developing countries. According to the OECD, there were already more than 300 PES or PES-like programmes in place around the world by 2010 at national, regional and local levels (DEFRA, 2013). One of the most successful PES scheme is situated in Costa Rica, known as the country-wide program called Pago por Servicios Ambientales (PSA), which was implemented in 1997, and aimed to reverse the severe deforestation rates existing at that time (Porrás et al, 2008 and Porrás et al, 2013). Mexican PES program for hydrological services began in 2003, where payments are made to individuals and communities as incentives to preserve existing forests. Although the design of Mexico's PES program was strongly influenced by the political process, the program is deemed to have been successful on many fronts (Alix-García et al, 2005). A study reviewing 40 cases of implementation of PES schemes in Latin America concluded that the type of ecosystem service being traded, the scale of the scheme, transaction types and type of actors involved are those elements which contributes to the success of a PES scheme. The study concluded that regional and local schemes, involving mainly private actors using mostly in-kind contributions and securing continued provisioning of the environmental service involved are the most successful (Grima et al, 2015). Another very successful example of PES implementation is Perrier Vittel case in France, a company that has entered into a long-term environment conservation agreement and sustainable farming practices with farmers and forest owners in the upstream and surrounding natural resources in the Rhin-Meuse basin, from which Perrier Vittel gets the water. The company pays these owners for reforestation of certain areas and for undertaking less harmful environmental practices (Perrot-Maitre and Davis, 2001 and Perrot-Maitre, 2006).

The use of PES has nevertheless been contested. For example, some PES projects in Bolivia met with opposition because some saw them as limiting future economic development and as a privatization of nature (Jack et al, 2008). Political interventions affect also PES implementation. A review of three PES schemes in Vietnam, concluded that insecure land tenure, high transaction costs and high opportunity costs can undermine the long-term benefits of PES programmes for local households and, hence, potentially threatening their livelihood viability (Xuan To et al, 2012).

3. Innovative Environmental Financing in Albania

3.1 Financial arrangements and instruments for environmental protection in Albania

In Albania, management practices and actions for environmental protection have been provided mainly through regulation. Anyhow, law enforcement has been very problematic especially in the field of environmental protection. In addition, very few market-based instruments are introduced. Currently environmental policy include environmental taxes, which are composed of indirect taxes (product taxes) for vehicles, fuel and plastic bags. Anyhow, there is much scepticism in relation to the taxation system, which is perceived as inefficient and in many cases corrupted. The following paragraphs summarize some arrangements for introducing innovative financing mechanisms for environmental protection, highlighting the problems and the potential of their implementation.

The Albanian government often uses concessionary contracts. The Law¹ defines a wide range of sectors for implementation of concession contracts, many of which related to environmental services. In fact, natural resources are a very important sector of concession contracts. The Law stipulates that the winner of a concession contract, among other things, is chosen based on the social, economic and environmental impact of the project. However, the public has generally been very suspicious about these types of contracts, especially regarding who benefits from the contracts, working conditions of employees, public procedure management, etc. Particularly strong debates affect contracts awarded in the mining sector. Arguing on the benefits of environmental protection through this instrument in Albania is a very ambitious topic. Even though the Law foresees the potential of such benefits, the reality behind the implementation of these contracts have usually witnessed disregard on environmental resources, and a suspicious contacting conditions.

Entry fees are applied to visitors in some protected areas in Albania. One example is their use in Dajti National Park, located near the capital². The value of the entry fees is very low and in many cases they are not even collected. The amount of the fee is based on sole judgment of the area management authorities and no studies in relation to the

¹ Law Nr. 125/2013, changed with Law Nr. 50, dated 18.07.2019 "For Concessions and Public-Private Partnership"

² The use of this instrument is addressed in Dajti Management Plan (2004)

willingness to pay of the population have been carried out. Based on these observations, the potential of this instrument for raising environmental funds in Albania is still very low (Pojani, 2014).

As the basic premise of Debt-for-Nature Swap contracts is that many developing countries, or countries with economies in transition, are unlikely to be able to fully repay their external debts, their use in Albania might be successful. A Swap contract offers three opportunities that are worth considering in the country: creditors are paid for the value of the debt at current market prices, developing countries reduce their external debt, and NGOs are able to generate more funding for environmental activities. The World Bank (WB) has been actively participating with programs in Albania over the last two decades, lending to projects that were within the WB's objectives and responded to Albania's loan repayment ability. Another important actor in Albania is the German Government, through programs developed either by the GIZ, or KfW (Kreditanstalt für Wiederaufbau), a development bank owned by the German Government and Länder. The Bank has also been active in advising the Albanian Government on water sector reforms³. The involvement of external creditors in the environmental sector in Albania is considerable, and this might create the premises for arranging a Swap contract. The success of the mechanism, however, depends on the availability of donor grants to buy the debt, and the willingness of credit and debtor states to enter into such agreements, rather than simply deciding on radical external debt restructuring.

Entry permits and development approvals are risky mechanisms in the case of Albania. Firstly, giving the development of an area to a single company creates the potential of a monopoly in the area, led by the main investor. Secondly, as Law enforcement is very weak, the fulfilment of obligations of the agreement from the investor is very questionable. Therefore, the feasibility of effective financing schemes through such mechanisms is unlikely. Apart from land use fees, which often face the problem of uncertainty of property rights, there are no genuine development agreements between public and private authorities.

Some private businesses, generally in the culinary field, perform their activity within protected areas. Such companies are usually focused in generating short-term profit, mostly disregarding environmental management. However, there are some agreements between the public and private sectors for activities performed within protected environmental areas. Thus, for example, the management plan of Dajti National Park states that tariffs for land use are applied to the cable car business for the entire period of use (49 years), in the amount of 50 lek per m². Similar tariffs should be applied to other businesses within the park (bars, restaurants, hotels), but property rights issues have hampered the implementation process. However, the plan does not provide for other concrete obligations of these businesses for the maintenance of the park, or for undertaking programs in cooperation with local and central authorities, or with research institutes. Such agreements could have been reached especially with the cable car company, which is a large company that has envisioned operating in the area for a long period of time. The only agreement for this purpose is the obligation of the company to pay a part of the ticket price to the national park administration.

Payment for environmental services is a mechanism that is worth considering in the case of Albania. Payment arrangements for environmental services involve two or more businesses, so they are generally carried out within the private sector on voluntary basis. The following sections will discuss the potential of implementation of this mechanism within a specific watershed area in Tirana county.

3.2 Case Study: A PES scheme for Bovilla Watershed

3.2.1 Data and method

There are many success stories in the implementation of PES in developing countries. The voluntary nature of the contract is the main reason of its wide use. The use of PES scheme in addition lowers the chances for corruption as both parties are equally interested in fulfilling the conditions of PES. The key steps to the successful introduction of a PES scheme are:

- identification of the stakeholders involved in the scheme, i.e. sellers and buyers of environmental services, and the intermediaries and facilitators that bring them together;
- cautious development of the design stage of the scheme; and
- evaluation of economic, social and environmental costs and benefits of the scheme.

Considering these insights, the next part of this paper will discuss the introduction of a PES scheme in a particular study area in Albania, i.e. Bovilla Watershed. The paper employs a case study strategy, selecting the area of interest

³ <https://www.kfw-entwicklungsbank.de/International-financing/KfW-Entwicklungsbank/>

based on its characteristics, including: the nature of the watershed, the defined relationship between water quality and quantity and the agricultural practices within the area, the availability of ecosystem providers and beneficiaries within the area, and the willingness of national policies to implement innovative financing mechanisms for the purposes of environmental protection. A desk research approach is embraced and the secondary data used to develop the case study have been selected from all available (published) resources developed about the study area, including hydrological studies, environmental studies, and government documents.

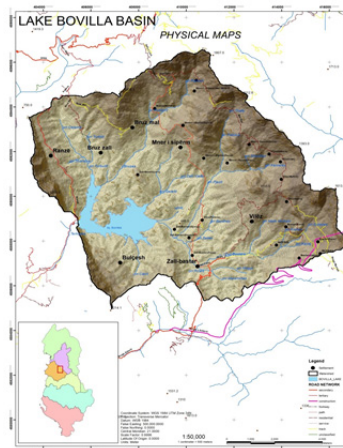
3.2.2 Context of the case study

A watershed is defined as any surface area from which runoff resulting from rainfall is collected and drained through a common point (Wani et al, 2009). Some of the main ecosystem services provided by a watershed include: improved water quality, carbon storage opportunities; increased resilience in the face of climate change threats, reduced risk for invasive species colonization (EPA, 2012). The Bovilla watershed (Figure 1) extends in northeast of Tirana and it is part of the Dajti National Park. The whole territory is well known for the freshwater springs, most of which are collected in Bovilla Reservoir. The Bovilla Reservoir is one of the largest hydro-technical constructions in Albania, built to deliver drinking water to the capital Tirana. The reservoir is situated 15 km far away from Tirana city with a maximum water filling capacity of 80 Million cubic meter. The potable water volume from Bovilla reservoir is estimated about 55 mln m³ per year and the rest might be used for irrigation. The total area of Bovilla reservoir is 4.6 km² and the maximal depth is 53 m (Diava Consulting, 2017).

The area has experienced massive anthropogenic interventions, mainly affecting the northern and eastern slopes. The human activity has caused strong erosion and a high concentration of suspended solids in water, feeding the Bovilla Reservoir. High erosion rates in the area have caused (Diava Consulting, 2017; Muça, 2018, Baloshi et al, 2018, Miho et al, 2009):

- the increase of the frequency and magnitude of flooding,
- the increase of sediment deposits and occurrence of saline soils in the lower reaches of the river basin;
- the degradation of water quality;
- the decrease of storage capacity;
- the decrease of water supply for population.

Figure 1: Location and physical map of the Bovilla watershed, Source: Diava Consulting (2017)



Bovilla reservoir main purpose is the provision of drinking water to the population. The company that is in charge of water production and water distribution in Tirana is the Water Supply and Sanitation Company Sha, which activity and profit depends on the quality and quantity of water resources of Bovilla watershed. Within the area a direct relationship between agricultural practices and water quality and quantity has been identified. Different hydrological studies of Bovilla

(Diava Consulting, 2017; Muça, 2018; Baloshi et al, 2018; Mersinllari et al, 2009; Miho et al, 2009), have identified the main risks of Bovilla watershed and possible interventions and changes in agricultural practices which could improve the erosion problem in the area. This makes the area a valid candidate for introducing a PES scheme. In such an arrangement, the ecosystem services providers and beneficiaries are easily identifiable: the farmers would be the services providers and the Water Supply and Sanitation Company would be the beneficiary of these services. Another indirect beneficiary is the Government, which is interested in guaranteeing water supply for the population. Tirana population and the business sector, which water supply depend on the availability and quality of Bovilla resources, are the last beneficiaries of the scheme.

4. Results

Farmers and Landowners are the sellers of a potential PES scheme in Bovilla Watershed. Their involvement in the scheme would require the change in current agricultural mix they produce. The costs categories of entering such scheme would include:

- Foregone agricultural production from the change in agricultural practices (opportunity costs);
- Cost of initiating a new type of agricultural production including labor and material costs;
- Other transaction costs affecting the agreement

They on the other hand would benefit from the scheme in several ways:

- PES payments received from the scheme should be in the amount that incentivise farmers to change their current agricultural values;
- A successful implementation of PES scheme would be highly advertised and possible increase of property values can be expected;
- Better quality and quantity of the water because of the reformed agricultural practices would raise attractiveness of the area, increasing this way tourism opportunities, which would led to more employment opportunities for local communities;
- All the above-mentioned benefits would lead to the reduction of poverty and better living standards (non-monetary benefits)

The buyer of in the scheme would be represented by the Water Supply and Sanitation Company. The costs of the PES scheme for the company would include the PES payments paid for the scheme and other accompanying transaction costs. The benefits associated with the PES agreement for the company include:

- Drinking water treatment and infrastructure costs will be reduced since the quality of the water be ensured by the service providers, i.e. farmers changing their agricultural practices;
- The company will have better public image, which would ultimately have a positive effect on the good name of the company(non-monetary benefit).

The rationale behind the agreement on the use of PES is that the benefits should outweigh the cost for both the seller and the buyer in the contract. The voluntary nature of the contract is ensured exactly because of this. The design phase which follows would include the negotiation phase between the stakeholders and agreement on the final terms of the contract. The buyer in this case will have to assess its financial position and potential to cover the PES payments. He could engage in finding new ways of financing the PES payments. He might plan to finance the PES payment involving the indirect beneficiaries identified before. For example, he might request co-financing from the Government or might transfer part of the PES fee to the water fees paid by the households and businesses. Monitoring and reviews of PES activities should be performed periodically and that would be the role of the intermediary. Finally, new opportunities might arise from the PES scheme which should be identified in the monitoring and review phase.

5. Conclusions and Recommendations

Options for protecting the environment are numerous, and often depend on the type of ecosystem service that is under the attention of a particular policy or program. The key is to identify the tool or policy alternatives that will lead the market towards more effective allocation of resources. New innovative financial instruments are being used around the world, which have proven to be more sustainable than traditional regulatory framework and fiscal tools. In Albania, the main instruments used for financing environmental protection are national taxes, which use is justified through the "polluter pays" principle. A PES scheme, which rely on the "beneficiary pays" principle, is a viable mechanism for environmental protection, which implementation would be a big step towards the achieving sustainable financing of environmental

protection in Albania. This paper presented a possible implementation of such scheme using a case study of Bovilla Watershed. Several factors made Bovilla watershed a valid candidate for PES, including: the characteristics of the watershed, the direct relationship between agricultural practices and water quality and quantity, clear identifications of ecosystem services providers and beneficiaries, and the willingness of the third parties to facilitate a PES implementation. This paper identified possible actors in a potential PES scheme in Bovilla and offered a preliminary view of a PES design. In order to complete PES design in Bovilla Watershed, the following steps are to be taken:

- Consultation with landowners and local communities living in the area about their willingness to take part in the scheme;
- Assessment of the willingness to take part in the PES scheme of the Water Supply Company, including its financial capability;
- Analysis of change in agricultural practices needed for achieving ecosystem services promised in a potential PES scheme, including the assessment of the extent of ecosystem services created with the change of agricultural practices;
- Consultation and finalization on the design of the PES scheme, by defining parties and intermediaries in the transaction;
- Discussion on the possible long term financing mechanisms of the PES scheme, including budgetary reallocations, increase of water fees, donor and international organizations involvement, or alternative funding.

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