

Guatemala- SIERRA DE LAS MINAS

Sierra de Las Minas Water Fund

SUMMARY

The Sierra de las Minas Biosphere Reserve (SMBR) Water Fund is a World Wildlife Fund (WWF) initiative to finance responsible water management. It promotes activities upstream that are expected to increase recharge and decrease erosion and support major users (industry) to increase their water use efficiency and reduce the impacts of their effluents. Savings are to be invested in the fund and channelled upstream to protect the buffer zone of the SMBR.

This Payments for Environmental Services (PES) scheme represents the "heart of a much broader initiative that takes into account several other project components including integrated river basin management, efficient irrigation systems, scientific research development, clean production, strengthening local water management and governance capacities and undertaking environmental education and awareness-raising among target groups" WWF (2005b).

MATURITY OF THE INITIATIVE

Ongoing since 2002 (proposal during first review in 2002); status in April 2005 - "Cooperative agreements (not specified how many) have already been signed with Coca Cola Bottling Company, the paper production plant, PAINSA, and the rum production plant Licorera Zacapaneca S.A" WWF (2005b)

DRIVER

Interest in increasing financial support to the Biosphere Reserve to protect the biological integrity of the reserve, and its hydrological functions, particularly in terms of water delivery, as local water users have in recent years noted a fall in water quality and quantity, particularly during the dry season". WWF (2005b)

Fundacion Defensores de la Naturaleza (FDN) and WWF, who have been managing the SMBR since 1990, have been pushing the idea forward in order to increase the funds available to ensure the SMBR's financial autonomy and protection against deforestation, forest fires and agricultural expansion and cattle ranching. The idea is to increase participation among local resource users, engaging the private sector and municipalities in the conservation of their own natural resource base.

STAKEHOLDERS

Supply

Private landowners within the SMBR - tropical mountain cloud forest. The Motagua watershed, on the southern side of the mountain is drier, while the watershed of the Polochic, on the north side, is wetter and with higher forest cover.

The approach taken by FDN and the National Protected Areas Council -CONAP so far has been to try and buy the land in the core area of the SMBR (). The goal of the present PES initiative is to promote shade coffee and sustainable agriculture (soil conservation measures and low use of fertilizers) by channelling funds to the farmers living in the reserve's buffer areas: large private farmers and forest owners (coffee, cattle), indigenous community forest owners (subsistence production of corn, beans, coffee); and cooperatives (coffee, sugar and vegetables).

Demand

Up to now bottling companies make no payment for water pumped from aquifers. Surface water users, agro-industry, industries and farmers do not pay any fees. Residential dwellers pay fixed fees, which are not based on consumption levels and cover only the maintenance of the distribution system.

Corporate businesses: A total of 20 industrial users are to be engaged in the scheme over the next few years, while irrigation and domestic users, are to be involved in the system at a later stage. At this first stage, the scheme aims to bring in contributions from companies which depend heavily on water for their production process (hydroelectric plants in Pasabien and Rio Hondo), bottling companies (Abasa - Coca-Cola, Cabcorp -Rio Beer and rum distillery Lizasa -Zacapeña Rum) and paper processing mill



(Painsa). It is starting out by involving users in the area of the Motagua River (Pasabien and Hondo tributaries), since these are the ones where most industrial contributions can be pooled. The northern part of the system is more rural and with lower willingness and ability to pay.

The plan is to improve water use efficiency and part of the production costs avoided will be channelled to the water fund that invests in protection measures upstream.

This is done in collaboration with other institutions such as UNIDO (United Nations Industrial Development Organization), fostering greater corporate responsibility towards sustainable freshwater resource management. There is already a formal agreement with the Guatemalan Chamber of Industry (GCI) and Guatemalan Clean Production Center to provide the participant companies with advice on how to reduce production costs by make a more efficient use of resources. (WWF and FDN. 2003)

Since the industrial users are already feeling the effects of reductions in water quantity, their willingness and ability to pay is high. "Water accounts for 99.5 per cent of the raw material used in the manufacture of paper.(...) However, towards the end of the dry season in April, the Motagua River is often so parched that we have to switch off one or two of our three machines. (...) In 1998, we had to actually bring production to a complete halt for a number of days because there was no more water; the river had simply dried up." (Rommel Najera, plant director of the PAINSA paper factory, cited in WWF 2004). For other industry users (such as those using mainly groundwater), the main incentive to begin paying lies in the fact that the measures fostered by the PES scheme can provide an insurance against further future problems with water supply (Oscar Brenes cited in Murillo, K. 2002)

Intermediary

Trust-Fund: The Water Fund Foundation which will include representatives from the biggest user groups – industry, agriculture, hydroelectric plants and local authorities, as well as environmental organizations, such as Defensores de la Naturaleza. (WWF 2004)

Facilitator

Substantial financial support has been provided by various international donors: : Central American Bank for Economic Integration (BCIE), Mesoamerican Biological Corridor, European Union; The Nature Conservancy), Programa Ambiental Regional para Centroamérica (PROARCA-USAID), United Nations Environment Programme (UNEP), Summit Foundation and the World Wildlife Fund (WWF-Centroamerica).

MARKET DESIGN

Service

Water flow regulation and water quality.

Commodity

Improved Management Practices contracts involving agroforestry and sustainable forest management in the buffer area of the reserve. Riparian bands and special water recharge areas will be under stricter measures for soil conservation.

Conservation and Protection of Existing Ecosystems: stronger protection of the core zone and other priority areas within the reserve. (in addition, the project will also support alternative technology to reduce fire wood use)

Payment mechanism

Intermediary-based transaction (trust fund); pooled transaction - the Fund is under development, but its legal and organizational framework have already been defined and a fiduciary institution and management terms agreed. (WWF/CARE/IIED. 2005a)

Terms of Payment

In-kind: training and potential financial assistance to adopt the management practices being promoted. This includes training in forest fire control, fertilization and pest control management;

Potentially also as *ongoing cash payments*, but unclear how the level of payment will be determined.

Funds involved

US\$5 million trust fund set up several major international donor organizations (see facilitators)

Other financial inputs originated in an US\$70,000 award from Swiss RE (reinsurance and financial services group) for sustainable watershed management, in 2003.

In 2002, the scheme's annual budget was \$120,000 (Murillo, K. 2002). However, in order to fulfil its goals, the fund will require at least US\$ 5 million by 2008 (WWF 2005a).

ANALYSIS OF COSTS AND BENEFITS

Economic

Expected avoided costs for the participating users: Defensores de la Naturaleza and WWF link up the companies with the services of the National Cleaner Production Centre of Guatemala (NCPCG) to increase profits through:

- i) resource conservation (for example, extraction and treatment of water: extract and treat only what is actually needed);
- ii) avoided loss of productive periods due to lack of water in the dry season and costs from sourcing water elsewhere;
- iii) avoided costs due to reduction of reservoir sedimentation (through erosion prevented by forest cover) which can represent savings of US\$ 23/ha/year (WWF/CARE/IIED. 2005a);
- iv) use of less polluting technologies: companies can save in pollution taxes (according to new legislation on effluents, that will come into effect in January 2006, industries must pay according to the amount (and toxicity) of their effluents).

Transaction costs of the PES scheme up to 2005 are an estimated US\$ 256,000 has already been invested in 1) the design of the financial mechanism 2) the development of water valuation studies 3) collation of scientific data for monitoring and evaluation and 4) constituency building 5) education and empowerment campaign for industry; 6) strengthening the organizational development of existing water user groups and 7) establishment of watershed management committees with user groups representatives. (WWF/CARE/IIED 2005a).

Environmental

Expected benefits include improved protection of the reserve's biological diversity and headwaters of 63 rivers. On the demand side, the scheme will promote improvements in water use management by strengthening water regulations, strengthening water community base committees and supporting efficient local water use systems.

Social

Expected benefits:

On the provider side, the projects financed by the water fund include i) production of environmentally friendly organic coffee, could improve income for farmers and benefit indigenous communities diversifying their income sources; ii) the scheme is also expected to support local education and health programmes; iii) in SMBR, about 80% of the population is considered poor. (WWF 2005a)

LEGISLATION ISSUES

No information.

MONITORING

No information.

MAIN CONSTRAINTS

- Industry recognizes water as strategic however still considers it an open access resource.
- Industry is more interested in Cleaner Production than in PES and upper watershed conservation.
- Conservation is still seen as a Public Relations activity rather than a risk mitigation investment.
- There is insufficient available hydrological data sources and limited information sharing on the part of industry for water valuation studies.
- Local communities are concerned about water privatisation.
- There is a lack of adequate water management norms and policies in Guatemala.

MAIN POLICY LESSONS

By investing in water use efficiency downstream, and in watershed management upstream, the scheme tries to address the two sides of the water scarcity problem.

How to capture demand: The scheme counts on initial environmental assessments that prove the future benefits of the scheme, to convince users to pay and avoid future losses: "The key to negotiate with the businesses are the preliminary studies that we have conducted: the watersheds suffering higher deforestation are losing their water, while the watersheds where forest has been kept, water remains available" (Oscar Núñez, Coordinator the Sierra de Las Minas Water Fund Project, cited in Murillo, K. 2002) Less forest means less water," is how Director of Defensores de la Naturaleza, Oscar Nuñez, sums up the problem. The exposed soil cannot retain the rainwater and thus loses its water-retaining function. As the initiative is giving companies advice on how to reduce their own costs and remain competitive, so, from this perspective industry is already benefiting from this relationship with the PES scheme. It is a healthy and productive relationship (Morales, C. 2005).

OUTSTANDING ISSUES

No information.

REMAINING INFORMATION GAPS

No information.

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REFERENCES

Morales, C. 2005. personal communication from Carlos Morales, WWF programme officer

Edwards, M. and Morales C. 2004. WWF-Central America Freshwater Program-Case study (Sierra de las Minas). WWF Central America Communications Department. Report Living Waters: Conserving the source of life. Payments for Environmental Services (PES) in the Sierra de las Minas Biosphere Reserve (SdM) Guatemala - Using the Water Fund as a Financial Mechanism to engage the Private Sector in Upstream Forest Conservation.

Murillo, K. 2002. Historias desde el Campo- Entrevista a: Oscar Brenes, Oficial de Agua y Capacitación de Fondo Mundial para la Naturaleza, Centroamérica y a Oscar Núñez, Coordinador del Proyecto de Fondo de Agua de Sierra de Las Minas. Alianza para Bosques <http://www.eco-index.org/new/stories/2002/decembers.cfm>

WWF. 2004. Hope for Guatemala's national bird. WWF Feature Stories http://www.panda.org/news_facts/newsroom/features/index.cfm?uNewsID=15531



WWF. 2005b. The Water Fund Model Motagua- Polochic System, Guatemala- A Novel environmental Payment Scheme with the Private Sector. <http://www.wwfca.org/php/proyectos/agua/fondo01eng.php>

WWF/CARE/IIED. 2005a. proposal. WWF/CARE/IIED workshop. Unpublished Work

WWF .2005. Water fund finances responsible watershed management in Guatemala.
http://www.panda.org/about_wwf/what_we_do/freshwater/news/news.cfm?uNewsID=19795

WWF and FDN. 2003. When Money Flows Upstream: Payment for Watershed Services in When Money Flows Upstream: Payment for Watershed Services in Guatemala. "Beyond Carbon – emerging markets for ecosystem services". Swiss Re Conference 29th- 30th of October 2003 Rüşchlikon Center:"Beyond Carbon - emerging markets for ecosystem services". Conference Proceeding
http://www.katoombagroup.org/Katoomba/meetings/_ppt/Switzerland_2003/Shows/Melissa%20Edwards%20%5BRead-Only%5D.pdf

LINKS

<http://www.defensores.org.gt/>

http://www.defensores.org.gt/index.php?id_category=28&id_subcat=41&parent_id=32

<http://www.swissre.com/Internet/pswpspr.nsf/alldocbyidkeylu/MDIS-5XKDF5?OpenDocument>