

Colombia- Fuquene

Payment for Environmental Services (PES) scheme in the Lake Fuquene; Project Cuencas Andinas (CONDESAN-GTZ)

SUMMARY

The Cuencas Andinas Project aims to reduce nutrient loads in the Fuquene Lake by helping farmers access commercial bank loans to improve their agriculture practices and switch to more environmentally friendly methods (e.g. reducing use of fertilizers). The German government (GTZ) has donated seed capital) which provides the collateral necessary for commercial banks to approve these loans. Water users are not yet contributing to the scheme.

MATURITY OF THE INITIATIVE

Ongoing since 2004.

DRIVER

The CAR (Regional Autonomous Cooperation) of Cundinamarca (*Corporación Autónoma Regional del Guavio*, CORPOGUAVIO) was looking for solutions to help reduce eutrophication in the lake (Laguna de Fuquene). CONDESAN (Consortium for the Sustainable Development of the Andean Ecoregion) was interested in generating a new dynamic in the rural development of the area by using the value of environmental externalities to its advantage. 80% of the pollutants have their origin in cattle ranching (from pasture fertilizers and animal organic effluents: in 2000, a total of 171,000 animals). Both organizations had previous experience in promoting environmentally friendly agriculture schemes, with some success in terms of farmer take-up, even if many of them required initial financial assistance to implement the necessary technological updates.

STAKEHOLDERS

Supply

Private small and medium landowners: in 2004, a total of 100ha owned by small farmers in the areas above the lake were under "conservation agriculture". In 2005, a further 100ha were expected to be included. (Total area of the watershed 187,000ha).

Demand

Local government (municipal water utilities downstream) and private individuals associated into water users associations.

Intermediary

Farmer associations and local government (CAR). A decentralized body from the Ministry of Environment provides the link between the participating farmers and the financial institution that supplies the loans. The CAR also provides technical assistance to the farmers.

Facilitator

CONDESAN-GTZ.

MARKET DESIGN

Service

Water quality improvement (reduction of nitrate and phosphate loads); water quantity; sedimentation reduction.

Commodity

Improved management practices contracts: to develop "conservation agriculture".

Payment mechanism

Intermediary-based transaction (local government agency).

Type of payment

To the providers:

In-kind payment: support through provision of inputs to implement the productive improvements being promoted: in 2004 they had access to a fund that supported the transition to organic fertilizers;

Financial: in 2005, the funds available from the PES scheme served as a guarantee (for 10% of the debt) to allow farmers to obtain loans from a financial institution (in this case the Banco Comercial) to implement productive improvements; *from the users:* no contribution at present and it is not clear whether this is planned for the future, although the project was not designed to draw on user contributions.

Funds involved

Unclear.

ANALYSIS OF COSTS AND BENEFITS

Economic

Transaction costs: CAR's technical assistance fees, (one) accountant's fees and the administrative charges from the bank to process the loan.

Benefits: *Avoided costs* of extracting 1 tonne of sediment from the lake (US\$ 20/per tonne): water treatment costs (not yet valued). Benefits expected in ten years time, are of about US\$900,000, if 160ha of the watershed are put under the best management practice that the scheme is promoting. (Calculation of these benefits included the valuation of: avoided costs of sediment extraction from the lake, improved water quantity, generated employment and increased profits from sustainable agriculture.)

Costs for the participant farmers: i) cost of reducing erosion US\$18/per tonne or US\$ 1,580 per ha: the idea is that, if the farmers adopt more environmentally friendly measures, these costs will be compensated by the higher profits (about 20% higher) they can get from their improved production methods (according to Rubiano, J. et al forthcoming).

Environmental

Expected benefits. This is an area of intensive cattle production (4.5 animals per ha) and agriculture (21,000 ha, mostly for potatoes and cereals) with associated environmental problems; 17,000ha highly affected by erosion or highly degraded. Precipitation is on average 1,300mm/year but episodes of heavy rain can lead to a loss of top soil of as much as 16 tonnes per ha in one episode alone. (Condesan (2004) Boletín "Cuencas Andinas" No.2 March 2004). All this has led to a reduction in the lake's storage capacity and to the eutrophication of its waters. The activities promoted by the PES scheme are expected to improve this situation by reducing intensive agriculture practices.

Social

Social benefits for the more vulnerable groups: the credit mechanism set up by this scheme is designed to favour small farmers in particular, as the farmer associations apply for loans and distribute them not only to their members but also to non members - without this support, these smaller-scale farmers would be unlikely to obtain loans.

LEGISLATION ISSUES

No information available.

MONITORING

i) *Environmental aspects:* Hydrological studies are being carried out in the field, to understand how different types of soil influence water flow and sediment loads, and to measure the results of the BMP on the sediment and nutrient loads reaching the lake. ii) *Socio-economic aspects:* Evaluations were conducted of changes in income and employment generation following the introduction of these BMPs. iii) No information about monitoring of compliance.



MAIN CONSTRAINTS

Cattle ranchers hold strong economic and political influence in the area and are highly profit-oriented, and they may oppose activities that they feel may restrict their profits.; Both cattle ranchers and small farmers in the area lack awareness of the impacts of their activities on soil and water resources. Climate data is difficult to access (due to institutional processes and price). The time frame for the awarding of loans can be too long.

MAIN POLICY LESSONS

Lesson from overall CONDESAN project on the PES approach: CONDESAN's initiatives are trying to overcome the "anti-market" concerns associated with the term "payments for watershed services" . The areas where they work are poor, and water is scarce. An interesting point is also the process by which PES is developing, and how it is helping to move the debate among stakeholders from a narrow focus on water towards a more holistic response to the watershed problems.

OTHER INFORMATION

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REFERENCES

Rubiano, J., Quintero, M., and Estrada, R. D. and Moreno A. 2005. Multiscale Analysis for Promoting Integrated Watershed Management. (Forthcoming). Agriculture, Ecosystems & Environment Journal. [Special Issue on Scales in Water Resources Management.]

Condesan (2004) Boletin "Cuencas Andinas" No 2/March 2004;

LINKS

<http://www.condesan.org/cuencasandinas/fuquene.htm#Doc> ;

<http://www.redcapa.org.br/cuencas/boletin-n2.htm#fuquene>