

Bolivia- ICO water planting

La Aguda 'water planting' scheme

SUMMARY

An initiative led and funded by the NGO, the Eastern Training Institute (ICO), to protect water quality in La Aguda community by fencing off riverside areas and prohibiting cattle grazing. No regular payments are involved as the land was purchased but there have been in-kind rewards for the land users (construction of a drinking pool outside of the enclosed area). The initiative started in 1993 and ICO states that "water flow increased by 38% over 31 months in the La Aguada stream." ICO has since applied similar approaches in other communities in other micro-watersheds.

MATURITY OF THE INITIATIVE

Ongoing since 1993.

DRIVER

Negative local effects of cattle ranching around water sources (animal waste, soil compaction and vegetation loss). "Before the establishment of the domestic water system, community members carried water up to 2 km each way in buckets from the headwaters. In the immediate vicinity, cows gathered to drink, defecate and urinate directly into the water. (...) In the larger upstream area, cows consumed the plant life and trampled seedlings, resulting in soil degradation and a loss of vegetation cover." Robertson and Wunder (2005)

STAKEHOLDERS

Supply

In La Aguada: 30ha at the headwaters of the water collection system.

Demand

Twenty-four families have organized themselves into a water cooperative which has bought the land around the community's water source.

Intermediary

Direct transaction between the water cooperative and the landowners.

Facilitator

Eastern Training Institute (ICO), which has been working to improve La Aguada's drinking water system since 1985. After working with La Aguada, ICO applied a similar model to other micro-watersheds. With ICO's support, a total of nine communities (include La Aguada) have now used this system in the Vallegrande province, protecting 504ha. In 2003, ICO began a similar project (three new conservation areas) in the community of Mairana (province of Florida, north of Vallegrande)

MARKET DESIGN

Service

Water quality.

Commodity

Protection of strategic areas through land purchase and fencing. Likely to involve the construction of rainwater harvesting structures.

Payment mechanism

Intermediary-based transaction (NGO) - land purchase: 30ha of land in the headwaters of the water collection system was used for grazing and access to the stream, by an estimated 700 animals; negotiations to cover opportunity costs to the landowners came to US\$ 700. An additional 33ha of cultivated land was also enclosed.



ICO has similar projects in eight other watersheds where the arrangements to place the land under protection were not based on incentives or on direct payment from users to providers. Methods for securing the protection of strategic areas were donations transfer of properties from private owners to the communities, secession of private property for the protected area while maintaining private formal owners (a type of conservation easement), and complete expropriation by the community. (Robertson and Wunder, 2005)

Terms of payment

To providers: *one-off cash payment* for land purchase and *in-kind compensation* to the ranchers in the form of the construction of a drinking pool outside of the enclosed area (US\$200); *from users*: in-cash one off from donor funds.

Funds involved

US\$900 in total. The water cooperative bought the land for US\$ 700 and ICO financed the cattle drinking pool at a cost of US\$200.

ANALYSIS OF COSTS AND BENEFITS

Economic

Total cost of purchase US\$900. Avoided costs from health problems, due to improved water quality. No visible costs to the users/providers, as the compensation given covers opportunity costs.

Environmental

According to ICO (1999) the water flow increased by 38% over 31 months in the La Aguada stream. This effect could be because of reduced soil compaction. However, thorough hydrological studies are needed to confirm this positive effect.

Social

With the establishment of the system, weakly defined property rights have led to some conflicts between neighbours.

LEGISLATION ISSUES

Existing legislation protects some vegetated areas near waterways, although in the past this law has often not been enforced. Robertson and Wunder, 2005

MONITORING

No information available.

MAIN CONSTRAINTS

In ICO's new project in Mairana there are several obstacles to the replication of the La Aguada solution: 1) disputes over land are more pronounced; 2) more actors have objected to the project development (for example, the colonist movement has refused to give up land for conservation). 3) the water cooperative has not been willing to pay for land-use change AND does not trust that it will result in cleaner water OR that the environmental-service providers will fulfil their part of the deal.

MAIN POLICY LESSONS

According to Robertson and Wunder (2005), there are several reasons why the initiative in La Aguada has been successful:

- 1) The small group of environmental-service providers (i.e. the original owners of the purchased land) were at the same time part of the larger group of beneficiaries and thus had some internal incentive to protect the watershed.
- 2) They were also living in the same community as the service users, thus being exposed to subtle social pressure to comply.
- 3) The link between land use and water quality was clearly perceived in the La Aguada case.
- 4) Few landowners were affected.
- 5) The payments and in-kind compensation provided to the landowners and the cattle ranchers were sufficient to cover the opportunity costs so no conflicts arose.



An interesting general lesson drawn by Robertson and Wunder (2005) from the ICO Water Planting Schemes, is that: "The fact that the monetary compensation option was only applied in one site out of many indicates that it is not the favoured approach. Indeed, it raises doubts about the viability of inter-village recurrent PES payments from water users to upstream landowners as a realistic option, if not for any other reason than the lack of a tradition of paying for protection of drinking-water sources".

ICO projects are the only PES-type projects in this overview of Bolivia that are not in or near a larger protected area and supported by a conservation-oriented NGO. The focus is thus purely on water-users. As Robertson and Wunder highlight, these projects "are not driven by conservation, but exclusively by the demand for cleaner water and a more stable water supply".

OTHER INFORMATION

REMAINING INFORMATION GAPS

CONTACT

REFERENCES

Robertson, N. and Wunder S. 2005. Fresh Tracks in the Forest Assessing Incipient Payments for Environmental Services Initiatives in Bolivia. Bogor, Indonesia, CIFOR

LINKS

Information on ICO http://193.194.138.128/FIELD/Countries/Bolivia/OP_Oriente.htm