KM 4 CTI Learning Notes
2011-3
ADB Regional Technical Assistance (RETA) 7307:
Regional Cooperation on Knowledge Management, Policy, and Institutional Support to the Coral Triangle Initiative

PES 101. Is your site "PES-able"?

Lessons from the Philippines

June 2011
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Introduction

The ADB Knowledge Management Project organized a workshop entitled, "Sustainable Financing Workshop: Costing the NPOA," for the Philippine National CTI Coordination Committee (NCC) and marine protected area (MPA) site managers on 31 January–1 February 2011. Costing the National Plan of Action (NPOA) implementation necessarily includes the identification of current funding levels and sources, determining funding gaps, and looking at alternative funding options including payments for ecosystem services (PES).

Several MPA sites were represented at the meeting consisting of those that are managed by the following:

- the national government through the Department of Environment and Natural Resources (DENR) as mandated by the National Integrated Protected Area System (NIPAS) Law (Turtle Islands Wildlife Sanctuary and Tubbataha National Marine Park);
- an aggrupation of LGUs, such as (a) Libertad, Pandan, Sebaste, Culasi, collectively known as LIPASECU, all of Antique Province, which manages at least 16 marine sanctuaries, and (b) the coastal municipalities of Batangas and Mindoro that are jointly managing a network of MPAs within the Verde Island Passage; and
- local government units (LGUs) (Bani, Pangasinan and Tiwi, Albay).

Three sites were ultimately selected to pilot-test and introduce knowledge regarding PES:

- Bangrin mangrove MPA in Bani, Pangasinan;
- the Verde island passage, specifically the *dulong* fishery; and
- Turtle Islands Wildlife Sanctuary.

The concept of PES was introduced at the Workshop as an incentive that allows appropriate compensation of a community or a group of people to maintain a certain level or quality of ecosystem service. The example provided was that of Bakun, Benguet Province in northern Philippines, where upland farmers were compensated for not encroaching on forest lands and continuing sustainable land management practices such as riprapping and terracing of forest slopes.[2]

However, the enticement of clearing more forest land to give way to vegetable farming sent some alarm signals to downstream users of watershed services. These users are two hydroelectric plants which were being affected by increasing siltation, erosion, and decreasing water yield and regularity of water flow. In this case, there is an obvious financial incentive to compensate the upland farmers with annual repairs

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[2] Interested readers may read more about this PES experience at www.worldagroforestrycentre.org or search the web for RUPES, which stands for "Rewarding Upland Poor for Environmental Services."

Implementing the steps towards finalizing a PES arrangement takes time due to the research, consultations, review of legal and policy framework, negotiations with buyers and sellers, and willingness to pay surveys that are required, at the very least.

and cleaning of turbines reaching US$1 million.[3] The compensation of low-income upland farmers, who do not convert their forests into other uses, is one mechanism by which all or part of these environmental costs are avoided.

This Learning Note discusses PES concepts including a first filter criterion to assess PES possibilities, presents the results of group discussions, and concludes by critiquing the results of the group work.

Why PES?

The attraction of PES stems from possibilities to address the twin objectives of conservation and financing. In the example provided above, the upland farmers continue to practice sustainable land management practices and maintain forest cover while earning extra income, both cash and non-cash, from the payments made by the hydroelectric firms.

The important learning from this example is the convergence of interests among the buyers and the sellers of ecosystem services and the facts that:

- there is an opportunity for an ecosystem service (flow of water) to be maintained;
- the demand for the service is known and quantifiable, with users coordinated; and
- there are proven relationships between land use and water yield and sedimentation that link the water flow and sediment yields to land use choices in the catchment.

In the marine environment, PES-like agreements have existed in some form, but are generally not as well-defined as in upland ecosystems. The USAID Primer, "Payments for Ecosystem Services: Getting Started in Marine and Coastal Ecosystems," lists several PES-like applications in the marine sector, which are categorized as being (i) managed by the public sector; (ii) self-organized; (iii) regulation-driven open trading such as tradable quotas; and (iv) MPAs, which can assume either a public or private character.

Two examples of sustainably managed MPAs are provided including the Chumbe Island Coral Park in Zanzibar, Tanzania, which is privately managed by the Chumbe Island Coral Park Ltd, and the Bonaire Marine Park in the Netherlands Antilles, which is wholly maintained and financed through user fees. In the latter, even long-term activities, such as research and monitoring, are financed through user fee systems.[4]

The literature on PES and valuation has, in fact, considered user fees and other forms of tourism contributions for resource uses, such as diving and snorkeling, as PES examples. The Bunaken National Marine Park (BNMP) in North Sulawesi, Indonesia can also qualify as a PES-like mechanism, where the more than 20,000 foreign and domestic visitors pay an entrance fee amounting to US$7.50 and US$2.00, respectively, to strengthen patrol efforts, village conservation programs, mangrove and reef rehabilitation, and collection and disposition of waste.

Previous to this, BNMP had no collection systems in place despite a legal provision that requires entrance fees. With payments being deposited to the national

[3] PhP 40 million at a conversion rate of US$1 = PhP40.
[4] Read more about the Bonaire Marine Park at http://www.bmp.org.

treasury, the tourists were not assured that payments would be used for the maintenance of the park.

Upon instigation of a policy that allowed retention of fees for site-level utilization, collections became more robust. [5] Oftentimes, the fees are arbitrary and nominal, but there are some fee schedules derived from willingness to pay studies that allow the respondent to select a conservation agenda, mode of payment, fund manager, and the fees or amounts charged.

User or entry fees and visitor charges are examples of PES; however, they also highlight the difference between sustainable financing and PES. Not all sustainable financing modalities can be considered as PES; in fact, PES is just one of many options for sustainable financing.[5]

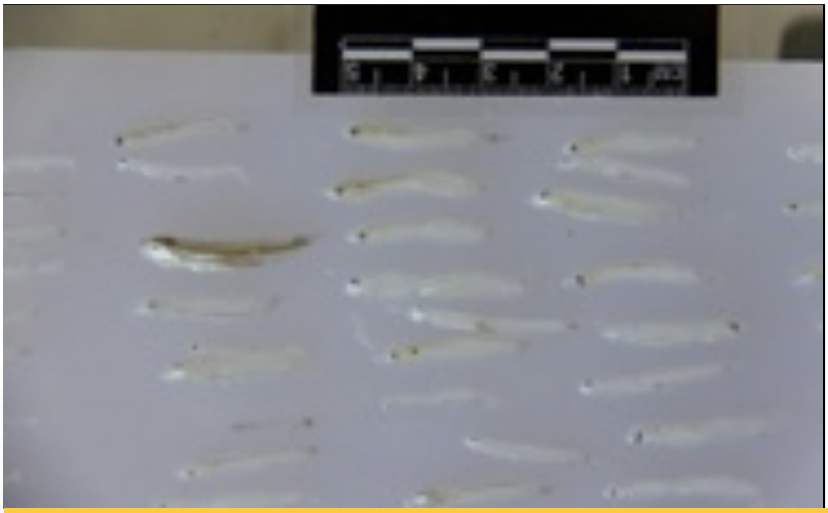
One criterion that can be used to evaluate a good PES deal is "whether the ecosystem service benefit has occurred due to the payment arrangement, where it might not have been possible."[6]

What is probably amiss in some of the examples for the marine PES examples is the conditionality criterion, i.e., where the fees are paid to ensure the actual improvement or maintenance of ecosystem service and the agreement itself is embedded with mechanisms to monitor and verify whether such benefit is occurring.

This clothes PES with a business-like character where the payment is made in exchange for something measurable. User fees are imposed for particular resource uses, are collected by an authority designated by local ordinance or national legislation, and are oftentimes lumped in a general fund with no guarantee that the payments are going to redound to the improvement of resource conditions.

The conditionality criterion ensures that the payments actually result in improved ecosystem services, and for that to happen, several steps need to be followed. PES Learning Note #1 outlined the steps necessary for conditionality to be achieved, although it was noted that it is rare for all conditions to be met.[7]

Implementing the steps towards finalizing a PES arrangement takes time due to the research, consultations, review of legal and policy framework, negotiations with buyers and sellers, and willingness to pay surveys that are required, at the very least. The exercise piloted by the RETA during this workshop sought to introduce the concept of PES as an option to contribute to sustainable financing initiatives and focused on the very first step which is essential to determining the feasibility of a PES: identifying the ecosystem service, sellers and buyers.



The average size of dulong is 30mm
(Photo credit: Rollan Geronimo, Conservation International)

[5] The *WWF Manual on Conservation Financing* is a sourcebook that lists more than 20 options for sustainable financing, one of which is PES. Citation : WWF. 2009. Guide to Conservation Finance. Sustainable Financing for the Planet. WWF, Washington, DC.

[6] UNDP, GEF, The Katoomba Group, Forest Trends, Marine Ecosystem Services Program, and the *Fondo Mexicano para la Conservacion de la Naturaleza*, A.C. 2010. *Payments for Ecosystem Services: Getting Started in Marine and Coastal Ecosystems. A Primer.*

[7] Other resources on this issue can be found through the following: (i) Virginia Tech. 2007. *Sustainable Agriculture and Natural Resources Management*, CRSP Office of International Research, Education, and Development. Virginia Tech, USA. (ii) USAID. 2007. *Lessons and Best Practices for Pro-Poor Payments for Ecosystem Services: USAID PES Sourcebook*; (iv) IUCN. 2008. *Designing Payments for Ecosystem Services.* Report from the East Asian Regional Workshop, Hanoi, Vietnam, April 2008; (v) Forest Trends, The Katoomba Group, and UNEP. 2008. *Payments for Ecosystem Services. Getting Started: A Primer.*

Characteristics of PES Sites

Bangrin MPA

The Bangrin MPA is located in the town of Bani in the province of Pangasinan. It covers 42 hectares (ha) consisting of 35 ha of mangroves and 5 ha of fish sanctuary, and is now home to 57 species of birds,including the endangered Philippine duck. Large-scale conversion of mangroves to fishponds occurred in the area during the 1970s and 1980s and almost decimated the forests.

Through efforts of the municipality of Bani and with support from national government, i.e., DENR through the community-based forest management agreement (CBFMA) and much later through the Fisheries Resource Management Project (FRMP) of the Bureau of Fisheries and Aquatic Resources (BFAR), the mangroves of Bani are now restored and protected through the establishment of the MPA.

As such, it is now gaining popularity as a preferred site for bird watching. However, despite its protected status, some illegal activities still persist in the area, including continued harvesting of wood for charcoal and poles and some illegal fishing activities.

Verde Island Passage's Dulong Fishery

"Dulong" is a collective term used for a group of small pelagic fish which attain maturity at very small sizes. The dulong fishery occurs mostly in the coast of San Juan, Batangas. Because of the peculiar characteristic of dulong, the law allows exploitation of dulong through the use of seines and push nets with small mesh-size nets. However, recent studies have shown that in some parts of the Verde Island Passage, dulong fishers actually catch mostly postlarvae and juvenile stages of *Engraulidae* (dilis) and *Clupeidae* (tamban).[7]

Turtle Islands Wildlife Sanctuary

The Turtle Islands Wildlife Sanctuary is regarded as the only major nesting ground of the green turtle (Chelonia mydas) in the whole ASEAN region, with more than 1,000 nesters annually. Turtle Islands is part of the Sulu Archipelago, which consists of six islands, namely: Boan, Lihiman,

Getting ready to hatch, a turtle digs its nest in the Turtle Islands. (Photo credit: A.G. Saño)

Langaan, Great Bakkungan, Taganak, and Baguan. The islands have an aggregate land area of 308 ha, with the smallest island (Langaan) measuring about 7 ha, and the largest (Taganak Island), about 116 ha. Baguan remains uninhabited as it was declared a marine turtle sanctuary in 1982.

On 31 May 1996, a Memorandum of Agreement (MOA) between the Republic of the Philippines and the Government of Malaysia was signed declaring Turtle Islands as Turtle Islands Heritage Protected Area (TIHPA) and aiming for the conservation and protection of the area. It was later proclaimed as a Wildlife Sanctuary under Proclamation No. 171 on 26 August 1999 and identified as extremely high (EH) for biodiversity conservation.

Aside from overharvesting and poaching of turtle eggs even within designated sanctuaries, the area is under threat from destructive fishing activities, such as trawling in nearshore waters and dynamite fishing, which is still rampant although outlawed.

Testing for PES Applications

For the three sites selected as possible test cases for PES under the ADB CTI Knowledge Management Project, small breakout groups were organized during the NPOA Costing Workshop to respond to guide questions for first filter analysis of PES applications (Box 1). All three groups concluded that PES is applicable (see Appendix 1).

In the Verde Island Passage, the dulong fishery itself is perceived to threaten spawning grounds for commercially important pelagic species such as sardines and anchovies. Accordingly, the potential buyers of the ecosystem service are the commercial and municipal fishers who are perceived to be deprived of adult pelagic fish due to the prevalence of the dulong fishery, while the sellers are the dulong fishers themselves.

This implies that, for example, dulong fishers will be paid an amount to dissuade them from catching dulong at certain times of the year, with the compensation being more or less equal to the foregone revenues from the dulong fishery.

Box 1: Guide Questions for First Filter Analysis of PES

- ☑ Are there ecosystem services threatened by current uses of the resources?
- ☑ What are these activities?
- ☑ Who are responsible for these activities which cause diminution in ecosystem services?
- ☑ Who are negatively affected by these activities?
- ☑ Is it possible to measure the current state of flow of ecosystem services?
- ☑ Is it possible to value the ecosystem services?

The coastal protection feature of mangroves in the Bangrin Mangrove MPA is threatened by cutting/ harvesting of mangroves for fuel and poles, albeit already outlawed by national law. Fishers and surrounding communities are considered to be both potential buyers and sellers alike, i.e., the ones who destroy the mangroves are also the ones who will lose the benefits.

Ecosystem services provided by coral reefs and seagrasses in the Turtle Islands Wildlife Sanctuary are under threat from various forms of resource exploitation including collection of turtle eggs, commercial fishing using active gears such as trawls, dynamite fishing, and collection of sharks' fin. Turtle egg collectors are potential sellers, and the entire chain of custody ending with the local government unit (LGU), which issues collection permits. Commercial fishers and sharks' fin collectors are also sellers of ecosystem services in the Turtle Islands Wildlife Sanctuary.

Those who must pay or compensate the other group include traditional fishers and the local community due to " ecological imbalance" and loss of opportunities for ecotourism. Turtle egg collectors

What did we learn?

In the case of the Verde Island Passage dulong fishery, the ecosystem service that is threatened is not actually the spawning ground for the dulong, but the larger pelagic fishery. The dulong fishery per se does not impact on the spawning ground, although the existence of the fishery itself is perceived as contributing to growth overfishing (if it is proven that the dulong are in fact juveniles of anchovies or sardines).

Thus, the ecosystem service which could be traded is "sustained recruitment into the pelagic fishery." Within this context, the potential sellers would be the dulong fishers, while the potential buyers would be the municipal and commercial fishers targeting small pelagics, as rightly pointed out in the group report.

In all cases, the functional relationship between resource uses and impacts on ecosystem services must be established as a prerequisite for a PES.

Before progressing further, it must be emphasized that taxonomic research on dulong is ongoing[8] and must be finalized with certainty in order to frame the ecosystem service properly. This shows that PES needs a very solid foundation and understanding of the pressure-state-response for resource use activities and its impact on ecosystem services.

For example, would closed seasons suffice to ensure that recruitment to the sardine/anchovy fishery occurs? Likewise, if dulong fishers are properly compensated for months when they are not allowed to fish, will they not shift to other fisheries, thus causing more fishing pressure on the resource? In order to make the case for commercial fishers to agree to providing incentives to the dulong fishers, there must also be proof that the cessation or regulation of the dulong fishery will increase the biomass of anchovies and sardines.

This case also shows that the distinction between buyers and sellers of the ecosystem service is blurred, i.e., dulong fishers may also be commercial fishers during some months of the year. Such is the case in tropical multispecies fisheries where fishers are wont to shift from one gear to another and target several species to adjust to the seasons.

In the Bangrin Mangrove MPA, the ecosystem service identified is valid (i.e., coastal protection), and the threats imposed by the continued cutting of mangrove trees and siting of fish cages and pens are real. However, mangrove cutting has long been outlawed under national laws and presumably under the ordinance establishing the MPA. PES is not the solution in cases where the law is thwarted.

Without considering the legal complexities of mangrove cutting, the appropriate resource management tool resulting in better coastal protection must be studied, benchmarked, and measured. What kind of

[8] Under the Coral Triangle Support Partnership (CTSP)

activity would ensure or maintain coastal protection afforded by the mangroves? Who would provide this and who would buy this service?

The issue of whether the sellers are also the buyers also emerges. While fishing communities should be protectors of the mangroves, illegal activities are also attributed to them. A clear distinction between buyers and sellers should be made for a transaction to occur. Otherwise, if the buyer and the seller are one and the same, then theoretically, there should be mechanisms for self-correction. What may be more appropriate is an enhanced awareness of the ecosystem service and a more aggressive enforcement of the law among the coastal communities.

In all cases, the functional relationship between resource uses and impacts on ecosystem services must be established as a prerequisite for a PES. Studies must illustrate how turtle egg collection (beyond allowable harvest rates) results in coral reef or seagrass degradation and by what extent.

The situation in the Turtle Islands Wildlife Sanctuary is complicated by the varying uses of fisheries and nearshore resources and the illegal nature of some activities (e.g., trawling in municipal waters, dynamite fishing, sharks' fin collection). Thus, it is difficult to isolate a particular ecosystem service which buyers may want to pay for. Several categories of ecosystem services include (i) stable marine turtle populations, (ii) enhanced fish populations and biodiversity from coral reefs, and (iii) beauty of coral reefs. Tourists and fishers may be identified as the ecosystem service buyers.

By virtue of its location and the possibility of catering to a wider range of beneficiaries including tourists, for example, transnational PES may be appropriate. In such cases, the enabling conditions for transnational PES must be strengthened and having a trusted, disinterested, and objective broker would be of utmost benefit. However, before any of this could happen, it is essential to have a clear delineation of buyers and sellers, determining the service to be traded, and resolution of illegal activities.

When is PES appropriate?

The exercise allowed the MPA site managers to apply coarse criteria to assess the applicability PES in their respective areas. The results of the breakout group discussions indicate that there is a common tendency to want to apply PES perhaps due to its allure as a sustainable financing tool and its attractiveness to compensate groups/communities who are tasked with coastal management. Several things need to be stressed, though.

Bamboo walkway at the Bangrin MPA, Bangrin, Pangasinan
(Photo credit: Ms. Gloria Gloria)

[9] Spergel, B. and M. Moye. 2004. *Financing Marine Conservation: A Menu of Options*. WWF Center for Conservation Finance. Washington, D.C., USA.

First, PES is not the only modality for sustainable financing. The WWF Manual on Conservation Financing[9] lists at least 30 modalities ranging from government funding to donations, fishery and tourism revenues, and shares from energy and mining, most of which have been tested in varying circumstances.

The choice of financing modality will ultimately depend on the (i) uses of the funds; (ii) mechanism for fund generation, management, and disbursement; (iii) transaction costs of implementing the program; and (iv) governance context. Second, PES does not promise to solve environmental problems. The applicability of PES is, therefore, narrow in scope, e.g., those in which ecosystems are mismanaged because many of their benefits are externalities from the perspective of ecosystem managers (Pagiola and Platais, 2007).[10]

In all the examples analyzed, the threats to provision of ecosystem services exist: habitat destruction, overfishing, and loss of biodiversity. A manager would then have to ask the question, "Why is this happening?" If the problems are caused by lack of awareness, lack of property rights, or lack of enforcement, then PES is not the solution.

If, on the other hand, there is evidence that ecosystem benefits are accruing to other parties outside of the resource users, and that resource users may be encouraged to continue providing this service in exchange for some compensation, then a PES transaction may be possible.

An example is that of a fisherfolk group that has been awarded a fishpond concession in a mangrove area but has opted not to convert the mangroves to fishponds, and instead maintains the mangrove forests to provide some positive externalities to coastal residents (non-fisherfolk) through protection from waves, catchment for siltation, etc. The opportunity cost of non-conversion represents an opportunity for coastal residents to compensate the fisherfolk group.

After determining the applicability of PES, the next steps include an analysis of the institutional and technical framework for PES applications, formulation of the PES agreement, and preparation and implementation of a PES plan.❹

Note: The author wishes to thank Mr. Egide Cantin and Mr. Lindsay Saunders for their comments on earlier versions of this paper.

[10] Pagiola, S. and G. Platais. 2007. *Payments for Environmental Services: From Theory to Practice*. World Bank, Washington.

APPENDIX 1

Results of Group Discussion on the Applicability of PES in Three Selected Sites

PES Parameters	Verde Island Passage	Bangrid MPA, Bani, Pangasinan	Turtle Islands Wildlife Sanctuary
Current use	Fishery for *dulong*	Illegal practices such as cutting for firewood, siting of fish cages and pens	Marine turtle egg collection; commercial fishing within the protected area, i.e., trawling; shark collection (for shark's fin); dynamite fishing
Ecosystem services threatened	Spawning sites	Coastal protection	• Coral reefs for fisheries, livelihood, and ecotourism • Seagrass
Who are responsible (seller)?	*Dulong* fishers	Fishers, other community members, people from adjacent communities	For marine turtle egg collection: • LGU for issuing permits to collect; • Turtle egg collectors, buyers/traders, consumers; • Law enforcers (neglect of duty) • Commercial fishing within the protected area (*tampasak*, trawl); • Commercial fishers encroaching in the protected area; • Law enforcers (for neglect of functions) • Shark collection (for shark's fin) – local fishermen, buyers/ traders, consumers; • Law enforcers (for neglect of duty)
Who are negatively affected (buyer)?	Commercial and municipal fishers	Fishers and fishing households/ communities	• Local traditional fishers deprived of greater harvest due to commercial fishers who have motorized bancas and other efficient gears • Local community affected by ecological imbalance; • Local community due to opportunity cost associated with ecotourism
Measurement of current state of flow of ecosystem services	Yes	Yes	Yes
Valuation of ecosystem service	Valuation of *tamban* (sardine) fishery	Yes	Yes
If not PES, then what?	• Government budget revenues • Investors/taxpayers • Taxes from commercial fishers • Tradable fishing quotas • Service taxes and levies	• Government budget revenues • Investors/taxpayers • Entry fees • Recreational fishing fees • Fines	• Government budget revenues (from DENR) • Bilateral and multilateral donors • NGOs