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# Environmental governance, adaptive and collaborative in model forests, watersheds and biological corridors

## Ten experiences in five Latin-American countries







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# Environmental Governance, adaptive and collaborative in model forests, watersheds and biological corridors

## Ten experiences in five Latin-American countries

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Turrialba, Costa Rica, 2008





The Tropical Agricultural and Higher Education Center (CATIE) is a regional center dedicated to research and graduate education in agriculture and the management, conservation and sustainable use of natural resources. Its regular members include the Interamerican Institute for Cooperation on Agriculture (IICA), Belize, Bolivia, Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Dominican Republic and Venezuela. CATIE's core budget is strengthened by generous annual contributions from these members.

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## Abbreviations

AAMMF	Araucarias del Alto Malleco Model Forest
ADI	Association of Integrated Development
AGEP	Pejibaye Environmentalist Group
AMISCONDE	Friendship, Conservation and Development of Pejibaye Project
APOT	Association of Organic Producers of Turrialba
ASADAS	Water Administration Associations
ASOPROA	Farmers' Association of Santa Cruz, Costa Rica
CACVR	Conservation Area of the Central Volcanic Range
CATIE	Tropical Agricultural Research and Higher Education Center
CBD	Convention on Biological Diversity
ChMF	Chiloé Model Forest
CONAF	National Forest Corporation of Chile
CUSO	Canadian University Services
CVTBC	Central Volcanic-Talamanca Biological Corridor
DAS	Department of Social Action from Archbishopric of Temuco, Chile
ECLAC	Economic Commission for Latin America and the Caribbean
FAO	Food and Agriculture Organization
FMF	Formoseño Model Forest
ICE	Costa Rican Electricity Institute
IFAD	International Fund for Agricultural Development
IMFNS	International Model Forest Network Secretary
INTA	Nicaraguan Institute for Agricultural Technology
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
JMF	Jujuy Model Forest
LAC-Net	Model Forest Network for Latin America and the Caribbean (Now Ibero-American Model Forest Network)





MANCORSARIC	Commonwealth of Copan Ruins, Santa Rita, Cabañas and San Jeronimo Municipalities
MBC	Mesoamerican Biological Corridor
MECs	Microwatershed Environmental Committees
MINAE	Ministry of Environment and Energy, Costa Rica
NGO	Non governmental organization
PC&I	Principles, criteria and indicators
RIABM	Ibero-American Model Forest Network
RMF	Reventazón Model Forest
SGP-UNDP	Small Grants Program financed by UNDP
Sida	Swedish International Development Cooperation Agency
SINAC	Areas of Conservation National System
TJBC	Turrialba – Jiménez Biological Corridor, Costa Rica
UMCRE	Reventazón Watershed Management Unit, Costa Rica
UNDP	United Nations Development Program



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## Summary

CATIE has developed and pretested a community approach to improve the provision of ecosystem services: *the adaptive and collaborative landscape management*. This approach has five basic components: (i) effective governance, (ii) participatory planning, (iii) sustainable financial mechanisms, (iv) adaptive management and learning, (v) public-private sector alliances. Our experience shows that the improvement on ecosystem service provision at landscape level in Latin America begins with the promotion of a favorable environment for dialog and negotiation among stakeholders. This paper analyzes some experiences, somewhat related with CATIE, on management of model forests, watersheds and biological corridors. Preliminary evidence shows that these platforms improve the interaction among government, society and private sector, and help to transform private interests into common objectives. Besides, they create the conditions for discussing topics of interest in the region, such as: land tenure, human rights, equity, pollution, water scarcity, and vulnerability to natural disasters. Any environmental community approach is likely to generate policies that take into account all the diversity of stakeholders in the landscape; evidence suggests that political incidence is possible, and positive results are easily obtained when there is a strong social capital.

**Keywords:** Environmental governance, ecosystem services, multi-sector network, participative management, watersheds, model forest, biological corridors.



## Resumen

El CATIE ha diseñado y validado un enfoque basado en la comunidad para mejorar la provisión de servicios ecosistémicos: *la gestión adaptativa y colaborativa a escala de paisaje*. Este enfoque se basa en cinco componentes: i) gobernanza efectiva, ii) planificación participativa, iii) mecanismos financieros sostenibles, iv) manejo adaptativo y aprendizaje y v) alianzas público-privadas. Nuestra experiencia muestra que la mejora en la provisión de servicios ecosistémicos en los paisajes de América Latina comienza por la promoción de un ambiente habilitador para el diálogo y la negociación entre actores. Este trabajo analiza experiencias de bosques modelo, cuencas hidrográficas y corredores biológicos, desarrolladas en cinco países latinoamericanos y con algún grado de apoyo por parte del CATIE. Las experiencias demuestran que la interacción entre el gobierno, la sociedad civil y el sector privado se da fácilmente en estas plataformas para concertar intereses particulares que convergen en objetivos comunes. Esta forma de gobernanza tiende a incrementar el diálogo entre sectores y a reducir la generación de conflictos. Además, sirve como plataforma de concertación en temas que preocupan a la región: pobreza, pérdida de biodiversidad, tenencia de la tierra, derechos humanos, equidad, contaminación, escasez de agua y reducción de la vulnerabilidad. Toda iniciativa de gestión ambiental comunitaria es germen de políticas aplicables mediante procesos de concertación y engranaje entre intereses diversos; la evidencia sugiere que la incidencia política es posible y de más fácil aplicación cuando existe suficiente capital social.

**Palabras claves:** Gobernanza ambiental, servicios ecosistémicos, redes multisectoriales, procesos participativos, cuencas hidrográficas, bosques modelo, corredores biológicos.



## Introduction

The Millennium Ecosystem Assessment states that “an effective set of answers to assure sustainable ecosystems management requires substantial changes regarding institutions and governance, economic policies and incentives, social and behavioural factors, and technology and knowledge, which could diminish considerably the severity of these problems in the next decades” (MEA, 2005). Through this publication, we would like to share environmental governance experiences of some landscapes linked to CATIE in its role as a regional support centre for the management of natural resources.

The international political context in which the environmental governance concept develops dates back to the 70s when this theme was brought into the global agenda at the Stockholm Conference (1972). During the 80s, the United Nation’s Bründtland Commission (1983) made environmental sustainability a priority; stating the first definition of sustainable development. By the early 90s these initiatives had led to international environmental frameworks. Agreements at the Earth Summit created financial entities and mechanisms, which are currently valid. However, the new millennium – with the Johannesburg conference – brought the equity agenda to the top level where gender and empowerment issues were considered vital through their effect on decision making.

In this framework, Castells (1996) and Touraine (2005) identified environmental protection and women’s emancipation as the most promising social movements of the XXI Century, affecting current governance and governability. New civil society attributions, and the need for society to be part of its own development, are priorities. Experiences studied in this report, including those coming from voluntary and democratic organizations, fully respond to this new framework.

The Latin American region faces serious risks regarding local efforts to democratize decision making processes. The UNDP report (2004) on democracy in Latin America indicated that, from 18 Latin American countries, only 43% of citizens were fully convinced of the value of democracy, 30.5% were unsure and 26.5% had a negative opinion. Even more alarmingly, this report concluded that 54% of Latin Americans would prefer an authoritarian system over a democratic one if the latter would deliver their economic needs.

Democracy in Latin America is young and not well established; likewise, a great part of the population is submerged in poverty and there is very unequal income distribution. Because of this, responses mentioned in the UNPD report are not unexpected. According to ECLAC (2006), nearly 25% Latinos live on less than US\$2/day: *“In most Latin American societies, the richest 10% receive between 40 and 47% of the total income, while the poorest 10% receive only between 2 and 4%”* (de Ferranti *et al.* 2003). Latin American and the Caribbean countries show the biggest inequalities in the world, with the sole exception of Sub-Saharan Africa (World Bank 2006). Thus, one of the pillars that will support natural resource conservation will be poverty reduction, understood not only as lack of income but also as deprivation of fundamental rights and limited access to latent opportunities (Sen 1998).

The critical poverty of the region is aggravated even further by corruption, which continues to weaken the moral authority of local leaders, and by the inefficiency of policies to confront inequality. Consequently, the rich and powerful continue to manage and control the distribution of resources (Latinobarómetro 2006), which influence social, economic and political behaviour and also affect the environment<sup>17</sup>. According to the World Bank, corruption represents nearly 20% of a country’s gross domestic product. Thus, the participative governance issue becomes relevant again, and therefore, it is necessary to fully understand the conceptualization on which this study is based.

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<sup>17</sup> The Millennium Ecosystems Assessment (MEA, 2005) refers to anthropocentric direct and indirect generators affecting the health of the ecosystems.



## Conceptual Framework

CATIE, as have other Latin American knowledge management centres, has been evolving parallel to the region's challenges and opportunities. Following the vision of knowledge management for the provision of equitable and sustainable development, we have tried to make science available to decision makers in the region. CATIE provides support to regional networks seeking to make sustainable changes, such as model forests, watersheds and biological corridors.

### Collaborative and adaptive management of natural resources

Collaborative and adaptive management of natural resources at landscape level is defined as an integration process between society, environment and economy aiming at restoring the landscape's ability to offer ecosystemic goods and services to society in a sustainable way. The experiences shared in this document are examples of management processes. CATIE's expertise in knowledge facilitation regarding landscapes has found five basic attributes contributing to the success of these initiatives:

- (i) Effective governance, which is the key condition to develop subsequent elements of the conceptual framework.
- (ii) Construction of a shared vision showing planning and dialogue processes for necessary actions and responsibilities by the stakeholders involved.
- (iii) Financial mechanisms to implement proposed actions including access to environmental funds, payment for environmental services, market access, technical assistance, etc.
- (iv) Learning processes, through monitoring, assessment, review and reflection, allowing timely adjustments under the adaptive management approach.
- (v) Public-private partnerships to develop a responsible entrepreneurial sector committed to sustainable natural resource management, and a public sector which facilitates a political, economic and social environment open to innovation and willing to take action.

In line with the ecosystemic approach, the Millennium Ecosystem Assessment and the management of natural resources, the vision of these experiences responds to the level where an ecosystem can maintain its integrity. At the same time, the vision responds to the subsidiarity principle where decision making should be done at the closest possible level to the natural resource of interest. As Celedón (2002) mentions "*...the exercise of power potentially finds in citizen participation, a re-design and renovation argument*".

If we observe the temporal adjustment of political tendencies towards participation and subsidiarity, changes suffered since the end of World War II became evident 40 years ago when faith in an interventionist State prevailed, followed by a tendency to accept the market model during the last 20 years and the uprising of a new paradigm – civil society participation – in recent years (Ackerman 2005).

### Governance and governability

For the purposes of this study, governance and governability are fundamental concepts since case studies base their work on a governance architecture that allows them to conduct coherent and effective environmental management actions. Thus, to fully understand this document, we must accurately define what we mean by the terms "governance" and "governability", and to make a distinction between these sometimes confusing concepts.



According to Bazzani (2006), i) decision makers do not make a distinction between governance and governability; ii) researchers have confused the use of these terms; iii) knowledge levels, comprehension and use of the governance term were inferior to those corresponding to governability.

### *What do we understand by governance?*

*Without going to deep into the ‘governance’ term prehistory, it is interesting to observe that it comes from the ancient French word ‘gouvernance’, precisely the term adopted by the French when they detected and studied this problem... ‘Gouvernance’ was until very recently a French word as obsolete as its equivalent “gobernanza” in Spanish; one and the other had the same meaning (government) when the former was introduced to the English language in the XIV Century... (cf. Spanish: Corominas; English: Oxford English Dictionary; French: Dictionnaire historique de la langue francaise).*

The following definitions show some agreement on this term and its meaning in documents and scientific papers since the 90s. These definitions consistently mention that “governance” refers to the way in which power is exerted for the common good, as well as the rules and regulations that lead to agreements, transactions and interactions between the social sectors involved.

It is important to mention the definition given by the United Nations because, given its influence and rank as an international organisation, it sets certain standards for other publications: *“According to the prescriptive approach, governance refers to the way in which the legitimate power is exerted in relation to society and for the common good. According to this approach, the governance concept indicates that society is not ruled solely by the government but that it is part of complex network interactions between institutions and groups. Without implying a value judgment, it can be stated that in an open or democratic government system, intensity of interactions can be stronger than in a non-democratic system. What remains clear is that the government is just the visible part of the governance iceberg”* (United Nations 1995).

The above definition opened the path to the idea of power and how it is moulded into a society’s affairs and into determining its political, economic and social matters. This emphasis on power can be found in other observations *“we consider the exercise of power/governance/ not as an attribute exclusive of governments as institutions, but also of the civil society and the market”* (Rodríguez and Winchester 1998). These authors also state: *“Therefore, the way in which the system solves social conflicts and its subsequent costs and benefits distribution depend both on the political regime and on the definition and decision making process and on its implementation and execution capacity. That is to say, that final costs and benefits distribution from conflicts among market, State and social civil partners depends on how it is governed and on the power distribution among them.*

According to the economist Gary Becker, governance implies presence of multiple power or pressure groups under a framework of certain norms or rules of the game, defining the interaction and action of the groups and establishing limits regarding their influence in the political sphere, where it is possible to achieve power equilibrium conditions<sup>18</sup>. We infer that environmental governance is not a concept directed exclusively to the State or to the public sector but that it involves political stakeholders in a more complex manner. To facilitate the relationship between stakeholders, institutional arrangements should be regulated by rules and norms. Stakeholders can influence these elements’ structure but, at the same time, there are rules and norms, which decide how group interactions are carried out.

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<sup>18</sup> Not in the sense that this term is commonly used to address the equilibrium of powers in the State, but to some equilibrium regarding power of negotiation and influence. There is a Spanish translation of Becker’s work in “The essence of Becker” (Febrero and Schwartz 1997).



The politologist Eduardo Feldman (2001), analyst for the International Institute of Governability, states: *“The ‘governance’ concept works as a conceptual umbrella to address the different ‘government’ instances (understood in its broadest sense) public and private in a society, as well as to analyze the consequences derived from the coexistence of different local governing institutions networks showing different degrees of sophistication and institutional development (including but not limiting them to the political sphere)”*. Feldman confirms the instrumentation of the governance concept involving the government both in public and private matters and introducing explicitly the idea of local networks or local government institutions. Feldman also talks about “governance architecture”, which gives the idea of a complex relationships network.

According to Ostrom (1999), interactions and transactions between groups occur in three arenas: i) the operational arena, ii) the collective arena and iii) the constitutional arena. These transactions occur in the same group of individuals at different aggregation levels or within the same group of individuals at different times. For example, the constitutional arena commonly involves a wider range of participants than the operative arena. But even if all the members of a community are equally involved in the three interaction levels, the decision making opportunity will change over time.

Finally, the term “governance” expresses the way to govern; in other words, the way in which people organize themselves to make decisions and to perform activities, including the procedures and norms regulating their relationships, agreements and transactions. Any social organization must have governance architecture in order to operate.

### ***What do we understand by governability?***

Etymologically, governability refers to the ability to govern and therefore, it is a quality of governance architecture. According to Altman (2001), *“If we understand governments as networks of political institutions, then governability would be the capacity to institutionally process and implement political decisions”*. In our case, environmental governability is the capacity to process and to implement decisions to improve environmental conditions of particular landscapes.

An example to illustrate the difference between governance and governability is presented as follows: in an environment where one or several authorities or political decisions have lost their legitimacy to exercise the power, be it temporarily or permanently, we are facing a “governability crisis”. However, the government system (form, way, scheme or architecture), its way to make decisions and to implement them, is still valid and socially accepted. In this case, we are witnessing a “governability crisis” and not a “governance crisis” (Loyo 2002).

To conclude, according to Giner (1993, cited by Loyo 2002) *“governability is a quality inherent to a political community that allows its government institutions (governance) to act effectively within its space in a manner considered as legitimate by the citizens”*.





## Methodology

The fundamental methodological basis used for this report was the study of experiences and comparison of results obtained in each management model. Review of experiences involved a process of reconstructing the experiences to help reflect on what had occurred and to extract lessons. This methodology had been designed to adjust to certain time constraints. It is based on techniques used to investigate case studies; among them, literature review, semi-structured interviews, in situ visits and review workshops where the main tool employed is “line of time”; lessons learned are defined in a participative and consensual manner.

Topics addressed in semi-structured interviews and workshops were similar<sup>19</sup> and no significant differences were observed regarding the quality of the information obtained. In any case, together with the workshops, personal interviews were conducted to triangulate and complement the information. This information triangulation included workshops, interviews and *in situ* observation.

Ideally, review should be a continuing process that offers the opportunity of adapting for improvement (Berdegué et ál. 2000, IUCN 2004, Jara 1994). By disseminating the experiences from these ten cases it is possible describe examples of positive management and the aspects that should be taken into account to improve environmental management of the landscapes, in these and other similar management models.

In Latin America, there are environmental governance initiatives that have become examples of a new participative paradigm. They encourage a flexible, plural and effective administration of a society co-responsible with the environment. These initiatives acknowledge the role of representatives elected by traditional means and they also embrace sectors formerly excluded. The present publication compiles a series of ten experiences on multisectorial management of ecosystemic services distributed in five countries of the region (Table 1).

**Table 1. Analyzed case studies**

Name	Location	Operation	Area (km <sup>2</sup> )	Population (inhabitants)
Jujuy Model forest	Jujuy Province, Argentina	Since 2002	1300	601.058
Formoseño Model forest	Western area of the Formosa Province, Argentina	Since 2001	8000	18.500
Chiloé Model forest	Chiloé Island, Region X, Chile	Since 1998	9180	155.000
Araucarias del Alto Malleco Model Forest	Curacautín and Lonquimay, Region IX, Chile	Since 2002	3600	30.000

<sup>19</sup> The thematic content can be found in Annex 4



Name	Location	Operation	Area (km <sup>2</sup> )	Population (inhabitants)
Reventazón Model Forest	Cartago Province, Costa Rica	Since 2004	1500	432.923
Central Volcanic-Talamanca Biological Corridor	Cartago Province, Costa Rica	Since 2004	721	41.521
Sectorial Bureau of Environment and Production	Copan, MANCORSARIC, Honduras	Since 2006	619	36.243
La Soledad Watershed Council	Municipality of Valle de Angeles, Honduras	Since 2005	46	13.400
Aguas Calientes Watershed committee	Municipality of Somoto and a community of the San Lucas Municipality, Nicaragua	Since 2004	47	7.294
Jucuapa Watershed committee	Municipality of Matagalpa, Nicaragua	Since 2004	39	3.705



## Comparative Synthesis

### How did these environmental governance initiatives originate?

The origin of each experience is related to worldwide trends, where concept and theory on biological corridors, watersheds management<sup>20</sup> and model forests began with a global concern for the environment. The watersheds approach was first discussed at the United Nations Conference on Water conducted in Mar del Plata in 1997, while in Europe corridors were simultaneously established as a new biodiversity conservation tool. Model forests originated as a proposal presented by the Canadian government to protect forest ecosystems.

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*The origin of each of these experiences was related to worldwide trends*

---

These trends have spread at global level, creating spaces for multilateral discussions such as the International Water and Environment Conference held in Dublin in January, 1992<sup>21</sup> and the Rio Convention or “Earth Summit” conducted in the same year, from where the Convention on Biological Diversity CBD, presenting the “ecosystem approach” as an integral instrument involving biological, physical, social and economic issues, emerged. In 1998, principles underlying this approach were still under improvement. These efforts and their developments were discussed again during the International Conference on Water and Sustainable Development (Paris, 1998), the International Conference on Fresh Water (Bonn, 2001) and the United Nation’s Conference (Johannesburg, 2002).

As dictatorship regimes disappeared in Latin America, a period characterized by decentralization, privatization and municipalization began, the purpose of which was to reduce the size of the State and to centralize social expenditure. After many years of systematic exclusion of social participation, different social groups have tried to reverse this situation by creating more spaces for civil participation in decision making.

The ideological construction of active citizenship in Latin America requires ample participation in managing the public sphere and in constructing a more inclusive and fair society. Thus, environmental organizations with lobbying capacity arise in the communities due to State deficiencies to lead environmental protection. This temporary and pragmatic process took place in Latin America during the 90s. The CATIE-Focuecas program began in 1998 supported by Swedish cooperation funds after the passing of Hurricane Mitch through Central America (Rivas *et al.* 2003). This program applied the integrated watershed management approach in four model watersheds located in Nicaragua and Honduras.

Model forests began to consolidate with sponsorship from the Government of Canada, which provided information and dissemination of Canadian experiences at worldwide level (IMODEL FORESTNS 2006). Nevertheless, Latin America already had several participative environmental management initiatives at the landscape level. In this sense, the model forest is grouped with initiatives with a similar vision that have expressed interest to join a regional network, facilitating communication and exchanging experiences from different landscapes.

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<sup>20</sup> Dourojeanni *et al.* (2002) conducts a thorough analysis on the watersheds management discussion.

<sup>21</sup> It was emphasized there that the most appropriate geographic organization for planning and management of hydric resources is precisely the watershed.



Biological corridors have been adopted in Mesoamerica in response to the regional environmental integration process that began in the 70s and was promoted by the Central American Partnership for Sustainable Development (ALIDES) in 1996. This process fostered the establishment of more protected areas and involves regional bodies such as the Central American System of Protected Areas (SICAP) and the Central American Environment and Development Commission (CCAD), legalized in 1989. The latter accepted the responsibility to prepare the proposal to implement the Mesoamerican Biological Corridor (MBC) based on the Paseo Pantera project (1990-1995). Gradually, biological corridors being are established in each Central American country, and more and more people and institutions are becoming involved. One of these case studies is analyzed in this document: the Central Volcanic-Talamanca Biological Corridor of Costa Rica.

## What is the governance architecture of these initiatives?

Keep in mind that the definition of governance accepted in this document implies a new type of government, different from the hierarchic control model and characterized by a higher level of cooperation and interaction between State and non-state stakeholders, at the centre of mixed decision networks between the public and the private sectors.

Flows of power in these case studies were mostly horizontal, where each member contributed according to his or her ability and took on some responsibility for representation and decision making. Every experience has been affected by a unique process, determined by the environment and the stakeholders involved. The affiliation and participation of the members was generally voluntary<sup>22</sup>.

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*Consensus and agreements on environmental management were attained through open dialogues*

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### *Strategic decisions platform*

In regards to model forests, there existed a Regional Model forests Board at regional level made up of forest or environmental experts from each landscape ascribed, as well as a model forest representative from each country, and representatives from strategic partners. This level of organisation at regional level was outstanding. The board met twice a year to build networks with institutions, to define strategies concerning a common vision, to share best practice and to identify joint solutions to similar challenges. This interactive space provided feedback to the management and was valuable for cooperation among model forests. In the same way, the Regional Board provided an opportunity for designated authorities to learn about regional environmental management trends and it was extremely relevant in terms of opening spaces for information dissemination and communication between authorities with similar mandates, and encouraging discussion of public policies related to the subject.

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*It is the platform where decision makers from the public sector, the private sector and civil society converged*

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The platform with highest level of strategic decision making was usually the one with the most sectors represented. In this sense, general assemblies, where representatives were elected to constitute boards (in the case of model forests), watershed committees (in the case of watersheds) or managerial committees (in the case of biological corridors), stood out; these bodies are relatively equivalent.

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<sup>22</sup> Annex 3 shows the members of each systematized initiative



In some model forests, as for biological corridors, it was not necessary to have a general assembly of partners. Evidence indicated that in the initial stages, a managerial committee was established and in subsequent stages, boards had been constituted –if they had sufficient members to allow a good level of interaction and consensus, there was no need to implement an additional plenary body. In watershed organizations, the first step was to define the assembly from which a representative Board of Directors could be elected. Usually, representative positions in the Board of Directors were not held by individuals but by elected institutions that appointed a representative to participate in the initiative.

### **Support platform**

This platform relates to bodies that supported the execution of activities and tasks for each landscape type: model forest, biological corridor or watershed. In general, this platform consisted of support groups that were active when a special issue became relevant; for example, selection of projects to be funded or follow up to specific subjects (gender, microcredit, training, etc.). These groups are described in detail in the analysis of each case study.

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*The initiatives were usually supported by voluntary groups created on a temporary basis*

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### **Operative or management platform**

Some activities and actions in each case study required permanent coordination. In order to execute the planned activities there should be at least one full time worker to smooth the management process. This was a paid position, usually held by professionals, who could provide assistance in their areas of expertise.

Model forests had “managers”<sup>23</sup>. Watershed organizations had an equivalent position since 2006: in Jucuapa, the “administrative secretariat of the watershed executive committee”, in Aguas Calientes, the “technical secretariat” and in Copan, though not yet established, there were plans to create a similar position. In Jucuapa, there was also an “Office Head”, which was an *ad honorem* position held by a voluntary member elected every three months within the Executive Committee to follow up the watershed organization activities<sup>24</sup>. The Central Volcanic-Talamanca biological corridor is part of the Reventazón Model forest<sup>25</sup> and so it received support from the model forest manager.

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*There were significant benefits to the initiatives from employing, at least, one person, full time or part time.*

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### **Community Platform**

Watershed organizations encouraged creation of community-based watershed committees<sup>26</sup>. These committees were the operations base in each community and their members were democratically elected. They included community leaders and territorial delegates from public institutions and community NGOs.

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<sup>23</sup> Chilean model forests have a multidisciplinary management team supporting the management process.

<sup>24</sup> This case is presented with more detail in the watersheds chapter.

<sup>25</sup> In addition to the manager, the Reventazón MODEL FOREST has a part-time person appointed by MINAE.

<sup>26</sup> In Jucuapa: local watershed committees; in Aguas Calientes: community watershed committees; in Copan: microwatershed environmental committees



Model forests included in their boards, private entrepreneurs and indigenous people representatives. In Auracarias del Alto Malleco and Chiloé there were annual selections of projects presented by civil organizations. Chiloé also has a microcredit program that links community entrepreneurial groups to environmental sustainability objectives.

The managerial committee of the biological corridor had contact with the communities through community delegates who were democratically elected. The mission of these delegates was to help the managerial committee attain its objectives<sup>27</sup> and they were frequently contacted to coordinate community actions.

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*The environmental management of each initiative was the result of active community participation.*

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### What were the governance instruments?

These initiatives had similar tools to facilitate their work. All the experiences had statutes to regulate their operation and to avoid internal conflicts; furthermore, they had annual plans, a long term vision, and transparent information transfer mechanisms.

In regards to legal standing, different options had been selected. For example, the Central Volcanic-Talamanca Biological Corridor preferred to wait longer before obtaining legal registration; in the meantime, it worked as a voluntary partnership with a verbal participation agreement that was nevertheless recognized by its partners and based on trust and responsibility.

Legal standing had not been a relevant issue for the watershed organizations in this study as they were recognized by municipal governments through municipal bylaws. The relationship with municipal governments facilitated their interaction with other organizations and the administration of financial resources. Watershed organizations had working regulations and had developed specific rules to manage an environmental fund in each case study.

- 
- *Strategic plans*
  - *Statutes*
  - *Legal recognition*
  - *Informative documents*
- 

Several model forest partners mentioned that legal standing was important because it allowed them to operate autonomously before other national or international bodies.

However, each case study had its own singularities. The Argentinean initiatives had been registered as “associations” since 2003, without implying important managerial differences. On the other hand, Chilean model forests did not begin the legal process until 2006 when they chose a foundation figure. This gave them more access to funds allocated by the Chilean State. The Reventazón Model Forest in Costa Rica chose not to invest in creating and maintaining an independent legal standing, and so it worked under the legal standing of its partner institutions. The Regional Model Forest Network also preferred to use the legal standing of partner institutions. In its beginning, the host of the Regional Network was the United Nations Development Program (UNDP) and currently it is the Tropical Agriculture and Higher Education Centre (CATIE).

There is still a latent discussion about the autonomy that legal standing can give to initiatives such as these. There is a risk, that in the long term, lack of legal recognition may allow similar organizations to

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<sup>27</sup> Annex 2 presents the objectives of each management model



operate in the territory instead of recognizing the original as the territorial consensus platform on the environment. Therefore, each initiative should evaluate the potential benefits of obtaining legal recognition, if this status will add value to its own processes and not affect its mission.

### **Planning**

It is necessary to mention that the most important aspect in initiatives, such as these under evaluation was not “the plan” *per se*, but the process of constructing a shared vision: The process was more important than the outcome. A plan is an instrument that contributes to the purpose of creating a better future for society, and partners of the initiative should be committed to it in order to keep it going.

The intention of each of the case studies under study was to develop plans in a participative manner that allowed an interrelationship between stakeholders and the sharing of expectations, interests and motivations, as presented in the following chapters. These processes have generated positive side effects, such as the creation of a common vision to manage interests, which had been previously opposed and the development of important plans such as municipal development or poverty reduction plans, among others. In the future, plans which incorporate the duties of each institutional partner will help integrate the activities of the watersheds.

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*The most important aspect was not “the plan” itself, but the process of building a shared vision*

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Watershed organizations had a standard but flexible way of designing “Co-managerial Plans”; model forests prepared medium or long term strategic plans according to their needs. In general, the initiatives developed four to fifteen year strategic plans. All watershed organizations evaluated in this study had a co-managerial plan. Two of the five evaluated model forests also had a strategic plan<sup>28</sup>; the other three followed strategic lines. The Central Volcanic-Talamanca Biological Corridor bases its current activities on the plan prepared for the “initiative consolidation in the territory project”.

### **On which aspects were their institutional sustainability based?**

The importance of the public and private sector approval for the initiatives was evident. This support had been attained by adapting concepts and through conviction by the authorities of the value of the process. Authorities were able to suggest and generate environmentally sustainable practices using a multisectorial approach.

In regards to public institutions, it should be mentioned that municipal governments played an outstanding role in landscape management. Support from central government institutions in charge of environmental management related offices, such as the lands institute, the water service and the ministries of agriculture, natural resources, health and education, to mention a few, was also important. Support was affected by decentralization and administration policies that involved environmental management.

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*Participation of each society sector: public, private and civil, was crucial in attaining collaborative agreements for effective action in the landscape.*

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Municipal governments were key stakeholders for watershed organizations. The synergy achieved between watershed

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<sup>28</sup> Araucarias del Alto Malleco and Reventazón



organizations and municipal governments had strengthened each of the initiatives, even in administration and logistic issues.

There was also evidence of municipal and provincial government participation in model forests. However, the commitment of each country to the Regional Network relied on the national public institution in charge of the forest/environmental sector. In the case of Chile, that commitment is endorsed by the National Forest Corporation (CONAF); in Argentina by the Environment and Sustainable Development Secretariat (SADS) and in Costa Rica by the Areas of Conservation National System (SINAC). All these public bodies had played an outstanding role in each of the case studies.

Private enterprise, motivated by market demands and legal environmental regulations, were developing more awareness about their social responsibility and they were gradually becoming more supportive of these dynamic environmental management models. Hydroelectric power enterprises, private farms, sawmill owners, commercial enterprises and tobacco producers were involved in several of these initiatives and they had collaborated in concrete and constructive ways.

Education centres and public and private universities had seen these initiatives as sources of research and knowledge application. Many thesis studies are generated every year in these landscapes. Knowledge management was a theme for the three landscapes types under study and the information created was shared among the initiatives through network links. Establishment of a Central American school of watersheds co-managerial thought, which was an outcome of the Focuecas II program, has been pivotal. The linkage of these three multisectorial initiatives (model forests, watersheds and biological corridors) to CATIE and to the research of postgraduate students from different fields related to the environment, had also been significant.

### **What is the trend regarding financial sustainability?**

In this aspect, it is worth recalling that these initiatives are based on volunteer work both at individual and institutional level. Consequently, the projects will be sustainable as long as each initiative has partners committed to its objectives.

Cooperation with Canada provided resources to launch the first model forests onto worldwide and regional levels and it also financed the operation of the Regional Network during its first years. The Regional Network also received contributions from CATIE, as its host institution, and from CUSO (Canadian University Services) that had facilitated the support of a multidisciplinary managerial team with a regional mandate. The Swedish Agency for International Development (SAID) provided financial support to Focuecas II program and has provided seed funds to create the environmental fund in watershed organizations. These organizations also obtained resources, but at a smaller scale, from counterpart friend countries and from other international organizations. The SGP-UNDP (Small Grants Program financed by UNDP) had supported the Central Volcanic- Talamanca BC since its initial stages.

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*In the long term, empowerment of the inhabitants, backing for the idea by the general population and local customs will be the main support for these initiatives*

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*Each initiative was experimenting with a diverse array of financial mechanisms to support the aim of sustainable development.*

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State organizations, such as environment and agriculture ministries, land institutes and municipal governments have the authority and the mandate to conduct activities to benefit the environment and the community; therefore, they allocated public investment funds to carry out activities that could be coordinated and executed through these landscape initiatives.



## Model Forests in Argentina, Chile and Costa Rica

In terms of management, a model forest is a voluntary partnership of stakeholders that fully represents the environmental, social and economic forces of a region. This partnership works to define a shared vision on sustainable forest management and strives to achieve that vision for the benefit of all interested parties. These partnerships operate on the basis of openness and consensus.

According to the International Model Forest Network Secretariat (IMFNS), model forests are developed at landscape level, which includes the main uses of a given ecosystem at operative level, involving productive forest and protected areas, agriculture and livestock lands, protected areas, water sources and population centres. A model forest can embrace complete watersheds or political divisions involving several ecosystems within the same country.

In the following section, the experiences of several model forests will be compared, analyzing their origin, operation scheme, governance instruments and their sustainability mechanisms.

### Genesis of model forests

Model forests began in Latin America with the dissemination of the concept by Canada at the Rio Conference (1992). This concept promoted sustainable development of forest landscapes. The first model forests were developed in Mexico, Argentina and Chile and with this critical mass a Regional Network was formed, with headquarters, until 2004, at the UNDP in Chile. Since then, the headquarters has moved to CATIE, Costa Rica and now it is known as the Model Forests Regional Network for Latin America and the Caribbean (LAC-Net). This network has nine partner countries in 2007. In June 2006 a forest landscape from the Iberian Peninsula was incorporated, and it is reasonable to anticipate continuous growth. Landscapes which are interested to join the network request membership through the environmental or forest authorities with the highest jurisdiction in their territory. This request is submitted to LAC-Net's Regional Board for consideration.

The process of model forests in Chile began around 1996 with the participation of the Ministry of Agriculture's Adviser at that time. In 1998, the first of South America's model forest was created in this country: the Chiloé Model Forest (ChMF). Since then, two more model forests have been established in Chile: Araucarias del Alto Malleco (AAMMF) in October, 2002 and Panguipulli in 2006. In Argentina, the initiative has been fostered since 1996 by a NGO linked to the UICN (Los Algarrobos, Córdoba), which decided to join LAC-Net in order to create a more complete representation of model forests from different ecological zones. As a result, the National Model Forests Program, which managed the initiative in Argentinean landscapes was created and four model forests were established, two of which were analyzed in the present study: the Jujuy Model forest (JMF) and the Formoseño Model Forest (FMF).

The Reventazón Model Forest (RMF) of Costa Rica began in 2002, when representatives from the Model Forests Regional Centre promoted the concept. At the beginning, the Villa Mills landscape was favoured but, although it had ample forest cover, there were few social stakeholders. Once the model forest approach was understood as a social construction, priority was given to the Reventazón River watershed and this was supported by the Minister of the Environment who requested the country's incorporation into the LAC-Net. As the Reventazón Model Forest initiative was made known, other institutions joined it and so the intervention area was extended to all the Cartago Province, incorporating areas inhabited by indigenous people such as the Chirripó-Cabecar region, which is the second biggest of Costa Rica and with the highest poverty levels. The Reventazón Model Forest includes the Reventazón and Pacuare River watersheds, with great tourist and hydroelectric potential. The Central Volcanic- Talamanca Biological Corridor, also included in this study, is part of the Reventazón Model Forest.



## Governance architecture

The basis of the model forests' governance architecture is the establishment of institutional communication networks. Working platforms are dynamic, proactive and fluid; stakeholders involved generally participate in several of them.

### *Strategic decisions platform*

At least three decision making levels, regional, national and local, were observed in the model forests researched in this study.

**Regional scale.** Model forests are part of a structured network where the highest governance body, at regional level, is the LAC-Net board. It is made up by the top level forest/environmental authorities of partner countries, one model forests representative per country and strategic partners<sup>29</sup>, such as CUSO, CATIE, FAO and the IMFNS. The board meets twice a year in any of the partner countries. All requests are made to this body and any decisions regarding guidelines and application policy in the Latin America and the Caribbean model forests are taken there. LAC-Net has a regional managerial office formed by a General Manager and a CUSO team (voluntary professionals from multiple disciplines with a regional service mandate). The purpose of this team is to facilitate and network the tasks of model forests, in an effort to maintain efficient communication, knowledge transfer and technical support.

**National scale.** Argentina is the only LAC-Net partner country that has developed this national scale platform, currently consisting of four model forests. The National Model Forest Program of Argentina works under the Forests Office of the Environment and Sustainable Development Secretariat with headquarters in Buenos Aires. This Program is the highest body: any new Argentinean landscape must apply to the program to request entry into the network. The program has the ability to guide new landscapes that wish to become model forests. For this purpose, it has an assessment committee for applicant landscapes, made up by three voluntary working experts who revise proposals from three points of view: economic, social and environmental. Furthermore, the Program provides support to model forests in regards to negotiation of very important projects and development mechanisms to attain better environmental management<sup>30</sup>. The program is nominally part of the Jujuy and Formoseño Model Forest Boards.

*The structure has never been a burden to us, as everyone works toward the same goal. Everything needs to have an order, but this is not a burden. Rather it is the sum of wills*

*(Review workshop, Jujuy Model Forest, 2006)*

<sup>29</sup> Up to July 2006, Board representation was limited to state representatives at federal or central government level; recently, it was decided to include a representative from the model forests per country, with a right to vote. The first meeting under this modality took place in November, 2006.

<sup>30</sup> An outline of principles, criteria and indicators of sustainable forest management is being developed.



- . **Local scale.** In a model forest, the strategic decisions platform corresponds to the board which represents all social sectors relevant to the environmental management of the landscape. The board has a hierarchy that allocates responsibility within the structure and has the power to dictate and/or approve policies and strategies, according to model forest attributes<sup>31</sup>.

Due to its voluntary nature, the working functionality is predominately horizontal. The hierarchy of positions works better when it is related to meeting attendance, information transfer and official representation (Case 1). In general, the availability and interest of each member to work in various areas is the factor defining their role within the model forest initiative.

## Case 1.

### Appointment of the first Chiloé Model Forest Board

“The first board was established through direct invitation by the Minister of Agriculture to key people whom, it was thought, could collaborate. They were not representatives from..., but exponents of... This procedure was perhaps necessary at the beginning. Due to personal commitments, some people could no longer continue and institutions were suggested to replace them. This was the case for Andrea Hoffman, who left for CONAMA and recommended the Senda Darwin Foundation as her substitute. Currently, the Minister of Agriculture invites potential directors; though in some cases it is the Board that requests the Minister to exercise his good offices to invite some institutions of the area to participate. At present, the board has 12 members”.

(Santiago Elmudesi, Manager of the Chiloé Model Forest. 2006)



<sup>31</sup>Attributes: association, devoted to sustainable forest management, scale, scope of activities, management structure with ample range of values, cooperation/Exchange and capacity building.


**Table 2. Governance attributes of each model forest assessed**

	<b>Alto Malleco Model Forest</b>	<b>Chiloé Model Forest</b>	<b>Jujuy Model Forest</b>	<b>Formoseño Model Forest</b>	<b>Reventazón Model Forest</b>
<b>Assembly/ Board</b>	All members participate in the board which creates with an assembly	The directory is the highest ranked decision making body	The assembly is the highest decision making body; the institutional board is elected within it. The assembly has the power to request institutions to appoint another representative if a serious mistake occurs (this has not been the case up until now)		The board is the highest body (establishment of an assembly is under study)
<b>Partners</b>	Institutional stakeholders or representatives from relevant sectors	Appointed by the Minister of Agriculture	Only institutional members	Active partners, individuals or institutional	Board members and others attached to the Reventazón Model Forest
<b>Requirements to be part of the platform</b>	Chilean nationality Indigenous representatives and local inhabitants are elected in participative processes conducted in each community every two years.	Representatives from public institutions at national level and municipal mayor's offices, private sector, catholic church and indigenous sector (Lonko Mayor)	Two years seniority in the organization	Six months seniority in the organization  Candidates must be of age.	Resident in the country. Individuals with some institutional linkage. Institutional representatives
<b>Representative positions</b>	Chairman elected by the board every 2 years.  Plus 24 directors, 8 of them indigenous and community representatives elected through their own processes every 2 years.	Chairman appointed by the Minister of Agriculture  Eleven people with the title of "director"  Six delegated directors (acting directors)	Elected by the Assembly:  . Chairman . Deputy-chairman . Secretary  They represent public and private sectors and NGOs.	Elected by the Assembly:  . Chairman . Secretary . Treasurer . 4 members  Supervision committee: 2 members	Elected by the board in positions of indefinite duration <sup>32</sup>  . Chairman . Deputy-chairman . Secretary . Treasurer . Members . Supervisor
<b>Voting mechanisms (if applicable)</b>	Simple majority, agreements are usually reached by consensus	Simple majority, agreements are usually reached by consensus	Absolute majority. Executive Committee Members and the supervisor do not have a vote in matters related to their duties.  Consensus prevails	Simple majority, the chairman has the power to settle a voting with double vote.  Consensus prevails	Simple majority, the chairman has the power to settle a voting with double vote.  Consensus prevails
<b>Meeting frequency</b>	Quarterly	At first, 5 times a year; currently twice a year.	Bimonthly	Monthly	Bimonthly

<sup>32</sup> The Reventazón Model Forest board was established in year 2005. A very important factor that has helped to its consolidation was the hiring of a manager that same year, facilitating the process and allowing meetings and activities to flow in a periodic and constant manner.



### *Support Platform*

Between the decision platform and the operative platform, there is a support platform, which collaborates in the execution of activities and expresses itself as support committees. These people work in close relationship with the board and with the management.

In Chile, the Araucarias del Alto Malleco Model Forest had three support committees called “functional committees”, working in the following areas: planning and projects, accounts review and promotion and dissemination. On the other hand, the Chiloé Model Forest has independent committees for some of its programs such as the credit committee for the Minga Fund (microcredit) and the Huillin Centre Board (environmental education). The latter has become an autonomous organization, to which the Chiloé Model Forest contributes a technician and it has an active relationship regarding the contents and activities carried out. In previous years, the Chiloé Model Forest created the Working Tables (specialized committees) to deal with diverse issues; this initiative was adopted by the “Chiloé Emprende” Program. Currently, the Chiloé Model Forest is a member of the forest, sustainable tourism and national park and surrounding community committees. The “Chiloé Emprende” Program is a public-private platform which encourages productive development and supports innovation and new enterprises in the territory, improving the quality of life in, and the economic development of, each Chiloé community (Case 2).

*“Years before, the indigenous people viewed CONAF as an employer that provided jobs. Now they have realized that it is not just their employer but that they can also be co-participants. This is what the Chiloé Model Forest wants both parties to understand, that through cooperation they can earn more. Tourists not only come for the nature’s richness but also because they want to learn about the culture”*

*(Abel Igor, part of the Chileo Model Forest management team 2006)*



## Case 2

### Chiloé National Park – indigenous community Partnership



Created in 1982, the Chiloé National Park covers 43,000 ha. It was established on government controlled land (former indigenous territory), still inhabited by the indigenous community. The community was not involved in its creation. In the 1990s, the indigenous community claimed its lands and was violently repressed by CONAF, the organization in charge of national parks. In 1995 the government agreed to hand over lands to the indigenous community, raising conflicts between them regarding whether the land should belong to the community or to individuals. At the beginning of 2005, an agreement was finally signed, handing over the majority of lands as individual property holdings and a portion as community property. At this point, a co-managerial process facilitated by the model forest began.

In 2006, the indigenous people started to administer the park and to conduct activities such as renting cabins and operating a camping area, generating resources for its administration. By 2007, thanks to the model forest support, the park was expected to provide not only the usual activities but also horse rides and other complementary services. The Chiloé Model Forest facilitated the communication between its stakeholders and accompanied the community in their activities. “The park has a small museum, and bridges and trails have been built. The indigenous people themselves have identified the need to build bathroom facilities for visitors”.

Roberto Lincomay. Indigenous leader Chiloé Model Forest. 2006.





**In Argentina**, the Jujuy Model Forest had an “executive committee” as its support platform. It consisted of the most active members of the initiative and established technical support teams for projects conducted in the model forest. As for the Formoseño Model Forest, it provided a delegation to the board, elected within its members, whose responsibility was to ensure the transparency of the board’s reports to its members. The name of this delegation was the “Account Review Committee”.

**In Costa Rica**, the Reventazón Model Forest as outlined in its statutes, had established “specific committees” formed by voluntary members. These committees were created according to needs arising in the process; among them were: management, research, production and conservation. At this time, this initiative had a managerial team, made up by institutional delegates from CATIE, MINAE, the Horticulture Corporation, the Federation of Cartago Municipalities and Aqueducts and Sewers. Its members were usually different to those delegated by the same institutions to the board, but in some cases they were the same, or the only member, as for the community group leading the Cabecar-Brokenhead indigenous tourism project.

### *Operative Platform*

Although committees had been appointed to support the execution of activities and guidelines, it was useful to conduct a real analysis of the time that these stakeholders could dedicate to follow-up tasks and punctual activities in the model forest. In the understanding that they had contractual obligations with the institutions they represent, and, although their commitment and good intentions were evident, it was necessary to consider the cost of a full time paid position, to facilitate the advancement of sustainable development.

In the **Chilean** case, the Araucarias del Alto Malleco Model Forest had a managerial team formed by eight professional technicians working with projects associated with the model forest. Furthermore, the National Forest Corporation (CONAF) paid full time salaries to the manager and to the secretary. In the Araucarias del Alto Malleco Model Forest statutes, it is mentioned that, transitorily, CONAF finances the basic activities of Chilean model forests and their managers. In the case of the Chiloé Model Forest, CONAF’s support reached six of the 15 professionals, in different areas, who reported to management. Up to the end of 2006, the managers of both model forests were contracted by the Nature and Biodiversity Patrimony Foundation.

In **Argentina**, managers were members due to personal interest in the model forest and because of that their involvement was voluntary and supportive. They dedicated time and even logistic facilities to carry out activities. They were members of the stakeholders’ assembly and/or of the special board commissions. Starting in September 2006, the Argentinean National Network was able to obtain a budget allocation to pay managers for their full time work. These managers reported to the respective board and assembly.

The **Reventazón** Model Forest of Costa Rica had had the support of a full time manager since 2005. This temporary position was financed by one LAC-Net partner (CUSO). The management also received support from partner institutions such as MINAE, which had appointed one part-time professional to work with the initiative.

### *Community representation*

Model Forests were working through their boards, which had community sector representatives democratically elected by their respective communities. The experience of the Araucarias del Alto Malleco Model Forest, is a very successful example; seven representatives from the indigenous and settler





communities are part of a broad board consisting of 25 representatives. This initiative has demonstrated consensus and democracy in decision making and development of actions, which benefit society.

The process of community involvement in Chile has been more difficult due to the long dictatorship period suffered by this country. Communities are habituated to obey government policies rather than participate in them (Case 3). To be part of a decision making process is a very new concept. The merits of these initiatives are greater when analyzed through a historic perspective, as was demonstrated by the interviews conducted for this study.

*"In Chile there is no civil society, because during the dictatorship period, people got used to letting others decide for them. Sometimes society's opinion is asked but in the end, others decide...Actually what matters is not the size of the board, because if there is not enough participation, either a big or a small board will be the same, and at the end only a few decide and they are usually city people. If local people or indigenous people do not understand the subject, they can not participate effectively"*

*"The dictatorship caused us to lose much participation and influence and it is hard to recover it: there is no citizen involvement. Sharing with one another and trusting were practices almost lost, it was complicated to deal with that and we are still trying to advance in that aspect...With the model forest, an effort has been made to transform participants into stakeholders."*

*(Claudio Sandoval, member of the AAM-MF. 2006).*

The Chiloé Model Forest had developed one experience whose purpose was to link sustainable practices to the market; a warehouse offered craft products manufactured by the community for sale to the general public (Case 4).

The Reventazón Model Forest envisioned in its statutes, an interrelationship with community organizations already established in its area of influence. It sought to identify organizations with similar objectives to those of the model forest and encourage them to become active partners of the working process in the communities. Currently, the Reventazón Model Forest is facilitating an initiative on cultural tourism through a partnership between the Cabecar community and the indigenous Brokenhead community of Canada. During the first quarter of 2007 a group of Canadian indigenous people visited the Cabecar indigenous territory in Costa Rica; moreover, the Reventazón Model Forest Manager visited Canada in order to have a closer look at their model forest program.



## Case 3 National Award for Citizen Innovation 2004 to the Araucarias del Alto Malleco Model Forest

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The Araucarias del Alto Malleco Model Forest received the “National Award for Citizen Innovation 2004”, from the Poverty Relief Foundation. The award recognized the creation of a valid platform for productive and equitable dialogue between stakeholders, despite the historical conflict between the Mapuche indigenous and the Chilean State on claims of land possession rights.

*“Beyond the material incentive that this award represents, it means that the model forest concept is a novel territorial management model that seeks solutions to local development issues in forest ecosystems involving people as relevant stakeholders and the only true builders of a better future”.*

(Francisco Mendoza, former manager of the Model Forests Regional Network. 2004)



This model forest has also received other national awards such as: “Growing Country 2005” and the “Pehuenche Woman 2006” award for its work with pine nuts, an ancient product that had no commercial value but now is becoming known. This is an important process for the Curacautin and Lonquimav communities.



## Case 4

### Chiloé Model Forest biodiversity warehouse “Non-profit and non-loss organization”

The biodiversity warehouse had been operating for two years selling Chilotas handicrafts. It had around 400 suppliers some of whom were paid for their products directly, while others placed their products at the warehouse on consignment. The selling price incorporated the value of the product plus 25% for warehouse administration and operation and 20% for taxes, meaning a 45% increase to the final retail price. Still, the Chiloé Model Forest was able to pay its employees and cover the costs of ordinary services and suppliers' expenses. Currently this is an almost 50% self-financed initiative.

(Santiago Elmudesi, Manager Chiloé Model Forest. 2006)



## Governance instruments

Case studies had demonstrated the use of some instruments, which improved governability. The application of these tools was not standardized in model forests but rather it had developed according to decisions made by stakeholder for their particular needs and context.

### *Legal standing*

Legal standing allowed environmental governance initiatives to have a legal name to identify themselves for funds administration purposes, official representation and recognized social status. 98% of people interviewed for this study affirmed that legal standing was a very important aspect, one that provided relative autonomy for environmental management purposes.

Despite this affirmation, legal status can compromise group identity based on voluntary partnerships where the purpose is to conduct actions in a shared and co-responsible

*“The strategic plan is followed as much as it is possible. Sometimes lack of resources postpones the execution of planned activities”*

*(Carlos Paton, Formoseño Model Forest Manager 2006).*



manner; meaning, co-management. Case 5 exemplified an event where the legal standing was necessary and useful for social recognition purposes.

Model forests of Argentina were at the forefront in this aspect and have had legal standings practically since their constitution. Both initiatives were registered as non-profit civil organizations. On the contrary, Chile model forests did not prioritize this aspect at their commencement and they are currently pursuing their registration as “non-profit foundations”. During the previous eight years and up to the end of 2006, the Nature Conservancy Foundation, owned by CONAF, acted as a liaison for the financial resources that the Chilean State gave to both initiatives. This foundation closed down its operations and model forests are currently using their partners’ legal standing to administer those funds. For example, funds belonging to the Araucarias del Alto Malleco Model Forest are administrated under the legal standing of the Mayor’s office. In regards to the Reventazón Model Forest, it has been decided for the time being, not to invest in an independent legal constitution, but to encourage a co-responsible management, using, if necessary, the legal standing of one of its partners.

## Case 5

### Conflict due to name usurpation in the Formoseño Model Forest

When the community development project was negotiated for the Toba community, the name of the Formoseño Model Forest was West Formoseño Model Forest. However, a parallel group was formed within it that registered the name through a legal standing in order to administer the resources that they would receive from JICA. This parallel group was not recognized by the National Network nor by the international organization; this caused confusion among the inhabitants and concern in the Toba community, which had proposed the initiative. As a result, the original partners agreed to register their initiative as the Formoseño Model Forest.

(Carlos Paton, Manager Formoseño Model Forest. 2006)

#### *Statutes*

Argentinean model forest statutes were instrumental to their legal standing. These statutes established the rules that determined their partners’ participation in the organization and, among other things it included a disciplinary regime to be applied if necessary. In Chile, the Araucarias de Alto Malleco Model Forest had functioning statutes, developed by the strategic planning process. These statutes defined the functions of each board position and the rules for its operation. The Reventazón Model Forest had developed a statute that clearly stated their partners’ roles and functions. It came into effect in 2006.

#### *Strategic and annual operation plans*

All model forest initiatives evaluated had defined roles and responsibilities for their landscape stakeholders. In some occasions, more complete medium term plans were developed. Annual operation plans were framed, according to each case, into strategies or plans.

The Argentinean initiatives developed triennial strategies in accordance with the National Model Forests Network. From these, Annual Operation Plans (AOP) were developed based mostly on aspirations rather than actual resources. Because of this, many planned activities had to wait until funds arrived. Chile initiatives presented their annual plans to CONAF, which financed most activities through State funds.



From a strategic point of view, each Chilean model forest operated differently. The Chiloé Model Forest had worked during its eight years of operation following five clearly defined strategies. Despite not having a written strategic plan, it had taken advantage of the context opportunities with a clear vision of contribution to society and to the environment. Currently the model forest is involved in strengthening the processes of the initiative. On the other hand, the Araucarias del Alto Malleco Model Forest had developed a participative four year horizon strategic plan beginning in 2006. This plan was based on a consultation process with all sectors involved in the area, and programs had been designed to which future projects had to align. The strategic plan also had a monitoring and assessment system expected to be operative in 2007, which was to give feedback to management and be useful to present reports to the initiative partners.

The Reventazón Model Forest had worked since its origin with a strategic plan developed as part of the model forest constitution proposal submitted to the International Model Forest Network. The plan was designed in the initial stages. Today, platform partners have increased and, because of that, the initiative has taken concrete actions to update and take ownership of the strategic plan. As interest in the initiative continues to grow, the network partners expand and contributions to the plans increase.

The process of preparing these plans was even more important than the result itself. The Jujuy Model Forest conducted an annual planning workshop to which all the community was invited; this process allowed information about the initiative to spread and allowed the group to learn about the population's demands and needs. In general, the drafts of annual operation plans were prepared by the respective managers and approved by the board; these reflect short term actions, which were in agreement with the strategic plan guidelines and included clear statements of the mission and vision of the corresponding model forest. A lesson learned about developing strategic plans has been the way that plans are adapted, according to the interest and participation of stakeholders, which themselves change through time.

### **Reports and periodical summaries**

Reports and periodical summaries allowed submission of information and supported transparency. These were very important for disseminating information about activities, keeping partners informed and motivating more people to join the process. Usually, model forest managers presented reports to the board during each meeting regarding progress towards goals and achievements. The Reventazón Model Forest management submitted bi-annual reports to the board. It is worth mentioning that this was a voluntary practice that responded to a managerial vision, not formally established in the statutes. In the Araucarias del Alto Malleco Model Forest, assessment meetings were conducted at the end of the year when financial assessments were also presented.

*"During 2006, the Reventazón Model Forest reviewed key aspects to re-define its strategy. To do this, it had the support of CATIE and the LAC-Net. Two meetings for the consultation and validation of changes to the strategic plan were carried out. From this process, there were four programs or work axes: associative management, research, environmentally friendly production and conservation"*

*(Mildred Jimenez, Reventazón Model Forest Manager. 2006).*

The Jujuy Model Forest prepared short and clear annual summaries of no more than five pages, summarizing annual activities and showing the goals achieved during the year. This summary is disseminated among the board and the assembly members. The format permitted decision makers to access the information easily. Similarly, the Chiloé Model Forest prepared a five-year summary for 1998-2002. Currently there is an ongoing participative assessment exercise for the period 2003-2007 that will serve as input to the following period planning.



## Sustainability

Model forests, similar to other environmental governance initiatives, identified institutional, social and financial sustainability issues. The basis of this approach was that sustainability of a model forest is the outcome of the interaction between the landscape stakeholders and that it does not depend on specific projects.

### *Institutional sustainability*

Latin American model forests were affiliated to a Regional Network that in turn was affiliated to an International Network; these interrelationships allowed exchange of experiences, access to cooperation at the same level in different organisations, dissemination of activities and achievements and public recognition of their progress. Network adhesion was already an issue in the participative governance process at landscape level.

In this framework, the Jujuy Model Forest, Araucarias del Alto Malleco and Chiloé partners had visited Canadian model forests as part of experiences and knowledge exchange visits during the last eight years. At regional level, exchange processes had allowed sharing between initiatives from the Patagonia, Brazil, Central America and the Caribbean. The imminent evolution to an Ibero American Network, after the addition of a Spanish landscape, will increase these exchanges even more in a network in which language coincidence has been instrumental.

From the institutional perspective, it is appropriate to mention public policy generation (Case 6). This was supported by documents on regional policies from FAO and national forest programs in Chile and Costa Rica<sup>33</sup>, which included model forests as part of natural resource management. Since model forests involve negotiation and consensus between stake holders, they often proposed policy and also played a role in promoting policy.

### *Financial sustainability*

Evidence suggested that successful model forest initiatives had full time facilitators or managers. Managers devote a great deal of their time to obtaining and attracting funds from various sources. In some cases, this activity contributes to management expenses.

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<sup>33</sup> In Costa Rica, the Reventazón Model Forest is recognized as part of the MINAE structure



## Case 6

### Political agenda in the Jujuy Model Forest

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In 2006, the Jujuy Model Forest began fostering the planning process and reservoir protection in the area of Perilagos de Diques and Embalses. In November of that same year, a watershed organization called CAPOTEP was established and it was approved on May 29, 2002, through resolution No. 089 of the Provincial Office for Hydric Resources.

Although this body is not functioning anymore, the Provincial Law No. 5378 that created the Municipal Intendance of Los Diques, La Cienega, Catamontaña and Los Alisos Intendance resulted from its formation. The intendancy was supported by an Advisory Committee of which the Jujuy Model Forest is full member, as designated in the Law.

(Virginia Outon and Claudia Chauque, Members of the Jujuy Model Forest. 2006)

Chilean model forests had an important advantage receiving State support through CONAF. It allowed them to have a managerial team dedicated to support initiatives or projects negotiated by the same organization. The local relevance of Chilean model forests had been exponentially increasing and there was increased dissemination of their existence and work. More and more social organizations and institutions are approaching the model forest to join the initiative. The Chilean State has handled this contribution with distance and discretion. This has given autonomy to the model forests in terms of investment and expenditure decisions, providing a novel example of a model that provides significant power to its stakeholders.

The Chiloé Model Forest has managed around 120 projects in its eight years of existence. Some are likely to become sustainable in the long run; among them the Minga Fund (Case 7) and the biodiversity warehouse (Case 4). Chiloé Model Forest management became a multidisciplinary managerial team; therefore its projection for financial sustainability is now part of its institutional work. This model forest carries out annual project assessments, with calls to civil society and other organizations that wish to conduct sustainable activities. The annual model forest contribution was US\$10,000, which was added to partner contributions. Approximately US\$150,000 were allocated a year, assigned to community proposed projects.



## Case 7

### The Minga Fund: microcredit in the Chiloé Model Forest

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The process developed through the association between the Chiloé Model Forest and an NGO that offered urban credits but wanted to trial it in the rural area (the Model Forest provided the human capital and the NGO the financial capital). The result was successful and other partners were added; currently the Fund can finance 20% of its operational expenses (80% is subsidized). It is expected that in a short period of time this system will be completely self-financed.

Loans were offered, to 5 to 15 person groups of very low income (they had to prove that they had an income lower than US\$100 a month). These loans were given for agriculture, cattle, handicrafts, rural tourism, craft fishery, carpentry and homemade products. The amount of consecutive credits could increase according to the fulfilment of the debtor's obligations. The monthly interest rate was 1.2% (15% annually). To become self-sustainable the Minga Fund required a total of 5000 credits.

The number of loans had increased from 100 in 2003 to approximately 600 in 2006. All beneficiaries were women. The rate of recovery is 100% though there were delays as the marketing of some products was cyclical.

(Fernando Venegas, Chiloé Model Forest. 2006)

Since the second half of 2006, Argentinean model forests have had the support of the nation's government through payment of the salary of the model forest managers. Stakeholders of each initiative had contributed to projects through punctual activities, logistics, cash contributions, time of their technicians, etc. (Case 8).

The management strategy of the Reventazón Model Forest was focused on adding value to the alliances with its partners in order to develop some of its activities. Moreover, creation of some mechanisms to gather financial resources from the population to generate identity with the pro-environment movement, was under discussion.

## Case 8

### Productive development project in the Formoseño Model Forest

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This model forest worked mainly with a community productive development project financed by JICA, which in its first stage (2003-2005) financed a proposal presented by the Toba community from Ingeniero Juarez. This project was the basis for the model forest; its work focussed on three key elements: training, production and infrastructure with direct benefit to 680 people. In 2006, the second phase of the project began.

(Monica Gabay Director of the National Model Forests Program of Argentina and Carlos Paton Manager of the Formoseño Model Forest. 2006)





### *Seed funds for model forests*

'Seed funds' are granted by the MFINS and administered by the LAC-Net. The purpose of these resources was to strengthen model forests by encouraging low environmental impact activities in the landscapes. Resources are granted annually by the LAC-Net through an assessment of model forests that fulfil the following eligibility criteria. These requirements, designed by LAC-Net management, attempt to legitimize the participative governance spirit of model forests.

1. Board appointed and strategic plan prepared in a participative manner.
2. Products and activities to be financed should be included in the respective strategic plan. Model forests that do not have a strategic plan can request a limited percentage of these seed funds to prepare one.
3. The seed fund will cover 50% of the finance for the cost of products. In other words, model forest partners must co-finance, in a 1 to 1 proportion, the use made of the fund. This co-financing can be in-kind (labour, land, technical assistance) or cash (to enhance an on-going project in the model forest).
4. Payment of salaries or of recurrent operative expenses is not eligible for compensation by these funds.





## Reflections on model forests

The governance architecture of model forests had a distinctive feature; participation in the regional boards by high level politicians, involved in natural resource administration. Information transfer among political decision makers and also between these and other model forest partners was a benefit of these groups, with potential to raise awareness of regional issues related to environmental policies. The Board had the authority to accept or reject a landscape candidate that wished to join the Network.

At local level, model forests had a wider influence within the public sector than other initiatives (watersheds and biological corridors). This could be due to their broad style of environmental management and to the size of the region under management. Private sector partners included tourism operators, the tobacco producers, forest entrepreneurs, hydroelectric enterprises and representatives from producer associations.

Another distinctive feature of Latin American model forests was their broad social objectives, which promoted equity and peace through effective environmental management. Landscapes within the model forests' area of influence included urban and rural areas, watersheds and biological corridors, among others. It was clear that the territorial considerations of these initiatives was bigger, compared to watersheds or biological corridors. To set boundaries, model forests required the representation by at least one ecosystem and considered social sectors influencing environmental management; this allowed development of a complex institutional web. Generally, there was strong participation by national institutions.

Model forests focused their activities on management of natural resources, for both direct management of the forests or for re-establishment of forests (given forest scarcity) for the well being of populations using or demanding these resources.

On the other hand, in regards to governance instruments employed by model forests, it is important to point out that they were free to work under a legal standing of their own. Although Argentinean model forests had had legal standing for approximately five years this fact had not caused significant differences in management or results, compared to other initiatives, such as the ones in Chile or Costa Rica. Therefore, each initiative should analyze the benefit of pursuing its registration, according to own needs.

Model forests worked mostly following strategic goals; only some made it a priority to prepare strategic plans (Araucarias del Alto Malleco and Reventazón). The LAC-Net was usually flexible in these subjects and the decision of adopting certain governance instruments was fully determined by the stakeholders of each model forest, as long as it was the best way to achieve their objectives.

Finally, it is important to address the long term sustainability issue, the basis of which is the genuine commitment of the stakeholders. Argentinean and Costa Rican experiences have suffered from long periods without access to funds –and recently Chilean model forests found themselves short of funds as the foundation through which they received State funds closed down. However, this circumstance, rather than causing the disintegrating the movement, strengthened it, revealing the commitment and volunteering capacity of its partners, who eagerly joined forces to conduct activities to achieve their objectives.

The watersheds co-managerial approach started as a need to manage a large number of on-going projects in the same watershed. The projects yielded some positive results but not enough to stop degradation of landscape (some battles were won, but war was lost). Lack of local management capacity and empowerment may have caused this situation; once the project was completed, the positive activities also



stopped. Thus, co-management arose as a collaborative, participative and multidisciplinary action that allowed pooling of efforts, experiences and resources (Francisco Jimenez, Focuecas II Program. 2006).

Co-management of watersheds is an integral system, which promotes development of medium and long term processes, through territorial zoning and governance Co-management requires institutionalisation (e.g. watershed committees) - since watershed problems are so complex that no institution by itself is capable of assuming that responsibility. These organizational and real participation mechanisms are crucial for decision making. Under this complex approach, watershed committees emerged as organization with the responsible to lead and to coordinate watershed management actions.

Watershed organizations in this study were environmental multisectorial management platforms in the watershed. These platforms had the voluntary participation of representatives from the public and the private sectors. Each experience was unique, since participants as well as the social, political and legal context were different in each country. The experiences of four watershed organizations, two of them located in Nicaragua, where they are called “Watershed Committees”, and two others in Honduras: La Soledad subwatershed Council in Valle de Angeles and the Environmental and Production Sectorial Committee in the Copan watershed, will be analyzed in the following section.



# Watershed Management in Honduras and Nicaragua

## Genesis of watershed organizations

Case studies used for this document were framed within the CATIE-Focuencas II Program and financed by the Swedish International Cooperation Agency (ASDI) with influence in Honduras and Nicaragua. Focuencas II selected four model subwatersheds to promote the design, validation, learning and demonstration of strategies, methodologies and tools for adaptive watershed co-management.

The first stage of the Program began in 2000 under the name of Focuencas I “Strengthening Local Capacity for Watershed Management and Prevention of Natural Disasters”. This initiative supported the reconstruction and recovery process in Nicaragua and Honduras after Hurricane Mitch. Its objectives were: i) to strengthen management capacity of local communities and municipalities located in vulnerable watersheds y ii) to train at least 30 professionals to masters degree level on watershed integrated management. In terms of its management, Focuencas I chose to work with a “national coordinator” in each country, who was required to conduct regular field trips to the subwatersheds to support the work. These national coordinators had their headquarters in the capitals of their respective countries.

Since 2004, and with a four year horizon, the second stage began: Focuencas II “Innovation, Learning and Communication for Watershed Adaptive Co-management”. This stage aimed to establish a social basis to generate, in an organised way, a positive atmosphere to promote environmentally sustainable practices. Regarding its management, Focuencas II chose to hire a local Program coordinator in each model subwatershed; eliminating the position of national coordinators. This had an outstanding impact due to proximity, in time and space, to local stakeholders. These local coordinators had a highly proactive role that facilitated institutional interrelationships and provided assistance to watershed committees.

## Nicaragua experiences

The experience of the Aguas Calientes subwatershed resulted from the joint work of several social stakeholders brought together by the Capitalization of Small Farmers from the Dry Tropics of Nicaragua Project (TROPISEC). This subwatershed had the support of the Somoto Mayor’s Office to develop the Watershed Governing Plan<sup>34</sup> in a participative manner. Later on, it was necessary to establish an organization to run the governing plan and so work began to implement a watershed committee.

The experience of the Jucuapa river subwatershed began in 2003 when a municipal bylaw including the Subwatershed Conservation and Production Governing Plan was approved. This bylaw recognized the existence of a watershed committee, in charge of its implementation, though at that time it had not yet been formed. The idea was taken up again by Focuencas II that had commenced activity in the area. Within this framework, the watershed committee began to develop by the end of 2003, based on a general assembly in which all institutions, with representation in the city of Matagalpa, were invited to participate.

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<sup>34</sup> The Governing Plan for the Aguas Calientes sub-watershed was recognized through a Somoto-San Lucas bi-municipal bylaw in 2002.



## Honduras experiences

After the Hurricane Mitch emergency, initiatives were created to prevent further risky situations from developing. Thus, in 1999 the association between three neighbouring municipalities: Santa Rita, Copan Ruins and Cabañas began with San Jeronimo joining later on, consisting of the Commonwealth of Copan Ruins, Santa Rita, Cabañas and San Jeronimo Municipalities (MANCORSARIC). The commonwealth prepared a territorial development strategic plan in 2003, outlining the existence of “prompting tables” that would be responsible of executing the strategic plan. After that and to make management easier, sectorial plans were prepared from the strategic plan and tables changed their name to “sectorial tables”.

*“The idea was not to create a new structure, but to strengthen the existing one, as it also had legal standing”.*

*(Jorge Faustino, CATIE-Focuencas II. 2006)*

The first sectorial area launched by MANCORSARIC was the Health Sectorial Table with excellent short term results<sup>35</sup>. In 2006, the Production and Environment Sectorial Table, which was the watershed organization, began operations. It had developed a ten year co-management plan.

The experience in the La Soledad subwatershed started during the last stage of Focuencas I when the “first watershed committee” was organized in the Municipal Environmental Unit of Valle de Angeles, with the support of local stakeholders: farmers, teachers, the Natural Resources Secretariat (SERNA) and the Agriculture Secretariat (SAG), among others.

In 2005, a new watershed committee was established with wide representation from water boards, community organizations, the education sector and the health sector. The production, craft, agriculture and commercial sectors that had participated in stage I, became involved again and the integration was strengthened. Due to a transition phase between the first and second stages of Focuencas, some partners left when the stakeholders’ articulation processes began. Some of these came back but others lost interest.

## Governance architecture

As established in the governance definition presented in the conceptual framework of this document, power flows and decision making in model watersheds of Focuencas II were articulated in three environmental management platforms.

### *Strategic decisions platform*

This platform had the authority to decide on structural matters. Due to its partners’ high level of participation, the general assembly held the highest decision making power. It usually met once a year and committee or board members were elected from it. The board<sup>36</sup> also fitted into the strategic decisions platform as it represented the social sectors of the assembly and its members were elected democratically. Table 3 shows details of each of the bodies mentioned in the model subwatersheds.

<sup>35</sup> The national government decentralized the mother-child health services in a hospital funded for the commonwealth; this was the first experience of this type in Honduras.

<sup>36</sup> It can be called Board of Directors, Executive Committee or Coordinating Council, according to the case. For the purpose of this study, these are equivalent terms.



This governance architecture was established in 2004 when the Focuecas II program began. In all the cases, the municipality had become a fundamental and committed stakeholder in the actions of these initiatives. Municipal governments had recognized the initiatives through municipal bylaws and at the time, they administered the environmental fund assigned by Focuecas II, obeying the autonomous decisions of the watershed organization.

In general, the switching between national and municipal levels of government<sup>37</sup>, had not affected the existence of watershed organizations but it markedly changed the composition of the boards, as the members appointed by public institutions changed. Deputy-mayors became an active part of the initiatives and they participated in the boards. Their public authority in the watershed organization, facilitated the linkage between the political and technical spheres and citizens' demands regarding the integrated management of natural resources of the watersheds. The new deputy-mayors brought enthusiasm and ideas. They were elected to preside over watershed organizations, which affected the process to some degree as it took time to adapt and assimilate to the new approaches and activities.



To improve operations in the experience of Valle de Angeles, Honduras, preliminary working activities were conducted with municipal candidates, as a precautionary measure, so that the successful candidate would know about the concept and operation of the municipal Watershed Council. In Copan, the former Coordination Council of MANCORSARIC signed a public agreement with municipal candidates, to ensure the continuation of the policies already implemented; among them, the Environment and Production Sectorial Table.



<sup>37</sup> In 2004 municipal authorities were elected in Nicaragua; in 2005 general elections (national and municipal) took place in Honduras and in 2006, presidential elections took place in Nicaragua



Table 3. Strategic decisions platform in the Focuecas II model subwatersheds.

	NICARAGUA		HONDURAS	
	Aguas Calientes	Jucuapa	Copan	La Soledad
Highest rank organization	They have a General Assembly, from which the Board of Directors is elected.  The Assembly requires at least one representative per watershed area (upper, middle, lower).  Each Assembly member is accredited as representative of an institution or organization, in writing before the executive committee secretariat.		MANCORSARIC Coordination Council: Formed by the Commonwealth municipal mayors who, because of their elected nature, have community representation.	Assembly: organizations, water boards, voluntary youth, farmer groups, agricultural trading banks and civil society. The Board of Directors is elected from the Assembly.
Members	The Assembly has representatives from public institutions, NGO, communication bodies and inhabitants representing the three watershed areas: upper, medium and lower.	Assembly members are the institutions who appoint one representative.	Formed by three main sectors:  . Local and national governments (town councillors and UMA)  . Cooperation agencies (NGOs, projects and programs).  . Civil society (water boards and associations)	The Assembly has founding members and active members.
Requirements	To be an institution with influence in the watershed area or related to the subject at municipal or national level.  There is no restriction regarding nationality, age or seniority for institutional delegates to participate in boards of directors.			
Terminology of representative positions at board level	Watersheds Committee Board of Director  Chairman (ALSOM)  Vice-chairman (INTA)  Secretary (MECD-SL)  Treasurer (Plan Nic)  2 Supervisors (MARENA, Police)  4 Members (ALS, former vice-chairman and 3 Community representatives)	Executive Committee for the Jucuapa sub-watershed  Coordinator (ALMAT)  Vice-coordinator (MAGFOR)  Secretary (INTA)  4 Members (MARENA, La Pintada, UNICAFE, Jucuapa community centre)  They have advisors for the Board of Directors, without a right to vote: Focuecas II and INTA.	Coordinating Council for the Environment and Production Sectorial Table  Coordinator (Copan May.)  Deputy-coordinator (Copan Cattle Association)  Secretary (OCDIH)  Sub-secretary (Focuecas II)  Treasurer  Supervisor  3 Members (will be replaced after 3 consecutive absences or when each institution decides)	Watersheds Council Board of Director  Chairman (Mayor's Office)  Vice-chairman (young teachers)  Secretary (INFOP)  Treasurer (water Board)  Supervisor (artisans)  3 Members (community, AMITIGRA, education)
Voting when necessary	Nominal or secret voting according to the case.  Simple majority	If more than four members request it, proposals will be approved in two sessions and then take them to population consultation.  Simple majority.	Nominal or secret voting, according to the case.  Simple majority	Simple majority.
Meeting Frequency	Monthly; if necessary, extraordinary meetings.			The Board of Directors twice a month.  Quarterly in each community.



### Support platform

Support bodies working in close collaboration with the decisions platform, were found at this level. In the Nicaraguan experiences, the support platform was established for temporary support where it was necessary; in the Honduras experiences they provided long term support. In Copan, they were known as “thematic commissions” that worked autonomously, reporting their achievements at the meetings of the Sectorial Table. In Valle de Los Angeles there was a support structure formed by diverse groups; among them, the “advisors’ group” made up by outstanding community members, to whom advice was requested for particular subjects; the “volunteers group” and the “administrative environmental fund board”. Details of this support platform, both in Nicaragua and Honduras are presented in Table 4.

Table 4. Support platform for watershed initiatives

NICARAGUA		HONDURAS	
Aguas Calientes	Jucuapa	Copan	La Soledad
<p>The statute establishes Special Operative Commissions, formed by members with expertise in the area; each of them has one coordinator and one collaborator elected in the assembly.</p> <p>It is intended to create management, projects execution, environmental education and legal issues commissions, but they have not been formed yet.</p>	<p>The statute establishes Executive Committee support teams with specific tasks.</p> <p>They are appointed according to the activity to be developed and their nature is temporary (Matagalpa Bylaw/April 2006)</p> <p>The advisory institutions to the Board of Directors are Focuecas II and INTA. They have no right to vote.</p>	<p><b>Thematic Committees</b> are linked to each component of the Co-management Plan</p> <ul style="list-style-type: none"> <li>- Management commission</li> <li>- Water, sanitation, protection and watersheds management commissions.</li> <li>- Sustainable production</li> <li>- Environmental education and promotion</li> <li>- Risk management and territorial zoning</li> </ul> <p>They have 3, 5 or 7 members. Special committees can be established for specific subjects.</p>	<ul style="list-style-type: none"> <li>- <b>Advisors’ group:</b> Notable people living in the community who are required in matters of their expertise to give advice to the watershed organization.</li> <li>- <b>Volunteers’ group:</b> Generally young.</li> <li>- <b>Environmental Fund Administration:</b> Elected by the Board of Directors, it has a part time administrator who facilitates this task.</li> <li>- <b>Projects analysis commission</b></li> <li>- <b>Vigilance Committee</b></li> </ul>

### Operative Platform

In all cases, boards of directors received strong support from the local coordinator of the Focuecas II program to develop their tasks and to coordinate their activities; because of that, it was not necessary to have managers or other positions to coordinate operations. Nevertheless, the Nicaraguan initiatives decided to hire a person to assist watershed committees and this option was being considered in Honduras.

In this way, the watershed committee of the Jucuapa subwatershed hired the services of a forest professional for the position of Committee Administration Secretariat. This person was responsible for arranging regular meetings, carrying out administrative tasks and keeping the institutional summary of progress achieved by this initiative in the landscape (Case 9). In Aguas Calientes, since the second





semester of 2006 there had been a “Committee Technical Secretary” to support the watershed committee management. At executive level, watershed organizations also obtained support from technicians or from responsible members of Municipal Environmental Units who, despite budgetary and technical limitations, are key allies to the program and may help coordinate activities for watershed organizations.

## Case 9

### Office Chief: a voluntary and rotating position at the Jucuapa subwatershed

The Jucuapa Watershed Committee decided to appoint from among its members, an “Office Chief”; this was a three month long, *ad honorem* and rotating position. They decided to designate three consecutive periods in advance, so that partner institutions and their delegates knew when it was their turn to hold the post. Likewise, to support the Chief in the execution of activities, they also hired a forest engineer as “Committee Administrative Secretary”. This position was paid by the subwatershed environmental fund.

#### *Community platform*

Local committees<sup>38</sup> have been created at community level with members elected democratically by the community. Usually, local watershed committees consisted of people linked to drinking water committees (CAP)<sup>39</sup> health promoters, environmental fighters, community representatives of public institutions (auxiliary mayors, among others) and NGOs with presence in the community.

There are ten community committees in Agua Calientes (Case 10) and eight in Jucuapa. Each committee developed its own annual activity plan supported by the Watershed Committee and Focuecas II. In Jucuapa they decided to establish local watershed committees based on the “Assembly of Inhabitants” already existing in the communities, plus institutions related to watershed’s goals. Since the Assembly of Inhabitants did not have a board of directors, its formation was encouraged as well as establishment by the Local Watershed Committee. This committee had the following posts: coordinator, secretary, treasurer, youth representative, a women’s representative and two members.

Microwatershed Environmental Committees (MECs) were implemented in Copan, elected by the communities, as the community counterparts for the execution of projects. They had legal representation before the Mayor’s Office to execute bylaws, to carry out claims and other control and environmental protection mechanisms in the community (Copan Co-Management Plan 2006), and they were also part of the Local Environmental Committees. In some cases, water board representatives, community organizations<sup>40</sup>, Community Development Councils and auxiliary mayors were also part of the MECs.

<sup>38</sup> Watershed Local Committee (Jucuapa), Watershed Community Committee (Agua Calientes), Micro-watershed Environmental Committees (Copan).

<sup>39</sup> The CAPs receive a monthly contribution from the inhabitants for efficient water administration; its hierarchical structure is: coordinator, treasurer, health and cleanliness manager, water quality and chlorination vigilant (support with MINSA inputs), one secretary and 2 members. They are elected by the community and are not subjected to any political changes (Lorio 2004).

<sup>40</sup> Community organizations are recognized by the Law of Municipalities of Honduras as a basic auxiliary unit of public administration. These organization can be established in neighbourhoods, districts and villages; they are elected by secret vote of community members registered at the Municipality.



## Case 10

### Election of community committees in the Aguas Calientes subwatershed (Somoto, Nicaragua)

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The current board of directors of the Aguas Calientes watershed committee (2006-2008) decided that community committees had to be re-structured. However, after the 2006 election process, most community committees were ratified as such, confirming their legitimacy as representatives. In fact, these representatives received their credentials from the watershed committee board of directors and this action had a great impact on their level of identification as initiative partners and their ownership of the group's processes.

(Somoto Experience Review Workshop. 2006)

This is still an incipient body; few have consolidated their activities in the community and in some cases there has been overlap with the activities of the water boards. Community representation was being strengthened in La Soledad subwatershed and in Valle de Angeles with rotating funds managed by agricultural trading banks (Case 11).

## Case 11

### Agricultural Trading Banks in La Soledad subwatershed, Honduras

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Agricultural trading banks are rotating funds granted to a community to finance sustainable initiatives.

“The Board offers this credit at a 12% annual rate, calculated as follows: 8% to maintain money's worth due to inflation and 4% to maintain the environmental fund. This will allow future economic autonomy to the fund. (...) We want to create a financial mechanism for the poor.” (José Manuel González, Local Coordinator Focuecas II, 2006).

Between 8 and 20 people administer the agricultural trading banks in each community; they have been trained in accounting administration to ensure good management of these financial resources. All community members have access to the funds. This is part of the municipality's poverty reduction strategy.

The agricultural trading banks function through bills of exchange duly authenticated by a lawyer and submitted to the municipality. This process was used because 70% of the population do not own property titles and therefore, are not able to obtain credit through other financing agencies. The environmental fund allocated approximately US\$2,700 to each trading bank as initial capital; it was also expected to provide them with more resources from funds allocated to the Poverty Reduction Program by the central government.



## Governance instruments

It is important to emphasize that instruments used by the governance structure aimed to provide governability. Following Giner's (1993, cited by Loyo 2002) conception that "governability is a political community's own parameters according to which its government institutions (governance) act effectively within their space in a manner considered as legitimate by the citizens". With this in mind, people who participated in the case studies mentioned instruments such as the legal standing or legal recognition, which allowed them to attain territory legitimacy and be part of information flows, that helped them disseminate their experience to the rest of society. As a result, these instruments improved internal relationships and adequately articulated activities to attain the objectives of the group.

*"There are subjects that are not discussed when the forum is just participative/communal, for example, the prioritization of critical areas in recharging zones, which the population do not prioritize because they don't know about the subject; therein lies the value of the technician"*

*(Josue Leon, Local Coordinator  
Focuencas II, Copan. 2006)*

### Legal standing

At first, when these initiatives started, they did not have formal legal recognition despite working in close collaboration with the municipal governments. These have enacted municipal bylaws to recognize the initiatives officially, giving them the authority to conduct environmental actions for the watershed. This was not spontaneous but rather the result of negotiations conducted by the subwatersheds. The initiatives did not have legal standing and so they depended on any of their partners to receive and administer funds on their behalf. Currently, it is the Mayor's Office, which is in charge of carrying out the financial administration of the environmental fund, although expenditure decisions are defined by each Watershed Committee.

There is an on-going discussion in La Soledad subwatershed about the convenience and relevance of obtaining legal standing that will allow the Watershed Board to administer the environmental fund in an autonomous way. Currently, the environmental fund is administered through the Mayor's Office.

### Operation Statutes/Regulations

These organizations had statutes clearly defined and approved by their boards. The statutes were ratified through municipal bylaws during the 2006 municipal term. These regulations indicated the responsibilities and authority of partners in the watershed organization.

### Co-management plans: the process more than the product

Both the plan and the development process itself are important products of the planning process. The plan is the integrating factor, allowing stakeholders to make agreements and to conduct transactions in a multisectorial forum in order to preserve water quality and quantity in the watershed. One of the most important benefits of a participative process is the generation of social capital to create joint and supportive working spaces. A good example of this is the development of the co-management plan for the Environment and Production Sectorial Table of MANCORSARIC in Copán (Case 12). This process



focused on creating enough social capital and mutual knowledge among its partners to create a board of directors where team vision and mutual collaboration prevailed.

Focuencas II has prepared and disseminated a guide for developing co-management plans. This guide includes a fairly complete diagnostic of the watershed area, taking into account biophysical, environmental and social aspects. The plans should be augmented with monitoring, evaluation and organizational systems as well as with investment plans to attain their objectives. Co-management plans varied in length from 10 to 15 years. In Nicaragua, the Aguas Calientes subwatershed plan had a ten year plan; La Soledad subwatershed a 25 year plan and the Copan and Jucuapa ten years.

Each process was unique; partners decided and defined how the initiative would work. Since plans had only recently been approved (2006), their capacity for success goes beyond the research of the present document. Plans were participative, as they took into consideration the population, the government, the private sector and, of course, the technicians' points of view. The latter played an essential role, as they provided the professional support needed to define and to prioritize the area's relevant issues. Currently, these plans are under review by partner institutions and inhabitants in general. Partners of these initiatives hoped that these plans can be included in partner institutions' plans, which would mean a real integration of the staff and their skills.

*"Before the Bylaw, the watershed organization regulations had to be approved in a Corporation Municipal session. The 2006 Bylaw enables us to approve and to modify our own regulation making the process more dynamic.*

*(Watershed committee of Jucuapa, 2006)*

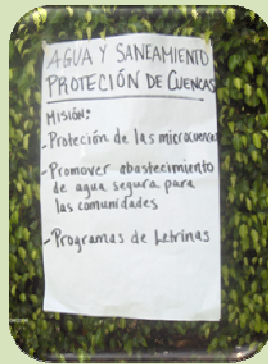


## Case 12

### Development process of the MANCORSARIC co-management plan, Honduras

Using team work group techniques, a planning process for the Environment and Production Sectorial Table was conducted. During the process, conditions were provided to generate social capital among sector representatives, who, with few exceptions, had not met previously at a personal level.

This planning process resulted in a personal approach that facilitated sectorial and even personal relationships among members, increasing the efficiency of communication. This interesting process allowed development of, not just the plan itself, but also the election the board of directors. The closeness attained during the process helped those in charge of appointing delegates for each project, to choose candidates more effectively.



#### *Relationship of co-management plans with other plans*

An additional outcome generated by the co-management plans is their utilization as models for the development of other important plans. Following are three examples:

- The co-management plan of La Soledad-Honduras subwatershed, was the model used by the Valle de Angeles municipality to develop its poverty reduction plan. It was expected that the Poverty Reduction Program funds would help to finance the watershed's own co-management plan. Likewise, the co-management plan will be used to develop the municipal governing plan.
- In the Aguas Calientes-Nicaragua subwatershed, the co-management plan was resourced from the production and conservation governing plan that included the creation of a watershed organization.
- The co-management plan of Jucuapa-Nicaragua included training and research plans. The idea to include these plans came from a recommendation from the Focuencas II local coordinator, as he thought that they would be useful components in the co-management plan. However, evidence showed that committee members had not yet included these plans in their tasks for solving environment needs and meeting emerging demands.



### **Reports and periodic summaries**

People involved in the processes recognized the importance of informing and disseminating their experiences, since communication is one of the program's cornerstones. Focuecas II had established a group of thought on adaptive co-management of watersheds by experts in this field. This knowledge base was producing documents from the experiences of the model watersheds and from other watershed management experiences in different parts of the world. Although systematic study is acknowledged as being important, it has not been practiced regularly.

*"The problem about experiences reconstruction is that people change and they do not know the history or why we do what we do. It should be a continuous process, to teach the new members about the goals of the group and the tools we have to carry them out".*

*(Somoto review workshop, 2006).*

### **Sustainability**

In watershed co-management it is necessary to establish the difference between social, institutional and financial sustainability, to guarantee their security and to measure their impact on watersheds.

#### **Institutional sustainability**

At institutional level, watershed organizations of Nicaragua relied on the Municipalities Law, the Citizen Participation Law and the recently approved General Law of National Waters of May 5, 2007. In Honduras, these organizations relied mainly on prior national programs that had set precedents, such as the Multistage Program of Natural Resources in Priority Watersheds of Honduras (MARENA Program). This program had encouraged the creation of the "Regional Subwatershed Boards", which represented the subwatershed environment.

Partners of watershed organizations were landscape institutions that had interest and willingness to join the initiative. Institutional representatives could change, but institutional competences and authority prevailed when agreements or subwatershed joint actions planning were conducted. At local level, municipal governments had an outstanding role in the four model subwatersheds of the Focuecas II program. Thanks to municipal bylaws, legal recognition of these organizations had been a source of motivation for their partners. In some cases, municipal governments, in coordination with watershed committees, had provided credentials to local or community committee members, which was an important incentive for the community. Moreover, Mayor's Offices had widely helped with the management, logistics, legitimacy and legality of these voluntary and participate initiatives. The Mayor's Offices, for example, hosted Focuecas II in their own facilities, facilitating partnerships with local institutions and the population in general. The Mayor's Offices are currently administrating the environmental fund.

In Honduras, watershed organizations worked in close collaboration with Municipal Environmental Units (MEU). In the case of the Environment Sectorial Table in Copan, the MEU staff coordinated the active projects. In most cases, the MEU had only one technician and significant budget and logistic limitations to perform their tasks. Because of that, they were a weak link in the institutional chain but a fundamental link between the water organization, the Mayor's Office and the local issues.

In Nicaragua, watershed organizations were acquiring higher relevance and proactivity, in comparison to municipal environmental commissions (MEC) (established by Municipalities Law 40). Perhaps this was



due to the fact that watershed organizations had the environmental fund, which they administered autonomously; as opposed to the MECs, which did not have their own resources but depended on municipal budget, which had little allocated for local demands.

### *Financial sustainability of the environmental fund*

In the area of financial sustainability, Focuecas II had the support of ASDI to create an environmental fund in each model subwatershed. This fund was used as leverage to obtain more partners. Use of funds by the watershed organization must happen according with the regulations for funds use. Usually, one part of the funds went to finance infrastructure projects and the other was used as a rotating fund to guarantee the environmental fund's permanence (Case 13).

## Case 13

### Rotating fund in the Jucuapa watershed, Matagalpa, Nicaragua

In this subwatershed, the environmental fund had been used for production projects by farmer groups, who defined the terms and interest rates to reimburse the fund. The Watershed Committee approved –or not- the projects' requests for finance. The projects' request application form was open – there was no standard format. In some cases, farmer groups contracted a professional to support them, although INTA, and Focuecas II also collaborated with them. Usually, farmers established an interest rate between 8 and 10%. Half the income generated went to drinking water committees and the other half to the watershed local committee which was also required to invest it in works related to water resource conservation.

The capital was received by the Watershed Local Committee, who gave priority to the particular the farmer group which requested the funds. These groups had a good credit record. In this way, the environmental fund decentralized the administration of rotating funds to local committees.

(Isidro Salinas, Local Coordinator Focuecas II, Matagalpa, 2007).

According to Moran and Navarro (2005), the following were common characteristics of environmental funds: i) they are managed by an intersectorial board of directors; ii) they have institutional capacity to receive and administer funds from different sources and iii) they can assign subsidies to certain beneficiaries. The environmental funds set aside a small allocation for regular expenses of the watershed organization that could be used to contract consulting services; for example, in Jucuapa and Somoto a person had been hired full time to support the committee's work. In La Soledad subwatershed a part time environmental fund administrator was hired.

*"Environmental payments are multiple strategies to produce payment mechanisms for natural resources; not just the principle of the contaminator pays. In Honduras, this is not culturally acceptable; it is more acceptable to grant incentives for friendly practices. During 2006, for example, compensation was offered to inhabitants if they did not burn, and burns dropped drastically as the inhabitants policed each other in this matter"*

*(Jose Manuel Gonzalez, Local Coordinator*



The environmental fund was intended for activities such as: aqueducts improvement, sewage management, solid wastes management, reduction of firewood use, reforestation, protection of aquifer recharge areas, delimitation of recharge and basic sanitation zones. To achieve these goals, several financial mechanisms were employed, such as environmental payments or the agricultural trading banks system.

### ***Watershed binding contracts***

According to Gonzalez (2006 c), this mechanism was destined to “contain the advance of the agricultural frontier and to encourage extension of the critical recharge zone by creating an incentive without imposing a land use change”. The watershed binding contract consists of:

## Case 14

### Payment for protection of water resources in Copan, Honduras

A feasibility study was conducted in Copan, Honduras regarding Payment of Hydric Environmental Services (PHES) under the guide of CATIE’s Environmental Goods and Services project group (SEBSA). It is expected that by the middle of 2007 this mechanism will begin to function. Potential beneficiaries had expressed that their maximum payment would be US\$0.89/subscriber/month (Cisneros, 2005), which was not enough to launch the process. However, the HESP mechanism would be subsidized initially with US\$10,000 from the Environmental Fund. This will benefit an approximate area of 265 ha with traditional and organic coffee, forest and some subsistence cropping.

The characteristics of the environmental payments system were expected to be:

- a) An agreement between the municipality, the watershed organization and the stakeholders using the area and those receiving the payment (farmers who own lands in critical points of the recharging area).
- b) A certificate of environmental protection issued by the Environment Unit corresponding to the area and showing the number of trees tagged for protection.
- c) A financing mechanism as compensation incentive (annual credit).

The compensation measure agreed between the parties was a local credit system for users that have the ability to preserve natural resources – above all, the forest resource. In this way the binding contract was to be an annual credit granted

*“For this mechanism to be financially sustainable it is important to find ways of covering the interest rate costs and the credit risk through the water prices or through other appropriate mechanisms. To do this, it is necessary to establish a global contract between the Watershed Board (that should have an environmental fund or something similar for funds disposal) and the agricultural trading bank where credit conditions are linked to the protection and conservation of the recharging zones”.*

*“Jose Manuel Gonzalez, Local Coordinator Focuencas II, Valle de Angeles. 2006”*





by the agricultural trading banks at very low interest rates, which would be renewed under the condition of no advance of the agricultural frontier and utilization of environmentally friendly agricultural practices in recharge zones. The specific area subjected to good management constituted the guarantee to access to this local credit.

In 2005, a standard of principles, criteria and procedures of the environmental fund for the model subwatersheds, was developed, which is valid now and includes administration and control procedures for the collaboration of CATIE, the municipalities and the watershed committees. Current administration of the environmental fund is sustained by a cooperative agreement, signed between the municipalities and CATIE. Municipalities' administrative regulations are accepted and in return they respect the decisions of the corresponding Watershed Committee. Although CATIE-Focuencas II is responsible for the fund, the municipalities must submit copies of expenditure receipts to keep the donor informed.

Individual administration mechanisms for the environmental funds had been developed in each model subwatershed, taking into consideration the needs and agreements of watershed committees. A case worth mentioning is the Valle de Angeles, where a special fund administration structure had been designed (Case 15); although it was in an incipient stage, it could have an important role in the administrative management of La Soledad subwatershed Board in the future.

## Case 15

### Administrative environmental fund board in La Soledad subwatershed, Honduras

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The Watershed Board monitored the environmental fund but it was managed by an Administrative Environmental Fund Board (AEFB), formed by one treasurer, one supervisor, one civil society representative, one financial advisor and one administrator, which was the only paid position. The AEFB presented monthly reports to the board of directors and reported twice a year to the assembly. The AEFB was responsible for determining the feasibility of project finance and it had the freedom to negotiate funds on behalf of the watershed organization for the execution of programs or projects.

(Jose Manuel Gonzalez, local Coordinator Focuencas II, Valle de Angeles. 2006; Raquel Salgado, Environmental Fund Administrator, Valle de Angeles. 2006)





Usually, the fund provided by Focuecas II had a complementary contribution from the Mayor's Offices; both funds were the basis for the watershed committees' annual budget. Each committee negotiated additional contribution of funds to help them execute their annual plans. For example, to finance the 2005-2008 co-management plan, the Aguas Calientes subwatershed had an environmental fund formed by three main contributions: Focuecas II, a contribution from the Fougères-France municipality and also from a project with the Spanish organization "Friends of the Earth". To finance the Copan-Honduras Annual Operation Plan 2006, they had the Focuecas II contribution plus small complementary contributions from PRONORTE and the Mayor's Office.

## Case 16

### Calling for Projects in Aguas Calientes, Nicaragua

During 2006 the Aguas Calientes subwatershed conducted the first selection of projects, which were requesting resources from the environmental fund. These projects went through a careful examination by a projects' selection committee formed by CATIE's Master's students, the Committee's technical secretariat and the local coordinator of Focuecas II. Proponents were able to adjust their projects after the first submission. The board of directors had the final say on project approval.

The criteria used for project selection were as follows:

1. Low similarity among proposals to avoid duplication of efforts.
2. Preference to projects with institutional partnerships
3. Characteristics of the subwatershed area
4. Application of the co-management approach

### Reflections on watershed organizations

Watershed organizations were different to other environmental management processes mainly in regards to delimitation of their action area: a territorial unit whose limits were established by geographical water divisions (Jimenez 2005, cited in Garcia et. al. 2005). Watersheds, model forests and biological corridors all used natural aspects to delimit their intervention area. The intervention landscape could include several politic-administrative divisions, that could have been municipalities, provinces, states and even countries.

Watershed management initiatives often required integrated solutions to attain their objective of providing quality and quantity water to supply the landscape population in question. Due to its importance for life, water is the priority resource for these initiatives; all social, economic and political sectors are interested in maintaining the quality and quantity of water required for consumption. Due to the social interest in the water resource, the population was motivated through their institutions and representatives, to participate in these coordination committees to promote activities that could be addressed in the production, forest, industrial, commercial or any other area that may impact on the watershed.

On the other hand, there were the governance instruments that used documentation of experiences. According to the Focuecas II program guidelines, co-management plans had been developed in all



model subwatersheds, from the same guide. Because of that, all plans had similar content and comprehensive information about the subwatershed. These plans were very useful for the management as they had information at diagnostic level, as well as medium term priority actions and a tentative budget. All these facilitated resources negotiation efforts with financing organizations that often needed to know the population demands and investment priorities in the watershed.

The watershed management case studies assessed in this report did not have legal standing although they were officially recognized through municipal bylaws. In the process, debate had arisen concerning the convenience and pertinence of this legal registration. The question to answer is: should an initiative aiming for co-management and based on stakeholders' co-responsibility and mutual commitment, have legal standing? Or, on the contrary, it is enough that any of its partners have legal standing? This is still an on-going debate.

A distinctive factor of these initiatives was the significant role of the municipality. Although municipalities also participate in model forests and biological corridors, in these cases they had a fundamental role, because they supported, in a very tangible way, the functioning logistics of watershed organisations: physical office space, administration of the environmental fund and support to technicians when required. Vice-mayors' participation as watershed committee members was remarkable; they facilitated a more intimate approach by the local government and better access to financial management processes which encouraged watershed conservation activities.

It is possible that, in terms of sustainability, municipalities were the organisations most responsible for long term fostering of watershed management, although there were other national institutions clearly committed to the initiative, such as the National Lands Institute of Nicaragua, which promoted this approach at national level. Participation of private enterprises was weak.

Financial sustainability of these initiatives required an increase in the environmental fund through contributions provided by international cooperation organizations.



## Central Volcanic - Talamanca Biological Corridor in Costa Rica

The biological or ecological corridor concept implies connectivity between protected zones and areas with important biodiversity in order to reduce habitat fragmentation, which is the main cause of plant and animal extinction. Although fragmentation is caused by humans, it is humans who must also play the leading role in preserving biological diversity, reducing fragmentation and improving connectivity between landscapes and the ecosystems. Therefore, biological corridors should be managed by social groups, fostering in a parallel way, sustainable production alternatives to improve the quality of life of local inhabitants involved. (Aldekozea and Colin 2004).

### Genesis of the Central Volcanic -Talamanca Biological Corridor

The Central Volcanic-Talamanca Biological Corridor (CVTBC) is located in Costa Rica; it was formerly known as Turrialba-Jimenez Biological Corridor. This corridor began in 1999 as part of the Mesoamerican Biological Corridor initiative (1997). In 2001, a biology thesis from the Latin University – financed by the Mesoamerican Biological Corridor (MBC) and the Conservation Area of the Central Volcanic Range (CACVR) – provided a connectivity proposal that helped to foster the corridor's consolidation. During the process, it was possible to attract interest and involvement from several institutions; thus, the initiative grew from six representatives, in the initial local commission, to 15 institutions in the current managing committee.

According to data from the case study (Canet 2006), in 2003 a local management commission was created, which directed the process. The commission was established in a workshop attended by almost 50 people, most of them partners of the Association of Organic Producers of Turrialba (APOT). There were also representatives from the Central Volcanic Range Conservation Area, the Ministry of Agriculture and Livestock (Turrialba office), the Santa Rosa Coffee Company, the Latin University and the Friendship, Conservation and Development of Pejibaye Project AMISCONDE (currently Pejibaye Environmentalist Group – AGEP). Fifteen people were elected from this group to form the Local Management Committee.

The purpose of this commission was to validate the geographical proposal for the biological corridor and to include the inhabitants' visions into a geographic information base (GIS); moreover, it was sought to consolidate a grass roots association with community and institutional representation in charge of the corridor's management. All this was stated in a technical report completed in July 2003. In the following stage, the Turrialba Volcano National Park, the University of Costa Rica and the Reventazón Watershed Management Unit (UMCRE) of the Costa Rican Electricity Institute ICE, joined the initiative. The tasks plan was developed by this new working group.



*“During the first semester of 2004, the incipient local commission was going through a stage full of uncertainty as it was not clear which were the implications of the corridor nor the responsibilities that each of the stakeholders should assume. With no clear direction or funds to launch the working plan, the group began to totter” (Canet 2006).*

By the middle of 2004, CATIE and the Reventazón Model Forest had joined the initiative. In 2005, the Small Grants Program from the United Nations (SGP-UNDP) approved a US\$20,000 project and the local management commission saw itself strengthened with the incorporation of the Guayabo National Monument and AGEP. In this way, the local commission was transformed into the corridor management group. In 2006, the Guayabo Community Group and the Farmers’ Association of Santa Cruz (ASOPROA) also joined the initiative; the latter works independently in tourism and sustainable production activities and on the guarantee of origin of the “Turrialba cheese”.

In 2005, the first workshop to prioritize working sites in the corridor for scientific studies, took place. In this same year, it was decided to change the name to Central Volcanic- Talamanca Biological Corridor.

## **Governance Architecture**

The CVTBC is part of the MBC. The Central American Alliance for Sustainable Development (ALIDES) has described this endeavour as the greatest “sustainable effort” of its kind in the world. *“The Mesoamerican Biological Corridor is a growing network of protected lands and semi-protected areas where a better use of natural resources is encouraged and it covers all Central America, from the south of Mexico to the Darien region in Panama, a zone known as Mesoamerica”* (NASA 2003). The governments of seven Central American countries were involved in the Mesoamerican Biological Corridor governance architecture. Together, these governments protected some areas and in other areas they fostered the land’s economically “sustainable” use.

Each biological corridor also had a governance architecture regarding voluntary work for habitat conservation. Social participation was very important: natural resources should be preserved as they are necessary for population’s survival. To achieve its objectives, the CRTBC worked on the following governance platforms:

### **Strategic decisions platform**

The managerial committee held the highest rank in regards to decision making for the biological corridor. Social organizations of the area, from farmer associations to mandated public national institutions and academic centres were represented on this committee. The positions democratically elected within the Managerial Committee were: chairman (OFAT), vice- chairman (ICE-RWMU) secretariat (Reventazón Model Forest), treasury (CATIE), members (AGEP and MINAE).



### **Support platform**

A stable support platform did not exist; the academic partners, through their students, contributed with substantial support to develop the initiative. Up until the time of this research, around 18 thesis studies had been conducted in the biological corridor in topics such as: hydrology, forests, biodiversity quantification and social aspects in the area. Masters degree theses have highlighted the area's rich biodiversity and to established networks, which are currently under study in coordination with the community.

At the beginning of 2007, the Managerial Committee hired the temporary services of a social communicator to support information dissemination activities. This improved communication between landscape stakeholders and lightened the logistic work load of the Managerial Committee. It should be noted that this committee was formed by voluntary partners with contractual obligations to their institutions and not much time was available for this voluntary work; therefore, the strategic use of temporary personnel was an efficient method for attaining CRTBC objectives.

*"The theses have helped a lot and have marked important milestones for the development of the CVTBC. For example, from them we are developing the subcorridors. So much valuable knowledge has been created by these theses that we have not been able to process half the information generated so far.*

*(Mildred Jimenez, manager of Reventazón*

### **Operative platform**

To execute actions, the SGP-UNDP Project offered to coordinate the 2005-2007 implementation plan, the main aim of which was to develop a working strategy for the biological corridor, from the definition of priority areas to identification and strengthening of leaders and grass roots groups, work delegation and maintaining close links with the institutions that supported the initiative.

### **Community platform**

At the beginning of 2005, the biological corridor supported three Master's degree thesis studies at CATIE: avifauna richness in the area, delimitation of the area in terms of biological connectivity and social basis for the CRTBC operation.

The last study established the basis to implement a community level platform to allow more direct and concrete actions in the communities (Ramirez 2006). This study had a highly participative nature and close contact with the communities. It created an awareness process in the population and its organizations in regards to the importance of the biological corridor and its conservation. At the same time, the SGP-UNDP project "Participative design and strategies of the biological corridor" was launched, favouring an exchange visit to the Chorotega Biological Corridor (North area of Costa Rica). This

*"It is not possible to function without someone managing operations. Although the biological corridor doesn't have a manager, the Reventazón Model Forest Manager offers part of her time to manage the corridor. Without this position, it would be very difficult to have success. The ideal situation would be to have, not just a manager, but a team that could coordinate operations".*

*(Ligia Quiroz, MINAE representative to the Reventazón Model Forest. 2006)*



opportunity was seized to apply lessons already in practice at the CVTBC, such as the establishment of a sub-corridor to facilitate environmental management at community level.

The criteria for sub-corridors design were: i) vulnerability of the area; ii) possible community response; iii) relevance of the territory for the connectivity. Each sub-corridor had a “**local committee**” from which a coordinator was appointed to maintain regular contact with a liaison in the Managerial Committee. In February 2007 five sub-corridors were officially established:

Table 5. Sub Corridors of the Central Volcanic-Talamanca Biological Corridor

Sub-corridor name	Communities involved	Local participation
North	Guayabo, Santa Cruz, Coliblanco*	COVIRENA Coliblanco, Orieta sports committee, ADI Santa Cruz , the Public Force, ASADA Guayabo
Central	Aquiaries, Isabel Forest, Turrialba, CATIE, Santa Rosa	ASADA Aquiaries, Cafetalera, ASADA Verbena Sur, Alto Varas Association, Alto Varas Pre-kinder, OFAT
Balalaica	Pavones, Eslabón, La Suiza*, Tres Equis	OFAT, Javillos Primary School, the Public Force, ASADA Sitio Mata, ADI Silencio, ADI Pavones, ASADA Jabillos-Pavones, Turrialba Youth, Ortuño Farm
Pejibaye	Pejibaye, Tucurrique*	ASADA Pejibaye, District Board, Tourism Chamber, Education Board, Humo Greenhouse, Plaza Vieja Committee, Copal Reserve, Ecological Group Association, the Public Force
Shara Pacuare	Piedra Redonda, Bajo Pacuare and Grano de Oro	Piedra Redonda Farmers Association, OFAT, ADI Grano de Oro, Grano de Oro Catholic Church, Grano de Oro milk producers, Grano de Oro Lands Comité, Bajo Pacuare farmers, ADI Chirripo

Source: Mildred Jiménez, Reventazón Model Forest Manager. 2006.

\* In the process of the joining the initiative

Each local committee selected its own name and each one defined its organization method autonomously. Most of them decided to elect a board of directors whose chairman was also the liaison with the CVRTBC Managerial Committee. Some committees did not choose a formal structure but they did have a coordinator. It was possible to observe the local committees’ activism and rallying power, and although it was a very new process, results were starting to show: community activities and frequent meetings with invitations to authorities and local leaders.

Committee partners were usually local leaders who also participated in other community development organizations: school boards, water administration associations (ASADAS), natural resources surveillance committees (COVIRENAS), Association of Organic Producers of Turrialba (APOT), Farmers’ Association of Santa Cruz (ASOPROA), and even municipal councillors. Due to its nature as local level negotiator, the municipality was called to play a more relevant role.



Local committees have started to design their own plan of activities and they are carrying out environmental awareness and dissemination actions in their intervention areas. This was the case with the Jimenez Municipality, which started a recycling program in 2006 in coordination with the Health Ministry and a rural tourism project at the Pejibaye River. There were also on-going actions to establish and develop intersectorial partnerships. Although local organizations and institutions had traditionally worked in isolation and with little (or no) coordination, some joint actions between stakeholders had become evident.

### **Governance instruments**

The opinions of those involved in the CVRTBC in regards to viability and utilization of the following governance instruments were:

#### ***Legal standing***

No need had been felt to pursue a legal registration as the initiative had worked under the wing of its members. In the case of the project currently under way, work is conducted using CATIE's legal standing.

#### ***Statutes***

The initiative did not have written statutes. Partner responsibilities were affected by the high level of volunteering and limited time availability. Those involved believed that, at the time of this research, rules were not necessary, since activities had been accomplished in a supportive and collaborative way.

#### ***Strategic plans and annual operative plan***

The plan that will guide the initiative for at least three years was incorporated into the consolidation project sponsored by SGP-UNDP. This, in turn, was to establish a participative strategy to guide medium and long term actions. The objectives of this plan were:

- i. To design a strategic program for the CVRTBC development based on consultation, validation and agreements with key stakeholders.
- ii. To consolidate spaces for participative development of a general working strategy with consideration of the priority sites identified.
- iii. To foster key local stakeholder awareness and enthusiasm regarding region's connectivity and conservation issues.

*The Municipality (Turrialba), has requested collaboration from the Talamanca Central Volcanic Biological Corridor to prepare it but it is uncertain whether the groups have the institutional, logistic, and technical capacity at this moment"*

*(Roger Villalobos, CATIE representative to the Reventazón Model Forest. 2006).*

Currently, according to the Urban Planning Law No. 4240, municipalities are required to develop a Regulatory Plan, which is necessary for the success of the Biological Corridor.





### ***Reports and periodic summaries***

Financial and technical reports were prepared for the SGP-UNDP, within the framework of the project's accountability. Within the Managerial Committee, it was the secretariat's responsibility to inform the members about the progress of activities, both verbally and in writing, during each monthly meeting. When community workshops were carried out to develop the concept with the area's stakeholders or to come to agreements with the communities, minutes were taken and commitments and activities were recorded in writing.

### **Sustainability**

Biological corridors of Costa Rica did not appear explicitly in any environment or conservation related law, but they were supported by SINAC, which is the liaison with the MBC. These landscapes should be priorities for each government within the framework of regional conservation policies. In some cases, areas within the MBC were protected; in others economically sustainable land use was encouraged.

#### ***Institutional sustainability***

As part of the effort to gain more support for biological corridors in Costa Rica, a national commission of organizations and related institutions was implemented. Participation in this commission was voluntary and by direct and official invitation from SINAC. Its tasks involved advisory and coordination activities; none of its agreements were binding to its partners or to Costa Rican biological corridors.

The managerial committee of a biological corridor, as were other experiences of territorial environmental governance, was essentially an alliances network that included public and private institutions. In the case of the CRTBC, its broad interaction with landscape farmers was remarkable. From 2007 on, and under a new mayor's administration, a representative from the environmental management unit of the Turrialba Mayor's Office was incorporated into the committee, showing progress in regards to local authority involvement.

Rather than extending the managerial committee, the priority was to increase network partners and to have more and better relationships with enterprises and local organizations outside the committee. The private enterprises that have supported the initiative include the Cafetalera de Aquiares, the Horticultural Corporation (Reventazón Model Forest partner), Pochotel hotel and restaurant and Explonature.

#### ***Financial sustainability***

The CRTBC was executing a two-year project financed by the SGP-UNDP to consolidate the initiative. This support had been extremely useful in fostering the initiative's extension activities and consolidation process, integrating ecosystem conservation and development of sustainable production activities.

Moreover, there were matched contributions, contributions from the corridor partner institutions, in the way of logistic support, contributions to develop scientific research, printing of extension materials, time for representatives to attend meetings and participation in, and sponsorship of, public activities.

### **Reflections about the biological corridor**

The CRTBC is part of the Reventazón Model forest, and because of that, it shared some partners and objectives. However, there was a difference in approach between the objectives of the biological corridor



and those of the other case studies analyzed in this report. The objective of biological corridors is the biological diversity conservation and for this purpose they aim to re-establish connectivity of protected areas.

Although its governance architecture was similar to the other initiatives, volunteering, commitment and proactivity were most noticeable in the biological corridor. The aim of this initiative was biodiversity conservation; it did not intend to become a social or economic development organization. During the process of concept maturation, it was necessary to evolve from a purely biological approach to an ecosystemic approach, realizing the importance of society's participation to attain the biological conservation objective.

The CRTBC had partners from the public, academic and private sectors; recently local tourism agencies had been linked to activities regarding the care and conservation of sites, which have tourist potential due to their natural richness. Partners of the biological corridor usually came from local surroundings, though public institutions with national interests had also joined, such as SINAC – MINAE's office, the Costa Rican Electricity Institute and the Costa Rican Institute of Aqueducts and Sewage.

This case study was in initial stages and the SGP-GEF-UNDP contribution had been very important because it allowed extension of information about the initiative, establishment of sub-corridors and strengthening of the network with partners so that work could begin with a common vision. In this study, it had not been necessary to consider legal standing or to prepare wider ranging plans. Currently, work is conducted following the plan presented to the SGP-GEF-UNDP.

The sustainability of the initiative was based heavily on the commitment of its partners. The Managerial Committee carried out actions to extend the network to strategic partners, while local committees conducted additional activities for the sub-corridors. Collaboration between the Reventazón Model Forest and the CRTBC was very important, as besides partially coinciding in the intervention landscape, they also shared some core activities, such as the professional support of the model forest manager who also worked as secretary of the biological corridor. Likewise, some partners, such as the Horticultural Corporation, which did not participate directly in the corridor, had supported some activities through the model forest. These collaborative and complementary partnerships benefited the landscape and its population.



## Lessons Learned

The lessons learned from the operation of the biological corridor have been gathered from personal experiences and from the reflection processes initiated at each site. This new knowledge related to conservation of the natural capital through three main aspects: i) human capital contribution, ii) social capital and iii) development of financial mechanisms; all of these aimed to attain optimum management of the natural resources in model forests, watersheds and biological corridors.

### The human capital

Leaders or managers in these case studies were highly committed to the objectives. , Many partners facilitated the active participation of their institutions in these environmental governance initiatives beyond the responsibility assigned by their institutions. In this sense, the main lessons learned were:

*“The work we perform deals more with people’s interests than with institutions. If one person has an initiative, he/she will do anything possible to maintain it. Bosses are interested the everyday activities for which we are hired; if I only do that, my boss will be satisfied, but it is my initiative to participate in this”.*

*(Ligia Quiros, MINAE representative to the Reventazón, Model Forest. 2006).*

- ***To acknowledge the value of their partners commitment and to highlight it***

The commitment of these initiative’s partners has been unquestionable. Among many other examples, it is worth mentioning the role of the managers from the North model forests of Argentina during periods of low funding. The managers provided crucial support to keep the initiative going; supported by volunteers, they offered their own houses as offices for the model forest.

- ***To have at least one full time paid person dedicated to management of the activities***

Evidence showed that a key factor for success in these initiatives was to have a person or a group of people dedicated, full time, to managing and executing plans and activities. The advantage of having a management team can be clearly seen in the Chilean model forests where they boosted a significant number of projects and had technical expertise in various areas to provide assistance to the community. Stable finance was essential to ensure effective operative support.



## Case 17

### Bishop Yrsen: mediator and facilitator in the Chiloé Model Forest

“When the Chiloé Model Forest was created there was a leader in environmental issues living on the island: Bishop Yrsen. The bishop was essential in the model forest consolidation process, as it is not easy to have on the same table so many different social sectors; then, he helped as conciliator and mediator between sectors.

This bishop had been a decisive culture protector, partly because he was acknowledged as indigenous by the indigenous people themselves. Currently, he is chairman of the Caritas organization in Chile and his headquarters is in Santiago. His role had been as mediator, supporting important decision making and giving us motivation when the process became confused. The vision, establishment and recognition that we have had as Model Forest, is largely due to him”.

(Santiago Elmudesi, Manager of Chiloé Model Forest. 2006)

- ***To provide all members with the necessary tools to participate***

It is obvious that a landscape scale initiative is an ideal setting to promote the participation culture even among groups traditionally known for their isolation. This is a long term process and each process has faced challenges in encouraging more participation from indigenous people, women and youth groups, among others.

*“Participation by indigenous people was nominal on some occasions as they were not ready to participate and to express themselves at a table with other representatives. Most of the time, the indigenous people remained quiet and they only listened (...). From the 25 board members, only one was a woman and she didn’t speak for two years, now there are three women and they are relatively more participative”*

*(Mario Rivas, Representative from DAS - Department of Social Action from Archbishopric of Temuco. Alto Malleco Model Forest. 2006).*



In all sites visited, rural inhabitants had difficulty attending meetings or events, due to the distance of their homes from urban centres and due to economic restrictions. The community commitment to environmental management is evident when participative events take place. There were times when people walked up to three hours to attend workshops, where the dynamics required them to be proactive and highly participative.

*“Women still do not have the same participation, but it is part of the process. Little by little, they have improved and are now more confident to talk”*

*(Josue Leon, Local Coordinator, Focuecas II. Copan. 2006).*

## Case 18

### Economic compensation to settlers and indigenous directors in the Araucarias del Alto Malleco Model Forest

This model forest provided compensation to its directors who come from settler and indigenous sectors; an amount of 9,000 pesos (US\$18 approx.), per diem per session, up to a maximum of two sessions a month. This allowance was approved because, to earn their salary, many of these directors do piece-work jobs and one day less of work affects the well-being of their families. In this way, participation of these directors in the sessions is assured while allowing them to meet their family obligations and continue their contribution to the community.

### The social capital

The social capital<sup>41</sup>, expressed in trust, support and transparent relationships, increased the initiative's development potential in the landscape. The most important factors affecting social capital were:

- ***Group identity is a key factor in the strength of these initiatives***

Model forests, watershed organizations and biological corridors generated positive externalities; among them, strengthening of the social capital at personal level<sup>42</sup>, which strongly motivated their partners' active participation.

<sup>41</sup> According to Putnam (1994) the social capital is the establishment of horizontal associations between persons; networks and their associated set of rules that contribute to the community productivity are included.

<sup>42</sup> This statement is based on the dimension of bonding social capital, defined by Woolcock (1999) and Gootaert and Narayah (200) as links between people with compatible physical, social, cultural and ideological characteristics. For example, members of a family, of a community,



Case studies are investing time to build trust and to make their partners feel comfortable and motivated to continue participating.

- ***The planning process can strengthen the social capital***

The process of environmental management, through initiatives such as those studied here, showed that the most important aspect of participative planning was not the plan as a product, but the process of developing it. This process linked participants under a common objective where commitments were made and partner roles and contributions were defined; that is, co-responsibility was generated. It was a process that began with partners, who did not know each other at first, or who had just had a regular institutional relationship; it was necessary to form teams and to develop a supportive and collaborative environment, especially since these were voluntary initiatives. Another important aspect in the planning process was the inevitability of change<sup>43</sup>. In this field, a predominant role is played by the “adaptive management”, which is to accept that there is an evolution process generated by the stakeholders themselves, as they take on new knowledge and use it to improve (Prins 2006, Berdegue *et al.* 200, IUCN 2004, Jara 2004).

*“Before this, I hadn’t known initiatives where work was carried out in an interdisciplinary and interinstitutional manner, in such a friendly way as happens in the Reventazón Model Forest and in the CVTBC. These are places where one has the opportunity to grow a lot professionally; you learn from many people and about topics totally different from yours. You can make friends; you can meet people around you working on topics similar to yours, that otherwise you would never have dared to call and say ‘Hey, can I borrow this!’ ‘Please help me with this!’ ‘Give me that!’ That friendship happens because we constantly share common goals and fight for common things and that builds closeness among people. Then your confidence increases until you are able to borrow or to exchange things, and you can utilize resources from other institutions that otherwise you would not have accessed.*

*(Ligia Quiros, MINAE representative to the Reventazón Model Forest. 2006)*

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close friends or work colleagues. “It supports on bonds formed from a common lived experience and specific values shared by certain social group, which forms their group identify” (Abramovay *et. al* 2006).

<sup>43</sup> In agreement with principle 9 of the Ecosystem Approach



- ***Network tasks and articulation of multi-sectorial partnerships are fundamental characteristics of these initiatives***

These networks<sup>44</sup> have been qualified as valuable spaces that open the possibility for debate, consensus, transaction and horizontal inter-relationships between people (natural or legal entity) that seek agreements and meeting points to advance their own and common interests. These people came from diverse social, economic, political, religious and cultural backgrounds; from different places and with different points of view regarding the environment. Evidence from this study suggested that it is necessary to include the most and best representation from relevant sectors in these decision making forums and subsequent activities.

*In the Copan River subwatershed, cattle farmers recognized that..."never before were we taken into consideration because we are the sector with money; no project would include us. Now we know that we impact on the environment and we are improving our practices".*

*(Copan Cattle Farmers' Association, 2006)*

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<sup>44</sup> Networks mentioned here correspond to the bridging social capital, where groups not necessarily homogeneous have a harmonious relationship. According the Guittel and Vidal (1998), Putnam (1994) and Narayan (2002) this dimension consists in identifying bonds between persons who do not share necessarily common characteristics, evidencing the openness of social groups to others different to them that do not have the basic identity elements from which they constitute themselves. This capital visualizes the capacity to cross and to go beyond the boundaries and the cognitive universe of mutual recognition (Abramovay *et al.* 2006).



## Case 19 Seed bank of native trees from the north-east part of Argentina, Jujuy Model Forest

A project was developed in this model forest with the Dr. Vicente Arroyabe Rehabilitation Centre and the collaboration of the Minetti Foundation and the Embassy of the Federal Republic of Germany. The purpose was to generate employment for people with disabilities who were patients of the Centre.

Patients have acquired expertise in activities such as: opening hard fruits without breaking the seed, counting and weighing seeds, controlling germination experiments, registering data in the computer and making crafts using discarded seeds. The work has been therapeutically successful for the patients, as well as providing a valuable service in the reforestation of some sectors of the Jujuy Model Forest.

(Virginia Outon and Claudia Chauque, members of the Jujuy Model Forest. 2006)



- Although there are costs and risks in multisectorial participative processes, management groups presented in this document have shown their willingness to accept them in order to generate effective solutions for their target population. The processes of participative consultation require longer periods compared to those established by projects which have rigorous budget and efficiency targets. However, evidence suggested that benefits associated with sustainability and the participative processes exceeded the costs of making these groups work.

In this sense, people involved in these initiatives had identified aspects that could prevent conflicts; such as:

- i) To provide total transparency about the work and the conditions upon which these partnerships are based upon; to avoid incorrect expectations and confusion between external bodies providing the finance and the voluntary processes of environmental co-management.





- ii) In line with the previous point, to offer reasonable expectations, so that, in the medium or long run, the initiatives will not be pressured for more than they can give.
- iii) To avoid institutional jealousy and to facilitate a fluid communication between partners of the managerial group.

- ***It is easier to build upon previously existing initiatives***

The value of building upon previously existing initiatives was recognized. Investigations revealed that some people were participating in up to four community organizations at the same time. The organizations themselves had overlaps in functions and missions, and so it's hardly surprising that they also shared some members. Local leaders were able to draw together objectives, views and activities to improve the efficiency of sustainable development.

*“Organizational structures that already exist in the community should be used, to avoid creating parallel structures; moreover these existing structures have institutional maturity, established mechanisms of constitution and local credibility, among other things”.*

*(Roaer Villalobos, CVTBC partner. 2006).*

- ***These initiatives had great potential to influence public policies***<sup>45</sup>

In most developing countries, participation takes place through intermediaries (leaders of social groups, spokespersons, village chiefs, employees), whose legitimacy is largely determined by common practices. For social stakeholders to achieve efficient participation, it is necessary to understand their particular interests and influence level (World Bank 2002). “Not just how policies impact on social individuals, but also how they can impact on policies” (Friendenberg 2000).

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<sup>45</sup> This lesson is based on the dimension of linking social capital. This dimension of the social capital refers to the establishment of vertical links to persons in authority positions, such as public representatives or private institutions (Woolcock 1999).



## Case 20

### Forest regulation policies in the Araucarias del Alto Malleco Model Forest

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“The Forest Law is very old, it goes back to the 1930s and there are many areas with over matured forest. I had 40 ha of oak forest in an agriculture area, flat land, with irrigation, very convenient. It is better than raising cattle, for me it is better business although it delays 50 years, my children will profit from it, but I cannot inherit them due to juridical insecurity.

In 1994 I requested a permit to cut and I thought of taking out what was useless; I got the permit but, at the same time, a new policy came up, pushed by the ecologists to prohibit commercialization of native forest wood for 50 years. My forest was left with no market in Chile, then I decided to cut it all, even loosing money, I turned it into firewood, sticks and beams, I couldn't sell it, then the mountain I took care for so long was left treeless.

Through the model forest we have tried to do something and now I want to plant araucaria; in Chile araucaria trees were protected by Law, then a decree came out allowing harvesting the araucaria if you planted it; but then another decree came out banning people from harvesting what they had planted.

The model forest requested an explanatory statement directly from CONAF, but up to now no response has been received. I had planned to plant 300 ha but ended up with 5 ha. I don't want to continue planting if the right to the use of my private property is denied to me”.

(Jose Chahin, Forest entrepreneur partner of the Araucarias del Alto Malleco Model Forest. 2006)

All these initiatives became agents of change. For example, the Model Forest Network allowed and promoted the interaction between landscape managers and highest rank authorities in regards to forest resources at local, provincial, national and international level. This facilitated a direct communication between the population and their authorities. Civil society organizations can work side by side within the political processes and they do not need to compete. As a whole, these stakeholders felt assured that tolerance would prevail and that there were opportunities for open debate and democratic dialogue within a legal framework that protected the property and individual rights (World Bank 2006a).



In the La Soledad subwatershed there were lands near the recharge zone of great economic value due to their natural beauty; however, these lands will not be commercialized in favour of the common well-being, as indicated in the following case.

## Case 21

### Referendum for life “Not to cut and not to burn” in Aguas Calientes, Nicaragua

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During the first semester of 2007 a referendum took place with a total of 2280 voters (1288 adults and 992 children; 1085 men and 1195 women). Votes in favour of no burn were 2119 (92.9%) and votes in favour of no cut 2125 (93.2%).

These results and the work leading up to the referendum had been disseminated through different local and some national networks, resulting in approbation for the initiative, which was unique in its country.

The municipal councils were preparing a bylaw to declare the subwatershed a municipal interest zone. The referendum results supported the bylaw.

## The Financial Capital

To achieve sustainability in the initiatives described in this document, funds are required to support basic activities. It is also necessary to motivate the population to change to more environmentally friendly practices.

- ***To negotiate several financial sources for core activities***

The main lesson was that the operation of these initiatives should not depend only on one main funding source, whatever its origin may be. Both public and private sector participation was important. It is essential to obtain the contribution of several partners and to acquire funds from different institutions to improve financial sustainability.

- ***Payment for natural resources to stimulate environmental care***

One way to stimulate conservation and long term supply of natural resources is the mechanism of payment for their use. This mechanism was of interest to all the initiatives. Thus, CATIE-Focuecas II is conducting research about its feasibility in the model subwatersheds. LAC-Net regional management, in response to a request by its partners, sought a course offered by CATIE on this subject which was taught in Argentina during 2006. Evidence indicated that in order for this mechanism to be effective, it was important to develop the political will to apply the instrument. CATIE's suggestion was to base this mechanism on an action and reaction function that will require scientific support (Campos *et al.* 2006).



- ***Microcredit to promote visionary environmental projects***

Microcredit, the extension of small loans to people who would not otherwise have access to credit, is a very interesting topic in the initiatives under study. The experience of increased development through microcredit in the Chiloé Model Forest, had been widely disseminated due to its effectiveness (see Case 7). A similar program was starting at the Araucarias del Alto Malleco Model Forest (Chile), with an initial capital of approximately US\$9,000 to support environmentally friendly production initiatives in the Curacautin community.

## Case 22

### Communities can only grow as far as the water allows them

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In the Valle de Angeles municipality, Honduras, due to recommendations presented by La Soledad subwatershed Board to the Mayor's Office, it was possible to stop housing developments in water recharging areas where the land was highly desirable due to its natural beauty. It was stated that the city could grow insomuch as there was enough water available; if not, conflicts will arise due to water shortage and low quality of life for the rest of the population. Ecosystems must be managed within the limits of their ability to provide natural resources (Ecosystem Approach. Principle 6).

***“Communities can only grow so far as the water allows them. Without adequate water sources life is impossible and conflicts arise”***

(Jose Manuel Gonzalez, Local Coordinator Focuecas II. Valle de Angeles, Honduras. 2006)



## Conclusions

1. As shown by the cases presented in this document, governance architecture allowed a horizontal and multisectorial interrelationship for decision making in each situation. The interaction between the government, civil society and the private sector occurred effectively in these platforms, drawing together particular interests and developing common objectives.
2. Evidence indicated that this form of governance tended to increase the dialogue between sectors and to reduce conflicts. It also served as a consensus platform on topics of regional concern: poverty, biodiversity loss, land ownership, human rights, equity, pollution, water shortage and vulnerability reduction, which established policy precedents that advanced to the highest hierarchic level.
3. In order to reach sustainability in each initiative, it was fundamental to have financial sources to support basic coordination and funds leveraging activities. It was necessary to find more than one main funding source to avoid financial vulnerability.
4. Community environmental management initiatives were affected by a network of policies applicable through concerted processes and linkages between diverse interests. Evidence suggested that political influence was possible and more effective when there was a high level of social capital.
5. During the 1990s, most Latin American States enacted laws to stimulate societal participation and decentralization. This context enabled the functioning of these consensus platforms which, due to their voluntary and co-responsible nature, increased innovation and reduced the State funds required for the fulfilment of public policies.
6. The landscape or territorial co-management approach created an integrated stakeholder vision and fostered interrelationships between environmental, social, economic and institutional components for the provision and sustainable use of natural resources. Relationships based on trust and support reduced transaction and negotiation costs between the parties and returned greater and faster benefits.
7. The approach proposed by CATIE could contribute to the landscape inhabitants' livelihood, through a circular process. The basic components of this approach were: i) a shared vision; ii) effective environmental governance, iii) financial mechanisms with environmental impact; iv) learning processes and v) public-private partnerships. This approach reinforced –and was reinforced by – human, social, physical, financial and natural capital existing in the landscape.



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## Annex 1. Principles of environmental management models under study

ECOSYSTEM APPROACH	MODEL FOREST NETWORK	WATERSHEDS CO-MANAGEMENT	BIOLOGICAL CORRIDORS
<ol style="list-style-type: none"> <li>1. The objectives of management of land, water and living resources are a matter of societal choice.</li> <li>2. Management should be decentralized to the lowest appropriate level.</li> <li>3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.</li> <li>4. Recognizing potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context.</li> <li>5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.</li> <li>6. Ecosystems must be managed within the limits of their functioning.</li> <li>7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.</li> <li>8. Recognizing the varying temporal scales and lag-effects that characterize ecosystem processes, objectives for ecosystem management should be set for the long term.</li> <li>9. Management must recognize that change is inevitable.</li> <li>10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.</li> <li>11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.</li> <li>12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Partnership.</b>- Each model forest is a neutral forum that welcomes voluntary participation by representatives of stakeholder interests and values on the landscape</li> <li>2. <b>Sustainability.</b>- Stakeholders are committed to the conservation and sustainable management of natural resources and the forested landscape</li> <li>3. <b>Landscape.</b>- A large-scale biophysical area representing the full range of forest values, including social, cultural, economic and environmental concerns</li> <li>4. <b>Governance.</b>- The model forest management process is representative, participative, transparent and accountable, and promotes collaborative work among stakeholders</li> <li>5. <b>Program of Activities.</b>- The activities undertaken by a model forest are reflective of the model forest's vision and stakeholder needs, values and management challenges</li> <li>6. <b>Knowledge sharing, capacity building and networking.</b>- Model forests build stakeholder capacity to engage in the sustainable management of natural resources, and collaborate and share results and lessons learned through networking</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Convergence:</b> to identify common interests, needs and potentialities.</li> <li>2. <b>Processes development:</b> to articulate short, medium and long term actions.</li> <li>3. <b>Shared responsibility:</b> to develop joint efforts and processes.</li> <li>4. <b>Integration and integrality:</b> to join efforts and capacity in the understanding that all elements are important.</li> <li>5. <b>Cooperation:</b> to act in a joint manner and to develop partnerships and synergies.</li> <li>6. <b>Identity respect:</b> each participant maintains his/her organization and responsibility.</li> <li>7. <b>Transparency:</b> to have clear and timely rules for public information and activities.</li> <li>8. <b>Solidarity:</b> to integrate strengths and capacity to respond in a joined manner.</li> <li>9. <b>Equity:</b> Equal opportunities and justice</li> </ol>	<ol style="list-style-type: none"> <li>1. Environmental management institutionalization and conceptualization as transversal axis.</li> <li>2. Connecting areas are sustainable development spaces.</li> <li>3. Connecting areas have been defined to favour diversity conservation, to reduce fragmentation and to improve landscape and ecosystems connectivity.</li> <li>4. Connecting areas generate environmental goods and services important for countries development.</li> <li>5. Responsible citizen participation will assure sustainability of connecting areas.</li> </ol>

## Annex 2. Specific objectives of each experience

Jujuy	Formoseño	Alto Malleco	Chiloe	Reventazon
To implement an environmental planning process contributing to the integral management of Los Pericos-Manantiales watershed natural resources using a planning and participative management model to attain sustainable development.	To improve rural families life quality at the Formoseño MF area by implementing integrated management systems for the area's natural resources in order to attain harmony among environmental, social, cultural, productive and economic matters.	The mission of the Araucarias del Alto Malleco MF is to take responsibility and to contribute through community democratic participation to sustainable management of its territory natural ecosystems, seeking to ensure biodiversity conservation, strengthening and acknowledgement of the local culture, and improvement of its' inhabitants life conditions.	The institutional challenge is to stimulate the organization of local communities, generating management capacity and adequate knowledge levels for them to decide on the use of their natural resources, in order to improve their life quality and to walk towards a sustainable development model.	The ultimate objective of the Reventazon MF is to attain a sustainable management of the Cartago Province natural resources. This will be achieved through active community participation on an integrated action involving state agents, non government-mental organizations, enterprises and private sector representatives to contribute also to improve the living conditions of the area's inhabitants.
Aguas Calientes	Jucuapa	Copan	Valle de Angeles	CBCVCT
Institutions and inhabitants at the Aguas Calientes sub-watershed, planning and developing activities in an integrated an orderly manner contributing to the natural resources protection and recovery; to the integral communities development, and to improve the life standard of its inhabitants.	The communities at the Jucuapa river watershed have improved their life standard by applying watersheds co-management principals, approaches and strategies to attain sustainable development and improvement of life quality.	To contribute to the conservation, improvement and potentiality of the Copan river sub-watershed, in order to ensure sustainable use and human development through resources management, projects execution and activities.	The communities of La Soledad river micro-watershed have improved their life standard by applying watersheds co-management principals, approaches and strategies to attain sustainable development and improvement of life quality.	To restore and maintain the biological connectivity among the following wildlife protected areas: the Turrialba Volcano National Park, the Guayabo National Monument, the Tuis river watershed Protection Area, and La Marta Wildlife Private Reserve

### Annex 3. Members of each initiative

#### Watershed organizations and Biological Corridor

AGUAS CALIENTES	JUCUAPA	COPAN	LA SOLEDAD	CBCVCT
<ul style="list-style-type: none"> <li>▪ Alcaldía de Somoto,</li> <li>▪ Alcaldía de San Lucas,</li> <li>▪ INTA</li> <li>▪ MAGFOR</li> <li>▪ INAFOR</li> <li>▪ INTA</li> <li>▪ Ministerio de Educación</li> <li>▪ MECD-SL</li> <li>▪ MECD-Somoto</li> <li>▪ MINSA Somoto</li> <li>▪ MARENA,</li> <li>▪ Policía Nacional</li> <li>▪ Plan Nicaragua (ONG)</li> <li>▪ Radio Ecológica,</li> <li>▪ Movimiento Comunal Nicaragüense MCN</li> <li>▪ CIDEs</li> <li>▪ Plan Nicaragua</li> <li>▪ INPRHU</li> <li>▪ ADRA</li> <li>▪ FUNDER-CONAGRO</li> <li>▪ UNAG</li> <li>▪ UNICAM</li> <li>▪ ENACAL</li> <li>▪ 1 representante comunitario de la cuenca baja, uno de la cuenca media y uno de la cuenca alta a nivel de directiva.</li> <li>▪ 7 CCC</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alcaldía de Matagalpa</li> <li>▪ INTA</li> <li>▪ MAGFOR</li> <li>▪ UNAG-PCaC</li> <li>▪ MARENA,</li> <li>▪ FUMDEC,</li> <li>▪ UNAN Matagalpa</li> <li>▪ UNICAFE,</li> <li>▪ ASOCAFEMAT,</li> <li>▪ Representantes comunitarios (alta, media, baja)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alcaldía de Copan Ruinas,</li> <li>▪ Alcaldía de Santa Rita,</li> <li>▪ Alcaldía de Cabañas,</li> <li>▪ Alcaldía de San Jerónimo,</li> <li>▪ SANAA,</li> <li>▪ CASM (ONG)</li> <li>▪ AFE-CODHEFOR,</li> <li>▪ Proyecto Norte de Copan,</li> <li>▪ OCDIH</li> <li>▪ Agua para el pueblo,</li> <li>▪ Plan en Honduras,</li> <li>▪ AFE-CODHEFOR,</li> <li>▪ IHCAFE,</li> <li>▪ PRONADEL,</li> <li>▪ PRODERT,</li> <li>▪ Cámara de Comercio,</li> <li>▪ Visión Mundial,</li> <li>▪ FOCUENCAS</li> <li>▪ Asociación de Ganaderos Copan</li> <li>▪ CAM: Sesesmiles, Marroquin, Mirasol, Otuta, rio Blanco, Limón, Guila,</li> <li>▪ CODELES</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alcaldía de Valle de Ángeles</li> <li>▪ Instituto Nacional Agropecuario INA,</li> <li>▪ INFOP (ONG),</li> <li>▪ AMITIGRA</li> <li>▪ Centro de educación básica de Cerro Grande,</li> <li>▪ Centro Educativo de secundaria San Juancito,</li> <li>▪ Grupo de jóvenes educadores voluntarios</li> <li>▪ Patronatos,</li> <li>▪ Juntas de agua,</li> <li>▪ Artesanos,</li> <li>▪ Grupos de agricultores de Montaña Grande</li> <li>▪ Grupo de agricultores Buena Vista,</li> <li>▪ Grupo Plantar</li> <li>▪ Grupo de agricultores los Cusucos,</li> <li>▪ Cajas rurales</li> </ul>	<ul style="list-style-type: none"> <li>▪ APOT Asociación de productores orgánicos Turrialba</li> <li>▪ MINAE-Turrialba</li> <li>▪ UMCRE Unidad de Manejo de la Cuenca del Reventazón</li> <li>▪ PNVT Parque Nacional Volcán Turrialba</li> <li>▪ BMR Bosque Modelo Reventazón</li> <li>▪ MNG Monumento Guayabo</li> <li>▪ UCR Universidad de Costa Rica</li> <li>▪ CATIE</li> <li>▪ Grupo Ecológico de Pejibaye.</li> <li>▪ ASOPROA Asociación de productores Agrícolas</li> <li>▪ PPD-PNUD</li> </ul>

## Model Forests

CHILOE	ALTO MALLECO	JUJUY	FORMOSA	REVENTAZON
<ul style="list-style-type: none"> <li>• Ministerio de Agricultura (Presidente)</li> <li>• Obispo de Ancud (actualmente no hay certeza)</li> <li>• Intendente X Región</li> <li>• Dirección Nacional del CONAF</li> <li>• INFOR</li> <li>• INDAP X Región.</li> <li>• Cacique Mayor del Consejo de Caciques de la Buta Huapi Chilhue</li> <li>• Universidad Austral de Chile</li> <li>• Fundación Senda Darwin</li> <li>• Corporación de Educación de Castro</li> <li>• Maderera Tantauco</li> <li>• Alcaldía de Castro</li> </ul>	<ul style="list-style-type: none"> <li>• 10 Dirigentes Campesinos de los cuales 3 son mujeres.</li> <li>• 1 empresario forestal,</li> <li>• 1 empresario ganadero (Presidente)</li> <li>• Alcaldía de Lonquimay.</li> <li>• Alcaldía de Curacautin.</li> <li>• Intendencia IX Región.</li> <li>• CONAF,</li> <li>• CONADI,</li> <li>• INDAP,</li> <li>• FOSIS.</li> <li>• ONG: Acción Social del Obispado,</li> <li>• SEPADE Lonquimay,</li> <li>• CODEFF,</li> <li>• PNUD.</li> </ul>	<ul style="list-style-type: none"> <li>• Agencia de Extensión rural del INTA-Perico</li> <li>• Cámara del Tabaco de Jujuy (Presidencia del BMJ)</li> <li>• Centro de rehabilitación Dr. Vicente Arroyave</li> <li>• Complejo Educativo Agropecuario Ing. R. Hueda</li> <li>• Consorcio de Riego Valle Los Pericos</li> <li>• Cooperativa de Crédito y Consumo La Tabacalera Ltda.</li> <li>• Cooperativa de Tabacaleros de Jujuy Ltda.</li> <li>• Escuela de comercio de Pampa Blanca</li> <li>• Escuela Provincial No. 153 "La Victoria" de Monterrico</li> <li>• Fundación AVES</li> <li>• Fundación educativa San Patricio</li> <li>• Fundación Jujeña de Desarrollo Sustentable FUJUDES</li> <li>• Grupo Ecológico La Posta</li> <li>• Grupo Yavi de Investigaciones Científicas</li> <li>• Hospital Nuestra Señora del Carmen</li> <li>• Municipalidad de la ciudad de Perico</li> <li>• Universidad Nacional de Jujuy, Facultad de Cs. Agrarias.</li> <li>• Propietarios Ing. Luis Picchetti</li> <li>• Secretaría de Medio Ambiente de la Provincia de Jujuy</li> <li>• Secretaria de Ambiente y Desarrollo Sustentable de la Nación</li> <li>• Dirección de Bosques-Coordinación Programa Nacional de Bosques Modelo</li> <li>• Grupo Minetti S.A.</li> <li>• Supervisión de la Región III-Secretaria de Educación de la Provincia</li> <li>• Dirección provincial de Empleo y Capacitación</li> </ul>	<ul style="list-style-type: none"> <li>• Gobierno de la Provincia de Formosa</li> <li>• Ministerio de la Producción</li> <li>• Ministerio de Obras y Servicios Públicos</li> <li>• Universidad Nacional de Formosa</li> <li>• Municipalidad de Laguna Yema</li> <li>• Comisión de Fomento de Pozo de Maza</li> <li>• Comisión de Fomento de Los Chiriguano</li> <li>• Programa de Desarrollo del Centro Oeste - Centro de Validación Tecnológica</li> <li>• Dirección de Bosques</li> <li>• Colegio de Ingenieros Forestales de Formosa</li> <li>• Asociación de Técnicos del Oeste Formoseño</li> <li>• Fundación para el desarrollo Aborigen</li> <li>• Productores</li> <li>• Comunidad Aborigen Toba</li> <li>• Comunidad Aborigen Wichi</li> </ul>	<ul style="list-style-type: none"> <li>• Federación de Municipalidades de de Cartago (FMC),</li> <li>• Ministerio de Ambiente y Energía de Costa Rica (MINAE), Gerencia de Manejo y Uso Sostenible de Recursos Naturales</li> <li>• Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Departamento de Recursos Naturales y ambiente.</li> <li>• Cámara de Comercio, Industria, Turismo y Servicios de Cartago,</li> <li>• Consejo Regional de Cartago,</li> <li>• Federación de Asociaciones de Desarrollo Comunal de Cartago,</li> <li>• Corporación Hortícola Nacional,</li> <li>• Coordinador Nacional del Programa de Pequeñas Donaciones de PNUD</li> </ul>

## **Annex 4. Thematic interviews content**

It is worth to mention that these inquiries are just a guide and not close questions. Also, they were not asked in the exact same manner to all the interviewers.

### **About those involved**

Which are the main actors of the initiative in the area?  
Who are the direct beneficiaries of the Model Forest initiative?  
Which are the main rules and behaviours of the area's population regarding natural resources management and conservation?  
How does the population participate? Do they participate in meeting; are there community representatives in the Board; do they take part in decisions making; do they have right to vote or not; do they contribute with labour hand?  
Describe the decisions making participative process (if you participate in it)

### **About the organization**

How is the Model Forest or the Watershed Committee organized?  
Who constitute the board or committee? And why?  
How are their members elected?  
Which is the motivation of the members to work in the organization?  
Do they get a salary for participating in the Board or Committee?  
Which are the main duties of the Board or Committee?  
What does each member contribute with?  
Have the duties of each entity or participant institution been clearly defined?  
Which are the main collaborators or partners? (only for the Model Forest case)  
How is the Manager elected?  
Which are the main duties of the Manager?  
Does he get a salary for this position?

### **About the legality**

Which is the legal status of the Model Forest?  
Why was this legal figure chosen?  
Which was the process followed to choose this legal figure?  
Do you consider it as the most useful legal figure for the Model Forest objectives?  
If not, which aspects of this legal figure do you consider useful and which would you consider changing or strengthening to match with the Model Forest objectives?  
Which is the legal framework on which the Model Forest or the Watershed Committee develops?

### **History**

Which was the need that motivated you to organize as a Model Forest or Watershed Committee? Which were the key elements that motivated the establishment of the Model Forest?  
How was the organization created? With whom or by whose initiative was the organization created? Searching for what? Who were the main promoters?  
Which were the main conflicts you faced?  
How did you go from the idea to the action?  
Which concrete results have you seen since the organization exists?  
Could you make a comparison of how things were before and after the organization?



### **The present**

- Is this organization necessary? Why?
- How does the population benefit from this initiative?
- Who have the right to benefit from the area Natural Resources?
- Which is the institutional framework for the Model Forest or Watershed Committee?  
International, national, local
- Which have been the best successes regarding preservation and management of natural resources?
- Which have been the best lessons regarding conservation and management or natural resources.
- Do you obtain and administer internal and/or external financial resources?
- How do you obtain them and how do you administer them?
- Which are the main conflicts that you face in your daily work?
- What have you done to include the population in the activities and in the model forests reason for being?

### **The future**

- Do you believe that the Model Forest or Watershed Committee organization is beneficial to the population?
- What do you expect from the Model Forest or watershed in the long term? How do you picture the Model Forest or Watershed in 5 years (2011)? (Is this a realistic assumption?)
- Which resources do you have to attain these objectives?
- Do you believe that the Model Forest or Watershed Committee is economically, politically and socially sustainable in time? Why?
- Do you believe that this organization is necessary in the long term?

### **Planning**

- Do you have a territorial zoning plan?
- Do you have a strategic plan?
- How do you prepare the strategic plan?
- Who participate in its preparation?
- Which is the procedure?
- Who are involved in the activities development and who are not?
- Are there any terms of reference, responsibilities and action plans that respond to the strategic plan?
- Is there a literal follow up of the strategic plan?
- Is there any vigilance entity to ensure fulfilment of this plan?

### **Opinion**

- Which do you think is the best practice of your Model Forest or Watershed Committee?
- Which is the experience that you consider worth rescuing, documenting or sharing with other sites worldwide?
- Which are the forces that encourage and which are the forces that limit your watershed or model forest organization development? Mention 3

## Annex 5. Interviewees

<b>Name</b>	<b>Position</b>	<b>Place</b>
Jorge Menendez	Secretaria de Medio Ambiente-Argentina	<b>B. Aires, Argentina</b>
Monica Gabay	Directora del Programa nacional de BM de Argentina	<b>B. Aires, Argentina</b>
Sabrina Vaccaro	Direccion de Bosques/ Programa nacional de BM de Argentina	<b>B. Aires, Argentina</b>
Alejandro Blamey Alegria	Director Regional CONAF	<b>Alto Malleco, Chile</b>
Carmen	Miembro del directorio Repr. Indígena	<b>Alto Malleco, Chile</b>
Claudio Sandovál	Encargado Biregional SEPADE	<b>Alto Malleco, Chile</b>
Joaquin Meleñir	Asesor Intercultural	<b>Alto Malleco, Chile</b>
Jose Chain	Empresario Forestal	<b>Alto Malleco, Chile</b>
Leonardo Duran	Cooperante CUSO	<b>Alto Malleco, Chile</b>
Mario Rivas	DAS / Arzobispado de Chile	<b>Alto Malleco, Chile</b>
Pablo Sola	Presidente	<b>Alto Malleco, Chile</b>
Rosa Amelia Huicalco Ñanco	Miembro del directorio Repr. Colonos	<b>Alto Malleco, Chile</b>
Tecnico SEPADE	Servicio evangelico para el desarrollo	<b>Alto Malleco, Chile</b>
Washington Alvarado	Gerente	<b>Alto Malleco, Chile</b>
Abel Igor	Sociólogo	<b>Chiloé, Chile</b>
Carolina Heager	Administracion de proyectos	<b>Chiloé, Chile</b>
Fernando Venegas	Administrador del Fondo Minga	<b>Chiloé, Chile</b>
Franco Marabolí	Encargado de silvicultura comunitaria	<b>Chiloé, Chile</b>
Lonko Roberto	Miembro comunitario del BM	<b>Chiloé, Chile</b>
Roberto Malachin	Lonko	<b>Chiloé, Chile</b>
Santiago Elmudesi	Gerente	<b>Chiloé, Chile</b>
Carlos Paton	Gerente	<b>Formosa, Argentina</b>
Alejandro Snopek	Presidente del BM Jujuy -Cámara del Tabaco Jujuy	<b>Jujuy, Argentina</b>
Ariel Martinez	Centro de Rehabilitacion V. Arroyabe	<b>Jujuy, Argentina</b>
Beatriz Filomeni	Centro de Rehabilitacion V. Arroyabe	<b>Jujuy, Argentina</b>
Bouchet Jorge	Grupo Minetti	<b>Jujuy, Argentina</b>
Calapeña J. Carlos	Grupo Minetti	<b>Jujuy, Argentina</b>
Claudia Chauque	Miembro de la Comision Ejecutiva	<b>Jujuy, Argentina</b>
Ester Cruz	Centro de Rehabilitacion V. Arroyabe	<b>Jujuy, Argentina</b>
Guillermina Diaz de Outon	Voluntaria	<b>Jujuy, Argentina</b>
Juana Tolaba	Centro de Rehabilitacion V. Arroyabe	<b>Jujuy, Argentina</b>
Lili Carmen Cabezas	Centro de Rehabilitacion V. Arroyabe	<b>Jujuy, Argentina</b>
María Eugenia Lanfranco	Cámara de Tabaco Jujuy	<b>Jujuy, Argentina</b>
Rafael Alfaro	INTA (Perico)	<b>Jujuy, Argentina</b>
Ripley Shannon	Voluntaria	<b>Jujuy, Argentina</b>
Virginia Outon	Gerente	<b>Jujuy, Argentina</b>
Ligia Quiroz	Miembro del directorio	<b>RMF - VCTBC</b>
Mildred Jimenez	Gerente	<b>RMF -VCTBC</b>
Roger Villalobos	Miembro del directorio	<b>RMF -VCTBC</b>
Alan González	Diseñó el programa Focuecas	<b>CATIE</b>
Lindsey Canet	Investigadora	<b>VCTBC</b>
Anibal Murcia	Vicealcalde de Copán	<b>Copán, Honduras</b>
Candelario Hernandez	Miembro comunitario de la MSMA	<b>Copán, Honduras</b>
Delmis Ledezma	Secretaria General MSMA / OCDHI	<b>Copán, Honduras</b>

Delmis Suyapa	Subsecretaria del OCC	<b>Copán, Honduras</b>
Josué Leon	Coordinador Focuecas II	<b>Copán, Honduras</b>
Kelvin	Asistente de coordinacion Focuecas	<b>Copán, Honduras</b>
Leonidad Alemán	Director Ejecutivo MANCORSARIC	<b>Copán, Honduras</b>
Luis Godoy	Sub coordinador MSAP, Presidente de la junta de agua, miembro del patronato, presidente de la asociacion de ganaderos y ex presidente de la asociacion de cafetaleros	<b>Copán, Honduras</b>
Marco Tulio Guerra	Miembro de la MSMA. Pte. Junta de Agua	<b>Copán, Honduras</b>
Pedro Villeda	San Jeronimo UMA	<b>Copán, Honduras</b>
Roberto Vides M.	Pastoral y equidad social CASM	<b>Copán, Honduras</b>
Jorge Faustino	Ex coordinador general	<b>Focuecas I</b>
Hans Kammenbahuer	Coordinador general	<b>Focuecas II</b>
Cristian Gonzalez Estrada	Asistente técnica de coordinación	<b>Matagalpa, Nicaragua</b>
Isidro Salinas	Coordinador Focuecas II	<b>Matagalpa, Nicaragua</b>
	Secretaria Administrativa del Comité de Cuencas	<b>Matagalpa, Nicaragua</b>
	Alcaldía de Matagalpa (Presidente)	<b>Matagalpa, Nicaragua</b>
Alba Roque	MARENA	<b>Somoto, Nicaragua</b>
Cesar Paez	Radio Ecologica	<b>Somoto, Nicaragua</b>
Efren Gonzalez	Vicealcalde	<b>Somoto, Nicaragua</b>
Freddy Ovando	Egresado de CATIE	<b>Somoto, Nicaragua</b>
Marlon Lira	Representante del INTA	<b>Somoto, Nicaragua</b>
Mauricio Cajina	Ex Vicealcalde/Tesista de CATIE	<b>Somoto, Nicaragua</b>
Nestor Lopez	Secretario Tecnico del Comité de Cuenca	<b>Somoto, Nicaragua</b>
Sonia Gomez	Coordinadora Focuecas II	<b>Somoto, Nicaragua</b>
Ceyla Rivera	Directora Secundaria San Juancito/Secretaria CC	<b>V.Ángeles, Honduras</b>
Jose Crisanto Santos	Artesano/Pte. Junta de agua Chaquitios/Tesorero CC	<b>V.Ángeles, Honduras</b>
Jose Manuel Gonzalez	Coordinador Focuecas II	<b>V.Ángeles, Honduras</b>
Manuel de Jesús Torrez	Alcalde de Valle de Angeles	<b>V.Ángeles, Honduras</b>
Noemí Elvir	Profesora Centro Educ. Cerro Grande	<b>V.Ángeles, Honduras</b>
Raquel Salgado	Directora EDUCATODOS/Administradora de Jafa	<b>V.Ángeles, Honduras</b>
	Vicealcaldesa de Valle de Angeles	<b>V.Ángeles, Honduras</b>