Biodiversity Conservation at the Landscape Scale

A Program of the Wildlife Conservation Society
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Northwestern Bolivian Andes Landscape Conservation Area Annual Report October 2002 – September 2003

I. Summary of Activity Status and Progress

a. Introduction/Summary:

The Northwestern Bolivian Andes Biodiversity Conservation at the Landscape Scale (BCLS) Program aims to ensure conservation of the wild lands and wildlife of the greater Madidi area through a landscape conservation approach, working with other conservation and sustainable development projects active in the region. The landscape approach is designed to determine the needs of key wildlife species, assess human activities across the same landscape, and use the intersection of these to focus efforts on those areas and actions which emerge as key conservation conflicts or opportunities. The landscape species conservation hypothesis assumes that by meeting the needs of a suite of spatially and ecologically complementary landscape species, biodiversity in general will be conserved.

The Northwestern Bolivian Andes Landscape Program remains on track. To accomplish the long-term goal of biodiversity conservation at the Northwestern Bolivian Andes Landscape Conservation Area, we focus on five interrelated objectives: establish baselines and monitor landscape species and the landscape context in which they are found; facilitate community-based natural resource management across the landscape; strengthen institutional capacity in natural resource conservation and management; promote the development of national policies that support the landscape conservation approach; and elaborate a participative, integrated landscape conservation action plan.

In terms of research, we remain at the forefront of conceptualizing the landscape conservation approach and developing useful landscape species tools that can be applied at an international level within landscape conservation initiatives. Thus, we have now completed the landscape species approach with the definition of our 'focal conservation landscape' as well as taken the next step in implementing a set of corresponding spatially explicit interventions and actions. While the analysis has confirmed the rationale for the majority of our ongoing interventions, both spatially and thematically, it has also flagged a number of locations and associated tasks for future activities.

Our community natural resource management strategy is now progressing into a second phase wherein our activities become more tailored towards making management decisions and implementing interventions. The effectiveness of our community approach will be tested over the next two years as communities take management decisions and we begin the process of disseminating these experiences across the broader landscape.

The processes and products arising from the Tacana Indigenous Communal Land (or Tacana TCO) project and the Madidi National Park management plan project have raised the bar on participation at a local scale, and both projects have been recognized by the relevant national bodies, CIDOB (national indigenous representative body) and SERNAP (protected area service) respectively. Indeed, the Madidi management plan is now considered a benchmark for other protected area management plans within the Bolivian protected area system.

Building on our preliminary success at placing environmental issues on the local government agenda will be a major challenge for the program, and the interest of key partners, particularly SERNAP and CIPTA—Consejo Indigena del Pueblo Tacana, will help this process to be institutionalized. Nevertheless, local politics and economic interests are delaying the development of municipal relationships in certain areas of the landscape, particularly in the lowland municipalities of San Buenaventura and Ixiamas. Fortunately, this situation appears temporary and underscores the

advantage of a landscape approach that recognizes a long-term (at least 20 year) commitment to a region. It also highlights the importance of marrying a strategic approach to project development and resulting interventions with recognition of the importance of considering organic opportunity-based decision-making processes.

Finally, the release of a first draft of a Landscape Conservation Action Plan for the region signals the consolidation of a SERNAP vision for the northern La Paz region. This represents a significant step in the development of an integrated conservation plan for this region and hopefully will further stimulate inter-institutional collaboration and coordination.

b. Highlights:

Completion of Madidi Management Plan

In September 2003, the Madidi management plan is expected to be approved by SERNAP and then submitted to the Ministry of Sustainable Development for final approval. The process and resulting document are already being recognized as a model for protected area planning and management across the country, and the BCLS team was recently asked to lead the process of actualizing the Pilon Lajas protected area management plan. We are currently assessing whether we can conduct this work given our other commitments to the region. The participative process has taken a little over two years due to the size and ecological, social and political complexity of Madidi that spans a 6000m altitudinal range. In short, the process included a thorough and multidisciplinary documentation and analysis of existing biological and socioeconomic information. This information was then used in the landscape-scale planning process through exemplary participation of local people and authorities, both within and immediately adjacent to the protected area. Finally, the management plan identified a series of concrete priority actions over the next five years, including a realistic monitoring strategy.

Legal Titling of the Tacana TCO

In July 2003, the first and largest portion of the Tacana TCO was legally titled by the Bolivian government. Representing 325,327 hectares of lowland tropical forest and savanna immediately adjacent to the Madidi protected area; this was identified early in the BCLS program as a key area for conservation interventions. This early decision has been justified by subsequent analyses considering the spatial needs of landscape species in relation to human activities. The land titling process lasted over six years, with WCS and USAID support for nearly 40 months, and was an extremely difficult and conflict-ridden activity. However, CIPTA and their representatives have shown great pragmatism, persistence, patience and respect for the relevant laws, which finally paid off with their being granted legal title. Although second and third phase titling activities for smaller portions of the original claim will continue over the next year, CIPTA is also aware that the challenge now shifts to the management of this area.

SERNAP-based conflict management research and strategy for Northern La Paz

The Conflict Management project that we have been implementing with SERNAP and Conservation International in the context of the Madidi management plan, and with important experiences and case studies from the Tacana TCO titling process, has been identified by all the actors as a priority for the protected area system. Not surprisingly, our detailed analysis for the region suggests that a primary factor in managing conflicts over natural resources will continue to be access to accurate and locally digestible information. The analytical process is also proving important in further underlining the need to work with local representative institutions, such as local municipalities, in strengthening their capacity to conduct and contribute towards conflict management and natural resource management. While this support needs to have a technical background, there is also a great need to develop a more democratic culture in the world of local politics, thereby building the local constituencies for conservation that will be required for sustainability in the longer term.

Completion of design of "conservation landscapes" for each of the landscape species

The spatially explicit threats analysis has identified real wilderness areas with no threats to biodiversity across the landscape. Essentially there are several large polygons found mainly within the National Park portions of the Madidi protected area and amounting to 18,400 km^2. This represents an extremely powerful image for use during negotiations with the government regarding the proposed road construction and hydrocarbon exploration within Madidi, indeed SERNAP are already using previous versions of this analysis for such purposes.

The biological landscapes for Madidi underline the importance of considering a suite of landscape species for conservation planning purposes. There are clear divisions for the six species except jaguar and white-lipped peccary that

overlap spatially to a large extent but are subject to distinct threats (white-lipped peccary hunting, and jaguar human-animal conflict and tourism. Another interesting aspect of the analysis is the apparent gap in coverage corresponding with lower montane forests across the landscape. These forests sit between excellent habitat types for spectacled bear and white-lipped peccary/jaguar. It is as yet unclear as to whether a seventh landscape species is required. However, we suspect that once the conservation landscapes for each species are joined this problem will be minimal, and steps to increase connectivity could be taken at this stage of the process without having to add another landscape species.

The variability of the human landscape and biological landscape intersection models across the six species is striking. For example, the long-term situation for vicuñas would appear problematic and to some extent this contradicts the recent dramatic recovery for this species in Apolobamba. However, the threats map is dominated by the overgrazing risk and related threats and these risks remain. In fact, the real risk is that a sudden pasture failure would render the population at risk to a mass mortality event. The maps and associated threat analysis stress that condors essentially have an image problem. This image problem is linked to the image of the protected area and needs to be worked on from both angles – increasing positive feelings towards the condor through education and tourism initiatives and decreasing negative feelings through improved livestock management.

The spectacled bear analyses underline the importance of this landscape as a potential stronghold for this threatened species given that large wilderness areas remain in the montane forests of Madidi and Apolobamba. Through the model we have also been able to identify priority actions, for example, human-animal conflict management and associated improved livestock management, in priority communities in a highland landscape with over 100 communities. The results also provide an explicit vindication of our work with CIPTA and the Tacana communities towards the consolidation of the Tacana TCO. Critically, it allows us to identify specific communities for support, for example Santa Rosa de Maravilla lies within one of the few intact biological corridors between the TCO and the Madidi protected area.

Over the next month the BCLS team will produce a list of priority interventions for the landscape based on the conservation of landscape species and hence the ecological integrity of the landscape and its biodiversity. This will then guide BCLS interventions over the next five years.

c. Table of Activity Status

Activity Number	Activity Title	Status	Page Number
Obj. 1	**Establish baselines and monitor landscape species and the landscape context in which they are found**		
1.1.	Describe the Ecological Context of the Landscape	On track	4
1.2.	Research on Distribution, Abundance and Ecology of Landscape Species	On track	5
1.3.	Ecological Studies of Special Elements	On track	6
Obj. 2	**Facilitate community-based natural resource management across the landscape**		
2.1.	Sustainable Management of Community Natural Resource Use	On track	6
2.2.	Community Mitigation of Human-Animal Conflicts	On track	7
2.3.	Land Tenure and Territorial Planning	On track	7
2.4.	Supra-communal Sustainable Natural Resource Management	On track	8
2.5.	Schoolyard Ecology Education	On track	9
Obj. 3	**Strengthen institutional capacity in natural resource conservation and management**		
3.1.	SERNAP Institutional Strengthening	On track	9
3.2.	Protected Area Support and Staff Training	On track	9
3.3.	Wildlife Management Program (Institute of Ecology)	On track	10
3.4.	Monitoring Strategy Implementation	On track	10
3.5.	CIPTA Institutional Strengthening	On track	11
3.6.	Local Government Environmental Planning and Management Support	On track	11

Obj. 4	**Promote the development of national policies that support the landscape conservation approach**		
4.1.	Technical and Policy Report	On track	12
4.2.	Financing Mechanisms	On track	12
4.3.	Threats Assessment Working Group	On track	12
Obj. 5	**Elaborate a participative, integrated landscape conservation action plan**		
5.1.	Integrated Landscape Conservation Action Plan	On track	12
5.2.	Landscape Stakeholder Workshop	Delayed	13

II. Detailed Description of Progress

a. Key short and long-term program objectives for the reporting period (October 2002 – September 2003)

In one of the most biologically diverse landscapes on the planet, WCS intends to develop and implement long-term conservation measures at a landscape scale by working with key national, regional and local partners to address identified threats and opportunities, and by focusing research efforts on ensuring the conservation and management of wide-ranging and vulnerable 'landscape species'. We aim to successfully implement and refine the landscape approach within the Northwestern Bolivian Andes Landscape, thereby promoting this concept in other biologically critical Bolivian landscapes.

In the medium term (about 5 years), our main objective is to capitalize on our working relationships with the plethora of actors in the region, promoting the development of the landscape approach with interested parties through the production of a participatory landscape conservation action plan. We also intend to add more detailed environmental planning experiences to this document, thereby creating a 'living' library of relevant landscape conservation planning documents. This process and the accompanying documents will explore mechanisms to integrate spatially distinct land-use planning initiatives (for example, community and inter-community zoning, TCO land-use plans, protected area management plans, local government development proposals, multiple municipality planning activities, private lands and forestry concessions) into an overall landscape conservation strategy. These landscape planning initiatives will allow a more strategic and collaborative approach to the design of conservation interventions and subsequent monitoring and evaluation activities by different actors working in the region.

Over the next two years, we intend to continue gathering and interfacing the biological and socioeconomic information necessary to refine spatial priority-setting models and determine management actions at the landscape scale. Indeed, for the Tacana TCO and Madidi, areas that are now both legally recognized and have developed management visions (in the form of a natural resource management strategy and a management plan respectively), the landscape program will increasingly shift toward implementing high-priority interventions identified within these plans.

OBJECTIVE 1: Establish baselines and monitor landscape species and the landscape context in which they are found.

Activity 1.1. Describe the Ecological Context of the Landscape

In coordination with the Bolivian National Herbarium, we conducted standard vegetation surveys at 25 spectacled bear sites. Over the last three years, the BCLS program has also funded qualitative botanical studies at a further 10 sites across the highland landscape. Preliminary vegetation analyses are complete and species compositions revealed seven clearly identifiable habitats. This information was included within the management plan process for the Madidi protected area as a consideration for subsequent zoning proposals, and has also been incorporated into the comprehensive vegetation map of the greater Madidi landscape.

Bennett Hennessey continued to conduct observational and acoustic ornithological surveys in the region. To date, these have revealed at least five new bird species for Bolivia and one for science, and greatly expanded the bird knowledge base. Trail systems in the Tuichi and Hondo river valleys have been used to estimate relative abundance of medium and

large mammals to further characterize the areas' mammalian community. A student thesis regarding bat diversity has recently registered over 65 species for the Alto Madidi including several first-time records for Bolivia and species possibly new to science. This study is designed to assess if bats can serve as indicators of the conservation status of different ecosystems within the framework of a monitoring strategy for the landscape. Furthermore, the entire landscape project biodiversity database has been used in the preparation of the Madidi protected area management plan, particularly for zoning purposes. We considered a number of variables from the database (e.g., human activities, biodiversity, endemism, presence of landscape species) to produce a map of overall conservation importance. The management plan zoning proposal classifies Madidi into 6 different levels of use, intangible core zones, non-extractive extensive use areas, extractive extensive use areas, intensive nonextractive use areas, and extractive intensive use areas.

Biodiversity surveys are also generating information in a largely undocumented region threatened by both petroleum prospecting and road-building projects. Based on this information, imminent petroleum exploration activities by Petrobras set to begin in the Tuichi/ Hondo river valleys of Madidi, as well as in the Pilón Lajas protected area, could be countered with the help of declarations made by the then Viceminister in April 2003. Explorations in the Northern Hondo valley were not permitted due to their location within sensitive areas of the Pilón Lajas protected area, although this decision is currently being re-evaluated by the Bolivian government. Another major direct threat to the Madidi landscape is the recent proposal to construct several roads that would fragment the core areas of Madidi protected area. Here again, biological information is being used by SERNAP to justify its opposition to these initiatives. In the longer term, these will also serve as baseline data to help assess the impact of ecotourism ventures and provide management information to the Madidi protected area administration, including future monitoring programs.

Activity 1.2. Research on Distribution, Abundance and Ecology of Landscape Species

To date, 1,375 records of landscape and other threatened or ecologically important species' presence have been documented and included in the landscape database. These data are being used in the development of distribution maps and in the construction of biological landscape models for landscape species. In combination with spatial data on human activities and threats, these data will enable us to define the extent of the landscape and locations in which conservation efforts should focus, as well as to identify priority actions in areas of critical conservation importance and conflict. In 2003, BCLS staff member Humberto Gomez completed a refined version of the methodology developed by BCLS for the spectacled bear, with support from the New York core team. In September 2003, the Bolivian team completed this process for the other five landscape species, and the combination of these 'conservation landscapes' has determined the focal conservation landscape for the project (see highlights section above). The following ecological studies of landscape species have been conducted to provide information for these landscape designs:

Over the last year, our spectacled bear research program completed the first phase of studies to document the ecology of this elusive mammal. Intensive survey methodologies that assess botanical diversity, record fruiting species, register bear sign, collect hair samples, and detail a number of environmental parameters relevant for predicting bear presence in an area, have now been conducted at a total of 31 randomly selected sites in forests and natural grasslands between 1,000 and 4,250m elevation across the landscape. Results of these surveys have allowed us to describe Andean bear habitat and predict their habitat preferences in the region.

At present, the BCLS team is implementing a camera trap survey for jaguar in the Quendeque river valley, as an alternative site to the Alto Madidi region, where project interventions were complicated by social unrest. This site will add to our previous efforts and help us assess the effectiveness of Madidi for jaguar conservation. Additionally, we supported the development of a method to estimate jaguar abundance by means of footprints, taking digital photographs of jaguar footprints for ten individual jaguars at the La Paz Vesty Pakos Zoo.

We calculated white-lipped peccary relative abundances using line-transect data across the trail system in the Hondo and Tuichi river valleys. White-lipped peccary abundances here are among the highest registered for Bolivia, with populations apparently recovering after intensive hunting activities and perhaps disease between 1980 and 1995. Dr. Karesh from the WCS-Field Veterinary Program visited the Hondo site to capture and radio collar white-lipped peccaries and jaguars to obtain critical information on their ranging behavior and spatial needs. He was accompanied by our project's Bolivian veterinarian, for training in wildlife veterinary techniques, particularly animal immobilizations. In August 2003, Wallace,

Rodolfo Nallar and Gomez radio-collared four white-lipped peccaries, and these have been successfully radio-tracked by the research team. Attempts to capture both jaguars and white-lipped peccaries will continue over the next fiscal year.

We conducted 120 interviews with fishermen along the River Beni to evaluate surubí distribution, habitat preferences and reproduction. Results show unexpected use patterns that will be relevant for the participatory definition of future management measures for this landscape species.

In 2002, we continued evaluating Andean condor distribution in the Apolobamba protected area, using two methods to estimate population density: identifying nesting sites and potential sites for counting condors at carcasses. The negative local perception of condor presence was reconfirmed in conversations with community members during field work, reflecting one of the major challenges for defining participatory management measures for this emblematic Andean species.

We added vicuna to our set of landscape species, after recognizing that highland portions of the Northwestern Bolivian Andes landscape were not adequately represented by the ranges of the initial landscape species. Therefore this year we have begun management-related studies on vicuna in Apolobamba. We are analyzing SERNAP-generated census data collected over the last thirty years, and have presented these data with DGB and SERNAP staff at an International Meeting in Lima, Peru on vicuna management.

Activity 1.3. Ecological Studies of Special Elements

Biodiversity surveys conducted in by the research team in 2002 revealed the presence of two mammals that had not been registered in Bolivia previously: *Cuniculus taczanowskii*, a mountain paca registered for Peru, and a titi monkey of the genus *Callicebus* which appears to be new to science, possibly restricted to the Madidi protected area. Two specimens of the latter were collected in 2003 to confirm their identification. Two other species of titi monkeys were registered for the first time in nearly 70 years in the nearby Beni grasslands. BCLS continues its efforts to establish the taxonomic and conservation status of the woolly monkey and swallow-tailed cotinga in the montane and cloud forests of Madidi. These species may well be endemics for the protected area and would hence require special attention.

OBJECTIVE 2: Facilitate community-based natural resource management across the landscape.

Activity 2.1. Sustainable Management of Community Natural Resource Use

We continued technical support to seven communities already involved in wildlife management projects within the landscape. These community projects are important for the long-term conservation of the landscape, as they promote the concept of natural resource management at a local scale, improve the capacity of local people to design and implement projects, and provide a critical opportunity for the development of community-based decision-making processes including internal regulations and controls.

We concluded the second year of community-based monitoring of hunting and fishing activities implemented by rural communities along the Beni river, and the first year of such monitoring by San Miguel and Asunción de Quiquibey. All communities are now moving into second phases, including continued self-monitoring of hunting activities and evaluating wild animal populations in hunting areas and adjacent potential source areas. On the basis of improved information on population dynamics and harvest rates, communities will evaluate the sustainability of hunting activities in the region in cooperation with BCLS.

Regarding the community-based monitoring of fishing activities, we provided technical and financial assistance to support the formation and functioning of a CIPTA-based Tacana peoples fishing association in the River Beni region. The association formed by 12 communities is currently seeking legal recognition from the Departmental government, but has already participated in departmental and bi-departmental workshops related to fishing activities in the region. This is seen as a necessary step in a long-term process towards building locally-supported fishing regulations along the River Beni.

With respect to the native bee honey production in two Tacana communities (Santa Fe and San Pedro), experimental honey harvesting took place in November 2002 from all producing hives. This harvest was assisted by an indigenous expert from the Siriono group in the Beni Department. The Siriono have been producing honey for several years and have

recently successfully commercialized this production at a regional scale. Using results from the first phase of communal native bee honey production, community members initiated the construction of a bee shelter to concentrate hives and management activities, as well as increasing the total number of honey-producing hives from 44 in the first year to a total of 100 by the end of 2003. It is important to recognize that native bee honey production underscores the value of the forest to local communities and also encourages communities to adopt a participatory approach for making decisions regarding natural resources, a critical prerequisite for wider-scale and more diverse natural resource management.

Two of the communities that asked for support in community-based monitoring of hunting activities, San Miguel and Asunción de Quiquibey, also asked for assistance in the development of wildlife-related tourism activities. The communities have developed ecotourism infrastructure and administrative capacity and have shown interest in harmonizing their subsistence hunting with tourism activities. Our support so far has included the communal mapping of actual and potential tourism areas.

During August and September 2003, Zulema Lehm led the CIPTA/WCS/AOS (Ayuda Obrera Suiza) technical team in a series of workshops designed to identify and develop community ideas for natural resource management projects. To date, the project has visited four communities, Carmen del Emero San Antonio de Tequeje, Esperanza de Enapurera and Alta Marani, and seven community-based project proposals have been submitted, ranging from medicinal plant production, to tourism and hunting management projects, to small-scale and traditional sugar cane production. Over the next months, the workshops will extend to other communities within the TCO and, subsequently, four projects will win funding via a competitive process. AOS is considering funding additional projects under the same competitive process.

Activity 2.2. Community Mitigation of Human-Animal Conflicts

We continue supporting three communities in the Apolobamba protected area (Pajan, K'apna and Huayrapata) in implementing mitigation measures, (identified in previous BCLS evaluations of crop damage) to reduce the impact of wildlife on agricultural lands. BCLS helped these communities to implement mitigation measures include the guarding of corn fields and of the deterrence of intruding wildlife. Implementation resulted in the reduction of damage by an order of magnitude to an average of 2% (from a previous average of around 15%) of the annual corn production, thus revealing the effectiveness of these measures. However, in terms of sustainability, the savings by guarding were economically insufficient to cover the costs of implementing the mitigation activities. Results have now been analyzed from the three years and a manuscript for international publication produced, as well as a locally-appropriate pamphlet summarizing successful mitigation techniques for other communities.

We conducted a participatory workshop to evaluate the magnitude of community-reported damage on livestock caused by wildlife in the town of Pelechuco and surrounding pasture lands. The workshop included discussion of possible mitigation measures, such as community-based and organized hazing of intruding wild animals; these actions would be focused on high-priority areas during problematic periods of the year.

Activity 2.3. Land Tenure and Territorial Planning

We continued legal advice and follow-up to the consolidation and titling process of the Tacana TCO at INRA (National Institute of Agrarian Reform in charge of land demands and titling), as well as the Agrarian Court. In July 2003, the first part of the land-titling process drew to a close with over 325,327 hectares being officially titled to the Tacana TCO. The Tacana legal team will continue to assist with this process by supporting a second phase of titling – that of lands with conflicting ownership; these will hopefully be ceded to the TCO. The final part of the Tacana TCO titling process should be the compensation of additional fiscal lands not originally included in the TCO demand, which would make up the total approved land necessity for the Tacana, established by the government as 406,000 hectares.

We also conducted an evaluation of the existing forest concessions and Local Forest Associations (ASLs) within the TCO to assess alternative means to negotiate access for Tacana communities to use non-timber forest products within these zones.

WCS in coordination with SERNAP, CARE and the Institute of Ecology (IE) has concluded the Madidi management plan. This process has taken two years. In addition to the management plan itself, this work includes (a) Participatory Rural Appraisals for over 40 communities-inspired by our previous work with the Tacana; (b) a spatially-explicit

biodiversity analysis for zoning purposes; (c) political and vegetation maps of the protected area that are compatible with those we produced for the Tacana TCO and the Apolobamba protected area; (d) assessments of administrative, historical, cultural and tourism potential; (e) an assessment of the sociopolitical representation offered by the management committee; and (f) an integrated zoning proposal for the protected area. Much of this work has been inspired by the WCS participative approach used with the Tacana; this and the continuous, intense involvement and guidance by WCS staff has ensured that the management plan will be compatible with the TCO strategy and will also consider and embrace the overall landscape conservation approach.

As part of the process and on the basis of the participatory zoning methodology developed in cooperation with CIPTA, we also conducted a participatory zoning process together with representatives of four additional indigenous communal lands/TCO's that neighbor or are superimposed on the Madidi protected area (Lecos Larecaja, Lecos Apolo, Tacana II and Uchupiamonas). These zoning documents were used in protected area planning and provided important input for improving protected area – TCO relations.

Activity 2.4. Supra-communal Sustainable Natural Resource Management

The Tacana TCO Natural Resource Use and Conservation Strategy was published and distributed to the Tacana communities, then presented to authorities and municipalities in December 2002. The plan focuses on zoning within the TCO. Each zone established criteria for productive activities that will provide new or improved livelihood options for Tacana families, and will be consistent with the objectives of conservation and sustainable resource utilization in the region.

At present, we support CIPTA in the development of internal regulations and controls for natural resource use, and the financing and technical support for evaluating and financing communal natural resource management projects. Our support included conducting workshops to define sustainability criteria for natural resource management projects, as well as training in the design and implementation of such projects. An important related issue we continue to discuss with natural resource user 'communities' within the TCO is the distribution of benefits obtained in communal natural resource management projects. It is important to recognize that these communities may be either 'communities of interest' or 'communities of location'.

Many of the conflicts regarding land tenure within the Tacana TCO have arisen because of disputes over timber resources, heightened because rights of access to this common resource have not been defined within the TCO and because other stakeholders do not recognize the validity of the Tacana claims. Therefore, one priority has been the continuation of technical support to the Community Timber Management initiatives in Tumupasa and San Pedro. As a result, three ASL community-based management plans are expected to be approved by the Forestry Super Intendancy in September 2003. Critically, these initiatives have served as a model for other natural resource management initiatives within the TCO.

In this context, the aforementioned native bee honey production initiative conducted in two Tacana communities has been identified as a potential pilot project for support from the BIOCOMERCIO Program of the National Strategy for Biodiversity Conservation. Another interesting initiative is the development of a management plan for the commercialization of wild chocolate in four Tacana communities (San Silvestre, Carmen del Emero, Santa Fe, and San Antonio de Tequeje), where BCLS provided a small supra-communal matching grant and technical support to the Fundacion Tropico. A proposal to sustainably harvest spectacled caiman in the TCO is being considered by the US Fish and Wildlife Service, and has been adopted by the DGB and the La Paz Departmental Government as a strategic pilot project and potential model within the context of the DGB's country-wide spectacled caiman sustainable harvest program.

Finally, in the Apolo region of the Madidi protected area, WCS funded and technically supported a Master's thesis on the sustainability of the incense industry, looking at populations of incense in the montane forests surrounding Pata and Virgen del Rosario. With additional resources from the MacArthur Foundation, we will begin to work with two or three communities in the area which may well represent the best starting place to further examine this pressing issue for the region.

Activity 2.5. Schoolyard Ecology Education (EEPE)
We continue providing support to EEPE participating teachers in Apolo, Tumupasa, Charazani and Pelechuco. This decision follows recommendations made by a consultant in 2002, which advocated providing long-term technical support to schools, 'key' teachers and technicians using the EEPE methodology, rather than investing in further EEPE workshops. Additionally, the BCLS team will produce posters and postcards of the park's fauna for the local population and tourists, using photos obtained in camera trap surveys conducted in the Tuichi and Hondo river valleys. The CIPTA radio station began broadcasting in late August 2003 and programs regarding natural resource management will be developed over the course of the next fiscal year.

Objective 3: Strengthen institutional capacity in natural resource conservation and management

Activity 3.1. SERNAP Institutional Strengthening
At their invitation, we continue to provide technical support to SERNAP in the development of a monitoring strategy for the Bolivian Protected Area System and assistance in the review and development of SERNAP policy documents and internal regulations. These latter include the development of the Landscape Approach in the recently completed Guide to Protected Area Management Plan Development, and the preparation of technical reports and maps from our various databases.

In addition, we are implementing, together with SERNAP and Conservation International, a USAID Bolivia funded project to analyze, evaluate and manage conflicts in protected areas. A methodology for conflict analysis and information gathering has already been designed, which is being implemented at the SNAP (Bolivian System of Protected Areas), as well as the protected areas level in northern La Paz. This analysis is already being considered as a major priority for SERNAP, given tense situations in many of the country's protected areas, primarily due to land tenure conflicts. Lessons learned from the detailed analysis of northern La Paz-based conflicts, both in terms of conflict causes and successful management and mitigation techniques, will be published by BCLS and SERNAP in a hands-on document for protected area staff by the end of October 2003.

Activity 3.2. Protected Area Support and Staff Training
Park guard training in protected areas, and specifically in Apolobamba, focuses on a) workshops regarding the use of GPS technology and reporting and using spatial information on biodiversity as well as basic data management issues, and b) the production of a manual concerning wildlife-related livestock loss, and how to recognize and quantify this problem in the field.

In the long term, we view park guards as key to monitoring the three protected areas and the broader landscape. Although SERNAP recognizes the importance of monitoring and investigation activities, financial constraints understandably reduce their priority for the moment. Thus, a major challenge for the conservation community of this landscape will be to secure long-term funding for adequate staffing of the protected areas. In the meantime, we will continue to train park guards on the job, in monitoring and surveillance activities that require minimal additional effort and are linked to the priorities of the protected areas.

We also provided substantial information and technical assistance to the Madidi Management Plan project that was conducted by CARE and WCS (see Activity 2.3). This support has produced maps for the protected area, developed a monitoring strategy for the protected area, interpreted biodiversity diagnostics for the area, identified priority areas for conservation, and developed a zoning proposal. However, inevitably our role has been far more wide-reaching with Lilian Painter effectively leading the project and providing technical back-up to the Director of Madidi on biological, social and political issues.

Similarly, we continued support and participated in the Inter-institutional Coordination Committees and Management Committees of the Apolobamba and Madidi protected areas. This has included participation in the development and follow-up of comprehensive, inter-institutional, annual work plans for three consecutive years. We also provided technical reports and advice to Pilón Lajas protected area in the review of the Environmental Impact Evaluation presented by the petroleum sector.

Activity 3.3. Wildlife Management Program (Institute of Ecology)

The exact institutional placement of the Wildlife Management Program within the Institute of Ecology remains unclear. Our efforts to define this situation included a one-day workshop regarding the needs of the Institute and summarizing activities conducted to date. The meeting was well attended and developed a formal goal for the Program: Develop the human and technical capacity of the Institute of Ecology to achieve the management and conservation of wildlife in Bolivia. This meeting also identified the following three strategic objectives of the Wildlife Management, Conservation and Ecology Program: development of wildlife management and conservation professionals, development of technical capacity required to conduct applied and basic research that improves the standard of living for local population and promotes wildlife conservation, and promotion of the discipline of wildlife management to change its professional and public image. We also participated in a workshop to identify the Strategic objectives of the Institute of Ecology, where development of natural resource management capacity was identified as a major prioirity. Initial activities have continued, including a weekly journal club designed to promote critical thinking for faculty and wildlife students at the Institute, as well as to provide a means of staying in touch with current technical literature. This has developed well and now draws the participation of between 25-30 people each week. The Journal club runs three times a month and the fourth week is now devoted to a series of seminars on wildlife management by local experts. The Bolivian Faunal Collection (CBF), a division of the IE, has also agreed on formal procedures for external institutional support to undergraduate thesis students. Another aspect of our support to the Institute of Ecology is a small grant program that, to date, has supported 8 undergraduate theses, 2 small research grants, scientific supervision of 3 masters theses, and 4 volunteer research projects for undergraduate interns.

Finally, at the request of Coleccion Boliviana de Fauna (CBF) staff, the project team led by Dr. P. Feinsinger, a WCS Associate, revised a series of wildlife management courses in the biology curriculum at the University. We helped develop a number of educational tools to supplement the curricula of several courses, most notably Zoological Methods, Animal Behavior/Behavioral Ecology, as well as revising and updating the content of related courses (Statistics 1, Statistics 2). This task also included the preliminary development of an optional course on Wildlife Management for the undergraduate biology degree. The revised Zoological Methods course is now being implemented and the other proposed course changes are awaiting formal approval from the University.

Activity 3.4. Monitoring Strategy Implementation

The monitoring strategy for BCLS is structured in a database and includes multiple levels, covering institutional strengthening, land cover, threats, wildlife, natural resource management and landscape conservation communication networks. Fortunately, this strategy responds extensively to monitoring requirements presented by other donors like the Gordon and Betty Moore Foundation. During 2003, we prepared the database, including inputting relevant data for each variable based on activities to date. There are a number of potential monitoring activities detailed for each intervention that would require substantial additional financial investment.

To date, the monitoring and surveillance strategy for the conservation status of the Northwestern Bolivian Andes Landscape corresponds to perceived key threats to the region. However, the process of refining this strategy based on coordination meetings with the other major stakeholders in the landscape remains challenging. As a preliminary step towards this goal, we coordinated with the Madidi Management Plan team in the production of a Monitoring Design and Implementation Strategy for the Madidi protected area. This was considered a logical starting point, given the need for a monitoring strategy within the management plan, as well as the recognition by the Director of the Madidi protected area of the need for greater and more meaningful coordination between institutions, both in terms of intervention design and monitoring activities.

Finally, we participated in the design of the general structure for the Bolivian Protected Area System monitoring strategy, as well as the development of several initial workshops to structure specific monitoring strategies for Madidi, Pilón Lajas and Beni protected areas. Additionally, we participated in several inter-institutional meetings at the SERNAP central unit held in order to structure and orient inter-institutional coordination of monitoring activities throughout the Bolivian Protected Area System. This offers the opportunity to share lessons learned from the Northwestern Bolivian Andes Landscape monitoring process with other protected area staff: for example, the spatial analysis of conservation objectives and associated threats.

Activity 3.5. CIPTA Institutional Strengthening

We continue to assist CIPTA in the implementation of institutional processes. These include a transparent monitoring program for activities undertaken by CIPTA representatives, consisting of bi-monthly work plans and corresponding reports, organized under objectives within the overall TCO management strategy, that require pre and post-approval by the CIPTA directorate. These measures have worked well and have also instilled a level of activity-based planning within CIPTA. With the titling of the TCO and increasing emphasis on implementation, these measures will become increasingly important. The election of a new CIPTA directorate in early September 2003 will be a test of the institutional sustainability of these processes.

Another major aim of this year's support was to strengthen CIPTA's capacity in general administrative matters, particularly in the accounting and reporting of finances, as well as in corresponding proposal development. This is critical to ensure an efficient and transparent management of funds generated from either proposal development or natural resource management. Transparency is particularly pressing given the forthcoming income expected from timber management. Unfortunately, the CIPTA directorate has not dedicated the time required for this objective because of the intensive activities culminating in the land titling process. Nevertheless, we hope that as early as October 2003, an administrator will be assigned to CIPTA and the process of capacity building will resume. These decisions will be taken at the forthcoming Annual General Meeting of CIPTA in San Miguel in early September 2003.

We also offered support for the preparation of new projects, such as sustainable wild chocolate harvesting and the proposal submitted to CEPF - the Critical Ecosystem Partnership Fund, as well as technical and legal advice in the review and negotiation of hydrocarbon prospecting projects and agreements with BOLFOR on forest management in the Ixiamas sector.

As part of the process to prepare the Madidi protected area management plan, members of the CIPTA directorate participated in several workshops related to zoning of other indigenous communal lands in the influence area of Madidi. Workshops were also conducted on territorial planning and the role of indigenous districts within strategic as well as territorial municipality planning. In this context, a working relationship was facilitated between CIPTA and the regional peasant federation FESPAI, as a part of which we supported several events for organizational strengthening and discussion of existing regional development proposals. CIPTA is also participating in discussions surrounding the management of priority conflicts in the region. Indeed, the Tacana TCO project experience is a major source of case studies in conflict management, including some examples of best practice conflict management models.

Activity 3.6. Local Government Environmental Planning and Management Support

In 2003, we designed second-phase workshop techniques to further environmental planning processes at the municipality and multi-municipality level. In May 2003, we initiated a second- phase workshop with the Apolobamba multi-municipality (Charazani, Curva, Pelechuco), producing spatial and temporal maps of identified environmental problems and developing more concrete plans for intervention. Our support to these participating municipalities will now shift toward developing working groups for priority problems, and subsequently developing proposals. Related to this, in 2002 we initiated work with SERNAP to refine and develop workshop methods for environmental planning in municipalities around protected areas; to formally adopt these methods as an approved SERNAP land-use planning tool; and produce a SERNAP support package for interested municipalities. At the moment, this activity has been postponed due to a vacancy in the corresponding SERNAP office. With the recent arrival (late July 2003) of a new Director for SERNAP, we anticipate continuing progress towards this goal.

We also received an invitation to share our first- and second-phase methodologies for environmental planning workshops and respective lessons learned with the WB/COSUDE supported PDRC II project. They plan to conduct a training program for environmental staff placed in 20 municipalities.

We identified several candidate municipalities for a possible combined first/second-phase environmental planning workshop that would include strategic as well as territorial conflict analyses and threats-based planning (Apolo and Guanay in the Madidi context, and Rurrenabaque in the Madidi tourism and general Pilón Lajas contexts). Relations with San Buenaventura and Ixiamas municipalities remain strained due to the land-titling process of the Tacana TCO and conflicting interests over departmental road building projects that would cross the core of the Madidi protected area.

OBJECTIVE 4: Promote the development of national policies that support the landscape conservation approach.

Activity 4.1. Technical and Policy Support

During our work on the Madidi management plan, we continued giving technical advice and support to SERNAP in the development of a series of regulations regarding natural resource management within protected areas: for example, sustainable natural resource harvesting in protected areas, research protocols in protected areas, guidelines for the development of management plans for the protected areas of Bolivia, and monitoring guidelines for the protected area system. Currently, these remain in discussion and/or draft format and official approval will depend on SERNAP-defined schedules.

For the third consecutive year, we supported the Inter-institutional Committees of the Apolobamba and Madidi protected area administrations, as well as further site-level planning initiatives being developed in these protected areas: for example, strengthening the Madidi Management Committee and the Apolobamba multi-municipality. Indeed, Madidi is the only protected area in Bolivia that is technically and financially integrating institutional activities into the annual work plan presented to SERNAP.

Activity 4.2. Financing Mechanisms

In collaboration with SERNAP, we have conducted a financial investment analysis of the three protected areas across the landscape (Pilón Lajas, Apolobamba and Madidi), as part of the first edition of the Landscape Conservation Priorities and Actions document (see Activity 5.1). During preparation of the Madidi protected area management plan, we helped develop a financing strategy for the implementation of the Madidi Management Plan, including more realistic estimates of the financial resources required to manage this protected area in the future. Adequate financing will be procured through more informed inter-institutional coordination, as well as through sources of finance generated by tourism and associated park products. The financing strategy will also enable SERNAP central office to demonstrate financial requirements more clearly to prospective donors. In the next few months, financing strategies will be developed in close coordination with FUNDESNAP, a private foundation for the development of the protected area system. The lessons we learn will feed back into the development of financing strategies for the Tacana TCO, as well as for Apolobamba and Pilón Lajas protected areas and involved municipalities, and form part of the second edition of the Landscape Priorities and Actions Document.

Activity 4.3. Threats Assessment Working Group

We continue to monitor threats to the landscape and refine the conceptual model and the participatory threats and opportunities assessment for the landscape annually, responding to the dynamic political and social climate. The informal threats assessment working group (formed in the first year of the project and consisting of SERNAP, WCS, CI, IE, Conservation Strategy Fund, and WWF, the World Wildlife Fund) will continue to monitor and respond to proposed oil exploration in two large concessions that cover significant parts of the Madidi and Pilón Lajas protected areas, as well as proposed road construction within the region. There is also an initiative to increase communication between conservation interventions/projects in the Coordination Committee for the Amboró – Madidi Corridor (CCCAM), formed by SERNAP, DGB, WWF, CI, WCS, TNC The Nature Conservancy, USAID, and Trópico, where threats analyses and joint action to manage identified conflicts are high priorities.

Indeed, the WCS/SERNAP initiative to document conflicts facing the northern La Paz region and assess the effectiveness of differing techniques to manage these conflicts is an extension of our threats analysis. This project is part of a collaborative effort with CI and is encouraging the formation of working groups regarding priority conflicts in northern La Paz. It will also produce analytical documents detailing best practices in conflict management for petroleum exploration and exploitation, as well as the pressing issue of road development and associated colonization.

OBJECTIVE 5: Elaborate a participative, integrated, landscape conservation action plan.

Activity 5.1. Landscape Conservation Priorities and Action Plan

By the end of 2002, the first edition of the strategic 'living' document entitled 'Landscape Conservation Priorities and Actions' was completed, edited and printed. This SERNAP-published document is based on the project's original threats and opportunities analysis and represents a major first step in the production of a comprehensive Landscape Conservation

Action Plan. To date, the document 1) introduces the political and socioeconomic situation of northern La Paz, 2) underlines the global importance of the region in terms of biodiversity conservation, 3) ranks the threats and opportunities to the landscape using a series of criteria, 4) introduces the major stakeholders in the region and the conservation actions currently underway, 5) briefly discusses case studies in environmental planning at different scales, and 6) provides a financial investment analysis of the landscape. This guide will serve to identify key gaps that must be addressed to achieve effective conservation in the landscape.

Wider distribution of this document and holding of the related Landscape Stakeholder Workshop are being delayed due to several changes in SERNAP leadership over the last nine months. We consider SERNAP participation crucial at all stages of this process if we are to indeed strengthen this institution and foster landscape-scale planning within the Bolivian protected area system. On the basis of the comments and proposals gathered regarding the document, the second edition of the 'Landscape Conservation Priorities and Actions' will also be prepared in close coordination with SERNAP by the end of FY 2004.

Activity 5.2. Landscape Stakeholder Workshop

The purpose of a Lanscape Stakeholder workshop is to provide an opportunity to further refine the landscape threats and opportunities analysis from the local and regional perspective, as well as work toward a second version of the Landscape Conservation Action Plan for the northern La Paz Department (see Activity 5.1). The focus for further discussion is the integration of planning initiatives taking place at different scales, including the Madidi protected area management plan process, the TCO Tacana Natural Resource Management Plan process, and the local government Environmental Planning experiences.

We had originally planned to bring together members of all international, national and grass-roots institutions working in the landscape, as well as relevant national and local government officials, into one comprehensive workshop for the landscape. However, considering recent social conflicts and the general political situation, we are rethinking the idea of one comprehensive Stakeholder Workshop for the Landscape and may opt for a series of bi-lateral coordination workshops (e.g. Madidi-Apolobamba, Madidi–Pilón Lajas, Madidi–Tacana TCO). Bi-lateral workshops would avoid discussions being dominated by contentious partisan issues, such as increased road development within Madidi, as opposed to a broader review of landscape conservation and development themes. This is consistent with our overall approach, which is to construct the Landscape Conservation Action Plan from consolidated pieces of planning and management experience. In this case, we will use the Madidi Management Plan, the Tacana TCO Management Strategy and respective zoning exercises as a nucleus for facilitating each bilateral workshop and for identifying potential future allies. Allies may include the Iturralde peasant federation or the Lecos Larecaja territorial demand, that have already been involved in coordination and negotiation efforts surrounding the Madidi protected area management plan.

III. Success Stories and Appendices

On the evening of Friday the 4th of July, 2003, in a ceremony at CIDOB in Santa Cruz attended by the President of Bolivia and several senior ministers, the first and main portion of the Tacana TCO was officially titled to CIPTA and the Tacana people. Immediately adjacent to the now world-famous Madidi protected area and representing 325,327 hectares of intact tropical forest and natural grassland, this area will be critical for the sustainable development and conservation of northern La Paz. The titling of the Tacana TCO has been an extremely arduous and conflict-ridden process stretching over six years, including three and a half years of WCS support. Throughout it all, CIPTA has acted with great pragmatism in the face of a series of seemingly insurmountable problems. The support of USAID Bolivia through a grant to WCS and CIPTA was fundamental to this achievement.

The challenge now will be to continue and intensify activities tailored to building natural resource management capacities within CIPTA and across the communities of the TCO. Fortunately the USAID supported participatory process has also developed a natural resource management strategy for the TCO, and this has now been published and presented to the Tacana communities. Activities continue with respect to building locally-relevant, sustainability criteria and principles, as well as regulations and internal controls for the use and sustainable commercialization of a series of natural resources within the TCO. The strategic alliance between CIPTA and the Madidi protected area administration has proved fruitful to date, and there remains every intention of managing these neighboring areas in a mutually beneficial way that considers landscape-scale ecological and social dynamics.

Appendices

1. Madidi Management Plan Information CD
2. Second Municipal (Charazani, Curva, Pelechuco) Environmental Planning Workshop Report
3. Adjusted BCLS Monitoring Framework
4. Preliminary Biological, Human, and Conservation Landscapes

Appendix 2

Memoria del Segundo Taller de Gestión Ambiental de la Mancomunidad de Apolobamba 20 y 21 de Mayo de 2003 en Charazani

INTRODUCCIÓN

La idea de realizar talleres de gestión ambiental municipal es la de fortalecer la capacidad de gestión de los municipios - en el sentido de capacidad técnica y financiera y herramientas de gestión – para administrar su territorio, considerando la introducción de temas de biodiversidad y conservación en los mecanismos de planificación y gestión municipal existentes, como son Planes de Desarrollo Municipal o Mancomunado y POA. Los temas abarcan el manejo adecuado de recursos naturales, calidad ambiental y políticas e instrumentos de gestión y deberían permitir la articulación y participación local, p.e. en la elaboración de Planes de Manejo de áreas protegidas y POA.

Los tres municipios, Charazani, Pelechuco y Curva, integrantes de la Mancomunidad de Apolobamba, firmaron un convenio de asesoramiento con el Servicio Departamental de Fortalecimiento Municipal y Comunitario de la Prefectura. Al comienzo, la iniciativa de conformar una mancomunidad de municipios era con fines administrativos, porque Curva con menos de 5000 habitantes en el Censo de Población y Vivienda de 1992 estaba en la obligación de mancomunarse para poder acceder, a través de la cuenta mancomunada, a los recursos de la Coparticipación Tributaria (Art. 156, Ley No. 2028 de Municipalidades). En respuesta al trabajo realizado por el ANMIN Apolobamba, su Comité de Gestión y la Coordinadora Inter-Institucional, se acordó conformar una Mancomunidad ecológica, turística, agropecuaria y productiva entre los municipios de Charazani, Curva y Pelechuco.

Se acordaron como objetivos de la Mancomunidad de Apolobamba: 1. Optimizar recursos humanos, financieros y administrativos para lograr una gestión transparente, eficaz y eficiente de los municipios; 2. Promover una gestión integral y concertada del ANMIN Apolobamba; 3. Recuperar, preservar y promover aspectos y actividades referentes a la cultura ancestral; 4. Desarrollar actividades turísticas referentes a difusión, promoción e interpretación tendiente al diseño de un Plan Turístico; 5. Impulsar y gestionar perfiles, proyectos y/ o programas de desarrollo regional que beneficien a los municipios concertantes.

Después de la primera Asamblea de la Mancomunidad de Apolobamba, realizada en Noviembre de 2001 en Pelechuco, y al haber posesionado los directorios, la Mancomunidad se encuentra en fase de consolidación. Los directorios están conformados de la siguiente manera:

Directorio deliberante:
Presidente de la Mancomunidad: Edgar Pacheco (HCM Curva)
Paulino Quispe (HCM Pelechuco)
Pablo Yujra (HCM Charazani)

Directorio ejecutivo:
Isaac Mamani (Honorable Alcalde Municipal de Pelechuco)
Alipio Cuila (Honorable Alcalde Municipal de Charazani)
Santiago Quina (Honorable Alcalde Municipal de Curva)

En Febrero de 2003, se entregó la personalidad jurídica de la Mancomunidad de Apolobamba a representantes de los tres Municipios. Se quedó en consensuar el monto de aportes entre los tres Municipios integrantes de la Mancomunidad de Apolobamba. Además, el Servicio Departamental de Fortalecimiento Municipal y Comunitario de la Prefectura de La Paz SED-FMC aseguró su apoyo en concluir los trámites de apertura de una cuenta fiscal para los fondos de la Mancomunidad de Apolobamba.

En la misma fecha se realizó una mesa de trabajo entre Personal del SED-FMC y de la Unidad de Turismo de la Prefectura de La Paz, Honorables Alcaldes, Concejales y miembros de los Comités de Vigilancia de los municipios de Charazani, Curva y Pelechuco, COBIMI y WCS, donde se discutió la propuesta para la realización del Segundo Taller de Gestión Ambiental Municipal de la Mancomunidad de Apolobamba y de posteriores talleres de fortalecimiento de la planificación estratégica a nivel de los tres municipios involucrados.

En el primer Taller de Gestión Ambiental de la Mancomunidad de Apolobamba, con la ayuda de una metodología variada de charlas temáticas introductorias, sesiones en plenaria y trabajo en grupos, se ha realizado una sistematización del análisis de la problemática ambiental de Apolobamba y sus dinámicas. Para el Segundo Taller de Gestión Ambiental de la Mancomunidad se propuso hacer una revisión y actualización de los resultados del primer taller, considerando un mapeo de la ubicación y extensión de los problemas ambientales identificados y un análisis de su dimensión temporal.

PARTICIPANTES Y METODOLOGÍA

Participaron 45 personas (vea Anexo 1), entre ellas el presidente de la mancomunidad (Edgar Pacheco), los Honorables Alcaldes Municipal de Charazani, Curva y Pelechuco, los Sub Alcaldes de Amarete y Suni Alpaquero, el Subprefecto de la Provincia Bautista Saavedra, el Secretario Ejecutivo de la Federación de Bautista Saavedra, representantes de varias centrales como Chullina, Jalichulaya, Sub trópico, Kaata, personal del ANMIN Apolobamba, los Directores Distritales de Educación y Salud de Bautista Saavedra, y como equipo de apoyo al taller la Sociedad para la Conservación de la Vida Silvestre WCS.

Después de una fase introductoria con una explicación de los antecedentes y los objetivos trazados para este Segundo Taller de Gestión Ambiental de la Mancomunidad de Apolobamba, se procedió con una revisión breve de los conceptos y contenidos de gestión ambiental municipal:

Revisión de los Contenidos de Gestión Ambiental Municipal

Gestión Ambiental es la capacidad de organizar y conducir diversas acciones orientadas al uso racional y sostenible de los recursos naturales y la preservación de la calidad ambiental en el ámbito del territorio del municipio. Estas acciones, es decir, la gestión debe realizarse de manera compartida entre gobierno municipal y la sociedad civil.

Los temas que involucra la gestión ambiental a nivel de municipios y mancomunidades pueden resumirse de la siguiente manera:

Manejo de Recursos Naturales

Este ámbito incluye la conservación de los ecosistemas y del patrimonio biológico, el uso de la tierra según su aptitud, la gestión integral de las áreas protegidas, y el aprovechamiento sostenible de recursos hídricos, recursos forestales, energía, recursos mineros no energéticos, y recursos naturales específicos como fauna, vegetación, recursos forestales no maderables, y otros.

Calidad Ambiental

Este ámbito abarca el control de la contaminación, el manejo de residuos sólidos, la planificación de asentamientos humanos, la prevención de desastres, la definición de indicadores y estándares ambientales mínimos y el monitoreo relacionado.

Políticas e Instrumentos de Gestión

Este ámbito se refiere al marco legal y normativo (Ley de Medio Ambiente, Ley de Participación Popular, Ley de Municipalidades, etc.), planificación estratégica (SISPLAN, SIPAP), ordenamiento territorial, la aplicación de tecnologías tradicionales o alternativas, incentivos económicos para el manejo sostenible de los recursos naturales, valoración de recursos naturales de los beneficios obtenidos del uso sostenible de los recursos naturales, y métodos y técnicas específicas de elaboración de y seguimiento a estudios de evaluación de impacto ambiental EEIA, manifiestos ambientales, inventarios forestales, zonificación de áreas protegidas y TCOs y para el manejo de recursos naturales, mecanismos de participación y

descentralización, educación ambiental, difusión e información, indicadores de capacidad de gestión y de sostenibilidad en general.

Revisión del Análisis de la Problemática Ambiental realizado en el Primer Taller de Gestión Ambiental de la Mancomunidad de Apolobamba

Después se continuó con un trabajo en los siguientes cuatro grupos para dinamizar la revisión del análisis de la problemática ambiental de la Mancomunidad de Apolobamba, resumida en la Matriz de Planificación consolidada del Primer Taller de Gestión Ambiental de la Mancomunidad de Apolobamba en Diciembre de 2001, presentada a continuación.

Grupo 1:
Jaime Mamani, Teófilo Villegas, Ángel Condorí, Luis Paredes, Benito Chura, Sixto Yujra, Pablo Yujra

Grupo 2:
Santiago Medina, Nestor Quilla, Alipio Cuila, Idelfonso Canaza, Francisco Villaverde

Grupo 3:
Edgar Pacheco, Paulino Quispe ....

Grupo 4:
Leoncio Sarmiento, Melva Oblitas, Ermegilio Carrión, Raúl Huanaco, Augusto Cuila, Augustín Calle, Santiago Quina, Julián Ramírez

Al concluir los trabajos en grupo, se presentaron y discutieron los resultados de la revisión por problema entre los cuatro grupos de trabajo.

Matriz de Planificación consolidada del Primer Taller de Gestión Ambiental de la Mancomunidad de Apolobamba

PROBLEMAS	CAUSAS	OBJETIVOS	ACCIONES	RESPONSABLES	PRIORIDAD
1. Erosión de la tierra	Manejo no adecuado de suelos Pérdida de prácticas tradicionales de manejo de suelos (terrazas, cortinas de retención de tierra en parcelas agrícolas) **Quema de las praderas nativas y pastizales** Carreteras y caminos	**Recuperar el manejo y costumbres antiguas sobre uso de tierras** **Reducir y controlar la quema de praderas y pastizales**	Conservar las terrazas y la vegetación Reforestar en lugares depredados Recuperar canales de riego Rotación de cultivos	ANMIN-A IPADE, SEREDES Sociedad civil Aynikusum, COBIMI	**Baja**
2. Sobre pastoreo en la parte alta	Carga de animales de camélidos	**Controlar capacidad de carga animal**	Mejoramiento genético Reducir las poblaciones de camélidos Rotación de pastoreo Mejoramiento de praderas Tener políticas de forraje Recuperar canales de riego	ANMIN-A AIGACAA, ISQANI, IPADE	**Media**
3. Tala indiscriminada de árboles	Desconocimiento de leyes Necesidad económica (para combustible, construcción, venta)	**Control permanente de tala** **Realizar uso sostenible de bosques**	Reglamento a nivel regional Plan de manejo Centro de almacigo de pastos y arbustos nativos Reforestación con plantas nativas	SERNAP Mancomunidad ANMIN-A	**Alta**
4. Caza, pesca y recolección indiscriminada de animales silvestres (caza furtiva de vicuña, explotación de plantas medicinales)	Falta de conocimiento de las normas (LMA) Necesidad económica	**Reducir caza, pesca y recolección indiscriminada de fauna silvestre**	Capacitación, protección, conservación y uso sostenible de la fauna a través de planes de manejo	ANMIN-A, Aynikusum, WCS, COBIMI	**Media**
5. Animales silvestres atacan animales domésticos y destruyen cultivos	Qué los animales domésticos están libremente en las serranías	**Recuperar conocimientos andinos en el manejo de vida silvestre**	Diagnóstico del conflicto, evaluación de daño, id., implementación y evaluación de posibles alternativas con comunidades	ANMIN-A WCS, COBIMI	**Máxima**

PROBLEMAS	CAUSAS	OBJETIVOS	ACCIONES	RESPONSABLES	PRIORIDAD
6. Contaminación ambiental minera	Utilización de mercurio por las cooperativas mineras Concesiones mineras transnacionales (Downer, Suchez)	**Reducir la contaminación minera**	Buscar alternativas con tecnologías nuevas Seguimiento a las actividades mineras	ANMIN-A Mancomunidad CI-SERGEOMIN MEDMIN Araucaria	**Máxima**
7. Ampliación del área protegida (D. S. 25652)	Falta de difusión de parte del ANMIN Apolobamba a la población Falta de consenso de la sociedad	**Difusión permanente mediante vías de comunicaciones**	Radioemisora Educación ambiental formal y no formal (curricula ecológica, EEPE, Carpa verde, etc.)	ANMIN-A Mancomunidad Dir. Distrital B. S. Y F. T. Sociedad civil WCS, COBIMI, CI, AECI	**Alta**
	Falta de acceso a territorio Falta de saneamiento de tierras			Centrales y ayllus INRA	**Alta**
8. Información, Difusión, Capacitación	Desconocimiento de leyes, normas, reglamentos para manejo de recursos naturales renovables y no renovables Falta de información relevante para la conservación	**Incrementar la información disponible y accesible para todos y el conocimiento de todos sobre el trabajo del ANMIN-A, la mancomunidad y las ONG's.**	Radioemisora Educación ambiental formal y no formal (curricula ecológica, EEPE, Carpa verde, etc.)	ANMIN-A Mancomunidad Dir. Distrital B. S. Y F. T. Sociedad civil WCS, COBIMI, CI, AECI	**Alta**
9. Falta de personal de protección en el ANMIN Apolobamba	ANMIN Apolobamba tiene 483.743 has. Con su ampliación	**Garantizar una adecuada gestión del ANMIN Apolobamba**	Fortalecer personal del área Capacitar vigilantes comunales	ANMIN-A WCS, COBIMI, CI, AECI	**Alta**
10. Mancomunidad Apolobamba: Falta de capacidad de gestión de la mancomunidad de Apolobamba	Débil capacidad técnica Débil capacidad financiera Aún pocas herramientas de gestión	**Fortalecer la capacidad de gestión de la Mancomunidad**	Fortalecimiento de los directorios de la Mancomunidad Capacitación en gestión ambiental municipal Elaboración del Plan de Desarrollo y POA Mancomunados	ANMIN-A WCS, COBIMI SED-FMC (Prefectura) Grupos GOL, VMPEPP SED-FMC (Prefectura)	**Alta**

PROBLEMAS	CAUSAS	OBJETIVOS	ACCIONES	RESPONSABLES	PRIORIDAD
11. Falta de alternativas económicas	Turismo no organizado Potencial turístico no valorado	**Promocionar el turismo en el área** **Mejorar la distribución de beneficios**	Plan mínimo de ordenamiento turístico del ANMIN Apolobamba Mejorar la calidad de servicios (infraestructura, guías, atención, etc.) Evitar conflictos sociales	ANMIN-A SERNAP Mancomunidad Araucaria COBIMI SED-FMC (Prefectura)	**Alta**
12. Servicios básicos (manejo de basura, letrinas, energía eléctrica)	Industrialización, tiendas, manejo inadecuado Falta de letrinas en las comunidades Desechos sólidos y líquidos	**Reducir la basura en las poblaciones del área Apolobamba**	Capacitación y concienciación sobre el manejo de basura Reciclaje de basuras inorgánicas Construir posas o depósitos de basuras Construir letrinas	Mancomunidad ANMIN-A Araucaria	**Máxima**

Mapeo y Análisis Temporal de los Problemas Ambientales Directos

Luego, en grupos de trabajo por regiones (Pelechuco-Curva, Charazani y Amarete) se pasó al mapeo y análisis temporal de los seis problemas ambientales directos: 1. Erosión de la tierra, 2. Sobre pastoreo en la parte alta, 3. Tala indiscriminada de árboles, 4. Caza, pesca y recolección indiscriminada de animales silvestres, 5. Animales silvestres atacan animales domésticos y destruyen cultivos, 6. Contaminación ambiental minera.

Matriz de análisis temporal de conflictos

Pelechuco – Curva

Integrantes del grupo: Paulino Quispe, Manuel Barrera, Daniel Kama, Isaac Mamani, Augustino Calle, Leoncio Sarmiento, Julián Ramírez, Santiago Quina, Edgar Pacheco, Rosminda Quispe, Cilveria León, Francisco Villaverde

CONFLICTOS	E	F	M	A	M	J	J	A	S	O	N	D	
Erosión de la tierra	■	■	■										
Sobre pastoreo en la parte alta	■	■	■	■									
Tala indiscriminada de árboles						■	■	■					
Caza, pesca y recolección indiscriminada de animales silvestres			■	■									
Animales silvestres atacan animales domésticos y destruyen cultivos	■	■	■									■	
Contaminación ambiental minera	■	■	■	■	■				■	■	■	■	

Charazani

Integrantes del grupo: Teofilo Villegas, Luis Paredes, Ángel Condorí, Pablo Yujra, Benito Chura, Jaime Mamani, Celia Mamani, Ermegilio Carrión, Raúl Huanaco

CONFLICTOS	E	F	M	A	M	J	J	A	S	O	N	D	
Erosión de la tierra	■	■						■	■				
Sobre pastoreo en la parte alta						■	■	■	■	■	■		
Tala indiscriminada de árboles						■	■	■	■				
Caza, pesca y recolección indiscriminada de animales silvestres	■	■	■	■	■	■	■	■	■	■	■	■	
Animales silvestres atacan animales domésticos y destruyen cultivos					■	■	■						Maizales
	■	■	■	■	■	■	■	■	■	■	■	■	Kaata
	■	■	■	■	■	■	■	■	■	■	■	■	Cultivos del trópico
Contaminación ambiental minera													Hay en la parte baja
Contaminación de otras fuentes	■	■	■	■	■	■	■	■	■	■	■	■	Cría de chanchos

Amarete

Integrantes del grupo: Néstor Quilla, Francisco Huaqui, Emilio Vega

CONFLICTOS	E	F	M	A	M	J	J	A	S	O	N	D	
Erosión de la tierra													
Sobre pastoreo en la parte alta													
Tala indiscriminada de árboles													
Caza, pesca y recolección indiscriminada de animales silvestres													
Animales silvestres atacan animales domésticos y destruyen cultivos													
Contaminación ambiental minera													

BALANCE DE JUEGO

Temas internos de la Mancomunidad a resolver:

- Acuerdo sobre montos y firmas para la cuenta fiscal de la Mancomunidad de Apolobamba.
- Funcionamiento de la Mancomunidad a través del directorio deliberante (concejales) o del directorio ejecutivo (alcaldes).
- Mecanismos de coordinación con el ANMIN Apolobamba.

Se logró profundizar el análisis de la problemática ambiental de la Mancomunidad de Apolobamba considerablemente. Será importante fomentar en las próximas reuniones de la mancomunidad una revisión de los objetivos trazados para la Mancomunidad de Apolobamba y orientar los futuros trabajos con énfasis en este sentido.

Se sintió una mayor disposición de los actores locales (autoridades y sociedad civil) de asumir responsabilidades en llevar adelante las acciones identificadas para responder a los problemas ambientales que en el Primer Taller de Gestión Ambiental de la Mancomunidad de Apolobamba.

En general, la percepción de que los problemas ambientales directos (1 – 6) son de prioridad para la gestión de la Mancomunidad de Apolobamba ha sido fortalecida. El tema 5 relacionado a Ataques de animales silvestres a animales domésticos y cultivos sigue siendo el problema de mayor discusión e impacto.

PRÓXIMOS PASOS

El la sesión final del Segundo Taller de gestión Ambiental de la Mancomunidad de Apolobamba, se acordaron los siguientes aspectos como próximos pasos a tomar:

1. Actualización de la Matriz de Planificación de la Mancomunidad de Apolobamba, a cargo del personal de WCS/ Bolivia.
2. Reunión de Coordinación entre el Presidente de la Mancomunidad y WCS/ Bolivia en la Paz.
3. Convocatoria a una reunión de coordinación interinstitucional para la Mancomunidad de Apolobamba
4. Talleres de Fortalecimiento de la Planificación estratégica en los tres Municipios a partir de Julio de 2003.

Anexo 1: Lista de Participantes del Segundo Taller de Gestión Ambiental de la Mancomunidad de Apolobamba

1. Fortunato Calamani (HCM Charazani)
2. Sixto Yujra (HCM Charazani)
3. Santiago Medina (Director Distrital de Salud, Bautista Saavedra)
4. Nestor Quilla (Amarete)
5. Paulino Quispe (HCM Pelechuco)
6. Manuel Barrera (Representante Comité de Gestión, Pelechuco)
7. Julián Ramírez (Tesorero, ARMVA, Pelechuco)
8. Daniel Kama (Pelechuco)
9. Augustín Calle (Pelechuco)
10. María René Valencia-Díaz (Charazani)
11. Emilio Yujra
12. Alipio Cuila (HAM Charazani)
13. Hipólito Quispe (Mallku Marka Suni)
14. Francisco Huaqui (Sub Alcalde Distrito Suni Alpaquero)
15. Pablo Yujra (Agente Municipal, Carijana, Sub trópico)
16. Teófilo Villegas (Secretario Ejecutivo Federación Bautista Saavedra, Chullina)
17. Silverio Monroy
18. Ermegilio Carrión (Agente Municipal, Kaata)
19. Fernando Oblitas (HCM Charazani)
20. Angel Condorí (Jalichulaya)
21. Genaro Alvarez (Chullina)
22. Jaime Mamani (Chullina)
23. Martín Pinto
24. Benito Chura (Secretario de Relación, Chullina)
25. Raúl Huanaco (Kaata)
26. Basilio Quispe
27. Luis Paredes (Agente Municipal, Chullina)
28. Gregorio Chura
29. Santiago Quina (HAM Curva)
30. Juan Carlos Gómez (ANMIN Apolobamba)
31. Francisco Villaverde (Representante Comité de Gestión, Pelechuco)
32. Edgar Tapia (ANMIN Apolobamba)
33. Edgar Pacheco (Presidente de la Mancomunidad de Apolobamba, HCM Curva)
34. ----
35. Idelfonso Canaza (ANMIN Apolobamba)
36. Primitivo Yujra (ANMIN Apolobamba)
37. Rubén Yujra
38. Melva Oblitas (HCM Charazani)
39. Augusto Cuila (ANMIN Apolobamba)
40. Leoncio Sarmiento (ANMIN Apolobamba)
41. Lidia Patty
42. Seferino Quispe (Director Distrital de Educación, Bautista Saavedra)
43. Isaac Mamani (HAM Pelechuco)
44. Emilio Vega (Sub Alcalde Amarete)
45. Rosminda Quispe (HCM Curva)
46. Robert Wallace (WCS)
47. Rodolfo Nallar (WCS)
48. Imke Oetting (WCS)