

FONAG: The Water-based finance mechanism of the Condor Bioreserve in Ecuador

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HIGHLIGHTS

OBSTACLES TO OVERCOME

- Political instability
- Changes in the people involved
- Lack of hydrological and watershed information
- Lack of institutional capacity to address hydrological and aquatic biodiversity issues

FACTORS CRITICAL FOR SUCCESS

- A clear proposal for
- Capacity and resources (people, materials, funds, etc.) to follow-it through
- Perseverance

BACKGROUND

Quito and its neighboring towns and villages, among the country's most populated regions, receive their water supply from the high plateaus of the Andean mountain range. Some of these watersheds are located inside protected areas, such as the Antisana and Cayambe-Coca Ecological Reserves, and the Cotopaxi and Sumaco National Parks that together comprise the Condor Bioreserve. Although in good condition and abundant at the source in these protected areas, this water does not enjoy unlimited or permanent availability - it needs protection.

Threats to the watersheds come from a variety of sources. The Cayambe-Coca Ecological Reserve is inhabited by 7,000 persons dispersed throughout the area and in small communities. Inhabitants require water for crop and vegetable cultivation, and use the plateau for extensive livestock grazing. In the adjoining region, approximately 20,000 inhabitants live in tenant farmer cooperatives, indigenous communities, and as private landholders. Their main activity is the raising of dairy cattle and the controlled harvesting of wood. Poor agricultural practices, such as overgrazing and the burning of scrub land seriously damage the high plateaus. Several important development initiatives affect the Reserve including the construction of a highway by the Quito Municipal Sewage and Water Agency (EMAAP-Q), an irrigation project, and several hydroelectric projects.

Unregulated development of these activities threatens the ecological balance of the reserves, as well as the long-term viability of the activities themselves. The degradation of water quality as it flows downstream affects the water supply reaching Quito and its neighboring communities. Erosion causes sedimentation in water flows and reduces power generation capacity. Unfortunately, the lack of resources for the operation and protection of the reserves threatens the long-term conservation of these vital ecosystems and the water services they provide.

The Nature Conservancy (TNC) and Fundación Antisana, a non-governmental organization, with support from the United States Agency for International Development (USAID), proposed the creation of a water consumption fee to fund conservation projects and improved management of the watersheds located in the reserves. Fees would go into a trust fund to be managed by an experienced asset management

company to ensure financial stability, and generate revenues from interest on investments. In addition to fees collected from water users the fund would eventually solicit additional support from national and international entities. The initiative was formally launched in April 1998 as the Water Conservation Fund (*Fondo para la Conservación del Agua – FONAG*). The overall objective of the fund is to collect a user fee from those who benefit from the water from the Bioreserve.

STEPS TO GET INITIATIVE OFF THE GROUND

1. CHOOSE CONSERVATION SITES

Chose a site that has biological and hydrological importance

Even though it may seem obvious, it is very important to have a clear idea of the conservation areas involved and their respective environmental values. The Condor Bioreserve has been an interdisciplinary initiative that is trying to coordinate the management of four protected areas: Antisana and Cayambe-Coca Ecological Reserves, and Cotopaxi and Sumaco National Parks. Within its boundaries is a wealth of diverse and rich ecosystems from perpetual snows to the Amazonian lowlands.

Each individual protected area has been in a process of consolidation in the last few years. The Ecuador Park Service and a group of local NGO's are defending the conservation of these areas with support from The Nature Conservancy. Fundación Antisana, has been designing the Management Plans for these areas. This process has demonstrated the clear need to ensure financing for the implementation of these plans.

2. IDENTIFY GOALS OF THE PROCESS

Recognize the "value" of the water resource

The watersheds within the Bioreserve are the current and future water sources for all economic activities in the central part of the country. For TNC's Ecuador office, Fundación Antisana, and USAID, a water-based finance mechanism was seen as a means to develop a permanent source of financing for the conservation of the Condor Bioreserve and in particular, Antisana and Cayambe-Coca Ecological Reserves. These two protected areas are the primary source of drinking water for the city of Quito. The social benefits that these protected areas help to generate through the provision of good water quality and quantity are not recognized by the users. Therefore a key objective is to encourage water users to recognize the value, implicitly or explicitly, of the water service provided by the protected areas, and to develop a long-term institutional mechanism to do so. As such, the final vision for the FONAG is to be funded by water user fees, based on clear and sound economic valuation of the resource.

Have a focal point or coordinator

In order to realize this goal, Fundación Antisana, representatives of The Nature Conservancy and USAID, hired a consultant to develop the idea. Considering the numerous obligations and commitments of the people involved, the role of the consultant has been to serve as a catalyst to get things done. The consultant is an environmental manager, with particular experience in watershed management and user fees. All the organizations continue to be involved but are constantly reminded of the tasks needed to be accomplished. This coordination role can be played by one of the organizations involved in the process or a third party brought in for that specific objective.

Over time, an ad-hoc committee was formed, composed of representatives from Fundación Antisana, The Nature Conservancy, EMAAP-Q and the Mayor's office, to oversee the implementation of the Fund. The consultant drafted a work plan and meetings were held regularly to discuss ideas and distribute tasks. Each organization was responsible for specific activities that were appropriate to their area of expertise, and progress was discussed at regular meetings.

Define the criteria for selecting the water-based finance mechanism

In order to ensure the effectiveness of the mechanism, the consultant began by identifying the criteria crucial for its design. After interviewing the different stakeholders, the following characteristics were

selected:

- Multidisciplinary - allow the participation of public and private organizations
- Efficient - should not create more organizations, and no bureaucracy
- Participatory - ensure and promote multi-stakeholder participation, in particular at the community level
- Legally feasible - based on the local regulatory environment
- Politically viable - likely to be accepted politically
- Ecologically sustainable - promoting long-term watershed conservation

Based on the identified goals and criteria, a review of water-based finance mechanisms was carried out analyzing experiences nationally and abroad. In particular, the consultant reviewed taxes, incentives and user fees that were implemented in Brazil, Costa Rica and Colombia, considering mandatory and voluntary initiatives.

3. IDENTIFY WATER USERS

Identify the whole spectrum of actors

In order to design the mechanism, it is important to know which direct water uses are involved. The Condor Bioserve is the source of more than 20 rivers that can be grouped in 6 large watersheds that provide water for the following uses:

- Urban and rural drinking water (EMMAP-Q and communities)
- Small and large-scale agricultural irrigation (commercial flower producers, communities, etc.)
- Small and large-scale electricity generation
- Recreational uses such as fishing and hot springs
- Additional users such as aquaculture, navigational, etc.

Each of these uses needs to be studied in order to identify the organization, individual or community involved. The amount of the current and future water use must be determined as well as each organization's aims and projects, its culture and its strengths and weaknesses.

In addition, there are a series of actors that do not directly use the water resource but have a stake in the resource whether politically, legally or socially. These organizations also need to be considered and in the case of Condor, they are:

- Ministry of the Environment - Protected areas Service
- Water Resources Council
- Ministry of Agriculture

4. PRIORITIZE WATER USERS TO MEET GOALS

Who uses the most water?

In this process, it is important to evaluate the weight of each user in the management and decision-making process, considering its physical and political impact.

In the case of Condor in the last few years, the city's water company (EMAAP-Q) has been developing two water diversion projects that extract 5 cubic meters of water per second, equivalent to 80% of the city's water consumption. In order to do this, EMAAP-Q projects have constructed roads, dams and distribution channels, which cause environmental impacts during construction, as well as operation. In the conservation management planning process, these projects were clearly identified as a threat to the conservation of the area. In terms of water consumption, the city of Quito is the leading consumer. Therefore, EMAAP-Q was identified as a key actor to get involved. In addition, being a public institution, its participation was seen as a way to leverage the involvement of other public organizations. That is how the electrical utility in Quito (EEQ), was approached to participate and has now joined the fund.

5. IDENTIFY KEY AUDIENCES AND STAKEHOLDERS / CRAFT YOUR MESSAGE

Sell your idea to the leading decision-makers

The previous step is very much related to this step of identifying key audiences and stakeholders. Considering that the leading users of water in Quito are city organizations that respond to the mayor's office, a key audience of this work was the Mayor himself. As such, Fundación Antisana, The Nature Conservancy, and USAID decided that the idea had to be "pitched" to the leading authority in town in a manner that was politically attractive. In turn the Mayor channels his decisions through his leading representatives, in this case the General Manager of EMAAP-Q and the EEQ, who have been lobbied extensively to support this effort. These actors in turn make decisions with their governing boards, so efforts were undertaken to inform these groups of decision-makers of the idea and receive their input and support.

It is vital to highlight the importance of being persistent in the lobbying efforts. Public decision-makers change frequently, and this was certainly the case in Ecuador. During the process of approval of FONAG, Ecuador had three Presidents, three City Mayors and three EMAAP-Q General Managers. Maintaining a decision through different administrations, with differing outlooks and viewpoints, has not been easy.

Develop a clear and coherent message

With this aim, a publication was prepared "Agua: Juntos podremos cuidarla! Estudio de caso para un fondo para la conservación de las cuencas hidrográficas para Quito, Ecuador" ("Water: Together We Can Care For It! Case Study of a Watershed Conservation Fund for Quito, Ecuador"). This publication is graphically attractive, short and has the following content:

- Explains the problem: the global and regional water problem highlighting how limited and threatened the water resource is. Talks about the local water problem.
- Proposes a solution: general explanation of the idea
- What needs to be done to get the idea off the ground
- What benefits does the solution generate

The information gathered for the document is the basic preliminary data that the stakeholders should know: characteristics of the watersheds (topography, geology, soils, rainfall), social conditions (population, activities, quality of life, water uses) and impacts (water flow and water quality, aquatic and terrestrial biodiversity).

This publication served as the "script" to market the idea among related audiences, such as the general managers and the board of directors of the EMAAP-Q and EEQ. By having a set text, all the lobbying involved was coherent. All organizations spoke the same language, which was reiterated in powerpoint presentations and a video. This material has served for national and international promotion as the mechanism develops.

Beware of the timeliness of your idea

The moment of pitching your idea is fundamental in order to succeed. It may be that your idea is perfect but the timing is wrong. Therefore, it is very important to conceptualize your proposal, prepare the material but **publicize it at the right time**. This is the case of the FONAG, that has had to face a lot of political changes during 1998 to the present. However, even though the creation of the fund was delayed because of political circumstances, the decision was eventually made and it has persevered in spite of the political changes. The idea was accepted by one city administration, and supported by an interim and newly elected administration. It is important to realize that inter-institutional financial mechanisms take time to get off the ground and that it is vital to be persistent.

6. DEFINE SCOPE OF VALUATION STUDY / CONDUCT VALUATION STUDY

Be sure to have the relevant information

As stated in the initial goal proposed for the Condor Bioreserve, an economic valuation study has been a

key objective. However, up to now, economic evaluation has not been the focus of the work. Rather the experience has focused on putting institutional and financial mechanisms in place.

In order to do an economic valuation study, you need basic hydrological and physical information that may not be easily available, this has been the case for Condor. An economic valuation study has been seen as a progressive, long-term process. To start, a basic data gathering exercise was undertaken to know the state of the hydrological information available. This was done through an internship with a graduate student, and working with NGOs, Universities and EMAAP-Q to attempt to systematize the data. Second, considering the information gaps found, efforts have been made to promote additional studies and information gathering, in order to effectively understand how the hydrological systems work and in particular the Papallacta and Antisana watersheds that feed the water diversion projects.

Integrate the financial mechanism to the overall conservation strategy for the area

Although this may sound obvious, water valuation efforts have to be integrated into the overall conservation work. Proposed activities must respond to the threats and strategies identified in a conservation management plan. This project aims to integrate hydrological systems and aquatic biodiversity into TNC's planning processes at the ecoregional and site level. This effort entails the creation of additional institutional capacity within TNC partners, as well as supporting existing water related institutions to address conservation concerns. Through research, information exchange and incremental capacity building, TNC-Ecuador is attempting to go up the "learning curve" of the water management field and be able to influence decisions that give more solid foundation to the FONAG.

Gradual and inter-institutional development of economic valuation

As stated earlier, the economic valuation study is a means to an end. This may seem obvious but considering that economic valuation is in vogue, there have been many failed and/or costly attempts because the studies become an end on to themselves. Therefore, economic valuation continues to be in the agenda of the Condor Bioserve but as a gradual process that depends on sound physical information and political buy-in.

During the initial stages of the FONAG, an economic valuation study was undertaken by Fundación Antisana. This entailed estimating the cost of effectively patrolling the upper part of the Papallacta, Chalpi Grande and Oyacachi watersheds and dividing it by the amount of water generated. The study resulted in suggesting a monthly user fee of US\$0,04 per family in Quito. In addition, GTZ hired a consultant to also value the water resource of Antisana Reserve. This study also used a simple method of quantifying the maintenance costs of protecting the upper part of the Antisana watershed with an integrated patrol system and included estimating the opportunity costs for the landowners of not being able to graze cattle and sheep in the protected area. The final result was a proposed user fee of US\$0,07 per family per month for those that receive their water from La Mica - Quito Sur project.

These studies are very interesting and are a good indication of what a user fee might amount to. They are useful preliminary evaluations. However, they are still isolated results that need political backing to be a reality. In the case of FONAG the start up water fees were a political decision. Now that the Fund is off the ground, efforts have to be made to continue valuing the water resource based on a consensual objectives of the stakeholders involved.

8. PERSEVERE

Effectively, the FONAG has come to be based on a value defined by each participant as the entity's willingness-to-pay for the protection of the water resource: EMAAP-Q with 1% of sales and EEQ with a set \$45,000 a year contribution. It is important to keep in mind that this case is a "work in progress" and the Fund has only just been created. No projects have been implemented yet, so results are still limited. The key result is that the fund has been created and it is up and running, with one new member, the electrical utility, on board, as shown in the following table:

	Contribution to Fund*	Payments starting date	Amount contributed to Sept.1, 2001
EMAAP-Q	Seed capital: \$15,000 1% drinking water sales	January, 2000	\$305,000
TNC	Seed capital: \$1,000		\$1,000
EEQ	\$45,000 per year	September, 2001	\$45,000

* As determined by the contract

This amount of capitalization is still not sufficient and this may be an area where the process should be improved. Due to the intense political lobbying that had to be undertaken not enough time was dedicated to the financial planning of the mechanism in order to develop different financial scenarios and develop a better financial target for the Fund.

However, the expectation is that by the end of 2001 the fund should have close to \$450,000 due to an increase in EMAAP-Q sales and financial returns. This would allow for some level of interest to implement a small project in the beginning of 2002. The Nature Conservancy will work to develop FONAG's institutional capacity and strengthen community support. In this regard, efforts are underway to look for alternatives, including a possible debt swap, user fees and transfer of tax revenues for the Municipality of Quito.

The fact that the Fund only uses the interest generated means that growth is slow and that investment will also be slow. Yet, this is an advantage, because the project can be learning and expanding its range of action over time, as it grows. And this is where most watershed conservation efforts have failed. The money is available for the initial years and when the project ends, there is no continuity. A mechanism such as the FONAG complements other conservation efforts underway. By involving the water users, those that benefit from the resource, there is the expectation that the effort will continue for the long-term.

Watershed protection is a multi-stakeholder process with long-term goals. For TNC, biodiversity conservation is the ultimate goal. For Condor, where a water-based financial mechanism was created during one of the country's worst financial crisis, the FONAG is seen as an effort that will take time to bear fruit. Experiences such as this, are few throughout the world, and the difficulties may be many. The important message is that organizations involved, whether they be an international or local NGO, a local government or business, have to give their commitment for the long-term. The creation of the Fund guarantees a long-term institutional mechanism to pull together multi-stakeholder participation to leverage the conservation of the Condor Bioreserve.