



Payment for Ecosystem Services, Sibuyan Island, Philippines

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Short title: Payment for Ecosystem Services, Sibuyan Island, Philippines

Key Message: By providing adequate evaluation and economic incentives, the foundation can be laid for the long-term management and sustainable use of natural resources

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What was the problem?

Sibuyan Island is the second largest island of the Province of Romblon located in the center of the Philippine Archipelago. It is home to around 330 indigenous Sibuyan Mangyan families dependent on swidden agriculture (temporary plots produced by cutting and burning off vegetative cover), hunting, and gathering of forest products. Over time, intact forests have been cleared to make way for new swidden farms, while the need for cash income has led some to resort to cutting and hauling timber for lowland traders. Since 1976, the 5,500 hectare forest has shrunk by 16%. With forest loss, two of the vital watersheds, and their services – Cantigas and Palangcalan - could potentially disappear. The San Fernando town depends on these two watersheds for drinking, irrigation, ecotourism, riparian fishing and to supply the needs of a mini hydro electric plant.

A study by WWF estimated that if the current trend in population growth and livelihood activities continues, it would have serious consequences to the water quality. The total erosion rate would increase by 28 percent in 25 years from the present rate of 293,267 tons per year for both watersheds (Evangelista 2007). The water quality from the Cantingas River and Panangcalan River would be less suitable for drinking and irrigation canals will become more silted affecting the residents and the downstream farmers.

What was done to solve it? How were ecosystem services considered?

Water supply and reduced sedimentation were considered as the main ecosystem services for better drinking water and irrigation. An economic evaluation conducted showed that the degradation would mean higher costs of \$152 per year to each of the 696 domestic consumer households because of water treatment or by buying bottled water and \$138 annually for each of the 170 farmer households for lower yields if less water reaches the farms.

Two alternative 25-year land use scenarios –Moderate Conservation and High Conservation were looked at. The moderate scenario would put soil conservation measures in place in existing swidden farms to address soil erosion and improve water quality in Cantingas and Panangcalan. The high conservation scenario will not only put soil conservation in place but also reforest denuded areas to improve water quality in Cantingas and Panangcalan. To

implement the moderate and high conservation scenarios, some 60 indigenous households upstream would lose \$260 a year representing loss of income from resource depleting activities. For the high conservation scenario 866 lowland water users would need to make monthly transfers of USD 2.50 (or 100 Pesos) to benefit the 60 indigenous households. This amount would not only cover opportunity costs for them but also pay for scholarships of their children and the transaction costs of the program. In this case Payment for Ecosystem Services (PES) was looked at to facilitate conservation activities.

What was needed to solve the problem in terms of data, resources and capacity?

To understand the linkages between the land use of about 60 upland indigenous families and the soil erosion impacts on the hydrology - in particular water quantity and water quality, WWF commissioned researches on climate, rainfall, geology, soils, land uses and hydrology.

It was also necessary to identify water users and quantify the costs and benefits of these impacts on the users – in this case the residents and the farmers.

They also had to estimate the willingness to sell and to pay using a referendum with 200 sampled respondents (175 randomly selected residents and farmers, and 25 randomly selected sellers), who marked their preference between two alternative 25-year land use scenarios with moderate and high levels of conservation practices in place. Results from the referendum showed preference for high conservation scenario.

What resulted from taking an ecosystem service perspective? Did the approach influence public management or result in policy uptake?

A watershed co-management agreement was signed in 2005 by Sibuyan Mangyan Tagabukid, the Local Government Unit (LGU) of San Fernando, WWF, PANLIPI (an indigenous legal support group), Department of Environment and Natural Resources (DENR), and Park Office and National Commission on Indigenous Peoples (NCIP). Their roles and responsibilities are stipulated in the agreement's provisions. The agreement stipulated that the Local Government Unit and WWF will set aside matching funds to finance patrols and reforestation. The DENR will provide technical support in the collection of seedlings for reforestation. The PANLIPI and NCIP are to provide legal support to indigenous members that face harassment suits because of enforcement operations. The mutual interest for the indigenous people, the LGU and the water users to secure watershed services is expected to sustain the agreement. As other parts of the country suffered devastation from drought and flooding, water and watershed management have become priorities of the government. The crucial role of upland and indigenous communities in promoting non-destructive land uses in watersheds has placed them in the centre of upland strategies to address landslides, floods and droughts.

In 2005, when the PES incomes were compared with the incomes of the indigenous people from logging and hauling activities it showed that incomes from PES made up 81% of the total gross incomes.

	Panangcalan	Cantingas	Total
	(n=12)	(n=19)	n=31
Timber Harvesting	263	1305	1570
		(n=12)	
Hauling	0	326	326
Total income from Logging (b)	263	1631	1896
2005 Gross Income	4701	8260	12961

PES Incomes (2006) (a)	4502	6028	10530
%PES to 2005 Gross Income	96%	73%	81%
No. times opportunity costs covered (a/b)	17.17	3.71	6

Table 1: Comparison of incomes from PES and 2005 Logging Activities (in US-Dollars)

The PES project has provided adequate incentives to attract the indigenous people to participate in patrolling and reforestation efforts.

What else was necessary for it be influential?

The two watersheds in Sibuyan offer viable conditions to implement PES, as they have:

- Well defined sellers and buyers,
- Good potential for poverty alleviation due to potential of mobilizing larger resources from a bigger number of richer buyers to a smaller number of poorer sellers
- A defined water problem and a business case to change existing land uses to prevent future damages to water quality
- A cost effective institutional framework drawing on existing mandates of site-based organizations.

In this context it is important to note, that the local indigenous people became legal landlords of an area of 7900 ha, which overlapped with the above two watersheds using the Indigenous Peoples Rights Act. This elevated them to a position of power and they enjoyed equal representation to leverage agreements such as this one.

References:

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