

CASE STUDIES ON ADAPTATION OF THE SCORECARD: MONTES AZULES AND EL OCOTE BIOSPHERE RESERVES

Ana Meli Torres Villatoro and Alejandro Hernández Yáñez¹

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Introduction

The Nature Conservancy first approached Chiapas in 1986 when it became interested in expanding its international program in Latin America and was about to launch the Parks in Peril program (PIP.) TNC provided funding for the Institute of Natural History (later the Institute of Natural History and Ecology-IHNE) to conduct the “Preliminary Appraisal of the Current Situation of Protected Natural Areas in the State of Chiapas.” This document was important for choosing areas that would be included in PIP.

In the 1980s, most of the natural areas established were “paper parks,” meaning that they had been created by decree but were never allocated resources for management. They had no staff, equipment, infrastructure or management programs, and on many occasions the decrees were incomplete. The purpose of PIP was to create minimal operative conditions at those sites.

In Chiapas, the TNC partner as of 1990 was IHNE and sites included El Triunfo Biosphere Reserve, newly initiated in that same year; La Encrucijada and El Ocote Biosphere Reserve, incorporated in 1991; and La Sepultura Biosphere Reserve, annexed to El Triunfo in 1998. IHNE, the government agency in the state of Chiapas, was in charge of promoting the establishment of the majority of the protected natural areas in the state and had been involved in their management ever since. In 1994 the federal government, through the National Institute of Ecology, assumed management of El Triunfo through a collaborative agreement with IHNE. Later on, at the end of 1996, it would do the same with the other three reserves. At the end of 2000 the National Commission on Protected Natural Areas (Comisión Nacional de Áreas Naturales Protegidas - CONANP) was created as a federal government agency. Currently CONANP is responsible for management of these protected natural areas, while the collaborative agreement with IHNE remains in place.

¹ We wish to thank biologists Adrián Méndez Barrera and Sonia Náñez Jiménez (El Ocote Biosphere Reserve) and engineer José Alberto Zúñiga (Montes Azules Biosphere Reserve.)

IHNE administered the four reserves through the Department of Nature Areas (DAN), before their management was passed to INE (later CONANP.) DAN staff had access to opportunities for technical assistance, training, exchange of experiences, and learning and implementation of methodological tools used in the PIP program, such as the threat analysis and the scorecard on site consolidation, first used in 1995. When INE assumed responsibility for administration of the four reserves, most of DAN's personnel went on the INE payroll, working fulltime at one or another of these areas.

As such, much of the experience generated in protected area management in IHNE was transferred to INE and later on to other areas that were not PIP sites. The two case studies that follow were part of this transfer of experience.

The first case study concerns the Selva El Ocote Biosphere Reserve, where an "advanced" scorecard was designed for ongoing measurement of progress in its management program. The second study was conducted in Montes Azules Biosphere Reserve, where the PIP scorecard was used to design an instrument to measure progress in community development work.

Both case studies were based on interviews with biologists Adrián Méndez Barrera and Sonia Nájuez Jiménez, in the case of El Ocote; and engineer José Alberto Zúñiga, for Montes Azules. The different site management programs were also consulted.

Case Study on Adaptation of the Scorecard (Evaluation of the Management Program) in Selva El Ocote Biosphere Reserve

Background of the Site

In 1972, El Ocote was declared a “Natural and Typical Area of the State of Chiapas,” high rain forest type of ecology, with a minimum extension of 10,000 hectares. In 1982 it obtained federal recognition as the “Selva El Ocote Zone for Protection of Forest and Fauna,” with an extension of 48,140 hectares.

The area was reclassified as a biosphere reserve in June of 2000, and a federal decree issued in November of that same year increased its extension to 101,288 hectares. Currently the National Commission of Protected Natural Areas (Comisión Nacional de Áreas Naturales Protegidas - CONANP) under the Secretariat of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales - SEMARNAT) administers this reserve with the support of a technical advisory committee (TAC) whose function is to operate as a participatory body furthering objectives on behalf of this protected area.

Ten of the 19 types of vegetation existing in Chiapas are found in the reserve, with tropical jungle predominating. It shelters 646 species of land vertebrates, equal to 45% of vertebrates in Chiapas and 23% at the national level. The protected area has a special function as a catchment for rainwater distributed via underground flows. In addition, its world-level karstic aquifers are considered a reserve for the third millennium, while the canyon of El Ocote’s La Venta River harbors 600 million cubic meters of water.

In 1991 Selva El Ocote entered the PIP program, which provided almost exclusive financing for the zone’s management until 1996. The situation changed in 1997 when the federal government allocated funds for direction and administration and the state government contributed to protection and surveillance actions. During 1998 the availability of various financing sources made it possible to improve reserve management, with many of the actions focused on achieving its consolidation as a PIP site. These sources included INE (budgeted from taxes), IHN (investment projects), the Mexican Fund for Conservation of Nature, PIP (TNC-AID), the Arbor Day Foundation, the Compton Foundation and the National Fish and Wildlife Foundation. Other entities have provided funding for the reserve, such as the European Economic Community (EEC), the World Wildlife Fund (WWF), Klamath National Forest (KNF-USFS) and Industrias BIMBO.

Development of the Scorecard Spinoff

El Ocote graduated from the PIP program in the year 2000, the same year that the Selva El Ocote Biosphere Reserve Management Program was published. An “advanced

scorecard” was created for the reserve as an evaluation instrument to measure progress in applying the management program.

This new scorecard was designed as part of the process of drafting the management program. Previously the reserve had applied threat analysis methodology to identify conservation targets (the most important natural elements to be conserved in the site), impacts on the conservation targets and threats (sources of impact) placing the continuity of conservation targets in greatest jeopardy. Threat analysis was carried out at three levels, the first incorporating ideas from IHNE, the second an analysis with members of the reserve’s Technical Advisory Council and the third integrating the ideas of local communities (through community appraisals) and of municipal authorities and government agencies involved in the protected area.

For the design of components of the management program’s main lines of strategy, a workshop was held in September 1997 with the support of SEMARNAP and the Center for Education and Training for Sustainable Development. Six components were defined: a) conservation and ecological restoration, b) use and sustainable development, c) scientific research and monitoring, d) education, dissemination and training, e) administration and finances and f) evaluation. Each of the components has a particular objective and strategies to address a given problem, and specifies the zone in which it will be applied, when, and the actions planned over five years.

The new scorecard was part of the evaluation component and set forth five indicators of success:

- *Conservation and restoration*
- *Natural resource use, sustainable development and public use*
- *Scientific research and monitoring*
- *Education, dissemination and training*
- *Administration and finance*

With the exception of evaluation, these indicators correspond to the components of the management program, and each is divided into five degrees of progress or benchmarks. It should be noted that ideas from other planning methodologies were utilized, such as logical framework and objective-based planning for projects (ZOPP.)

Description of the New Scorecard

The following benchmarks were formulated:

Conservation and restoration benchmarks

5.- Through ecological ordering, zoning, plans for combating forest fires, patrols and the participation of all sectors, protection is assured for the core area, flora and fauna with some type of conservation status and other elements in the area, such as archeological monuments, cavern systems and water sources.

- 4.- All plans are in place and systematically applied. Actions have the consensus of all sectors and orderly participation has begun. All threats are being addressed, with different degrees of progress.
- 3.- There is a substantial set of plans for ordering, patrols and protection of the core area and other conservation targets. Some sectors are participating in these tasks. Some threats are being addressed but the area still has problems of stability.
- 2.- Isolated actions are being planned for ordering, patrols and fire fighting, with little or no participation. Threats to the site are being addressed in isolated and rudimentary form, but most are not being attended.
- 1.- There is no ordering or protection plan, the area is severely threatened by human activities or natural phenomenon.

State C = 3 P = 4 O = 5

C: current; P: planned for five years; O: final objective

Natural resource use, sustainable development and public use benchmarks

5.- Natural resource use in the entire area is based on consensually-reached regulations, sustainability and zoning criteria, and there are alternative projects for the reserve and local communities such as ecotourism, forestry development, wildlife management units, carbon sequestration, etc., to assure economic development and long-term conservation of all these resources. In general, farming activities are based on sustainable techniques, halting the advance of the agricultural frontier. Development works take environmental aspects into consideration and measures are taken to mitigate impact: human settlements do not impact significantly on the environment. Everything is carried out with local participation and good inter-institutional coordination in both planning and execution through a comprehensive plan for sustainable development. There is a common environmental policy agenda.

4.- Agreements with authorities and a good part of the communities are reached on a consensual basis with respect to regulations on resource use that include sustainability and zoning criteria. The phase of implementing regulations is beginning. Proposals have been submitted on wildlife management, carbon sequestration, etc. Most of the communities have agricultural projects with sustainable techniques and there is greater support for carrying them out. Advance of the agricultural frontier has been halted in 80% of the reserve. Development works consider and adhere to environmental aspects, and some are carrying out mitigation work. There is local participation in several aspects, and a good part of the government agencies are coordinating under consensually formulated plans. The foundations are being laid for observing common environmental policies.

3.- Some communities have signed agreements for the regulation of resource use but are not yet adhering to sustainability and zoning criteria. Proposals are being submitted

for projects such as economic alternatives for the reserve and residents. Half of the local communities have at least pilot projects for sustainable technologies. There are some mixes of resources for this purpose and advance of the agricultural frontier has been halted in 50% of the reserve. Development projects incorporate environmental measures and some observe these and carry out impact mitigation measures. There are projects with good local participation and institutional coordination. Strategies for generating a common environmental policy agenda are being defined.

2.- There are plans for the regulation of resource use. Economic alternatives for residents are being explored. There are emergent projects with little funding aimed at halting the agricultural frontier. Some development projects comply with certain environmental criteria but other projects do not yet observe them. There are some projects with a degree of participation and coordination. Policies both for and against conservation are detected.

1.- There is open access to natural resources with the consequent deterioration, and emerging regulation. There are no economic alternatives for local residents, the agricultural frontier is advancing, development projects and human settlements impact adversely on ecosystems and there is no participatory or coordinated planning. There are diverging policies with negative impacts on the natural protected area.

State C = 2 P = 4 O = 5

A: current; P: planned for five years; O: final objective

Scientific research and monitoring benchmarks

5.- Record keeping on research and researchers is systematic and accessible to the public, so that the necessary knowledge about natural resources is available to delineate new strategies for conservation, sustainable production and multidirectional use of ecosystems. There is a permanent research program based on the needs of reserve management with up-to-date databases executed by researchers and used by society in general. All threats and conservation targets are being monitored appropriately and systematically in order to establish suitable management of the area.

4.- Systematic record keeping is being completed on research and researchers. Knowledge is being generated and a good part is being utilized for management of the area, although it is accessible only to administrators and specialists. There is a greater presence of researchers, in response to a program based on management needs and available databases. There is a monitoring program being carried out for some threats and conservation targets and which recommends particular management guidelines.

3.- There are documents, publications and reports on research that are being utilized for management. There are some researchers and research addressing the management needs of the area and an emerging research program. A monitoring program is being formulated.

2.- There are isolated publications of some use for management of the reserve. Specialists have access to the information in a limited way. The need for a monitoring program has been detected.

1.- There is isolated research that does not address the reserve's management needs and access to information is deficient. There is no monitoring.

State C = 3 P = 4 O = 5

C: current; P: planned for five years; O: final objective

Education, dissemination and training benchmarks

5.- Most of the population exhibits a positive attitude toward the reserve, which translates into support and alliances for conservation and sustainable development. Conservation values and the results of conservation and development efforts are systematically disseminated at all levels. The entire reserve staff participates in a systematic and active training program that includes the different actors involved with the protected area.

4.- There is an established environmental education program with indicators, fomenting a positive change of attitude and the support of people with increased awareness. Conservation values and results are disseminated in various ways. Reserve staff and some stakeholders participate in training courses.

3.- Environmental education activities are established to let people know about the area. Generalized dissemination is limited and few members of the reserve staff are participating in training courses.

2.- There are isolated efforts with respect to activities for raising environmental awareness and dissemination, and no training.

1.- The local population has an attitude of indifference or negativity toward the reserve. There is no education, dissemination or training program.

State C = 4 P = 5 O = 5

C: current; P: planned for five years; O: final objective

Administration and finance benchmarks

5.- There are diversified sources of the financing and funding necessary for the area's management, based on a constantly updated financing program. A strategy is being formulated to achieve operational self-sufficiency. Administration of human, financial and material resources is responsive, transparent and systematized.

4.- More public resources are being allocated to the area along with diversified private international and national funding, together covering a good part of the area's

financial needs and all based on a long-term financial plan. A strategy is being designed to achieve operational self-sufficiency. Administration is developed and on the way to a responsive, transparent and systematized administration of human, financial and material resources.

3.- Public funding and private sources are permitting basic management, and a financial plan with recurring sources and mechanisms has been prepared. There is no strategy for achieving operational self-sufficiency. A process of administrative development is being initiated.

2.- There are some private resources in the area and financial planning is underway. Administration is emergent.

1.- The area has no resources and there is no evidence of financial planning or financial sources.

State C = 3 P = 4 O = 5

C: current; P: planned for five years; O: final objective

Evaluation of the Indicators

Each indicator is divided into five benchmarks, where "5" is the most desirable level of progress and "1" is the lowest. The management program establishes the current state, indicated with a "C"; the state to be obtained in 5 years, indicated with the letter "P"; and the ideal scenario (final objective), indicated with an "O."

Application of the Adapted Scorecard

The management plan for Selva el Ocote Biosphere Reserve was published at the end of 2000, but to date the new scorecard has not yet been applied. This is essentially due to budget and staff cuts, as well as changes in the organizational structure of CONANP, with a shift in priorities toward components with greater urgency, such as combating forest fires. Management program progress has only been measured through the quarterly reports required for charting the progress of annual operating plans.

Lessons Learned, Recommendations and Conclusions

The PIP scorecard laid the foundations for site management, made it possible to prioritize actions and clarified day-to-day reserve activities when few resources were available.

The new scorecard reflected a second phase focused on management processes at a consolidated site.

Implementation of the new scorecard is still pending. It is also recognized that financial resources are needed in order to apply follow-up, evaluation and monitoring actions.

Case Study on the Design of a Scorecard for Community Development in the Montes Azules Biosphere Reserve, Chiapas – Mexico

Background of the Site

One of the regions in Mexico with greatest biological diversity is Selva Lacandona, located in the eastern sector of the State of Chiapas, making it a conservation priority. One hectare of this Chiapas jungle can shelter 160 species of vascular plants and up to 7000 trees, and in just one of these trees there can be 70 different species of orchids and hundreds of species of beetles, ants and other insects. Five hundred species of diurnal butterflies have been recorded, along with 27% of the mammals and 30% of the birds existing in the entire country.

Montes Azules Biosphere Reserve extends over 34.6% of Selva Lacandona and is considered an important contribution to the tropical forest massif of Selva Maya. The predominant ecosystem is moist tropical forest.

The decree establishing the “Montes Azules Forest Protection Zone and Comprehensive Biosphere Reserve” appeared in the official federal government publication of January 12, 1978. The decree defined the territorial limits of the area even though demarcation had not been carried out. It also established regulations for natural resource use in Montes Azules, which was included within the lands of the Lacandona Community along with other *ejidos*. Since then the reserve has undergone numerous conflicts of agrarian, social and political nature, and unfortunately, while several initiatives have attempted to bring order and resolve these conflicts, none has met with success.

The first document on actions for managing the reserve was published in 1990, and a technical planning group was formed. Work resumed on this plan in 1992 and a second version was formulated.

In 1994 an operational office was set up for the reserve with basic infrastructure (personnel, equipment and financial resources), thanks to the Global Environmental Facility (GEF.) In 1997 the Technical Advisory Council was formed with representatives of institutions and reserve communities. Finally, publication of the Management Plan for the Montes Azules Biosphere Reserve was achieved in the year 2000.

Adaptation of the Scorecard

The entities that initiated a strong process of conservation in the protected natural areas of Chiapas were the Institute of Natural History (Instituto de Historia Natural - IHN) and The Nature Conservancy (TNC), providing solid foundations for planning and management. Several members of IHN later went on to join the staff of the Montes Azules Biosphere Reserve (REBIMA) in 1994. This is very important because the

knowledge and experience they acquired during their professional formation in the different protected areas included in the Parks in Peril program (PIP) were transferred to a site not included in that program.

When work began on the REBIMA Community Development Project, several social aspects were identified that had not been found in the PIP sites in Chiapas, most notably the presence of indigenous communities with their own language and an extensive knowledge of natural resources. For this reason, the reserve staff decided to design a scorecard that included human variables as a facet of site conservation.

Description of the Adaptation

The objective of this scorecard was to evaluate progress in community development actions for the purpose of orienting this component.

The design of the new scorecard included three workshops with different groups:

- Community workshops to determine communities’ perceptions of natural resources and how to conserve them
- Internal workshops with the work team to define indicators, benchmarks and work sites
- Inter-institutional workshops to define how the different agencies can collaborate and contribute to reaching the conservation objectives for the site

To define activities and evaluate the advances of community development actions, the scorecard was adapted to include the following six indicators:

Indicator 1.- Sustainable management of natural resources

Indicator 2.- Conservation and community development plan

Indicator 3.- Community ordering

Indicator 4.- Community environmental health plan

Indicator 5.- Women’s participation in resource conservation

Indicator 6.- Economic benefit

Conceptually, this scorecard is similar to that of El Ocote or PIP. The indicators are divided into five benchmarks, with 5 being the level desired and 1 the lowest. The scorecard for community development follows.

Adaptation of the Scorecard for Community Development Actions in the Montes Azules Biosphere Reserve, Chiapas – Mexico

Indicator 1.- Sustainable management of natural resources

5=	Activities are being carried out for the conservation and protection of natural resources used in community productive processes and positive impacts are being measured.
4=	Activities are being carried out for the conservation and protection of natural resources used in community productive processes, but have not been measured.
3=	There is a training program on production techniques that conserve and protect resources used in productive activities, but these techniques have not been applied.
2=	Some training has been carried out in production techniques that conserve and protect the natural resources used

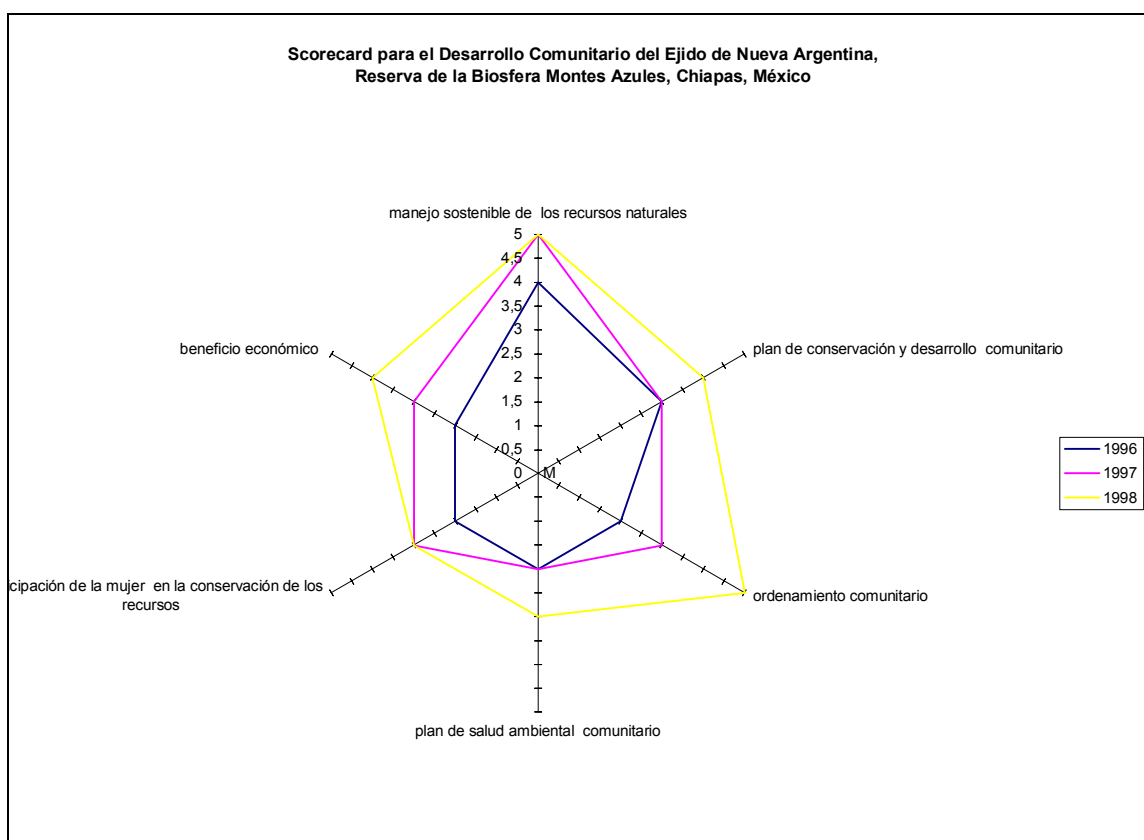
1=	No activity has been carried out to propose alternatives
Indicator 2.- Conservation and community development plan	
5=	Positive impacts on natural resources from the conservation and community development plan have been measured and monitored
4=	The conservation and community development program [should be plan?] has been concluded
3=	Consultations and participatory planning workshops have been held to formulate the conservation and community development program [plan?]
2=	Formulation of a program [plan?] has been accepted.-+++++
1=	No activity has been carried out to propose an alternative
Indicator 3.- Community ordering	
5=	Activities for the conservation and protection of natural resources used in community productive processes are being carried out and positive impacts are being measured
4=	Activities for the conservation and protection of natural resources used in community productive processes are being carried out but have not been measured
3=	There is a training program on production techniques that conserve and protect resources used in productive activities but these techniques have not been applied.
2=	Some training has been carried out in production techniques that conserve and protect the natural resources used
1=	No activity has been carried out to propose alternatives
Indicator 4.- Community environmental health plan	
5=	Environmental health activities are being carried out in the family unit and community and positive impacts are being measured
4=	Environmental health activities are being carried out in the family unit and community but are not being measured
3=	There is an environmental health program but it is not carried out.
2=	No participatory workshops for community and family environmental health have been held.
1=	No activity has been carried out
Indicator 5.- Women's participation in resource conservation	
5=	Women are organized and work in projects for conservation and sustainable use of natural resources
4=	Women are organized but have not carried out or applied any project for conservation and sustainable use of natural resources
3=	Participatory activities have been carried out to organize women
2=	There is a proposal to organize women's participation but no consensually reached agreement
1=	No activity has been carried out
Indicator 6.- Economic benefit	
5=	Trade is occurring and an evaluation exists showing a positive cost-benefit ratio for community development projects.
4=	Trade is occurring but project cost-benefit has not been evaluated.
3=	The phase of post-harvest or postproduction and trade has been evaluated with positive results.
2=	No post-harvest or postproduction and trade evaluation has been made.
1=	There is no economic benefit.

Application of the Adapted Scorecard

This scorecard was applied for 3 years (1996, 1997 and 1998) in the *ejidos* of Nueva Palestina, Nueva Villaflores and Nueva Argentina, within REBIMA. The information generated by each application of the new scorecard was entered into a matrix (table of measurements for each *ejido*) and a graph that illustrates the current state and progress of each community and indicator in a simple and schematic way. This made it possible to focus actions toward indicators with lower scores and reinforce those that were going well.

**Results: Measurement Table *Ejido* Nueva Argentina,
Montes Azules Biosphere Reserve, Chiapas – Mexico**

COMMUNITY DEVELOPMENT	1996	1997	1998
Indicator: Sustainable management of natural resources	4	5	5
Indicator: Conservation and community development plan	3	3	4
Indicator: Community ordering	2	3	5
Indicator: Community environmental health plan	2	2	3
Indicator: Women’s participation in natural resource conservation	2	3	3
Indicator: Economic benefit	2	3	4



**Scorecard on Community Development in the *Ejido* of Nueva Argentina
Montes Azules Biosphere Reserve, Chiapas, Mexico**

Economic benefit	Sustainable management of natural resources
Women’s participation in resource conservation	conservation and community development plan
	community ordering
	Community environmental health plan

Complementary methodological tools used for the design or application of the community development scorecard included the rural participatory appraisal, the method for measurement and improvement of productivity (SIMAPRO), the framework for evaluating and measuring indicators of sustainability (MESMIS) and evaluation of sustainability based on natural resources (PET-FAO/UNESCO.)

Results of Applying the Scorecard for Community Development

Some of the more significant results obtained with the application of this tool were the following:

- Land ordering in Nueva Villaflores and Nueva Argentina: this made it possible to restore 150 hectares affecting the banks of the Azul River
- Changes of attitude toward natural resources in the project communities through a restoration program
- Reconstruction of traditional Chol knowledge (classification of lands according to the relation between farming potential and forest species: the plant-soil relation defines soil aptitude)
- Application of this new scorecard laid the foundations for defining one of the management elements in the “Social Development Component” itself, as well as the proposal for subzoning in REBIMA.

Lessons Learned

The social component of the PIP Scorecard is extremely weak. Given the importance of that component in most of the protected areas of Chiapas and Mexico, with or without indigenous communities, the incorporation of social indicators is fundamental to improve protected area management and especially to identify and propose strategies for working with the people.

Conclusions

The importance of both scorecards is evident. In reality, they are not so much spinoffs as new designs required in order to address the different needs of the two reserves: in El Ocote to measure advances in its management program and in Montes Azules to measure progress in community development work.

Although the El Ocote scorecard has not yet been applied, there is no question that its very existence is a step forward and that it should be put into practice.

The case of Montes Azules is even more noteworthy since it remedies a weakness in the PIP scorecard. This is a very useful innovation that is worth replicating at other sites.

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The Parks in Peril (PiP) Program began in 1990 as an emergency effort to safeguard the most imperiled natural ecosystems, ecological communities and species in the Latin American and Caribbean region. With U.S. Agency for International Development (USAID) funding administered by The Nature Conservancy (TNC), PiP has worked through 30 non-governmental partner organizations to shepherd a collaborative effort with government agencies and stakeholders to consolidate the technical, human and financial resources necessary to sustain conservation of these sites into the future. By 2002, PiP had fostered protection, management, financing, and local support of 37 protected areas in 15 countries, covering 11.4 million hectares.

To substantiate and illustrate lessons learned and recommendations about the progress made towards consolidation of PiP sites from 1990 to 2002, ten case studies were developed by TNC staff and partners. This document presents one of these case studies.

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