In Bakun, indigenous people use modern mechanisms for selling environmental services to preserve a traditional way of life without its poverty traps

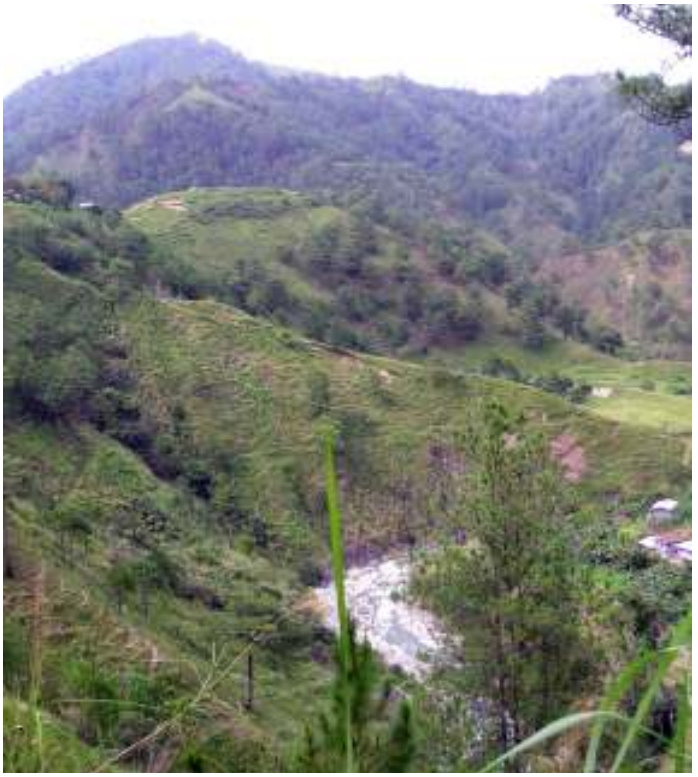
The Context

The Kankana-ey-Bago people of Bakun, a mountainous region of the northern Philippines, have a rich socio-cultural heritage. Their indigenous way of life governs how they relate with the land, the forests, and among themselves. They support each other through the inal-luyon system where assistance is reciprocated in kind. Likewise, conflicts/disputes among members of the tribe, and even with other tribes are settled through the traditional tongtong system which is basically through consensus. However, based on criteria of income, healthcare,, and education the traditional way of life no longer meets current expectations.

The people of Bakun have a history of articulating their rights within Philippine society and of adopting sophisticated strategies to protect their traditional way of life. In 2002, the Kankana-ey was the first indigenous group to obtain a Certificate of Ancestral Domain Title (CADT) from the Philippine Government. The CADT gave the tribe formal title to its traditional lands. The Kankana-ey received the CADT largely through the efforts of the Bakun Indigenous Tribes Organization (BITO) and with it BITO gained the responsibility of representing the tribe.

The CADT boundaries nearly coincide with those of the local government unit, and the democratically elected leaders of local government have overlapping responsibilities with BITO, deriving their 'representation' roles on different grounds of legitimacy.

The Kankana-ey have demonstrated responsible stewardship of their natural resources through their indigenous farming practices. These practices such as terracing and riprapping sloping farm lands and nem-a, a system of clearing portions of forest to establish a permanent farm for agroforestry, safeguard environmental functions on their lands. The practices are so embedded in their lives, that they have spiritual significance. For example, cutting down of trees cannot proceed without performing a ritual beforehand. With these practices in place, the watersheds of Bakun deliver plentiful water supplies to the two hydropower plants in the area.



Unfortunately, a net result for the indigenous people of Bakun of these forms of sustainable land use is that 87 percent of households earn incomes below the poverty line. These upland farmers cannot meet their basic needs as defined by modern standards. Presented with growing demands from urban areas for vegetables and the comparative economic advantage of urban buyers, many farmers cannot resist the lure of increasing their incomes by clearing their agroforestry plots to plant temperate vegetables. As the agroforestry plots disappear, so do a variety of environmental services.

These environmental services have created value for the hydropower company that operates the two hydropower plants in the area. The hydropower company has worked closely with the tribe, respecting its wishes in land use and assisting in some community improvement efforts. However, until RUPES began operating, the company saw these efforts as part of being a good community citizen. It did not recognize that the Bakun people provided a valuable service

and provided no compensation for this service. Within the CADT framework, farmers have the right to shift to less environmentally friendly land-use practices, so non-conversion represents valid opportunity costs that can merit compensation.

The starting point for RUPES-Bakun thus was the opportunity to test whether negotiated payments for environmental services can reduce poverty among traditional people whose protection of environmental functions has economically disadvantaged them. Watershed services make up part of the puzzle, but other services may potentially have buyers also. The Bakun site offers the opportunity to learn the preconditions for indigenous people to make decisions and negotiate for outcomes on ancestral lands.

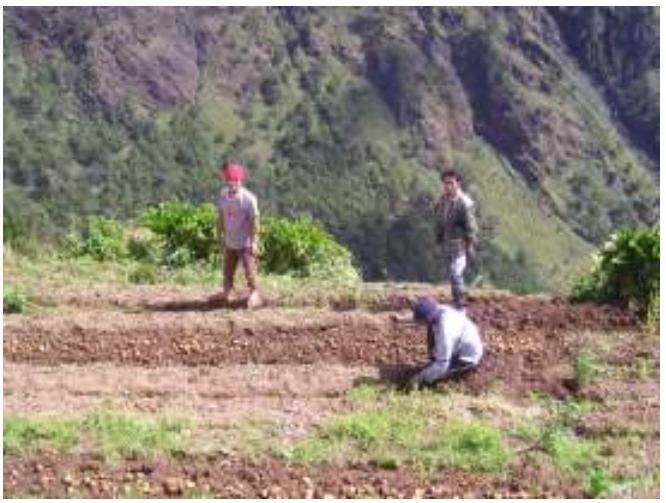
What Needed to Be Done?

Understand the environmental service dynamics

Although the Bakun people do use conservation practice, there is also severe land degradation in the area:

Fires cause much damage. Increased vegetable gardening on the slopes may be taking a toll. Many local people believe that multinational companies have caused damage by logging and mining. Research needs to provide definitive data to give sellers and buyers confidence about the best ways to manage for enhancement of environmental services. This research should:

- reveal the environmental functioning in the area so the Bakun people have the knowledge needed to maximize production of environmental services including water regulation, erosion control, carbon sequestration and biodiversity preservation.
- provide more insight into the inter-relationship of land cover change with stream flow quantity and quality, and to examine the importance of sustainable soil and water management practices to the stability and sustainability of the forests and watersheds, while separately tracking issues of annual water yield, regularity of river flow and sediment loads.
- Measure the magnitude of any adverse effects of legally allowed and financially attractive farming systems to the ecosystem and watershed functions as a basis for negotiated agreements to maintain the watershed services.



Harvesting potato as cash crop

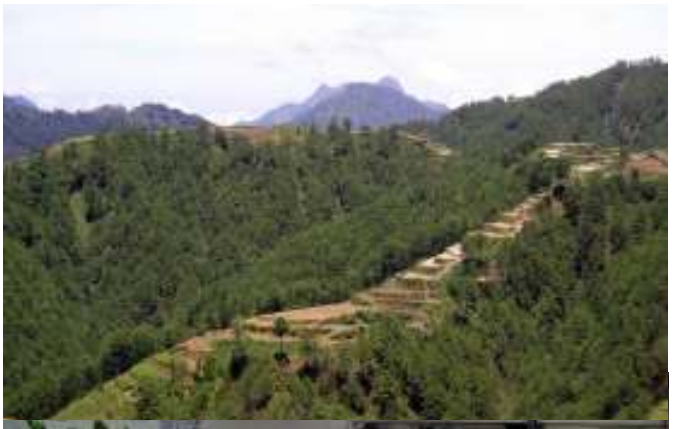
Create on operating environmental service market

Successful payments for environmental services require willing sellers and buyers. In Bakun, RUPES needed to assist in creating the pre-conditions needed for the sellers and buyers to come together. Actions for doing so included:

- Increasing the capability of the Bakun people to produce and market environmental services RUPES researchers and Bakun people needed to develop a mutual understanding of environmental functioning that integrates indigenous and scientific knowledge. This understanding is necessary for the Bakun people to determine and credibly explain how they will deliver environmental services. The project also needed to support the BITO in strategizing how to gain the social capital necessary for making the fullest contribution to selling environmental services given its ambiguous position in governance.
- Working with the hydropower company to make it understand that the Bakun people voluntarily provide a service beyond legal requirements that adds value to their operations. Beyond the legally required 'royalty' payments to the local government which can be used without direct linkage to the enhancement of environmental services, rewards that are conditional to and aligned with the actual services provided can make good business sense once the relations are well understood.
- Bringing the buyers and sellers together to develop a mutually beneficial buyer-supplier relationship With the Bakun people and the hydropower company both at the table, RUPES-Bakun needed to act as an 'honest broker' assisting with the design of payment mechanism that foster such a relationship. In Bakun, RUPES needed to exercise particular care in demonstrating that it did meet the standards of honest broker as many of the indigenous people were skeptical because of unmet promises from others in the past.

Stakeholders Needed to Halt Irreversible Damage

Effective strategies based on the indigenous system for enforcing law, rules and regulations need priority to halt on-going destruction while the RUPES project progressed.



What Worked?

First step toward conditional payments

The hydropower company and local government agreed in principle to allocate a portion of royalties from hydropower production to the Bakun people for their environmental services. However, both the government officials and BITO are making claims for managing the funds, so actual payments await the resolution of this discussion. In any case, the hydropower company now sees potential gains for the people and the company in purchasing environmental services.

Research Findings

- Local knowledge of plant resources some 265 plant species, were documented preserving the local heritage in a new, easily accessible format.
- Local knowledge of the relation between land cover and watershed functions was documented for comparison with the perceptions and logic used by government agencies and potential buyers of services, as well as for comparison with hydrological models.
- With Bakun's rainfall pattern of very wet seasons alternating annually with clear dry seasons, water balance modeling predicts that in the wet season the whole landscape will be rapidly saturated with water and will have limited storage capacity. The capacity of the soil to store and release water limits the potential for buffering so that water flows can be spread into the dry season. This leaves a relatively small role for tree or forest cover in affecting water supply services as long as the surface conditions allow for infiltration. Use of water for irrigating vegetables will directly compete with hydropower production. Otherwise the main environmental service of concern is sediment loads of the streams rather than water quantity or timing of flows.

Damage arrested

Bulldozing of land to open up new vegetable gardens has been brought under control. There was strict implementation of policies, rules and regulations on natural resource utilization/extraction.

Common Understandings Forged

As a result of RUPES work:

- Bakun people have greater understanding of the external appreciation for and value of trees, biodiversity, and the relevance of sustainable soil and water conservation practices for themselves as well as for downstream users
- Bakun sees the importance of an Integrated Watershed Development and Management Plan that can get real 'buy in' from the hydropower company on the basis of realistic and conditional agreements
- The local government officials and BITO council members appreciated the double-edged sword of selling environmental services based on the opportunity costs of foregoing legitimate and profitable land use practices, when implementing the practices would also hurt affect local services and sustainability. Emphasizing the local effects reduces the bargaining position of the Bakun people, but ignoring them leads to lack of trust from the buyers.

What's Next?

Making roles work

Government officials and BITO need to reach understanding on complementary roles they can each play in payments for environmental services for Bakun.

Further to go for common understanding

The effects of ongoing and possible land cover change on water quantity and seasonality of flow remain topic for discussion, in the absence of firm data. The relevance of water quality to different stakeholders needs further attention to make a clearer 'business case' to the potential buyers of watershed services.

Move from redistribution of royalties to conditional payments dependent on environmental service outcomes

Effective use of the existing royalty funds requires locally agreed criteria and transparent mechanisms.

Coming to terms with the question:

Can environmental service rewards sustainably alleviate poverty in Bakun? -- Experience in other RUPES sites suggests that the amount of per capita royalty distributions for water supply services to hydropower plants is not enough to raise people from poverty. For communities to significantly affect their poverty levels, they may need to layer in benefit streams from several environmental services, plus exploit other activities that generate income without reducing environmental services.

Seek alignment with national policy

Recognition of Ancestral Domain Title provides a basis for financial compensation for environmental services that originate from the area, but further clarification of issues of rights and resources is needed within the national policy framework that is not free of ambiguity. Together with Kalahan, the Bakun site has been a pioneer in recognition of indigenous people's rights and can serve as learning ground for other people of the Philippines.

The RUPES Project:

Throughout the world, upland people, many of them poor, earn their livelihoods from lands and landscapes that, when properly managed, provide valuable environmental services to others. However, management practices that maintain or increase environmental services often have a cost to the upland people in time or income. Regulations and prescriptions of land use aimed at securing the services are often ill-designed and enhance rural poverty. RUPES aims to work with both potential users and producers of environmental services to find conditions for positive incentives that are voluntary (within the existing regulatory framework), realistic (aligned with real opportunity costs and real benefits) and conditional (linked to actual effects on environmental services), while reducing important dimensions of poverty in upland areas.

At each of the 6 RUPES action sites, local institutions partner with the World Agroforestry Centre (ICRAF) to implement action research aimed at developing effective reward mechanisms in the local context. The sites are Kulekhani in Nepal; Sumberjaya, Muara Bungo, and Singkarak in Indonesia; and Kalahan and Bakun in the Philippines. National policy dialogues are aimed at making policy frameworks more conducive to positive incentives.

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