

Key-Note: Financial mechanism for natural resources management - learning from FAO experience.

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Intro:

Ecosystems and their specific functions and services are increasingly valued by society at large. The increasing popularity of payment for environmental services reflects this. PES have the specific aim to mobilize financial resources for the conservation of, or conversion to, ecosystems practices that offer direct and specific benefits to specific beneficiaries, or society at large. As such they represent a new trend to capitalize on specific beneficial services, rather than their general intrinsic values as traditionally at the forefront of conservation. In that sense, one could say, PES is the marketing of nature.

Broadly speaking four different marketing strategies, or mechanisms, can be distinguished, of which only two strictly qualify as PES.

- 1) local private/public arrangements around specific services;
- 2) trade in green/pollution credits, such as nitrate, salt or carbon sequestration, at local, national or global level;
- 3) national public arrangements with (cross) sectoral subsidies;
- 4) emerging market opportunities and trends for green products such as bio-fuels and green energy.

The first one is the most PES like of the mechanisms, which is highlighted in the paper we contributed. It concerns direct arrangements between service providers and users at a local scale – for example around catchment conservation between upstream providers and downstream users, usually utilities and industries with direct interest in natural resources. The financial principle applied is usually the inverse of polluter pays, where commercial users are found willing to pay for conversion to, or conservation of, environmental friendly practices.

The trade in credits may also be considered a PES as it provides a direct compensation for a good practice, but in this case provided by polluters that are not yet able or willing to meet their imposed environmental targets. As indicated in the background paper provided by the organizers, this mechanism depends on the setting of stringent and specific caps, and strong capacity for regulation and compliance. Which usually result from a tradition in command and control attempts. The price levels of trade in credits are then primarily an outcome of the level of supply vs demand on the credit-exchange.

National public arrangements are less straightforward. In cases such as the eco-fuel tax as applied in Costa Rica, a PES mechanism can be discerned based on the polluter pays principle, as long as the tax revenues are indeed utilized to compensate for the conservation of, or conversion to, ecosystems practices. In cases of general incentives or subsidies for good practices, any direct relation between user and provider is absent. In such cases one can thus not truly speak of PES. Moreover, that which will be valued to receive financial incentives will be subjected to the general values and political priorities of the day.

The emerging markets for “green” products, such as bio-fuels and green electricity, are not related to a scheme of purposely made financial arrangements, but a reflection of new market

and consumer trends. In terms of outcomes, however, they may be likened to PES like mechanisms, as they capitalize on the willingness of consumers to pay a premium for environmental friendly products and practices.

Which of these four types of financial mechanisms are the most effective still remains to be seen, and is another discussion. Suffice to say for now, that all four mechanisms are available options that are increasingly being tried in different settings and sectors. Here, as in our paper, I will mainly limit myself to the first type of direct payment mechanism. The attractiveness of which lies primarily in its capacity to mobilize additional sources of finance through the establishment of direct provider-user relations at the local level, which in principle should be self-sustaining.

Direct Payment for Environmental Services in Watershed Management

A) Valuing Ecosystems services:

Within the realm of watershed management PES are being established around a set of generally acknowledged water related ecosystem services. As a rule these are related to the positive impact of specific types of land-cover or use on the hydrological state of the watershed – with specific emphasis on forests. Potential beneficial services emphasised are then:

- improvement of water flow, especially stabilization and increase of dry season flows;
- soil conservation and minimization of sedimentation;
- reduction of agricultural source pollution;
- improvement of microbial water quality.

Rather than offering these services on an individual and specific manner, we see in practice that these services tend to be lumped and “marketed” together as general hydrological services.

Within watershed management the basic premise of PES is the upstream-downstream hydrological dependency. Where upstream ecosystem service providers can provide hydrological benefits to downstream water users. Not surprising then, we find watershed PES emerging where the following general conditions are met:

- a perceived increasing pressure and (threatening) deterioration of the hydrological status of the watershed – generally manifested in increased water scarcity and conflicts or deterioration of water quality;
- there is an established commercial interest among downstream water users in water dependent activities – in general water supply and hydro-electric utilities (private or public) and food and beverage industry.

Specific arrangements are then negotiated and agreed between upstream service providers and downstream users, as part of the establishment of the PES fund, or mechanism. Wherein the principle issue is to determine what type of activities or land uses will constitute hydrological or ecosystem services that will be eligible to receive compensation, and how much financial resources the users are willing to contribute to the fund.

In the survey we have made for Latin America, we have found that any of the precise or total economic valuation methods, as listed in the background paper, are rarely used or determinant in this process of negotiating the terms of the agreement. There are two principal reasons for this:

- Many of the economic valuation tools are laborious and expensive to execute, as they often depend on monitoring and survey data that are not readily available in most cases. Moreover, they are still prone to inaccuracies and assumptions.
- There is hardly ever a direct relation between economic value and the eventual pricing of the ecosystem service(s).

Instead, an important economic reasoning for users to participate in a PES agreement is the expected aversion of expenditure that an otherwise diminished or degraded water resource base would bring to their water dependent business. In addition non-economic reasons may play an equally important part, such as the prospect of the PES to provide a mechanism for conflict resolution between up- and downstream water users, or additional benefits users may acquire from a “green” or “socially engaged” corporate image.

Likewise for the service providers, for whom the actual economic benefits of providing the environmental service may be lower than other opportunity costs, other factors may be important drivers to participate, such as: agreeing voluntarily now, rather than being forced through regulation later; latent threats of losing out their productive land to protected areas; or seeing PES as an informal recognition of their land titles.

The lack of an effective monitoring and evaluation capacity, as we found in the majority of cases reviewed, that enables the quantification and the linkage of the ecosystem services (in terms of hydrological impact) to the actual type of land-use or intervention, also prevents any value based price setting and compensation mechanism. Instead, what we see emerging, are crude estimates and price settings that are based on:

- the size of the financial resources users are willing and able to pay;
- the size of service providers and the relative value of the services they can provide – in general forests are deemed more beneficial than agricultural land, and thus fetch higher direct compensation.

This lack of a monitoring and evaluation capacity at the same time also constitutes one of the main challenges for the implementation of PES. Although in most cases it is too early to determine whether the PES are indeed effective in delivering their services through a positive impact on the hydrology, these are bound to become concerns for in particular the users, who form the financial contributors. While at the same time, the burden such M&E systems would represent in terms of higher transaction costs, refrains at present most PES from developing them in the first place.

B) Legal and contractual aspects.

One of the core issues is the organization of the PES-fund, which will take the institutional responsibility to manage the fund, in terms of the user contributions and the compensation payments and their contractual arrangements. The presence of a PES specific legislation is generally not a prerequisite for PES-funds to register or operate effectively. But rather, we found that they could adequately register and operate under existing legislation. That is, as long as a fund can be registered under corporate status and can operate under the general judicial system as a contracting party. In some cases we have found that PES schemes have been brought under public agencies, which coincided with higher administration and transaction costs, and thus less effective compensation mechanisms. In general there is thus a clear preference to set-up the PES fund as an autonomous legal entity, with representation or stewardship of both service providers and service users.

Contractual arrangements with users vary largely in both height and contract duration, and form part of the specific negotiation and agreement outcomes in the specific context. Two general types of contracts can be discerned however: i) contribution of a fixed percentage of revenue of the users (usually applied by participating utilities), and ii) contribution of a fixed annual contribution (seemingly favoured by industry). In general the arrangements seek to establish mid to long term agreements, i.e. from 20 up to 80 years, in order to secure the viability and sustainability of PES scheme through commitment of the users. Especially in those cases where the conversion to environmental practices plays an important role, a mid-term perspective is required to allow the benefits of the ecosystem services to actually take effect.

The contractual arrangements with the service providers can take two very different forms. A common and most direct arrangement is to provide a specified financial compensation for a specified type of land-use (\$/ha/year). The contractual arrangement is then usually made for a short to mid-term period and conditional to the compliance of the provider to the terms (i.e. type of land use) of the agreement. Another general form encountered, is that the PES is set-up as a trust or investment/development fund for ecosystem services. Contrary to the former, these types of PES-funds do not enter into direct compensation agreements. Instead, the financial resources may be used to directly purchase land in the watershed, or invest in the adoption of environmental friendlier technologies and techniques.

The first type of direct compensation agreements requires the PES scheme to make transactions in the payment of compensations, as well as in monitoring the compliance. These can constitute substantial transaction costs in relation to the total available compensation funds. Generally these tasks are outsourced to an intermediary. When in place and effective, existing institutions as water user associations or other regulation of management institutions active in the area of the service providers may take up this role. We have also encountered examples, however, where these tasks are executed by the private sector – either on the basis of a fixed fee or the retention of percentage of the compensations paid.

Socio-economic impact:

Through our mandate we have a particular keen interest in the positive impact PES might have on poverty reduction, and their capacity to provide additional opportunities and means for the poor and vulnerable to engage in sustainable development. In this light, PES have been presented as potential vehicles for transferring financial development resources from wealthier urban centres downstream to their poorer rural hinterlands upstream.

Although promising in theory, the watershed PES in Latin America reviewed are wrought with some specific challenges in this regard. First, having to deal with numerous and dispersed poor smallholders tends to increase the transaction costs for compensation and compliance enormously. Not infrequently you therefore find in practice threshold values thrown-up by PES to participate as provider that lie well above those poor smallholders can meet. Secondly, the often informal rather than formal land and water resources entitlements of the poor may seriously complicate the drawing up of contractual arrangements. Thirdly, the inclusion of numerous smallholders puts extra demands on the establishment of an effective operational institution that can act as an intermediary between the individual smallholders and the PES. A positive impact of PES on poverty reduction comes therefore by no means naturally or easily, but will have to be an explicit added objective from the onset, so that the capacity of the PES to engage with them can be built up purposely from the beginning. In this

regard, my colleagues from the economic and social department are finding positive prospects in other small scale non-water related PES, such as those related to wildlife-conservation, eco-tourism and sustainable livestock keeping.

Concluding:

Although we may have been somewhat cautious and reserved with regard to the final impact and sustainability of water related PES in watershed management it is still early days to come to exhaustive conclusions. On the one hand it is clear that it cannot become a new panacea for water management and thereby replace other initiatives such as IWRM. On the other hand its already proven capacity to mobilize local financial resources through a direct provider-user relationship and to put ecosystems services at a centre stage of the management of natural resources, are enormous achievements and assets that are promising for its future development. At FAO, we therefore certainly remain committed to further dedicate our efforts to further facilitate the development and implementation of PES. In particular two challenges we intend to elaborate upon in our future work are: i) the monitoring of water related ecosystems and their valuing in economic, social and environmental terms; ii) how can PES also be made beneficial for the poor in a viable and sustainable manner.