Winter 2009 Newsletter of theFundación Natura Bolivia

Contents

Fundación Natura Bolivia specializes in the development of financial mechanisms—such as compensation for environmental services—to sustainably conserve critical ecosystems and improve the wellbeing of the Bolivian population.

Union creates strength

Municipalities of the Río Grande-Cruceño Valleys Natural Integrated Management Area validate the management plan

In August, the municipalities of Cabezas, Vallegrande, Samaipata and Gutierrez played host to a series of workshops in which Fundación Natura Bolivia presented the results of the diagnostic study and the management plan for the Río Grande-Cruceño Valleys Natural Integrated Management Area (ANMI).

After intense days of analysis and debate, the mayors and council members took the decision to validate the management plan for the reserve and create a "municipalities union" in order to execute activities and provide support to the programs established in the management plan, aimed at conserving and sustainably managing the ANMI's natural resources.

The validated management plan proposes a decentralized scheme of governability, in which the Santa Cruz Departmental Government would define policies and contribute economic resources, and the municipalities with jurisdiction over the Río Grande-Cruceño Valleys ANMI would be responsible for the management of the area and for directly executing activities.

To this end it is proposed that the seven municipalities form a board of directors and later the municipalities union for the ANMI. In the long term, it is expected that this scheme would function as an agile and efficient tool, capable of effectively managing the different programs planned.

The governability scheme proposed for the Río Grande-Cruceño Valleys ANMI will depend on a strong articulation between the departmental government and the municipalities involved, given that these are the political and territorial instances with the democratic legitimacy necessary to consolidate the area.

Mission

Improve the quality of life for the communities of the Río Grande-Cruceño Valleys ANMI through the sustainable management of its natural resources in a way which generates employment and income.

Vision

Healthy and adequately managed ecosystems, home to people with incomes above the national average.

Importance and strategic potential

The Río Grande watershed covers around 5.7 million hectares and originates in the departments of Potosí, Chuquisaca and Cochabamba. It is considered one of the most important watersheds in Bolivia from the hydrological point of view, given that it plays a key role in the production of water for consumption and irrigation. This sector has the highest biodiversity level of all the Bolivian Tucuman Forest, as well as high cultural and historical value.

However, in the past few years, extensive cattle ranching and deforestation have notably increased the naturally high rates of erosion and sedimentation in the region, contributing to the floods which annually cause enormous economic losses for the department. The forests of the reserve would play a key role in the mitigation of this type of disaster.

First steps

During the process of creating the management plan, conservation objects were identified and 11 zones defined for different uses according to their importance. The results of this process were submitted to consultation in a series of planning workshops, to which all of the key actors of the area were invited, including the presidents of local organizations, community representatives, forest guards and municipal government representatives, among others.

Once the characteristics, limitations and potential of the Río Grande-Cruceño Valleys ANMI were known, it was proposed that the management plan should include the following:

> *Mission:* Improve the quality of life for the communities of the Río Grande-Cruceño Valleys ANMI through the sustainable management of its natural resources in a way which generates employment and income.

> *Vision:* Healthy and adequately managed ecosystems, home to people with incomes above the national average.

The strategic objectives to achieve this mission and vision are:

· Ensure the conservation of the natural wealth present in ecosystems of great biodiversity which are vulnerable to human activity, as well as of the cultural values associated with the traditions and customs of local communities.

· Guarantee the health and integrity of important water sources and the environmental services which they provide, related to hydrological stability, carbon fixation and climatic regulation.

- Contribute to alimentary security and promote the economic and social development of local communities, based on the sustainable management of species which may be exploited to generate income without diminishing or degrading the natural capital of the area, and improve the livelihoods of the population involved.

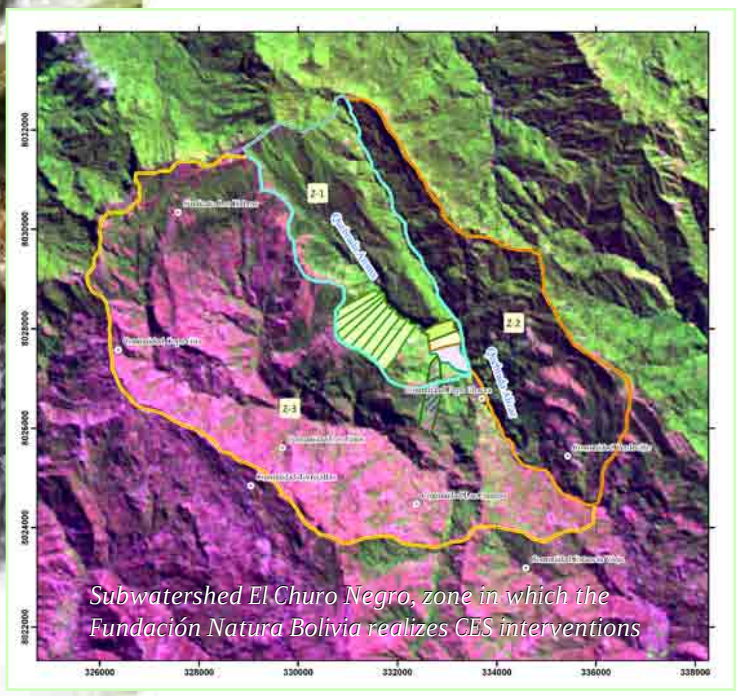
At the local level, compensation for hydrological environmental services schemes in the Santa Cruz valleys: The case of the Municipality of Comarapa

María Teresa Vargas and Maurizio Forno

Background

The Comarapa River watershed is located between the municipalities of Comarapa and Saipina, both belonging to the Caballero Province of the Department of Santa Cruz. The upper, middle and lower Comarapa watersheds cover a total area of 54,300 hectares. The Comarapa River is a tributary of the Mizque River, which is a tributary of the Río Grande and it in its turn of the Mamore River which flows into the Amazonas. The Comarapa watershed is fed by the Amboró National Park and covers a great part of the buffer zone of this protected area.

The watershed is divided into two zones or principal waterways: the Comarapa River (above the La Cañada dam) in the municipality of the same name and the subwatersheds Oconi and Puercos, which form the upper watershed and after meeting reach down to the Municipality of Saipina.



Subwatershed El Churo Negro, zone in which the Fundación Natura Bolivia realizes CES interventions

On the border between the municipalities of Comarapa and Saipina, at the beginning of 2003, the La Cañada dam was built through a public investment of 26 million dollars. The water from the dam is used, above all, in the lower part of the watershed, specifically in the valleys of Saipina, Chillón and San Rafael; permanently and adequately supplying more than 400 families which irrigate around 2,400 hectares in the Municipality of Saipina.

Of the two zones mentioned, the most important is the watershed of the Comarapa River, due to the fact that its flow is permanent throughout the year and that it is the one which feeds the dam.

Within the upper watershed of the Comarapa River, eight subwatersheds have been identified, with a total area of 15,037 hectares. The Churo Negro subwatershed, which has an area of 1,976 hectares, is that which presents the highest indices of precipitation and the greatest area with forest cover. Consequently it is the river which provides the greatest contribution to the Comarapa River.

The principal productive activity in the Comarapa watershed is agriculture, generally with irrigation. There are marked difference in relation to the types of crops grown, irrigation systems used and the extension of the lands cultivated between the upper, middle and lower watersheds, but generally the area is known for its agrohortifruticultural production.

The second productive activity in the Comarapa River watershed is cattle ranching, with approximately 15,000 animals (bovine) in existence in the Comarapa municipality.

Cattle ranching is done only at the small to medium scale, with an extensive system of production for both meat and milk products. The predominant race is "criolla" for the ease with which it adapts to the area.

Problems of environmental degradation in the watershed

The Comarapa River and its tributaries are key for water provision as much for domestic use as for the productive sectors of the area. Nevertheless, a large part of the watershed faces constant pressure from the agricultural sector, both through the expansion of the areas in production and from soil misuse, producing serious impacts such as soil erosion, an increase in the sediment load, loss of fertility, lower agricultural profits, loss of biodiversity and greater contamination in the water courses; all of which contributes to greater poverty in the rural populations.

In the middle watershed ranchers realize intensive cattle grazing, principally around the La Cañada dam in areas which due to the characteristics of the soil are inadequate for cattle, a situation worsened by overgrazing, which causes greater sediment production.

Possible solution: direct incentives for poor farmers

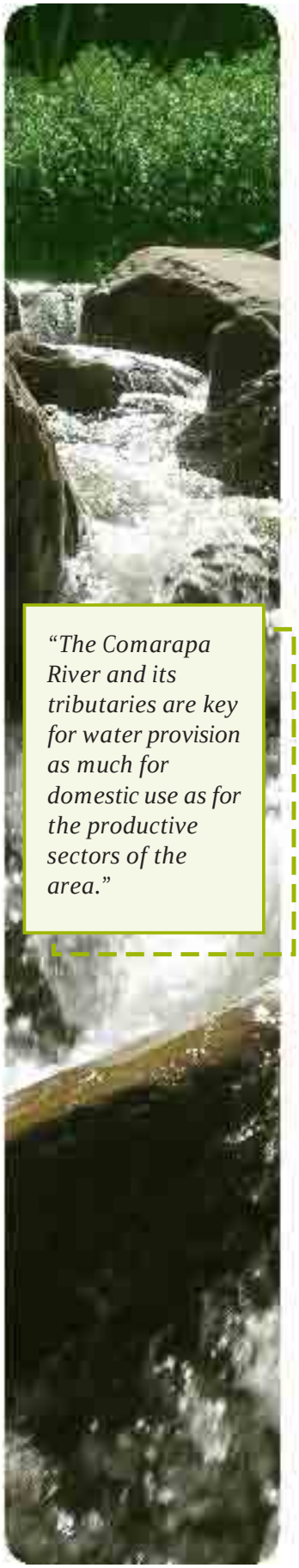
Consequently, any intervention in the Comarapa watershed requires a consideration of how to protect the remaining forest mass in the upper part of the watershed, and of how to diminish the sediment load in the middle watershed, so as not to affect the productive sector and livelihoods of this watershed.

After having put into practice various conservation measures, in February 2008 the highest local authorities approved the creation of a "compensation for hydrological environmental services" scheme, as a tool to help mitigate the environmental problems faced by the most important water sources for the municipalities of Comarapa and Saipina. The first step was to create a local, credible and transparent institutional framework, consisting of the water cooperative, Comarapa Municipal Government and a non-government organization, Fundación Natura.

The objective of this tripartite alliance is to conserve the environmental services of the watershed, restoring the ecosystem, where necessary and possible, in order to en sure the long-term provision of water for the supply not only of the general population but also for the productive sectors.

The means of reaching this goal is the establishment of a just compensation system, which will slowly but surely build support for the families which help provide these environmental services in the upper and middle Comarapa watershed. In order to be sustainable the scheme needs to involve the farmers of the upper, middle and lower watershed in commitments for mutual cooperation, considering that there are complementary interests for their productive activities. The downstream farmers need water for irrigation and consumption, but the watershed is susceptible to changes in the forest cover produced in order to initiate agricultural or cattle-related activities in the upper watershed, especially when cloud forest is involved.

A downstream "water fund" has been created to finance upstream conservation activities, which is administered by the Caballero Public Services Cooperative Ltd.,

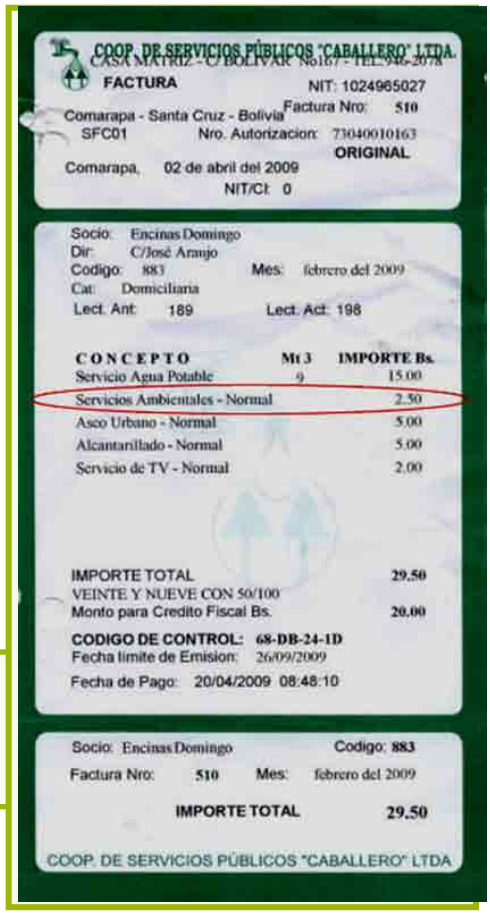


"The Comarapa River and its tributaries are key for water provision as much for domestic use as for the productive sectors of the area."

Water bill which includes the environmental services contribution

an entity with local legitimacy and administrative capacity to manage these resources. The fund's resources are derived from the annual contribution of the Comarapa Municipal Government, the Fundación Natura Bolivia and from the contributions of the members of the Comarapa water cooperative.

The contribution from the water cooperative members was obtained through an arduous process of social diffusion which sought to introduce the concept that the preservation of the sources of water supply is not a cost, but rather an investment with a high return in terms of social benefit. Following this process a meeting of cooperative members was held where the implementation of a new contribution for "environmental services" was proposed and approved.
This contribution consists in charging members a percentage of their monthly fee for the provision of water, which in the majority of cases amounts to approximately 2.50 Bs.



COOP. DE SERVICIOS PÚBLICOS "CABALLERO" LTDA.
CASA MATRIZ - C/ BOLIVAR No167 - TEL. 946-2078

FACTURA
NIT: 1024965027
Factura Nro: 510
Comarapa - Santa Cruz - Bolivia
SFC01
Nro. Autorizacion: 7304010163
ORIGINAL
Comarapa, 02 de abril del 2009
NIT/CI: 0

Socio: Encinas Domingo
Dir: C/José Arnujo
Codigo: 883
Mes: febrero del 2009
Cat: Domiciliaria
Lect. Ant: 189
Lect. Act: 198

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Servicio Agua Potable	9	15.00
Servicios Ambientales - Normal		2.50
Aseo Urbano - Normal		5.00
Alcantarillado - Normal		5.00
Servicio de TV - Normal		2.00

IMPORTE TOTAL 29.50
VEINTE Y NUEVE CON 50/100
Monto para Credito Fiscal Bs. 20.00
CODIGO DE CONTROL: 68-DB-24-1D
Fecha limite de Emision: 26/09/2009
Fecha de Pago: 20/04/2009 08:48:10

Socio: Encinas Domingo Codigo: 883
Factura Nro: 510 Mes: febrero del 2009
IMPORTE TOTAL 29.50
COOP. DE SERVICIOS PÚBLICOS "CABALLERO" LTDA

Evolution of the Comarapa CSAH fund

The objective of incorporating this amount in the water bill to conserve the water supply is to promote a system of compensation for environmental services in the watershed, which will enable the municipality to ensure water flow in quantity and quality. Specifically, the aim is a CES initiative for the provision of hydrological environmental services, both present and future. This initiative is motivated by the urgent need to protect the existing sources of potable water, as well as the zone where the water is collected.

The financial contribution by the end users to compensate those who assume the cost of protecting the watershed, responds to the principal of social equity and to the principal of "user pays" in relation to resource use. In this way the final beneficiaries are delegated part of the responsibility for protecting the existing sources of potable water.

In the first two years of the fund's management, 157,037 Bs were collected, and with this project partners have compensated 10 families which have put under permanent conservation 628.34 hectares of cloud forest in the upper Comarapa watershed. The size and the compensation package have been negotiated with each farmer.

An indicator of the success of the scheme is the quantity of farmers willing to participate, who comprise a group offering environmental services (provision of water and reduction of sediment) of more than five communities (La Jara, Los Pinos, Pampas, Pampa Chacra, San José and others), approximately 148 families, equivalent to 800 inhabitants, that have not yet received compensation due to a lack of funds, with the idea being to advance slowly but surely and reach at least 80% of the area with

forest coverage in the upper watershed through the compensation scheme, so as to guarantee the protection of the cloud forest.

Both the success of the conservation activities realized and the transparency in the management of the resources of the fund have attracted fans, for which reason since the first semester of 2009, the Comarapa Irrigators Association (downstream irrigators who benefit from the La Cañada dam) have joined the effort in an active and responsible way. The irrigators contribute 10 Bs per hectare/year. In total there are 460 irrigators and the area under irrigation occupies 2,400 hectares, with which it is hoped to raise an annual amount of 24,000 Bs.

With similar motives, other producers' associations of the area (such as the cattle ranchers association of the Comarapa municipality) have demonstrated their interest in supporting the conservation efforts in the middle and upper watershed; thus project partners are working on defining the kind of contribution they might be able to make.

Beyond the resources raised, this mechanism has been completely appropriated by local organizations which exercise full leadership of the scheme. Through their activities in favor of this initiative, both the Mayor of Comarapa, Mr. Noel Rojas, and the President of the water cooperative, Prof. Marcelo Quemaya, have enabled Comarapa to stand out as a "green" municipality and model for schemes related to conservation and environmental responsibility, willing to innovate and lead conservation actions, generating new alliances and maintaining productive systems.

All this enables both authorities to channel additional help for the integrated management of the watershed, the expansion of the sewer system, faster establishment of water connections and improvements to the administration of the cooperative itself.

One proof of this is that the current government approved a project worth 2.6 million bolivianos for the sustainable management of the Comarapa watershed; part of these resources will be used to strengthen the local CES scheme.

In the same way, the water cooperative has gained the attention of international support entities which have shown interest in helping expand the system of water connections and improving the water provision services.

Considering the favorable development of the local watershed protection fund, there is increasing interest on the part of the stakeholder communities and productive sectors to become involved, whether as buyers or sellers of the hydrological environmental service. The responsibility and commitment of those who compose and manage the fund is also evident; we can only hope that the process continues with the progressive development of activities and that it may be consolidated as an example of environmental management and responsibility at the departmental and national level.

"...this mechanism has been completely appropriated by local organizations which exercise full leadership of the scheme..."

Showing the new agreement with the signature of the Saipina irrigators

The international internship program 2009

A "Water Museum" for Santa Cruz and a baseline for conservation in the Cruceño Valleys

Stella Schons

Bryn Fluharty

Abbie Turiansky

During the months of June and August of 2009, Natura welcomed with open arms three Masters students from different universities of the United States: Abbie Turiansky from Duke University's Nicholas School of the Environment, Stella Schons from the Yale School of Forestry and Environment, and Bryn Fluharty from the global environmental policy program of the American University.

Abbie and Stella worked on the beginnings of a long-term research program which Fundación Natura is developing together with Harvard University. The program seeks to compare compensation for environmental services activities with other tools for conservation which Natura will be implementing in and around the ANMI Río Grande-Cruceño Valleys. Through this investigation, project partners hope to determine which mechanisms are most effective in terms of creating positive changes in people's behavior, values, social norms and the perceptions held with respect to conservation and natural resource use.

Abbie and Stella's work has been oriented to the elaboration of a baseline to facilitate the development, monitoring and evaluation of the project in the future. To this purpose they prepared a survey, developed by holding meetings with focal groups in the communities of El Torno and Mairana. With the help of participating community members, they designed questions which would be easily comprehensible in the final version of the survey. Another part of the process was the validation of the survey drafts, as well as the training and supervision in the field of possible future survey collectors.

The work realized by Bryn consisted of the design of a plan for a possible "Water Museum" for the city of Santa Cruz. The final product, a document of 40 pages, includes both written suggestions as well as designs of the different exhibitions. It also explains the information which each section of the exhibition should contain, which would run in sequence from cultural information about Bolivia through to scientific information about the changes being produced in the environment at the global level which affect us at the local level.

In general, the three interns consider that the time spent in Bolivia and with Natura has been very valuable and that the opportunity they have had to work with Natura has enabled them to learn about CES-related projects, especially given that Natura is an institution with much experience in this area.

Without a doubt, Abbie, Stella and Bryn won a place within the Natura family and we hope they will soon be back to visit us.

The Bellagio Conversations

The publication *Payments for Watershed Services: The Bellagio Conversations* (Asquith and Wunder, 2008) seeks to share lessons learned by implementers of payments for watershed services (PWS) initiatives worldwide. This is the sixth excerpt to be published in the tri-monthly newsletters of Natura.

How important are PWS initiatives for poverty reduction?

Whether for practical implementation reasons or for social justice, PWS programs cannot ignore the poor. However, PWS cannot be viewed as an all-encompassing poverty alleviation tool, although ensuring and improving the provision of watershed services will often by itself reduce poverty. In government-financed PWS programs especially, there will often be hard tradeoffs between maximizing watershed services and maximizing poverty reduction. Experience to date shows good PWS progress in addressing both objectives, but that there is often considerable potential to better manage the trade-offs .

A large number of the world's poorest people live in rural upland catchments. Sometimes they are potential suppliers and sometimes they are beneficiaries of watershed services. However, often the structural reasons for poverty are deep-rooted, and PWS programs alone are unlikely to solve them. Although PWS may have important localized effects on poverty alleviation, it can only serve as a targeted poverty alleviation tool if implementers are willing and able to make tradeoffs between maximizing watershed services and alleviating poverty.

PWS usually produces opportunities for the poor, but these are sometimes accompanied by risk. The opportunities include improved and more diversified incomes, improved governance and local organization, and enhanced capacity to prevent environmental degradation. Conversely, potential risks include uncompensated exclusion of non-participants from resources, and under-compensated opportunity costs on behalf of service providers. Each individual PWS scheme must come to its own equilibrium on how to balance maximizing the provision of watershed services and impacting the poor. However, PWS schemes to date have had positive welfare effects on most participants, even when there was no explicit poverty targeting. There is only anecdotal evidence about PES schemes having made poor people worse off on a significant scale.*

See Grieg-Gran et al. (2005) and Pagiola et al. (2005) for comparative assessments about the welfare impacts of PES schemes on the poor.

Q1 How are poor people affected by PWS schemes?

The poor are often sellers and sometimes buyers of watershed services. As water users, the poor often depend disproportionately on watershed services and are more vulnerable to declines in service provision (the rich are better able to find substitutes). The poor are more affected by deteriorating water quality and reduced supplies, and have less capacity to cope with economic stresses. They often live in risky environments that are prone to floods or landslides. On the service seller side, heavily forested upper watersheds and other environmentally fragile production areas capable of producing environmental services tend to be disproportionately inhabited by poor people. Since their land use practices have variable impacts on the watershed, in principle they also qualify as service providers.

Q2 To what extent can poor people become sellers of watershed services?

A high overlap in PWS schemes between areas supplying watershed services and poor inhabitants will likely lead to poverty alleviation. For example, the Mexican national PWS initiative enrolls areas based on the risk of deforestation (as calculated from a statistical model), but also prioritizes areas of extreme poverty. Over time, shifts in the weight attached to these priorities have also affected the environmental efficiency of the scheme. However, even without any poverty targeting, the criterion of heavily forested areas naturally directs area selection to some of the poorest regions in Mexico. In Costa Rica, places with high environmental value have priority (such as land in biodiversity corridors, protected areas, critical watersheds), but regional poverty reflected via a national social development index is also explicitly weighted.

Q3 Are there tradeoffs between maximizing watershed services and poverty alleviation?

Yes. Service buyers will want payments for watershed services to be as close as possible to the land user's opportunity cost of providing the service. Poor service providers will want to be paid as close as possible to the value of the service. Since buyer financial resources are finite and they usually are in a better position to determine the rules of the game, in practice this tends to translate into making a larger number of people a little better off by paying a high number of providers slightly above the opportunity cost of service provision. Alternatively, paying significantly more than the opportunity cost of service provision and thereby making a smaller number of people much better off will produce a lower volume of watershed services.

The trade-off between the two scenarios is clear, but the latter scenario is not necessarily superior on the grounds of social justice.

Q4 What is the risk of PWS schemes having adverse impacts on the poor?

PWS-triggered changes in land use and management may affect the poor adversely when they are not compensated or under-compensated. Poor people often engage in land use practices—such as overgrazing, cropping on steep slopes, slash and burn, etc.—that due to their negative hydrological impacts would make them the first choice for change. As long as they are compensated appropriately, trying to change poor people's land use practices is not intrinsically a problem. However, the landless poor are often dependent on common pool resources. Other groups of poor may have ill-defined land access rights, making them ineligible for PWS. It is thus within the realm of possibility that PWS schemes may negatively affect some groups of poor people—typically, those not directly participating in the scheme. Nevertheless, many of these potential negative effects of PWS interventions are universal to all watershed conservation initiatives, and are not unique to PWS. Indeed, to the extent that service provision agreements are usually voluntary, and often negotiated, PWS schemes are in fact less likely to adversely affect the poor than many other types of conservation initiative: providers will only join the schemes if they calculate that they will be made better off from participation.

Q5 To what extent can contract design favor poor people's participation?

Transaction costs on both sides of the agreement can become barriers to access for the poor. Buyer transaction costs are high if there is a need to contract numerous land users. One partial solution can be to use intermediaries who can lump poor providers, such as in the case of Costa Rica's PES system. High transaction costs can discourage poor land users. Keeping contract design and associated monitoring requirements simple can help to counteract this, as can efficient intermediaries. However, the poor are more risk-averse and more vulnerable, and may fail to fully understand the contracts they are signing (i.e. there is not free and informed consent).

Q6 Can the type of payments help enhance social equity?

The form of payments will be determined by the context in which the PWS is being proposed and negotiated. Payments may be in cash or kind, or involve the provision of technical assistance, or, more controversially, even entitlements and property rights. Having a number of negotiable options for selection by the poor may improve welfare outcomes.

In Sukhomajri, India, water rights were de-linked from land rights, and the landless were able to sell their water rights locally. This partially compensated them for reduced access to biomass for grazing in the upper slopes. In Bungo, Sumberjaya, Indonesia, service providers preferred secure land tenure as form of compensation. In Pimampiro, Ecuador, service providers received cash and spent the extra income on both basic needs (e.g. cooking gas costs) and children's education.

Another potential positive impact of PWS schemes is to empower both buyers and sellers. Some PWS mechanisms have been able to recast relations from the typical government patron-project beneficiary to more equal contractual terms. Rural communities may be viewed as service providers, rather than "beneficiaries", while the urban poor may be seen as valued stakeholders who are paying for a watershed service. Participating in PWS schemes may strengthen poor people's land-tenure security. The sense of entitlement and ensuing empowerment can have far-reaching impacts on wellbeing, and may be even more important than income gains See for example, Rosa *et al*. (2003).. In Bolivia's Los Negros watershed, for example, upstream community members note with pride that for the first time, outsiders are valuing the forests *in situ*.

July 22 kickstarted a new compensation for environmental services (CES) initiative, this time in the Municipality of Samaipata, which belongs to the Florida Province and is located 148 km to the east of the city of Santa Cruz de la Sierra. The tripartite agreement between the Honorable Mayor of the Samaipata Municipality, the Florida Public Services Cooperative Ltd., and Fundación Natura Bolivia, aims to conserve Samaipata's watersheds so as to ensure the availability of water in the quantity required and with adequate quality for the town's population.

Once the agreement had been signed, the process of promulgating the proposal began with the idea to approve the creation of an environmental service users' financial contribution for watershed protection.

A meeting of the members of the Florida Public Services Cooperative was held, in which the members voted unanimously to introduce a hydrological environmental services contribution of between 1 and 3 Bs to their monthly water bill, from August 2009 onwards. This process has served to demonstrate the high level of commitment on the part of Samaipata's population to conserving their current and future sources of water supply.

The money which is collected, together with the counterpart funding supplied by Natura and the Municipal Government, will enable the commencement of activities to conserve the watersheds, as has already occurred with other successful schemes being implemented in the area.

Bolivians look to ancient farming*

By James Painter

Poor farmers in the heart of Bolivia's Amazon are being encouraged to embrace the annual floods - by using a centuries-old irrigation system for their crops. They are experimenting with a sustainable way of growing food crops that their ancestors used. It could provide them with better protection against the extremes of climate change, reduce deforestation, improve food security and even promise a better diet.

These are the bold aims of a two-year-old project being carried out by a non-governmental organisation near Trinidad, the capital of the department of Beni.

The system is based on building "camellones"- raised earth platforms of anything up to 2m high, surrounded by canals.

Constructed above the height of flood waters, the camellones can protect seeds and crops from being washed away. The water in the canals provides irrigation and nutrients during the dry season.

See the idea behind camellones

Pre-Columbian cultures in Beni from about 1000BC to AD1400 used a similar system.

"One of the many extraordinary aspects of our camellones project is that poor communities living in the Beni today are using a similar technology to that developed by indigen ous pre-Columbian cultures in the same region to solve a similar range of problems," says Oscar Saavedra, the director of the Kenneth Lee foundation.

He experimented for six years in his own garden to develop the complex system of hydrology.

Ancient and modern communities face the same problems - regular flooding followed by drought.

"The floods were the basis for development and the flourishing of a great civilisation," says Mr Saavedra. There were bad floods in 2006 and 2007, but last year the region saw the worst flooding in at least 50 years. The floods affected some 120,000 people - a quarter of Beni's population - and caused more than $200m (£119m) of damage. That experience prompted many local women to enlist in the camellones project.

"I had planted rice, maize, bananas and onions on my plot of land. But the water left nothing," explains Dunia Rivero Mayaco, a 44-year-old mother of three from Puerto Almacen near Trinidad. "I lost my house too. We had to live three months in temporary accommodation on the main road. The children got ill there. So that's why I am working here on the camellones. I didn't want to lose everything again."

"...communities living in the Beni today are using a similar technology to that developed by indigenous pre-Columbian cultures in the same region to solve a similar range of problems."
Oscar Saavedra, Kenneth Lee Foundation

**Article published by BBC World August 2009*

" We are only just now learning how our ancestors lived and survived. They did not have tractors to build the camellones, and they survived for years. It's incredible." says Maria Salas

About 400 families are now enrolled in the project in five locations, growing mainly maize, cassava and rice. Many of the sites are still in an experimental phase, but the early signs are promising. Productivity appears to be on the increase.

"These camellones will help us when the floods come," says Maira Salas from the village of Copacabana, a 20-minute boat ride down the river Ibare. "Crops like bananas that die easily have a better chance of survival. We are only just now learning how our ancestors lived and survived. They did not have tractors to build the camellones, and they survived for years. It's incredible."

Extreme weather events

International charity Oxfam is supporting the project in part because it offers poor people the possibility of adapting to climate change.

If, as predicted by many experts, the cycles of El Nino/La Nina are going to increase in intensity and frequency, then the project has the capacity to help poor families cope better with the extreme weather events and unpredictable rainfall that are to come.

"It should not matter when the rains come as the water can still be managed at whatever time of the year," says Mr Saavedra.

Other potential advantages of the scheme include:

- The system uses natural fertilizers, and in particular an aquatic plant in the canals called tarope which both purifies the water and acts as a fertilizer when spread over the soil.
- The canals can also provide fish stock, animal fodder and nutrients for the soil
- The camellones can act as a natural seed bank which can survive flooding
- The system can reduce the need to cut down the forested areas around the communities. This is because the soil on traditional plots of land is often exhausted after two to three years. This forces the farmers to clear more land for planting by cutting down the forest.

Villagers are encouraged to embrace the floods and see them as a blessing, not a curse.
During the rainy season, large expanses of land in Beni are under water for several months - except for the raised areas. When the water recedes into the tributaries that run into the Amazon, it takes nutrients with it leaving a sandy brown soil in which it is difficult to grow crops. But in the camellones project, the water left by the floods is harnessed to bring fertility to the soil and irrigation during times of drought.

In short, from being victims of the floods, poor people could become masters by turning the excess water to their advantage.

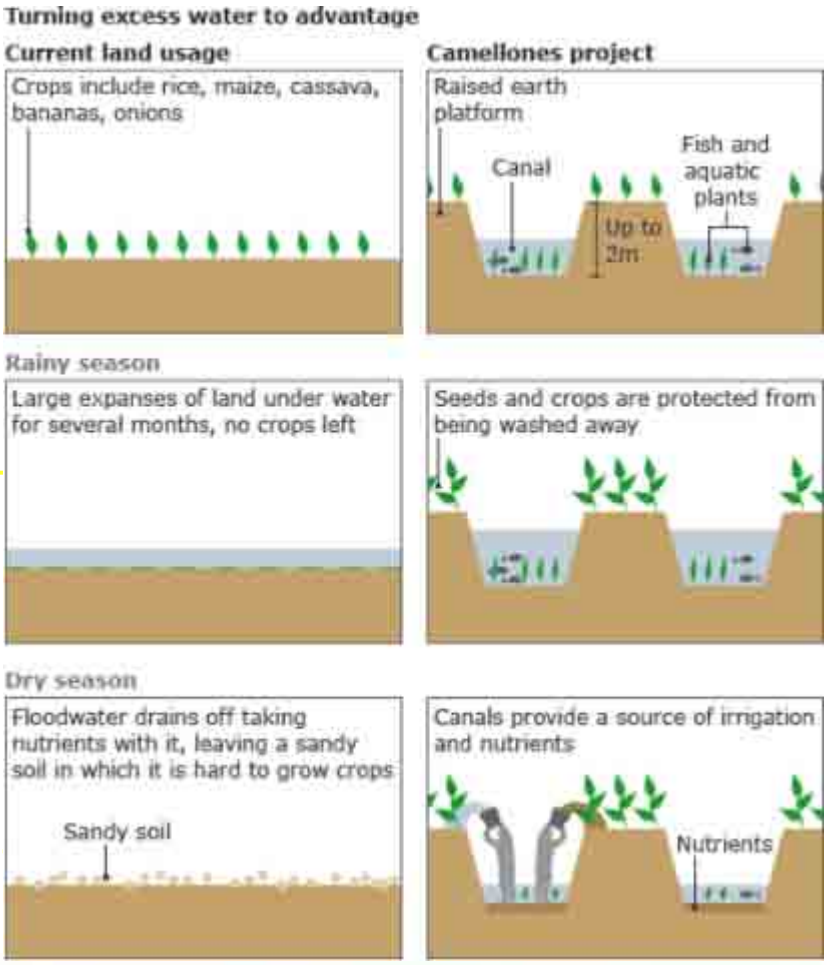
All this seems too good to be true. Some of the women say the real test will come when there is a bad year of flooding or a severe drought. So far, 2009 has not been one of the worst.

There are other huge challenges ahead. One is to try to provide the families with an income from tomatoes or garden produce.

Another is to overcome the scepticism from some local people about the time and physical effort invested in the camellones compared to other sources of local employment.

Mr Saavedra is convinced the camellones project can be expanded, even to other countries.

"This process could be repeated in various parts of the world with similar conditions to the Beni like parts of Bangladesh, India and China. It could help to reduce world hunger and combat climate change," he says.



"This process could be repeated in various parts of the world with similar conditions to the Beni like parts of Bangladesh, India and China. It could help to reduce world hunger and combat climate change,"
Oscar Saavedra,
Kenneth Lee Foundation.

Servicios SinergiAmbientales

Boletin tecnico de redes de servicios ambientales en Ibero-America

It is our pleasure to be able to advise that the Compensation for Environmental Services Learning Network (RACSA), which is currently coordinated by Fundación Natura, is now member of a group of environmental services networks which includes Katoomba Group, Iniciativa Amazonica, REDIPASAS and RISAS. Together we have produced the third edition of *SinergiA*, the technical environmental services newsletter for Ibero-American countries, which now has a new look and can now be enjoyed in three languages (Spanish, English and Portuguese) by a larger number of readers. The current edition of *SinergiA* is dedicated to the issue of "co-benefits" in the debate about the Reduction of Emissions due to Deforestation and Degradation (REDD), an issue increasingly relevant to the search for viable model that enables the inclusion of forests from 2012 within the agreements made as a result of current international negotiations on climate change mitigation. Without doubt the REDD mechanisms should contribute to the reduction of emissions, but will it be possible to reduce them sustainably without taking into account the other environmental services of the forests or the local needs of the populations that inhabit them? In search of an answer, the third edition of *SinergiA* provides opinions and information about tools, projects, publications and events which we hope may be useful in your daily work. In order to access the newsletter please visit the following link http://www.katoombagroup.org/documents/newsletters/sea/sa_edition3sp.htmor request a copy from Natura.

Getting to know the Natura family

Maurizio Forno Linale — *Amboró Project Coordinator*

Mauricio obtained his degree in agricultural economics from the NUR University as well as a Masters in Environmental Management from the Santa Cruz Private University (UPSA). He currently coordinates the CES projects which are being implemented around the Amboró National Park; supervising the work of field staff and external consultants, and coordinating the activities of each project as well as relationships with national, departmental and municipal public and private institutions working in the area. Previously he worked as a consultant in institutions such as FAN, working on the Indigenous REDD Program in the Bolivian Amazon; he also worked for The Nature Conservancy, in the BOLFOR II Project as support for the Forest Superintendant and others.

Roxana Valdéz Zamorano — *Communicator*

Roxana has a degree in Communication Science from the Gabriel René Moreno Autonomous University. She has worked as a communicator for the Fundación Trópico Húmedo, supporting the development of various projects in the rural area, producing communications material for distribution, and coordinating the execution of various workshops in the macro ecoregion of the humid tropics of Bolivia. She has also worked as an audiovisual producer on various independent projects, and in the area of public relations has implemented client loyalty campaigns as well as campaigns to motivate internal publics. She is currently responsible for the elaboration of institutional communication materials and strategies and for the dissemination of information about Natura's projects.

Edition and design Roxana Valdéz; translation Setephanie Secomb

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