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Local funds for environmental services on track

Paulina Pinto and Julián Torrico

During the last few months the Fundación Natura Bolivia has dedicated its efforts, in coordination with the municipal governments and the public services cooperatives of Comarapa, Mairana and Pampagrande (Los Negros), to strengthening the local funds created to protect watershed services and generating more resources to increase these funds, in order to use them to enlarge the upstream area under conservation in each municipality and realize new projects. The following article highlights the advances in the three municipalities...

Downstream: local funds

One important result of the work towards the creation of the Los Negros local fund has been the participation of the Pampagrande Municipal Government in meetings with the main actors of the watershed. As fruit of this process we have a tripartite agreement signed between Natura, the Los Negros Public

Services Cooperative Ltd. and the Pampagrande Municipal Government to create the local fund for watershed services, through a resolution of the Hon. Municipal Council, which includes a commitment from the municipality to economically support the fund and thereby strengthen the conservation of the upper watershed of the Los Negros River. It is also worth noting that the Los Negros Irrigators Association, formed more than two years ago, has finally obtained recognition as a legal entity with the help of Natura. The documentation was formally handed over by the Subprefect of the Florida province, Marín Maleta, and by the Executive Director of Natura, María Teresa Vargas, in a public act. Recently the association has been more active, for example, it has brought about the donation of a batch of organic composted vegetable matter by the Prefecture for the association, which will be used to assist the irrigators in the watershed. Consequently, more farmers are demonstrating an interest in affiliation with the irrigators association.

In Comarapa, the municipal government has followed through on its promise to make a financial contribution to its local fund in order to increase forest conservation in the Churo Negro watershed.

Another important activity in these past months has been the development of the first meetings between the public services cooperatives, municipal governments and Natura, as signatories to the agreements for the creation of the local funds for watershed services in the municipalities of Comarapa, Mairana and Pampagrande. As a result of these meetings, in each municipality a board of directors has been formed to ensure the

The signing of the tripartite agreement for the creation of the Los Negros water fund



implementation of the fund, establish regulations and supervise the use of the resources of the local fund. In each municipality the board of directors includes a president, vice-president, secretary and vocal, where the role of president falls to the presidents of the public services cooperatives and the other roles are represented by personnel of the municipal governments and Natura.

There has also been progress in relation to the strengthening of the cooperatives which will manage the funds. In the case of Mairana, the board of directors of COOSMAI Ltda. has been renewed, to which Natura had previously presented the local fund project and its advances. The new board of directors continues advancing with the execution of the project.

Upstream: conservation of forest and water

In the Pampagrande municipality,

we are preparing to renew the contracts of landowners who participate in the forest conservation scheme upstream of the Los Negros River.

In Comarapa, a meeting was held with the landowners of the San Joaquín area, who inspected the area together with a technical representative of the water cooperative and field staff from Natura; later various proposals were debated, which include the purchase of land in key areas for water production, compensations and technical help for cattle management. We now have a map of the area, documentation from landowners who wish to sell their land and a list of those who are interested in the proposals.

In the El Chape watershed in Mairana, similar proposals were discussed with landowners located close to water collection points, and there too we have a list of landowners in the area of hydrological interest.

New projects for watershed conservation

Natura is responsible for generating new economic resources for watershed services. Among recent achievements, we have the first payment from the United Nations Development Program (UNDP) of a project to strengthen the Los Negros fund and contribute to the Comarapa, Mairana and Samaipata funds. Through its Small Donations Program, it was the UNDP which initially financed the creation of the Los Negros fund.

Lastly, the final design of a project to create a watershed services fund at the provincial level, modeled on experiences with municipal funds, has been completed. The document was presented to the Provincial Popular Participation Committees of the Caballero and Florida provinces, and is undergoing a final revision prior to its presentation to the prefectural government.

Interview with: Mr. Marcelino Ortuño Cámara

Community: Palmasola del Carmen, in Pampagrande

Occupation: Farmer/landowner, participant in the environmental services compensation scheme, and Vocal I of the board of directors of APIASUR (South Amboro Apiculturalists Association)

How and when did you hear about the environmental services compensation initiative for the first time, and what did you think of it?

From Paulina Pinto and Irwin Borda, who started in the community of Santa Rosa de Lima... They explained the project and I started to get interested in forest conservation—it's very important for water and oxygen, we could say at a national level.

What type of compensation do you receive? Do you agree with this form of compensation?

Yes, I agree with the compensation because we've never had it before, and I'm working with bees.

How has the training been?

Good, very good, I can already manage my bees, harvest honey, and I haven't missed the training sessions.

What have been the challenges for you? And for the community?

To continue conserving the forests, because it's good for the environment.

Do you think the scheme has an impact on the deforestation, and on the availability of water downstream?

Yes, because we are conserving the forests and surely there will always be water in the river.

What do you think of the creation of the environmental services fund downstream?

That's good, so that they can support us with the forest conservation.

Do you have any other comments?

There should be other projects for production, such as fruit trees and others.



Interview with: Mr. Andrés Rojas Peña

Community: Los Negros, in Pampagrande

Occupation: President of the Irrigators Association in the Los Negros watershed, and member of the public services cooperative



How and when did you hear about the environmental services compensation initiative, and what did you think of it?

I first became aware of it through Juan León Coraje, who worked for Natura in 2003, and invited us to attend meetings in Santa Rosa, Palmasola and Valle Hermoso, in order to organize an environmental committee and in that way create ties of friendship with the people upstream of the Los Negros River. And later Paulina Pinto arrived and better organized us to conserve the forests, in other words the watershed.

What do you think about the creation of a local fund to protect the watershed?

It's an incentive, though not a very big one, but it already demonstrates that we truly want to conserve the forests. In the future it will be very good for the cooperative, and I hope that all the inhabitants understand that it will be very good to compensate the landowners who are conserving their forests.

Has there been enough consultation of the community?

There was consultation in an assembly of the cooperative and also with the board of directors of the irrigators in various meetings with Natura field staff.

How did you become president of the irrigators association?

First I was president of the environmental committee, but it didn't work, because here the people don't want to organize themselves. We had to organize ourselves in an association because we need to protect the forests and ensure the water doesn't dry up. It's working and the people are joining the association.

Do you have any other comments?

Natura Bolivia should be supported in order to ensure conservation, with the municipal government, Subprefecture, Prefecture and others. There should be projects for the protection of watersheds and for the commercialization of the products we make. The institutions and municipal government should support the forest conservation and the farmers in the area.

Interview with: Mr. Demetrio Vargas Cardozo

Community: Santa Rosa de Lima, in Pampagrande

Occupation: Local apiculture expert and participant in the compensation for environmental services scheme

Why do you think forest conservation is important?

In my hometown of Aiquile (Cochabamba), I knew about a timber company that cut down the trees in my part of the valley and later there was no firewood to collect. The community was in trouble, there was no longer space to collect firewood and everything was prohibited. And later, there was no longer any corn production.

How did you hear about Natura's environmental services compensation project?

In a meeting with Maria Teresa Vargas, to work with environmental conservation.

Have you had any training with the institution?

Yes, I have had training the management of bees, the measurement of water flow and the management of GPS systems.

What do you think of the forest compensation scheme?

It's very good, because nobody received compensation as we do. The four communities put the forests in conservation and receive their compensation, and that doesn't exist in other places.

What do you think about the creation of the downstream fund for the protection of the watershed?

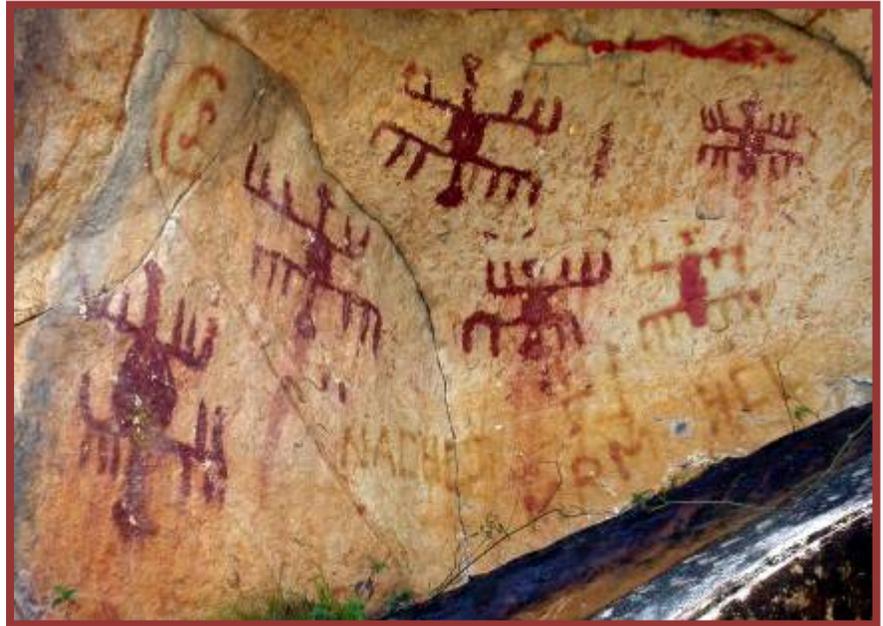
It's good to maintain and care for the environment. We will always need help from the municipal governments etc. to continue with the project. Also help is needed for cattle farming and fruit trees, because others don't have forests which could receive compensation, and a person without forest prefers work.



*Río Grande–Valles Cruceños:
A great opportunity for tourism in Bolivia*

Huascar Azurduy F.

A recent study of the Cruceño Valleys by Natura mentions that there are around 300 tourist attractions with potential in the region. This number includes cultural, archeological, historical and scenic attractions, as well as activities such as rafting, kayaking, bird-watching, etc., although it is true that we are barely beginning to understand the context of the Cruceño Valleys and their real significance for Bolivia. The valleys contain a cultural amalgam. If we pay attention, from time to time we will hear the Spanish phrase “yo



Rock paintings known as “the little devils of Temporal” (photo: M.E. Farell)



Melanerpes cactorum, typical woodpecker of the valleys (photo: S. Reichle)

truje el buey desde orillas del río” (“I brought the bull from the riverbank”). To a Spanish speaking ear, at first hearing, this would seem to be incorrectly said, with **truje** instead of **traje** (brought).

However, it is surprising to find that the word “truje” belongs to the old Spanish and can in fact be frequently found in old Spanish writings, which means that in the valleys this word has been maintained without modification from generation to generation during nearly 500 years. This suggests that the Cruceño valleys may be considered an area of cultural endemism, where old

Spanish words can still be heard. For me this was a revelation and I view it as evidence of our great lack of knowledge about this part of Bolivia, in this and other respects.

This are numerous examples of this historical richness: stars of David marked on antique doors as a reminder of the arrival of Jewish immigrants to the region, old mills,

rock paintings, and archeological remains that tell the tale of a meeting between two very different cultures, the Incan and Chirguanán, whose expansive borders are marked in this region. This mix of Guarani, Quechua, Jewish and Spanish peoples has resulted in a cultural richness and a patrimony of great magnitude... its people.



Estrecho Santa Rosa, Río Grande (photo: M.E. Farell)

Within the ins and outs of history, in more recent times, a bearded man arrived in the region carrying in his backpack all he had... dreams and ideals. His quasi self-destruction is today undeniably one of the legends of the twentieth century. "El Che" died in the Cruceño Valleys after having spent the last part of his life in the region. His route is well known and travelled by those who wish to remember, or simply to know more about this iconic man.

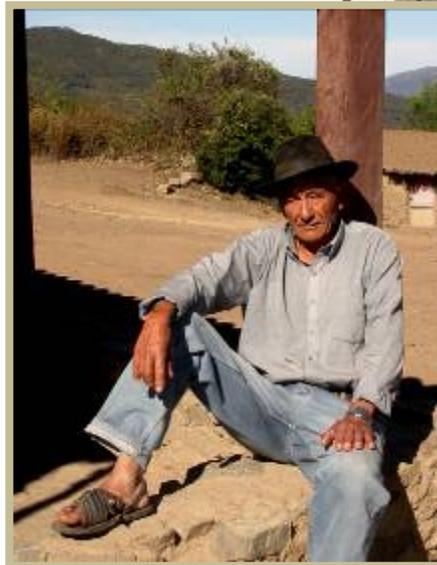
beauty... and its people.

*Photos:
Michael Blendinger*

*Star of David on
an old door in Pucará*

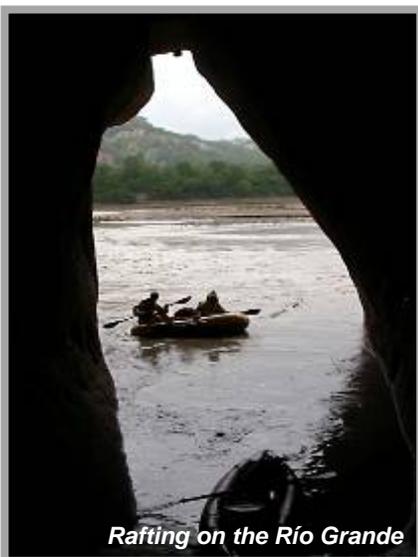


*Don Alcides Osinaga,
inhabitant of La Higuera*



The sun rises and majestically exhibits the rocky mass of the Muela del Diablo (Devil's Molar), which reminds us of other places worth mentioning, such as Bermejo, El Sillar, Refugio Volcanes, Valle del Colorado Barrientos, Abra de los Toros (Bay of the Bulls), Piedras Blancas (White Stones), Cerro La Mina (The Mine Hill), El Empinado (The Height), Sivingal, La Pajcha waterfall, La Higuera (The Fig-tree), Puente Santa Rosa, Abra del Picacho and the impressive Cajones del Río Grande, accessible by car in two and a half hours from the city of Santa Cruz de la Sierra.

The truth is that, after all, I was not that far from knowing and enjoying what the Cruceño Valleys teach us to value: its culture, its natural



The Bellagio Conversations

Nigel Asquith and Sven Wunder (eds)

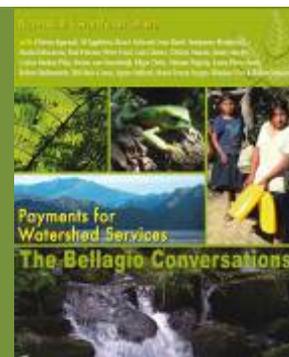
In the autumn edition of *Naturalia* we presented the publication *Payments for Watershed Services: The Bellagio Conversations* (Asquith and Wunder (eds), 2008) for the first time, which seeks to share lessons learned by implementers

of payments for watershed services initiatives (PWS) worldwide. We believe that this document could be very useful for people or institutions interested in knowing more about the opportunities and challenges of market mechanisms as

conservation tools. Consequently, in each edition of *Naturalia* we will present an excerpt from the Bellagio Conversations—a new theme every trimester—with the hope to inspire potential new PWS innovators to get involved and develop better schemes.

How do laws and policies affect PWS schemes, and how can they best be influenced?

Government roles in PWS schemes range at best from enabling and implementing and at worst they can be obstructive, but they are rarely avoidable. PWS protagonists should anticipate actively engaging with law, policy and national institutions in the process of exploring PWS. Some specific legal and institutional changes are likely to be desirable but may not be easily addressed at the outset. Thus, PWS implementers should not wait for the perfect legal conditions to be pre-established, but rather try to influence conditions as they go along.



PWS schemes do not operate in a legal, social or political vacuum; a range of laws, policies and institutions will affect them and thus need to be understood by PWS implementers. They must scrutinize what framework conditions may constitute preconditions for the success of their PWS scheme. Similarly, they must understand what legal and political factors are to be taken as a given, and will likely define the scope of PWS. Developing this understanding and the room for manoeuvre in the policy environment is critical to gaining social acceptance.

Q1 Are there certain policy, legal and regulatory changes that are always necessary to establish a PWS scheme?

Probably not. PWS schemes need to be developed to fit their particular contexts. For example, in Heredia, Costa Rica, the PWS scheme was developed based on existing public utilities regulation. The Catskill program of New York City was made possible by new

uses and interpretations of existing law. Development of PWS schemes may require legislation, or may best be done through institutional means. In general, there are political costs to enacting legislation and bureaucratic costs to working within the existing system. Based on local knowledge and an assessment of local support and the institutional position of the PWS scheme, promoters should assess which strategy is preferable. Often, the right answer will be a combination of both legislative and institutional changes. In circumstances where it is difficult to foresee any progress on PWS without policy and legal change, an objective assessment of the prospects of obtaining such change may lead to the realistic conclusion that it is better to search for alternative policies.

Q2 Are laws establishing private property rights required for user-financed PWS schemes?

Reasonably clear rights to land access, management or use are certainly needed, but this does not

necessarily imply western-style ownership rights. Access, management and use rights may be customary rather than statutory, and can exist in many forms—both individual and communal. In some PWS schemes, notably the RUPES (Rewarding the Upland Poor for Environmental Services) program in South East Asia, changes in land rights have been used as a compensation tool, i.e. awarding consolidated tenure security to local land users as a reward for (promised) future environmental services. One of the compensation modes in Bolivia's Los Negros PWS scheme has been barbed wire, which service providers have used to strengthen their de facto property rights. Changes in land use rights are value-laden and complex though and are perhaps best used only when the need is essential and the solution commands widespread public support.

Q3 Where should one look to find legal and regulatory guidance for PWS schemes?

In practice, working with existing law is usually the best course, at least initially. Existing laws and regulations may already contain part of the legal basis for PWS. The key is to revitalize these laws with public support and clarity for utilizing their PWS potential, which may boost legitimacy and support. Alternatively, the path to take will depend on whether existing laws are internally inconsistent, are unenforceable, or conflict with bureaucrat vested interests.

Q4 When is legal change necessary or desirable?

Strategic use of legal or regulatory reform can play a key role to:

- Establish a new right to a resource
- Establish a source of funds
- Authorize new institutions
- Create bureaucratic space
- Remove obstacles to PWS schemes
- Ensure monitoring, compliance and transparency

Q5 Can or should payments be made for activities that are obligatory under law?

Several payment schemes around the world are paying land users to conserve forest, even though clearing this forest would be illegal. PWS can enhance compliance with laws banning forest clearing, by co-financing private landowners' costs of complying with the law. Costa Rica's 1996 Forest Law simultaneously banned clearing and established a PES scheme compensating landowners for forest conservation. Conversely, laws that ban forest clearing can also provide incentives for participation in PWS and help justify sanctions for breaking contracts. Although PWS is often seen as an alternative to command-and-control policies, the two types of tools can often complement each other in practice.

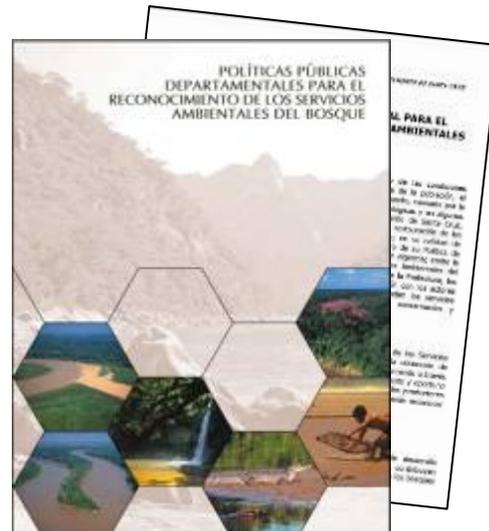
Q6 How can the policy and institutional environment

strengthen local institutions and improve PWS implementation?

Policy and institutional entry points emphasizing information transparency, decentralization, local financing and planning can all be seized to explore PWS ideas. This, in turn, may build local institutional capacity. In some contexts, governments can be encouraged to directly facilitate user-financed schemes, or support intermediaries in facilitating and brokering negotiations. Where there is bureaucratic space, or where such space can be created, these local ideas and demands can be fed back into improved government policy.

Q7 How can social and political circumstances best be influenced?

- PWS promoters need to be aware of trends that support PWS, such as decentralization, regulatory flexibility, and new service roles. They can then design PWS schemes explicitly to exemplify and support such trends. Similarly, they must understand the existing bureaucratic culture and avoid any unnecessary challenges to it. They should seek champions in the existing bureaucracy who share the same goals.
- Where key institutions and government functions are poorly integrated, national or state legislation endorsing or authorizing PWS is fundamental. PWS promoters can help develop such legislation by using the results of PWS pilot projects as the basis for its design. Moreover, governments are often spurred by PWS concepts and experiments to address underlying issues which PWS promoters themselves would be ill advised to focus on. Once government proposes such a course, however, PWS advocates should participate in the debate over these issues, lest they wind up becoming



The Santa Cruz environmental services policy (2007) paved the way for the development of PWS initiatives throughout the Santa Cruz department

obstacles. The European Union incorporates many PWS concepts into its agri-environmental funding programs.

- PWS proponents must seek to convert key critical voices or social interests, such as an urban business community, through arguments that demonstrate the cost-effectiveness of PWS. Where PWS schemes are yet to be started, this may best be done by reference to comparable approaches elsewhere, such as documented benefits of PWS in terms of income, development and jobs created.
- Implementers must be aware of the arguments being wielded against PWS in their particular context, e.g. "PWS is merely paying people to obey the law", "PWS privatizes public resources and commoditizes them", or "PWS favours the rights of some against those of others". Such potentially legitimate concerns need to be addressed within the local context. One, often prominent, issue is how PWS should deal with squatters, and with

ambiguous access and ownership rights to land.

- PWS proponents should recognize and use the lessons from similar schemes elsewhere. Although innovative, PWS initiatives do have a track record. Both large-scale and small-scale successes exist, providing hope that PWS can be a cutting-edge tool for sustainability. Both large-scale and small-scale failures exist

also, and these can be learnt from. It may be useful to present PWS as a broad strategic environmental and economic approach—demonstrating how the innovative nature of PWS not only provides new resources for economic development, but also provides a new way to address long-term intractable problems.

PWS schemes are inherently political; they alter who gets what, when, why and how. The first rule of advocacy politics is to have a clear and compelling good idea. The second rule is to build as large a network of supporters as possible. The third rule is to find champions within leadership echelons of local political and institutional structures.

From the United States and France to Santa Cruz, Bolivia: Natura's international internship program

In 2008, Natura initiated an international internship program to complement its national internship program. Lisa Poser, Cassie Hoffman and Monica Stich have just begun their second year as postgraduate students of an Environmental Management Master's degree at Duke University (United States). Laure André and Valentin Le Tellier come from France, where they are studying master's degrees in the International Development of Agriculture (ISTOM institution), and Forest Science (AgroParisTech-ENGREF), respectively. Here they explain the studies which they have been undertaking during their internships with Natura.

Lisa Poser



In addition to her master's in environmental management, Lisa Poser is also studying for a certificate in International Development Policy at Duke University. This year Lisa has

travelled to Bolivia to examine how tourism could contribute to the long-term financial self-sustainability of the Rio Grande-Cruceño Valleys reserve. She spent time interviewing key tourism operators in the northern part of the reserve (near Samaipata and Bermejo) to learn about the local tourism industry and market, and confirmed that Río Grande has incredible potential for tourism development. In order to help in creating the vision of the reserve as a tourist destination, Lisa is developing plans for an interpretation center that will serve as a central location for information about the protected area.

Laure André

Laure André is currently studying the melliferous flora used for honey bee pollination as an intern for Natura, in the upper part of the Los Negros watershed. She is concentrating primarily on the herbaceous species: collecting samples, taking photos of the

flowers and notes about the sites, date and phenological state of each melliferous plant, in order to develop a zoning of the species and study their periods of floration and fructification. Her work will be incorporated in a manual about apiculture and melliferous flora to be published by Israel Vargas,



who is supervising her internship. Laure has greatly enjoyed her field trips; for her, they have all been unique experiences. She has been able to learn a lot about apiculture accompanying Demetrio Vargas, a member of the Pampagrande apicultural association APIASUR, on trips to check on his bee boxes. She also highlights the moments spent sharing with the local population and their celebrations. Laure hopes to return some day...

Monica Stich



Focusing on environmental economics, Monica's project was designed to calculate the value of marketable carbon in the El Choré Forest Reserve. During this past summer with Natura, she completed the initial step of performing spatial prediction of deforestation. Her results indicate that in 30 years from the 2006 baseline 42% of the forested area will be disappear unless something is done to prevent it. The most important factors in determining where this deforestation will occur are distance to the forest edge, the interaction between distance to forest edge and distance to rivers, and distance to population centers. When vegetation type is included as an explanatory variable there is no significant

effect from distance to roads, distance to rivers, and slope. Legal management of an area, such as logging concessions, increases the probability of deforestation when significant. Over the next year she plans on completing the carbon analysis and evaluating whether a payment would provide enough incentive to change the patterns of deforestation for agriculture.

Cassie Hoffman



Cassie Hoffman has a background in social sciences with her first degree in political science and international relations. At Duke University, she is exploring her interest in human-environment interactions and using development and poverty alleviation as a conservation tool. As an intern for Fundación Natura Bolivia, Cassie was completing an evaluation of the value of the compensations for payments for ecosystem services in the Los Negros watershed through an economic analysis of opportunity costs of land for farmers upstream. Her analysis will help determine if the payments are just and give

sufficient incentive to conserve cloud forest. Cassie is grateful for the opportunity to come to Bolivia and work with Natura and appreciates all the support from their staff.

Valentin Le Tellier



The hydrological function of forests has always been a debated subject, but there are some ecosystems such as cloud forests which present hydrological peculiarities of interest in regard to maintaining dry season streamflows. In order to prove the existence of a hydrological environmental service in the case of Natura's Los Negros initiative, Valentin has spent five months in Bolivia analyzing local hydrological data collected since 2005 from 10 micro-watersheds in Santa Rosa de Lima with different levels of cloud forest cover. As part of the development of a master's thesis, he has processed the data obtained to complete a monthly streamflow and rainfall data series, and has updated land use data of the study site. In addition, he made a comparative analysis of the hydrological characteristics of the 10 micro-watersheds. With the data computed no influence of the cloud forests rate upon dry season flows could be proved. However, some simple measures to improve the quality of hydrological measurement and a longer data-series could help find significant results in the future.

Getting to know the different faces of Natura ...

Julián Torrico Salguero

Responsible for Local Natural Resources Management and the Strengthening of Municipal Institutions and Capacities

Julián graduated as a Superior Technician in Agronomy from the University of San Francisco Xavier in Chuquisaca. With 18 years of experience in the field, he is currently promoting the creation and implementation of local funds for watershed conservation in areas of hydrological interest for human consumption and irrigation in the Samaipata, Saipina, Comarapa, Pampagrande and Mairana municipalities. Prior to his employment by Natura, he realized a consultancy as a national expert in apiculture and also worked for other institutions such as SEARPI-FAO and the Friends of Natura Foundation.

Eslid Ana Guerra Cerezo
Geographic Information Systems and Remote Sensors Analyst

Ana Guerra has a Biological Science degree from the Autonomous University Gabriel René Moreno; she also has a master's in Land Information for Territorial Planning from CLAS in Cochabamba. She has spent seven years working as a GIS and Remote Sensors Analyst applied to natural resources conservation in the Noel Kempff Mercado Natura History Museum, and since this year has been fulfilling the same position within the Fundación Natura Bolivia.



Julián Torrico



Ana Guerra



Translation and edition of newsletter:
 Stephanie Secomb

Fundación Natura Bolivia has a new office. Come visit us at the Calle Moldes #620, between Cobija and Oruro streets.



CONTACTO

Calle Moldes #620 (between Cobija and Oruro)
 Santa Cruz, Bolivia
 Tel./fax: +591 3 3395133
 Email: naturabolivia@naturabolivia.org
 Web: www.naturabolivia.org

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