naturalia

FALL 2009 NEWSLETTER OF THE FUNDACIÓN 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

Is REDD an option for El Choré?

Illegal colonization, intensive land use activities, information gaps, and the political tension between eastern departments and central government are some of the principal barriers to improved forest management in Bolivia, according to a study by two masters students from Harvard University. At the request of Fundación Natura Bolivia, Kate Dillon and Andrés Mitnik visited Santa Cruz de la Sierra in January 2009 to evaluate the institutional, political and socio-economic context in which the El Choré Forest Reserve is managed, so as to determine the potential to implement a Reducing Emissions from Deforestation and Degradation (REDD) project to prevent its deforestation. This climate change mitigation mechanism—which is still under negotiation—would allow industrial countries to economically compensate Bolivia for reducing emissions from deforestation and degradation; effectively, it is a compensation for environmental services system at a global level which transforms a country's tropical forests into an asset within the national economy.

Using a donation from the European Union, the Fundación Natura is currently evaluating the potential of a REDD project to protect the El Choré Forest Reserve, a 776,379 hectare area located to the north of the Sara and Ichilo provinces in the Santa Cruz Department. The study indicated that under the present unstable political climate, it would be very difficult for Bolivia to be ready to form part of the international carbon market under a REDD mechanism, particularly in El Choré.

The study by Dillon and Mitnik entitled "Is REDD a Game Changer? : Assessing the Economic and Institutional Feasibility of Avoided Deforestation in El Choré Forest Reserve, Bolivia" asks: *What are the institutional opportunities and constraints to implementing a REDD project in El Chore Forest Reserve?* To answer this question the study followed a methodical gathering of updated and relevant information about the complex web of actors, legal frameworks, and the socio-economical situation. In this way, it is able to identify the institutional opportunities and constraints as well as potential incentives to ensure the continued cooperation between relevant actors to combat the barriers to the development of REDD initiatives and advance towards

better forest management in Bolivia.

The study *Is REDD a Game Changer?* does not view the economy as the limiting factor for REDD in El Choré, but rather the social and political problems. It identifies the principal cause of deforestation in El Choré as the illegal settlements by immigrants from the Andean region in search of land for agriculture. This migration is driven by the extreme poverty in the country and the need for new economic opportunities. The government will mitigate this problem if it considers two important political areas: the need to provide economic opportunities for displaced local peoples and the need for clear land tenure laws and regulation. Until the government accomplishes these goals, El Choré will be under constant threat of deforestation.

Even if the central government were willing to establish a REDD project El Choré now, the political and institutional situation in the area is such that it would not be possible to negotiate the project. Due to the influence of the syndicates and the inconsistency of land tenure laws, the migrants are already settled within and along the periphery of the reserve. To try and remove them and prevent future invasions would be very costly for the country.

The way to get a REDD project off the ground is to incentivize the campesinos not to deforest the reserve by providing them with alternative productive capacities such as sustainable forestry, non-timber forest product extraction, and possibly fisheries. Since the central government is not actively supporting REDD activities at this time, the only way to get a project such as REDD off the ground is if the campesinos demand it, and this will only happen if they believe it is in their best interest.

Recommendations

The recommendations from the study (see table) are directed to alleviating social conflicts that represent a threat to El Choré. The final objective is to create trust between the communities involved and to demonstrate that compensation for environmental services (CES) can be used to redefine the productive capacity of the region and generate greater incomes than the ones obtained through current economic activities.

It is clear that these actions must be accompanied by political support to ensure their success. This road, nonetheless, will be long and hard given that the national government is against market mechanisms for conservation, considering that REDD would give the right to contaminate to certain transnationals (*El Deber* 7/6/09).

It would be wise, however, to continue with the efforts towards a Bolivia ready for REDD. The fifteenth meeting of the Conference of the Parties (COP) on climate change, to take place in December in Copenhagen (Denmark), we hope, will provide the world with a functional REDD system, in which Bolivia could play an important role. It is essential, therefore, to cultivate trust in the local communities. In this way they will feel secure that in leaving their agricultural activities to avoid deforestation they will receive a just compensation and social services while will improve their quality of life.

Long-term steps
Initiate pilot projects in Santa Rosa and/or San Juan.
Facilitate the creation of a specific Community Development Strategy in response to the land tenure issues in El Chore.
To gain political support, the pilot projects should tie avoided deforestation and other payments for ecosystem services activities to the country's National Development Plan which emphasizes community development.
Immediate actions
Act as a facilitator to bring together the leadership of the San Juan and Santa Rosa municipalities to understand the specific necessary incentive structures.
Coordinate the drafting of specific Community Development Strategies by the municipalities in concert with their communities.
Start conversations with industrial agricultures south of the reserve who are benefiting from the ecosystem services provided by the reserve (Andes Elbow Effect). This could provide a cash flow that could help to sustain the project until a REDD project is more feasible.
Start conversations with the Sindicatos in Yacapani including the mayor of Yacapani and the Federacion de Sindicatos de Yacapani.
Coordinate technical assistance which can come from the Universidad Gabriel Moreno, the Departmental Government, World Bank, USAID, and other NGOs.

If this set of actions is not performed, even with a national REDD system in place, El Choré will be unable to benefit from this potential revenue source.

If this set of actions is implemented and the national government is able to coordinate a national REDD system, the El Choré project will be in an ideal situation to scale up and to begin receiving certified emissions reductions payments.

Last minute news! Andrés Mitnik and Kate Dillon's study has won the Harvard University Kennedy School of Government class award for outstanding analysis for 2009. Congratulations Kate and Andrés!

EL CHORÉ

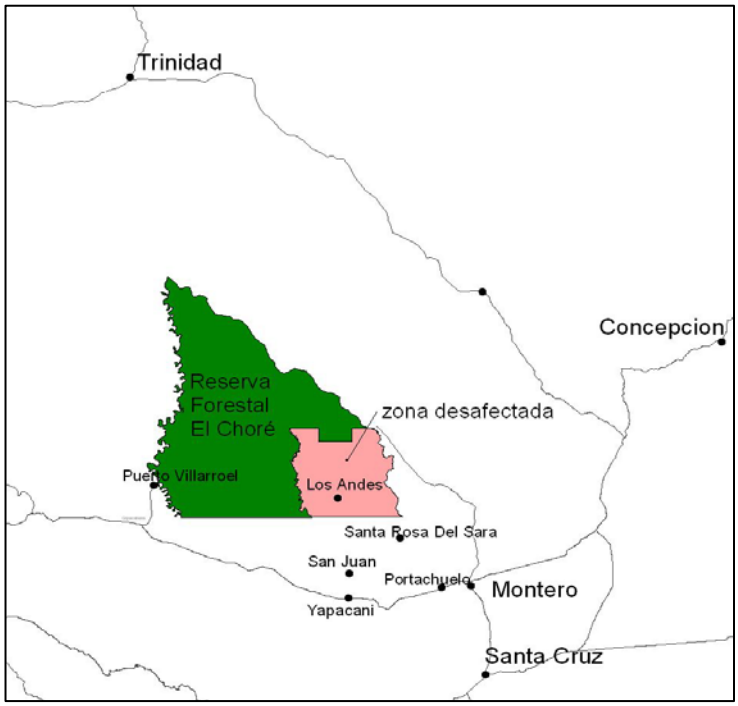
El Choré Forest Reserve: Analysis of the deforestation and of strategies to reduce it

Robert Müller, Fundación Natura Bolivia

The El Choré Forest Reserve, located to the north of the Sara and Ichilo provinces in the Department of Santa Cruz, contains the last great extension of Amazonian forest to the north of the city of Santa Cruz. These forests are very productive in forestry terms, and they are also of great importance for climate regulation in the agricultural area to the north of the department.

The reserve was created in 1966, with an approximate surface of 900 thousand hectares that were later expanded to 1.08 million hectares. In the year 2000, the national government designated 210 thousand ha to the southeast of the reserve (north of Santa Rosa del Sara) for agro-forestry use due to the overlap with colonizer settlements.

One of the objectives of this area's demarcation was to reduce pressure to the remaining forest in the rest of the reserve's area. Nevertheless, the current situation shows that this did not manage to curb the deforestation. In this article, deforestation in El Choré is analyzed and possible measures to reduce it are evaluated. As mentioned previously, one of the options under consideration is the possibility to implement a REDD project.



El Choré flooded

El Choré deforested

Investigation and analysis

Quantitative deforestation analysis

The following map shows the advance of deforestation in the El Choré reserve and in the agro-forestry area up to the year 2008, based on Landsat images. It can be observed that the agro-forestry area (to the southeast) has lost a large part of its forest coverage, while deforestation within the remaining area of the reserve is still in an initial stage.

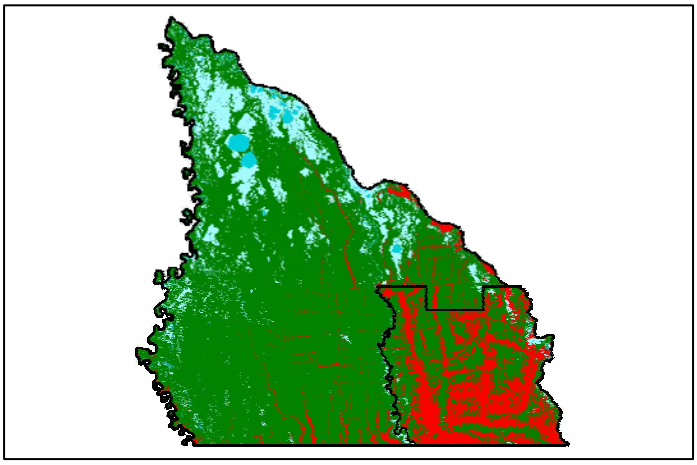
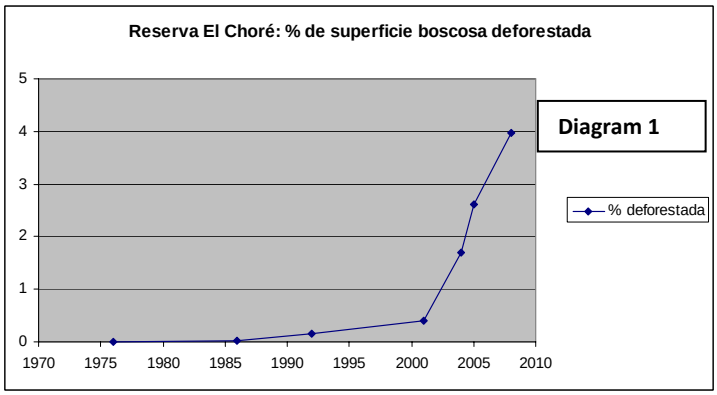
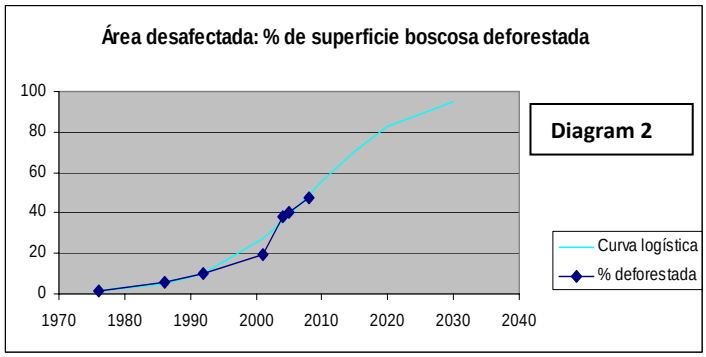


Diagram 1 shows the increase in deforestation within the reserve. An abrupt rise in deforestation is observed starting from 2001. It is clear that the designation of the agro-forestry area could not reduce pressure on the reserve. Four percent of the affected forest area corresponds to 26,3000 hectares.



Deforestation scenarios

Diagram 2 shows the increase in deforestation in the agro-forestry area using an adapted logistical curve. If deforestation inside the reserve continues along the same curve as the agro-forestry area, 50% of the forest cover would be lost by the year 2031, corresponding to approximately 50 million tons of CO^2, with a value of nearly 100 million US$ in the international carbon market. (A 300t CO^2/ha amount is assumed, of which agriculture would remove about 50%; prices of US$2/MT of CO^2 are assumed).



Socio-economic context for the deforestation

The actors inside the agro-forestry area and along the southwest border of the reserve (in the municipality of Santa Rosa) are long-standing Bolivian immigrants who arrived mainly during the 1970s. Their main agricultural product is rice, but they also produce corn, manioc, citrus, papaya and other fruits. Cattle ranching complements the agricultural production. In some areas, production is automated. Farmers produce for self-consumption and local markets.

An opportunity cost analysis of forest conservation was also done, which analyzes the profitability of agricultural land use. The net present value (NPV) of two common slash and burn systems was evaluated. To the east (Santa Rosa) where there is a drier climate, after clearing the forest it is customary to grow rice for two years, followed by two years of growing corn. Afterwards, the soil loses its fertility and is left to rest for six to seven years. To the west (Yapacani), where it is wetter, rice is typically grown for two years, followed by a five year resting period.

Results show the NPV to be around US$500/ha, clearly below what the theoretical income could be through carbon credits. Nevertheless, it should be stressed that compensation to actors inside the reserve would be very problematic given that the settlements are illegal. Instead of considering direct compensation, an integrated solution should be thought through to allow sustainable production.

A large part of the area within the reserve is covered by timber concessions, in part by local groups known in Spanish as ASLs, which possess the right to extract wood under forestry regulations. Deforestation within the reserve is done by various groups; among them are the settlers' children in search of land, and also people from other areas, in their majority Chapareños. According to various local actors interviewed, there is still no considerable agricultural production inside the reserve; the

condition of access roads would not allow it. Apparently, amongst settled groups inside the reserve there is hope that agriculture for land use will be legalized inside the reserve in the future.

The map shown above indicates that deforestation inside the reserve occurs on long paths covering a sizable area; this pattern seems to indicate that, for now, the main goal of the deforestation is to gain territory.

On the shore of the Yapacani river, west of the reserve, there are also Mojeño settlements.

Conclusions

Possible strategies to reduce deforestation

Given the great ecological and economic importance of the El Choré Forest Reserve, we must urgently initiate action to reduce deforestation inside the area.

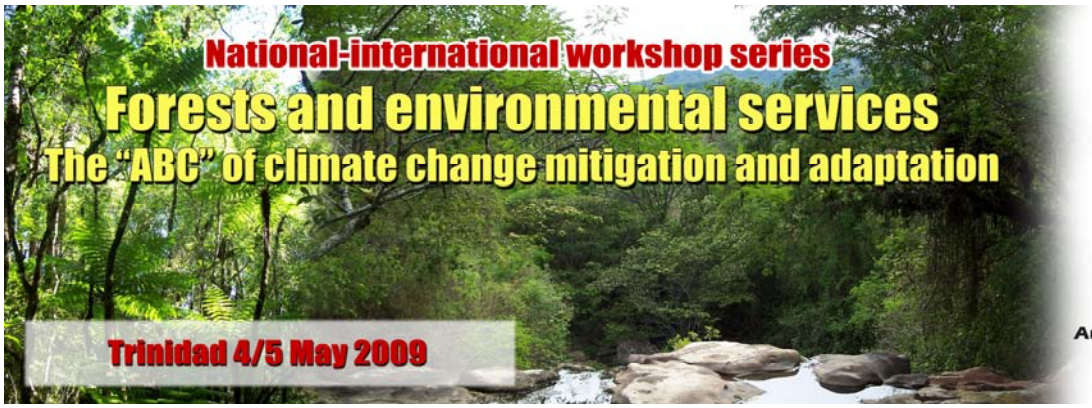
Even though settlements inside the reserve are not legal, it is clear that a violent evacuation would be neither possible nor desirable. A solution will necessarily be achieved through an agreement between the different actors, as much at the municipal as at the departmental and national levels. It is necessary to enable the local campesino representatives to become principal actors with respect to the implementation of conservation strategies for the forest reserve. It is also still necessary to strengthen the dialogue amongst different actors.

Based on a field analysis and the results of interviews with various actors, it is advisable to begin with support projects for agricultural production outside of the reserve, for example in the agro-forestry area. Such projects could be based on existing concepts of land use planning at the level of individual 50 ha plots. There are experiences from the Campesino Investigation and Promotion Center (CIPCA) that has been working in the agro-forestry area for 12 years.

Given that rice is the main income source for farmers in the area, an intensification of rice production through irrigation farming could be tested, which could increase current production from 2 ton/ha up to 6-8 ton/ha, without the need to abandon the plot and deforest new areas. The application of a land use planning system at a plot level would allow the conservation of large areas of forest. Currently, irrigation of rice crops is practiced by Japanese farmers, with some initial experiences being had by small farmers.

Inside the reserve, it would be good to keep supporting forest use, but not agricultural production. Little by little an agreement amongst actors should be reached on land use practices outside and inside the reserve. For now, a concrete REDD project cannot be considered; the ideas presented here would be the first viability tests for such a project. While the viability for a REDD project is being investigated, the Salvemos El Choré Committee—formed in 2007 by various institutions, including Natura—wants to contribute to the conservation of forests through the creation of public awareness on the importance of the reserve.

A group focussed on investigation and negotiation in El Choré



PREFECTURA DEL DEPARTAMENTO DEL BENI

FUNDACIÓN NATURA BOLIVIA

Auspician: AVINA CGIAR

Climate change is a fact. The increase in average temperatures around the globe can be measured, and proofs such as the retreating snow cap on Chacaltaya mountain demonstrate that Bolivia is already sufferering the effects of climate change. These have been some of the conclusions from the workshop "Forests and environmental services: The ABC of climate change mitigation and adaptation". The event, which was organized by Natura with the support from the Prefectural Government of Beni and the Compensation for Environmental Services Learning Network (RACSA by its acronym in Spanish), was held in Trinidad from the 4th to the 5th of May with the support of AVINA and CGIAR.

Fifty-six people participated in the event, among them were representatives of government entities, non governmentel organizations, universities, indigenous and women's groups, business men, farmers and members of the press. Those present learnt about the causes and impacts of climate change, the theory of compensation for environmental services (CES), the REDD mechanism (Reducing Emissions from Degradation and Deforestation), departmental programs for environmental management, the perspective of indigenous peoples and concrete experiences of adaptation and CES. Between the presentations and group work were open debate spaces in which everybody could participate.

It was clear that in the context of international debates about a potential mechanism to compensate developing countries for their forest conservation efforts, REDD represents a challenge to Bolivia, but also an opportunity to develop initiatives whereby taking care of the forest could be economically more attractive than cutting it down. As a country we already have pilot experiences from which we can learn, as much for mitigation as for adaptation. Given that the likely impcts in the bolivian Amazon include changes in the hydrological cycle, increases in the intensity and frequency of extreme climate events (i.e. floods, draught and fires), and the lost of biodiversity, adaptation measures for Bolivia must be developed.

Examples like the elevated field project of the Kenneth Lee Foundation, developed on the basis of pre-colombian techniques to expand the surface of arable land, stress the importance of traditional knowledge for facing the changes to come. This project caused so much interest on the part of the participants that a field trip was organized for the 6th of May.

As a result of the workshop, Natura will keep in contact with the Natural Resources and Environment Secretariat of Beni to develop public policies on climate change and environmental services. It is expected that in the second semester the process of raising awareness and promoting policies continues with the realization of another workshop in the Department of Tarija. For a copy of the report of the event, please contact Fundación Natura Bolivia.

Political management working group

Visit to the raised fields of the Fundación Kenneth Lee project

Mayors and municipal leaders debate CES

"This is a model we should export so that municipalities at a national level can benefit from the protection of their water resources, and citizens become aware of what compensation for environmental services means."

-Prof. Noel Rojas, Mayor of Comarapa

Mayors, councillors and water cooperative executives from the Cruceño Valleys in the workshop

The Compensation for Environmental Services workshop realized on Friday 3 April in the Monte Blanco Cabins in the city of Comarapa, organized by Fundación Natura Bolivia with the help of the potable water cooperatives and four municipal governments from the Cruceño Valleys, was considered to be a success by its participants.

At the end of the day, after the group work tables were concluded, during the stage of conclusions and entrusting tasks to the institutions undertaking CES projects, it was determined that there is an urgent need to create a *national level interinstitutional promotional and support network for the conservation of municipal water resources*, with the aim to publicize, expand, improve and promote the work being done by the municipalities and water cooperatives, which have implemented CES iniciatives as a tool to improve the quality of life for the communities and contribute to poverty reduction.

From above, right to left: Noel Rojas, Mayor of Comarapa; workshop participants; Germán Butrón, Mayor of Pampagrande; and leaders of the Los Negros community

This recommendation was expressed in a document which in one of its salient points states: “Taking into account the national situation, and given the lack of governmental initiatives to define clear policies destined to protect and care for the headwaters which feed into the potable water supply and irrigation for the population, it is urgent that we conserve the forests at the headwaters of the valleys and upper basins.”

The participants emphasized that interinstitutional support and organization is needed for those protecting natural resources, as an essential tool for putting into practice compensation for environmental services. The document recommends that other municipalities do what is possible to conserve their hydrological resources and commits support to move forward with interinstitutional agreements on the issue. It suggests that the municipalities of the Cruceño Valleys should take all the steps necesary to legally create Municipal Integrated Natural Management Areas to protect key areas within their jurisdiction, and asks for the technical support of Fundación Natura Bolivia in terms of Geographic Information System (GIS) assessments.

Pando visits us to evaluate the CES potential for Cobija

Fundación Natura Bolivia is analyzing the feasibility of implementing a compensation for environmental services scheme in the Bahia River, which provides water to the city of Cobija, capital of the Department of Pando. In this context, two representatives from institutions involved in the water resources issue from Cobija visited the Santa Cruz valleys, where various mayors and water cooperatives have established CES schemes as a means to guarantee the availability of water in quality and quantity. With this goal in mind, the Director of Water Resources, Captain Hugo Queirolo, and Viviana Vargas, General Manager of the Cobija water company (EPSA), visited us, together with Juan Carlos Corminola in representation of the donor, Conservation International.

The visit lasted four days, from the 1st to the 4th of April 2009. The project progress report was given during the first and second day in the central office of Fundación Natura, where each institution presented the advances with respect to the investigations underway. On April 3rd the three visitors traveled to Comarapa to attend a workshop for municipal leaders on CES, where mayors and key actors from the cooperatives and other entities shared their CES experiences, which was very productive for our visitors.

Finally, the last day they had the opportunity to visit the community of Santa Rosa de Lima in the Pampagrande municipality, where they could share with the pioneers of the CES project in Santa Rosa and learn more about the process and the results obtained through the implementation of the initiative, particularly with respect to apiculture. The representatives left satisfied with their visit and committed to working together towards solutions to the water issue in Cobija.

Representatives from the Pando Prefecture, the Cobija water company and Conservation International with Natura staff and local people from the Cruceño Valleys

The Bellagio Conversations

Nigel Asquith and Sven Wunder (eds)

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 fifth excerpt to be published in the tri-monthly newsletters of Natura.

In many countries, there is a deep-rooted perception that we shouldn't have to pay for nature—one of God's gifts—and that only man-made products or services should carry a cost. This conviction, together with a traditional perception of widely abundant natural services, severely limits PWS acceptance. The often rather unpredictable outcomes of the PWS process may also limit public support. On the other hand, the PWS concept is intuitively appealing to many, who see it as a way to continue to enjoy healthy and productive watersheds. A gradual shift towards a costs-savings or business-like approach to PWS may thus help further convince potential buyers and other society stakeholders.

How can service users be stimulated to pay?

Using the ecosystem services of natural watersheds can often meet human needs for water at a lower cost than conventional, technological alternatives. For example, the New York City Commission for the Environment saved the city $8 billion by investing $1 billion in watershed protection and restoration in the Catskill Mountains. Generally, avoidance of cost intensive technical solutions like building water treatment facilities provides both short and long term benefits to local governments. Preventative approaches such as payments for watershed services can often be a financially and socially attractive option. Terminology such as "PWS" may sometimes confuse the public, since the acceptance of the phrase varies widely across societies and cultural settings. Moreover, the term describes a process rather than a result. If "PWS" is used to describe an intervention, the public may not have a clear idea of what the result of the scheme will be, and so it may difficult to attract popular support. An alternative terminology—such as environmental resource investment or natural capital financing—may be more useful. The selected terminology should change perceptions so that the public recognizes watersheds as assets that include both economic and other intangible values, each of which can be capitalized.

Q1 How important are end-user attitudes towards payments?

Watersheds have been providing services free of charge for thousands of years. Thus, there is often a deeply rooted perception that we don't pay for nature, and that only man-made products or services should carry a cost. This is especially true in some Andean countries. On the other hand, an educated public often understands the PWS idea, feels a connection to it, and can be brought to recognize that investments must be made in order to continue to enjoy healthy and productive watersheds. A shift towards a costs-savings or business deal approach to PWS may thus help convince potential buyers and other stakeholders. Educating the end user is clearly an important issue. Water that has been packaged in a modern container, shipped, and heavily marketed is perceived as superior, safer, more convenient, and ready for consumption. Users have no problem paying higher prices for bottled water, and are often unaware that watershed restoration could achieve a similar product at a fraction of the price.

Q2 Is the "asset management" concept an effective incentive for users?

One emerging idea is that maintaining the health of a watershed ecosystem is the equivalent of asset management. Asset management comprises business practices designed to increase the value of the asset and reduce the risks of failure and increased long-term cost to its owner or user. It is a well-understood strategy for obtaining maximum value from physical assets and may be usefully applied to natural resource assets. To do so, the asset's economic value must be established. For PWS schemes, the defined asset is the watershed area: the forest, rivers, or glaciers or other source of freshwater, and the area it encompasses. By maintaining the ecosystem,

through user fees or "insurance" policies, users would be recognizing an economic value that was not previously recognized, and increasing the asset's value. This approach—asset management—can help create new understandings of the value of natural assets and ecosystem services. But it is probably not the best approach to obtaining short term funding or identifying the most immediate financial benefits. Risk management, insurance to maintain human health, and opportunities to avoid capital costs may be more pragmatic in mobilizing ecosystem service investments in the short term.

Q3 Is the use of risk management an effective strategy for increasing support of PWS programs?

Risk management may be a useful tool to incorporate into PWS decision-making, as it is a process that many people implicitly undertake in their daily lives. Risk management involves working through the implications of various risks using "what-if" scenarios. A key element of risk management is to understand the consequences of risk, and to quantify their cost and operational implications. To be effective, risk assessment should be user and site specific, and should address both existing and potential problems, such as those described in the table to the right.

Q4 How can the biggest water users (farmers, utilities etc.) be persuaded to pay?

The largest users of fresh water are usually farmers. Until now, they have not been required to pay, or have paid only negligible amounts for irrigation water because governments have been reluctant to impose higher costs on them. Large power and water utilities companies have

also often not paid for the full direct and environmental costs of their water projects, thus causing significant long-term economic harm to society. Where local resistance to changing policies cannot be overcome, new strategies must be considered, such as soliciting the participation of local and international capital markets, which have a vested interest in more rational economic policy. One way might be to convince the largest lenders in emerging markets not to fund irrigation or utility projects in which social and environmental impacts have not been incorporated. Lenders could also provide incentives for the use of ecosystem services where this is the most cost-effective way of meeting water resource goals.

Type of risk	Example
Delivery shortfall	What could reduce stream flow? e.g. diversion by natural or human impact, financial viability of the delivery system
Health hazards from reduced quality	Contamination after leaving the source, exposure to contaminants in surface waters, inability to adhere to health standards
Environmental	Erosion, landslides, flood control, weather/climate change factors
Operational	Price increases due to disruptions, quality control, silting, clean up
Legal and regulatory	Overlapping land claims, government policy affecting land use
Reputational	Large users might be concerned about how their reputation is impacted because of lack of ecosystem concern

Huascar Azurduy y Aldo Sacre de Fundación Natura en la mesa de negocios, junto al Gerente General del Hotel Los Tajibos y el Alcalde Municipal de Buenavista

"The goal is to cover 56 municipalities of Santa Cruz with 56 forests and 56 private enterprises… let people live from the conservation of their natural resources and let ecotourism activities become an important source of income for Bolivian families."

-Aldo Sacre,
Forests for Sustainable Development

Forests for Sustainable Development

The Los Tajibos Hotel is an enterprise that has always manifested an interest in expanding their committment to the social, economic and environmental development of the country. In this context, it has joined a strategic private-public alliance with the Municipality of Buena Vista, the Más Árboles Foundation of Spain, Fundación Natura Bolivia and the Aquiles community to create the Los Tajibos Forest.

To this effect, the hotel will encourage each of its guests to cooperate with the initiative by planting a tree or promoting activities whereby people buy new trees or adopt existing ones to construct the 44 hectare Los Tajibos Forest, located 1500 meters from the Buena Vista main square, on the banks of the Surutu River in the comunity of Villa Aquiles. Through the conservation and plantation of trees, the hotel will mitigate its contribution to global warming and be on track to be the first carbon neutral company in Santa Cruz.

In addition to Fundación Natura Bolivia, which works with the mission to conserve critical ecosystems and improve Bolivian livelihoods, the initiative includes the following institutions:

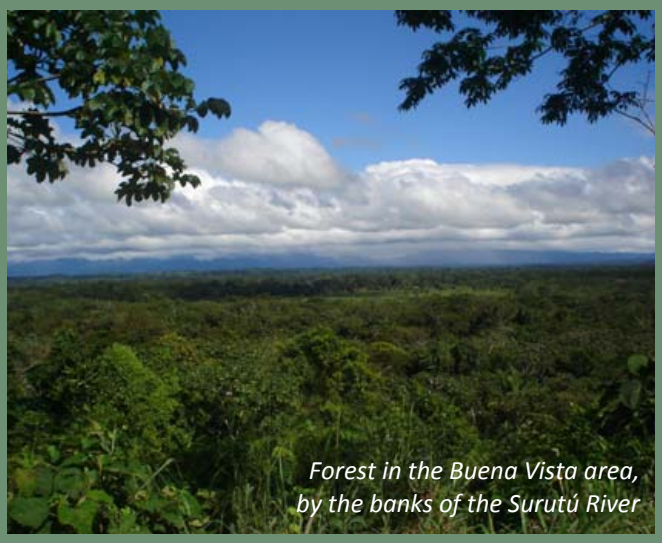
The Municipal Government of Buena Vista, an autonomous entity which will donate the forest to be replanted and which constitutes a reference point for local economic development, through tourism and the conservation of its natural resources. Moreover, it has committed to declaring the chosen forest as a conservation area by municipal ordinance.

The Más Árboles Fundación from Spain, which is promoting strategical alliances with private enterprises and municipalities in order to create new sustainable forest plantations which generate new forest mass, oxygen and fertile soil to absorb carbon dioxide from the atmosphere.

Expocasa promotes the Los Tajibos Forest

The first activity chosen by the Los Tajibos Hotel to promote this project was *Expocasa*, which took place from the 11 to the 15 of June. For the first time in this event each visitor was charged an entrance fee of 20 bolivianos to be used to buy a sapling, which will carry the name of the person who contributed his or her grain of sand to consolidating the forest of the Los Tajibos hotel.

The initiative was very well received by the visitors to Expocasa.



Forest in the Buena Vista area, by the banks of the Surutú River

GOBIERNO MUNICIPAL DE BUENA VISTA

Getting to know the Natura family

Jose Luis Izursa,
Science Coordinator

Dr. José Luis Izursa gained his Ph.D. in Environmental Science as well as a Masters in Sustainable Development and Biological Conservation from the University of Maryland. In addition he has a Masters in Higher Education from Bolivia. The investigation for his doctural thesis focussed on the study of the energetic bases for the sustainable use of Bolivia's natural resources, with an emphasis on forests and natural gas. He has worked in international organizations such as Conservation International, World Wildlife Fund and as project manager for CARE International; he taught at the Universidad of Maryland and also at the Universidad Amazonica de Pando; he has been executive director of CIPA.

Javier Chambi
Geographic Information Systems (GIS) specialist

Javier Chambi is a Forest Engineer who has completed postgraduate studies in Geographic Information Systems and Teledetection at the Universidad Mayor San Andrés. He has experience in the use and management of specialized programs in his area and he will be working with the Science Department, assisting with the GIS-related activities of the Fundación Natura Bolivia.

Javier Chambi

José Luis Izursa

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