Community Conserved Areas in Northern Mesoamerica
A review of status & needs

Isabel Camacho, Carlos del Campo and Gary Martin
Global Diversity Foundation, Mesoamerica
isabelcb@gmail.com, gmartingdf@gmail.com, carlos@huizache.org.

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Preface

This report is the result of a consultancy that the Global Diversity Fund (GDF) conducted on behalf of two IUCN Commissions' working groups (TILCEPA www.tilcepa.org and TGER www.iucn.org/themes/ceesp/TGER.html) as part of the IUCN framework agreement with Sida. The report reviews the status and needs of community conservation areas in northern Mesoamerica, particularly Belize, Guatemala and the Mexican states of Chiapas, Oaxaca, Yucatán, Campeche and Quintana Roo.

It includes information obtained through literature review, community workshops in Guatemala, meetings with NGOs involved in CCA processes in Oaxaca, field visits, community consultations and e-mail interactions with some key actors from Oaxaca, the Yucatán peninsula, Guatemala and Belize. After an initial draft was completed, co-authors Isabel Camacho and Carlos del Campo participated in a National Forum on Community Conserved areas in Mexico, held in Oaxaca City on the 14 – 15 of December 2007. The Forum offered a unique opportunity to review our initial conclusions with a wide variety of community members, governmental officials and civil society representatives.

A preliminary database of CCAs in the region was prepared, but its full dissemination awaits free prior informed consent by the various communities that are included. During the short consultancy period, we were able to visit only a few of the communities profiled in the database, so groundtruthing of our results remains a future task.

We found that the CCA movement is vibrant is Mexico, nascent in Guatemala and attracting increasing interest in Belize. This report focuses primarily on Mexico, but we provide insights from Guatemala when they broaden the overall picture of how community conservation initiatives are faring in the region. A similar analysis is needed for the other five countries of Central America, especially considering the unique approaches of the Comarca Kuna Yala in Panama, the work of Coope Sol i dar in Costa Rica and other experiences.

Our limited treatment of Central American countries – and the dynamism of the CCA movement in Mexico and throughout the region – implies that this report is preliminary and that our documentation and analysis of CCAs in Mesoamerica will be progressively revised in the future. For these reasons, this report should be considered a first approximation of the community conservation movement rather than a definitive statement.

Acknowledgements

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We take full responsibility for any misconceptions or factual errors in the report, and we welcome corrections and insights from readers.

Acronyms

ACICAFOC Asociación Coordinadora Indígena y Campesina de Agroforestería Comunitaria Centroamericana
Central American Coordinating Indigenous and *Campesino* Agrofoestry Association

ADECMAP Asociación de Desarrollo Etnoturismo y Conservación de Medio Ambiente de Pamuc
Ethnotourism Development and Environment Conservation Association of Pamuc

ADECRO Asociación de Desarrollo de El Rodeo Camotán
Community Development Association for El Rodeo Camotán Community

AGFC Alianza Global de Forestería Comunitaria
Global Alliance on Community Forestry

AMSCLAE Autoridad para el Manejo Sustentable de la Cuenca del Lago Atitlán y su Entorno
Atitlan Lake Basin Sustainable Management Authority

APROBA Asociación Pro-bienestar en Acción
Well-Being in Action Association

ARNPG Asociación de Reservas Naturales Privadas de Guatemala
Guatemala Private Natural Reserves Association

ASODICH Asociación para el Desarrollo Integral de la Aldea Chimel
Integral Development Association for Chimel Community

ASODILG Asociación para el Desarrollo Integral de la Aldea La Gloria
Integral Development Association for La Gloria Community

ASORECH Asociación Regional Campesina Cho'rti'
Cho'rti' Campesino Regional Association

BOSCOM Proyecto de Fortalecimiento Forestal Municial y Comunal
Municipal and Communal Forestry Strengthening Project

CATIE Centro Agronómico Tropical de Investigación y Enseñanza
Tropical Agronomy Research and Teaching Center

CBD Convention on Biological Diversity
Convención para la Diversiad Biológica

CBMM Corredor Biológico Mesoamericano
Mesoamerican Biological Corridor

CBS Community Baboon Sanctuary
Santuario Comunitario de Sarahuatos

CCA Community Conservation Area
Área de Conservación Comunitaria

CCAD Comisión Centroamericana de Ambiente y Desarollo
Central American Environment and Development Commission

CCMSS Consejo Civil Mexicano para la Silvicultura Sostenible
Mexican Sustainable Forestry Civil Council

CC-SECAN Consejo Consultivo del Sistema Estatal de Conservación en Áreas Naturales
Consultative Council for the Natural Areas Conservation State's System

CECON Centro de Estudios para la Conservación
Conservation Studies Center

CEESP	IUCN Commission on Environmental, Economic and Social Policy Comisión de la IUCN para la Política Ambiental, Económica y Social
COASO	Sociedad de Cooperativas y Asociaciones de Oriente Eastern Cooperatives and Associations Society
COCODE	Comités Comunitarios de Desarrollo Community Development Committees
COINBIO	Programa de Conservación de la Biodiversidad por Comunidades e Indígenas Program on Biodiversity Conservation by Communities and Indigenous peoples
COMPACT	Community Management of Protected Areas Conservation Manejo Comunitario de la Conservación de Áreas Protegidas
COMUVIAFAF	Comité Municipal de Vigilancia de Fauna y Flora Municipal Committee of Flora and Fauna Vigilance
CONABIO	Comisión Nacional Para el Conocimiento y Uso de la Biodiversidad Mexican National Commission for Biodiversity Knowledge and Use
CONAFOR	Comisión Nacional Forestal Mexican National Forestry Commission
CONANP	Comisión Nacional de Áreas Naturales Protegidas Mexican National Natural Protected Areas Commission
CONAP	Consejo Nacional de Areas Protegidas National Council of Protected Areas
CORENCHI	Comité Regional de Recursos Naturales de la Chinantla Regional Committee of Chinantla's Natural Resources
CTP	Community Territorial Planning Ordenamiento Territorial Comunitario
DEFRA	United Kingdom Department for the Environment, Farming and Regional Affairs Departamento del Reino Unido para el Ambiente, Agricultura y Asuntos Regionales
DIPRONA	Dirección de Protección de la Naturaleza in Guatemala Guatemala Nature Protection Direction
ERA	Estudios Rurales y Asesoría Rural Studies and Consultancy
EZLN	Ejército Zapatista de Liberación Nacional Zapatista National Liberation Army
FAO	Food and Agriculture Organization Organización de las Naciones Unidas para la Agricultura y Alimentación
FDN	Fundación Defensores de la Naturaleza Nature Defenders Foundation
FENATUCGUA	Federación Nacional de Turismo Comunitario de Guatemala Guatemala Community Tourism National Federation
FLACSO	Facultad Latinoamericana de Ciencias Sociales Latin American Social Sciences Faculty
FONACON	Fondo Nacional Guatemalteco para la Conservación de la Naturaleza Guatemala National Fund for Nature Conservation

FONTIERRAS	Fondo Guatemalteco Nacional de Tierras Guatemalan National Lands Fund
FSC	Forest Stewardship Council Consejo de Regulaciòn Forestal
GAIA	Grupo Autónomo de Investigación Ambiental Environment Research Autonomous Group
GEF	Global Environment Facility Facilidad Ambiental Global
GDF	Global Diversity Foundation Fundación para la Diversidad Global
IDESMAC	Instituto para el Desarrollo Sustentable en Mesoamerica Mesoamerican Sustainable Development Institute
ILO	International Labour Organisation Organización Internacional del Trabajo
INAB	Instituto Nacional de Bosques en Guatemala Guatemala National Forests Institute
INE	Instituto Nacional de Ecología en México Mexican National Ecology Institute
INGUAT	Instituto Guatemalteco de Turismo Guatemala Tourism Institute
ITAO	Instituto Tecnológico Agropecuario de Oaxaca Oaxaca Technical and Agriculture Institute
IUCN	The World Conservation Union Uniòn Mundial para la Naturaleza
MAGA	Ministerio Guatemalteco de Agricultura, Ganadería y Alimentación Guatemala Agriculture, Farming and Food Ministry
MBC	Mesoamerican Biological Corridor Corredor Biológico Mesoamericano
MIE	Manejo Integrado de Ecosistemas Integrated Ecosystems Management
MIQRO	Maderas Industriales de Quintana Roo Quintana Roo Industrial Timbers
MPS	Maderas del Pueblo del Sureste Southeast People Timbers
NGO	Non Governmental Organization Organización No Gubernamental
OEPFZM	Organización de Ejidos Productores Forestales de la Zona Maya Organization of Maya Region Forestry-based *Ejidos*
OIMT	Organización Internacional de Maderas Tropicales International Association of Tropical Timber-woods
PACT	Protected Areas Conservation Trust Consejo de Áreas Protegidas

PAIR-UNAM Programa de Aprovechamiento Integral de Recuros Naturales de la UNAM
UNAM's Integral Natural Resources Use Program

PARPA Programa de Apoyo para la Reconversión Productiva y Agrícola
Support Program for Productive and Agriculture Conversion

PFA Permanent Forest Areas
Áreas Forestales Permananetes

PINFOR Programa de Incentivos Forestales
Forestry Incentives Program

PINPEP Programa de Incentivos Forestales para Pequeños Poseedores
Forestry Incentives Program for Small Property Owners

PROAM Proceso de Autogestión Ambiental para la región Cho'rti'
Environmental Self-Administration Process for the Cho'rti' Region

PROCEDE Programa de Certificacion de Derechos Ejidales y Titulacion de Solares
Ejidal Rights Certification and Property Entitlement Program

PROCYMAF Programa de Desarrollo Forestal Comunitario
Community Forestry Development Program

PWPA CBD Program of Work on Protected Areas
Programa de Trabajo sobre Áreas Protegidas de la CBD

SCP Slate Creek Preserve
Reserva Slate Creek

SEMARNAT Secretaría de Medio Ambiente y Recursos Naturales en Mexico
Environment and Natural Resources Mexican Secretariat

SERBO Sociedad para el Estudio de los Recursos Bióticos de Oaxaca
Society for the Study of Oaxaca's Biotic Resources

SGP Small Grant Program of GEF
Programa de Pequeños Apoyos de la GEF

SICOBI Sistema Comunitario para la Biodiversidad
Community System for Biodiversity

SNS Sacred Natural Sites
Sitios Naturales Sagrados

SOSEP Secretaría de Obras Sociales de la Esposa del Presidente en Guatemala
Guatemalan President's Wife Social Work Secretariat

SPFQRO Sociedad de Productores Forestales Ejidales de Quintana Roo
Society of Quintana Roo *Ejidal* Timber Producers

SSNC Swedish Society for Nature Conservation
Sociedad Sueca para la Conservación de la Naturaleza

SwedBio Swedish International Biodiversity Program
Programa Sueco Internacional para la Biodiversidad

TGER CEESP Theme on Governance, Equity, and Rights
El Tema sobre Governanza, Equidad y Derechos de la CEESP

TILCEPA WCPA-CEESP Strategic Direction on Governance, Equity, and Livelihoods
Dirección Estratégica sobre Governanza, Equidad y Calidad de Vida

TNC	The Nature Conservancy Conservaciòn de la Naturaleza
TSL	CEESP Theme on Sustainable Livelihoods Tema sobre Modos de Vida Sustentable de la CEESP
UMA	Unidades de Manejo para la Conservación de Vida Silvestre Wildlife Management Units
UNAM	Mexican National Autonomous University Universidad Nacional Autónoma de México
UNDP	United Nations Development Program Programa de las Naciones Unidas para el Desarrollo
UNF	United Nations Foundation Fundación de las Naciones Unidas
UNOPS	United Nations Office for Project Services Oficina de las Naciones Unidas para Servicios de Proyectos
UNORCA	Unión Nacional de Organizaciones Regionales Campesinas Autónomas National Union of Autonomous *Campesino* Regional Organisations
URL	Universidad Rafael Landívar Rafael Landívar University
UZACHI	Unidad de Comunidades Forestales Zapotecas y Chinantecas Zapotec and Chinantec Forestry Communities Union
WCPA	IUCN World Commission on Protected Areas Comisión Mundial de la IUCN sobre Áreas Protegidas
WMU	Wildlife Management Unit Unidad de Manejo para la Conservación de Vida Silvestre

Executive summary

Northern Mesoamerica, renowned for its biological and cultural diversity, provides a complex portrait of the promise and challenge of community conserved areas. Our overview, based on literature review, workshops, interviews and field visits, reveals a preliminary list of 72 CCAs in Mexico, 18 in Guatemala and perhaps three in Belize.

In Oaxaca alone, 44 communities have set aside protected areas that comprise a total of 175,000 Ha, equivalent to 49% of the governmental protected areas in the state (Anta and Pérez 2004). There are some 25 CCA experiences in Quintana Roo, at least 2 in Chiapas and one in Yucatán.

Based on these results, we characterize the CCA movement as vibrant in Mexico, nascent in Guatemala and of growing interest in Belize.

One of the difficulties of classifying community conserved areas in northern Mesoamerica – and globally – is defining what distinguishes these unique initiatives from broader community conservation efforts such as co-management of protected areas designated by governments. There are also modes of subsistence and commercial production that may favor the sustainable use of landscapes and biodiversity, but are not typically classified as conservation initiatives.

The emerging definition from the IUCN considers that CCAs are "natural and modified ecosystems including significant biodiversity, ecological services and cultural values voluntarily conserved by concerned indigenous and local communities through customary laws or other effective means". Furthermore, they are characterized by several defining features: (1) "specific indigenous peoples or local communities (sedentary or mobile) are closely 'concerned' about the area (related to them culturally and/or because of livelihoods)'; (2) 'such communities are major players– i.e. hold power (*de jure* or *de facto*) in deciding, implementing and enforcing management decisions' and (3) 'the community voluntary management decisions and efforts achieve conservation results—through intentional conservation or other purposes'.

For our inventory of CCAs in northern Mesoamerica, we adopted these criteria and then narrowed the selection by requiring that the conservation effort be explicitly recognized by communities, governmental agencies, NGOs or academics. Without this further restriction, the list of potential CCAs would be almost infinite and the designation rather meaningless.

There are dozens of indigenous groups in the region who, especially in Mexico, are the legal owners and *de jure* or *de facto* managers of extensive lands and forests. Although insufficiently studied, their traditional and current management of their landscapes and natural resources achieves conservation in a diversity of ways. Their ecological beliefs, knowledge and practices, which have ancient roots, have shown great resilience during important historical phases of colonization, independence and globalization. This implies that many community conserved areas derive from precursor sites that were already in existence in the prehispanic era, or that developed in response to colonial or governmental

authority sometime over the last five centuries. In addition to these indigenous peoples, there are many mestizo (mixed indigenous-Spanish) communities who have developed and maintain appropriate land use and resource management systems. Explicit recognition of these indigenous and mestizo modes of conservation is a more recent process that emerged over the last few decades and has grown rapidly since the turn of the 20th century.

This explicit recognition of CCAs comes in a variety of forms. Sacred Natural Sites (SNS), probably the most ancient of the CCAs, are widely acknowledged in communities but their legal status is not clearly established. Productive activities are typically restricted in these culturally important areas, resulting in biodiversity and landscape conservation. Cerro Rabón and Giéngola in Oaxaca are among the sites that have attained wider public recognition (Anta Fonseca *et al.* 1999).

Many community assemblies (the local decision-making institution) are setting aside protected areas on their communal lands. Referred to as Community or *Ejido* Reserves, these areas are often publicly declared and in some cases receive government certification. This decision often follows some form of participatory appraisal of community lands, often in the form of Community Territorial Planning (CTP), which is called Ordenamiento Territorial Participativo (OTP) in Spanish.

Permanent Forest Areas (PFAs) – sometimes called Forest Ejidos (Kiernan 2000) – arose during the 1980s when an innovative National Pilot Forestry Plan enabled forestry-based *ejidos* to develop a forestry management model which requires sustainable forest management. A similar development in Oaxaca is the Community Forest Enterprise (CFE) reserve, a type of community and *ejido* reserve that is based on sustainable timber production to support community livelihoods. In this case, the community establishes management plans for species or habitat conservation which often includes setting aside a protected forest area (Bray *et al*. 2003). A further extension of CFEs are Community Association Reserves (CARs) that emerge when several indigenous communities, municipal agencies or smaller communities belonging to different municipalities come together to conserve and manage areas for natural resource use (Anta and Pérez Delgado 2004; Anta Fonseca *et al*. 1999).

Government agencies have set up additional mechanisms for the explicit recognition of some categories of CCAs. Beginning in 2003 with the recognition of a 'conservation zone' in Santa María Guienagati, Oaxaca, CONANP in Mexico has been active in the informal certification of natural protected areas declared by communities.

Mexico has an official scheme of micro-territorial planning that leads to the designation of Wildlife Management Units, called Unidades de Manejo de Vida Silvestre (UMAs) in Spanish. As a unit recognized in Mexican Wildlife Law (Ley General de Vida Silvestre), they are putatively designed to allow communities to diversify the production of goods and services from wildlife, while minimizing impact on the ecosystem and biological resources.

Academic researchers, non-governmental organizations (NGOs) and community-based organizations (CBOs) offer distinct pathways to achieving explicit recognition of CCAs that complement designation by community assemblies and governmental agencies. In the absence of governmental acceptance – for example when communities resist governmental authority in autonomous municipalities in southern Mexico – NGOs often play a significant role in assisting communities to document the existence of natural protected areas, including the Autonomous Municipal Reserves (AMRs) of Chiapas.

Researchers (Bandeira *et al.* 2005) have called attention to Agroforestry and Agroecology Systems as community conserved areas. From *milpas* (maize polyculture systems) to shade coffee plantations, the farming systems maintained by community members are important reservoirs of biodiversity and could qualify in the future under schemes such as FAO's Globally Important Agricultural Heritage Systems (GIAHS). Coffee plantations, especially areas of certified organic coffee production including San Juan Metaltepec and Santiago Teotlaxco in Oaxaca, are particularly relevant for conservation as they maintain a highly biodiverse canopy of original tropical forest trees (Anta *et al.* 1999)

The creation of Cellular Forestry Reserves (CFRs) is a nascent but innovative approach promoted by the CBO Ecosta Yutu Cuii S.S.S. These reserves comprise small areas of secondary vegetation – governed by *ejidal*, private or community land tenure – where the principal aims are to restore and conserve degraded ecological areas and biological corridors. As with the majority of CCAs, conservation explicitly embraces sustainable productive activities that, in the case of CFRs, include enrichment planting with precious hardwoods, cacao and vanilla cultivation, and harvest of deadwood (Anta Fonseca *et al.* 1999, Anta and Pérez 2004). Another approach to ecological restoration is the establishment of Soil and Vegetation Conservation Areas (SVCAs) often as the result of community territorial planning.

Based on these various forms of acknowledging community conservation experiences, we propose a preliminary classification of 11 categories of CCAs in Mexico. Although we could not verify the existence of similar modes of explicit recognition in Guatemala, we propose an additional four tentative categories of CCAs in that require further analysis: Regional Parks, Multiple Use Reserves, Community Farm Reserve and Community Biological Corridors. Explicit recognition of CCAs and clear forms of certification in Belize await further advances in communal land tenure and community conservation that are still in early stages of development.

Based on this wealth of experiences, we conclude that community conserved areas, in all of their diversity, are growing in strength in the region. In general, national government policies in Mexico (and increasingly Guatemala) encourage the creation and recognition of community conservation experiences, in part to increase the national protected area coverage. When well administered and funded, CCAs are likely to survive in the long run, and proactive government support can enhance their number and longevity.

Despite these positive advances, there are many challenges that face CCAs in northern Mesoamerica. One critical need is to understand and strengthen the legal framework for

each of the types. Mexico has a plethora of national and state laws, policies and programs that favor the recognition of community conservation experiences, but they are not always applied in a consistent way. It would appear that the lack of experiences under the CBD Program of Work on Protected Areas (PWPA) directly related to CCAs is partly due to the lack of interest from federal and states authorities to open more opportunities for community capacity building in relation to natural resource conservation.

There is a danger that the current enthusiasm for national or state level certification could outpace the communities' own initiatives – based on their own goals and timescales – and lead to premature official registration of CCAs in a way that does not serve local interests. Some of the communities involved with the indigenous rights movement – and which consider the protection of their natural resources and territory as a key aspect of their cultural identity and reproduction – are opposed to the attempts of any governmental agency to formalize autonomous indigenous initiatives.

Within and among communities, there is often a tension between communal and individual rights. Old agrarian conflicts limit some local experiences such as CTPs in Chimalapas, Oaxaca and Quezaltepeque, Guatemala, especially where one community is interested in conservation and the other not.

The further development of CCAs in the northern Mesoamerica will require resolution of these and other difficulties. We discuss opportunities and needs which have been divided into seven themes: (1) legislation and policy; (2) financial needs; (3) participation and communication; (4) productive activities and poverty alleviation; (5) human rights; (6) capacity building; and (7) research.

Mesoamerica

Geographical delimitation

The original concept of Mesoamerica is derived from archeological and anthropological characterizations of a culture area contained within present day Mexico and Central America (Map 1). The pre-Columbian societies in this region shared broad historical, linguistic and cultural similarities that are still in evidence today. Because this culture area does not precisely fit current political geographical boundaries, Mesoamerica is defined in diverse ways by different people.

In its broadest sense, it comprises all of Mexico and Central America. A more restricted and commonly accepted delimitation of Mesoamerica includes the broad region that stretches from southeastern Mexico to the southern border of Panama ("Mesoamerica", 2008). This typically incorporates nine states of Mexico (Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo, Tabasco, Veracruz, and Yucatán) which together cover more than 500,000 km^2 and are home to over 29 million people ("Political divisions of Mexico", 2008). The seven countries of Central America – Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama – include an area of over 520,000 km^2 with a population of over 42 million people ("Central America", 2008). In this broad

geographical delimitation, Mesoamerica is a region of over 1 million square kilometers and 60 million people.

Figure 1: The location of the ancient culture region of Mesoamerica ("Mesoamerica", 2008).

The region is further united by its common history of Spanish colonization in the 15th and 16th centuries (with Belize, the only English-speaking country in the region, distinguished by its later colonization by the British). During the Cold War, the region experienced significant external political and military manipulation that contributed to civil wars and conflict. Today, there is massive migration to the United States and increasing socioeconomic integration among the countries of Central America and Mexico. Democracy and governance initiatives have led to greater political stability, but the region is still relatively impoverished. Efforts to stimulate the economy face challenges from diminishing natural resources, foreign debt and inflation.

Biocultural diversity

Mesoamerica is a center of biological, cultural and geographical diversity. It forms a natural bridge between the continents of North America and South America, and is delimited by two large oceans, the Atlantic and Pacific. Its highly variable topography – which features extensive lowlands, numerous islands and several mountain ranges – has given rise to a diversity of landscapes and ecosystems. The emergence of this land mass some 3 million years ago allowed distinctive floras and faunas from North and South America to

intermingle, leading to the broader distribution of some species and the evolution of new forms of life. As noted by Miller *et al*. (2001), Central America covers just half a percent of Earth's surface but accounts for about seven percent of the world's biological diversity.

Figure 2. Cultivated and managed plant resources of CORENCHI community conserved areas

This natural environment has co-evolved with the diverse indigenous groups who trace their origins to hunter-gathers who arrived in the New World in 11,000 BC or before.

These founder populations gave rise to agricultural settlements that grew maize (corn), beans, squash, and many other crops. Agricultural intensification and population growth provided the foundation for the development of large, complex and wealthy empires such as the Aztec, Maya, Olmec and Otomangue (e.g. Mixtec and Zapotec) civilizations.

Mesoamerica's cultural diversity continues today. The total indigenous population of Mesoamerica, distributed in dozens of distinct ethnic groups, is estimated at over 13 million people. In southeastern Mexico, the indigenous people constitute from 15% - 59% of the overall population of individual states (Indigenous peoples in Mexico", 2008). Guatemala is over 40% indigenous, whereas the indigenous populations of other Central American countries range from 1% to 10% of the general populace ("Ethnic groups in Central America", 2008).

Mestizo (mixed Amerindian and white) people are in the majority in many areas of Mesoamerica, and there are smaller localized populations of black Caribbean and white people.

Regional conservation and community development

The combined biological and cultural diversity of Mesoamerica has created a challenging background for conservation and community developments efforts in the region. Regional efforts to create collaborative and transboundary conservation initiatives began in the mid-1970s, when there were just 25 protected areas in the region. An intensive effort by governments and civil society over the last 30 years has led to a sharp increase in the number of protected areas and regional conservation initiatives.

One of the early attempts at regional cooperation was the *Paseo Pantera* (Path of the Panther), a wildlands conservation project funded by the US Agency for International Development. Initiated in 1990 to address biodiversity loss and habitat fragmentation in Central America, the five-year project was implemented by a consortium composed of the Wildlife Conservation Society and the Caribbean Conservation Corporation in collaboration with other governmental and non-governmental partners in the United States and Central America. The *Paseo Pantera* was conceptualized as a biological corridor that would link protected areas in the region. Its program of international cooperation included proposed research on buffer zone management, environmental education and some development activities such as ecotourism (Miller *et al*. 2001).

This initiative, which faced resistance from local communities concerned about its impact on their land and resource tenure, led to a more ambitious program called the Mesoamerican Biological Corridor (MBC; *Corredor Biológico Mesoamericano*, CBM).

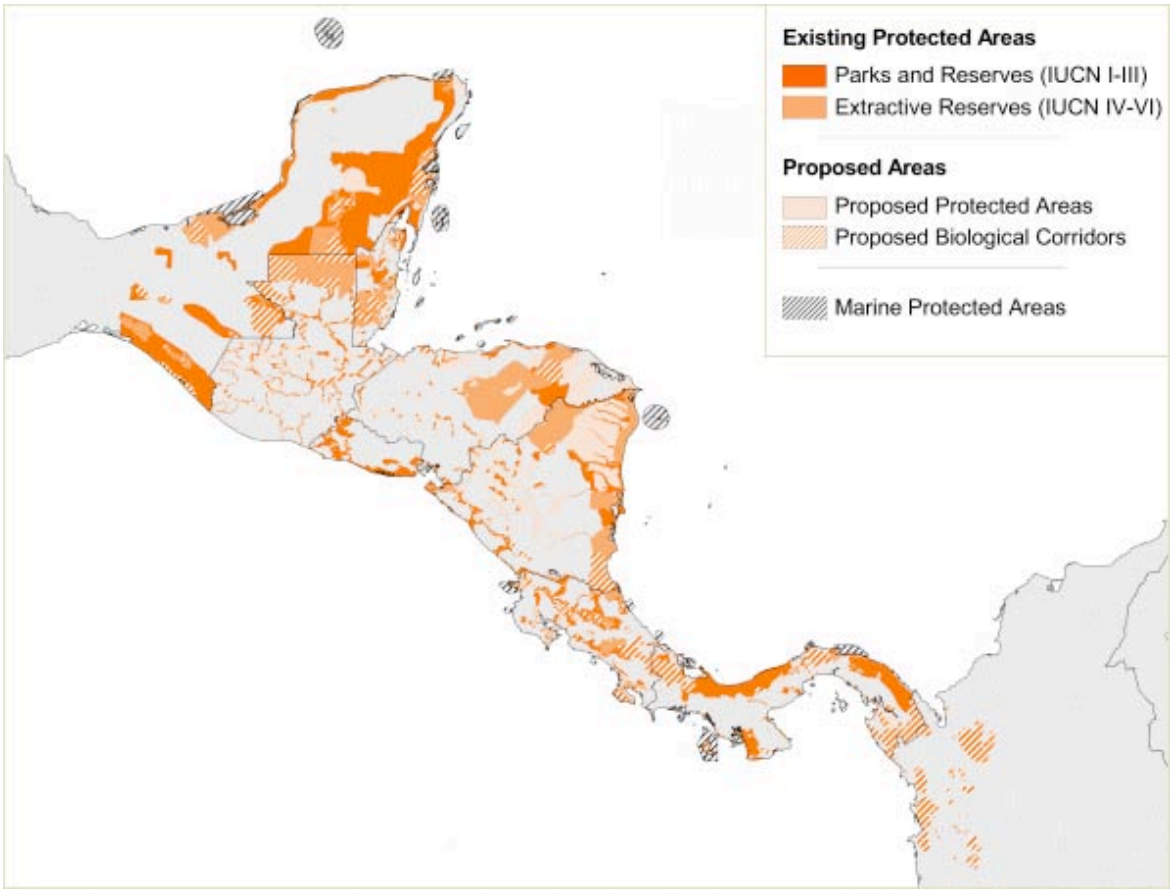

Figure 3: Proposed elements of Mesoamerican Biological Corridor (WRI 2006).

Launched in 1997 by a declaration signed by presidents of the region, the MBC took a significant step forward when it received GEF funding in 2000. The MBC is a cooperative endeavor between all Central American countries and four states of Mexico (Campeche, Chiapas, Quintana Roo and Yucatan). This more narrow delimitation of 'Mesoamerica' leaves aside the highly diverse states of Guerrero, Oaxaca, Puebla, Tabasco and Veracruz. Research and review sponsored by the MBC has generated an insightful overview of biodiversity and of the expansion of official conservation sites in the region (CCAD 2003).

Independently of the MBC, governments in the region had by 2003 had legally declared 597 protected areas covering some 22% of the land area. An additional 160 zones had been proposed for future protected area status. The MBC incorporates the current and proposed protected areas into a territory of 769,000 km^2 that includes more than 60 types of vegetation, 30 ecoregions and a population of more than 34 million people of which nearly nine million are indigenous (CCAD 2003).

Country	Declared protected areas	Total area declared (ha)	% of national territory
Mexico	29	3,890,200	16.5
Belize	59	1,029,109	48
Guatemala	104	2,865,830	26
Honduras	106	2,133,938	18

El Salvador	3	34,313	2
Nicaragua	76	3,012,561	24
Costa Rica	151	1,257,467	25
Panama	69	2,226,017	29
Total	597	16,449,435	

Table 1. Protected Areas of Mesoamerica as defined in the MBC (CCAD 2003)

Responding to interrelated concerns about natural resource degradation, economic development and community well-being, the MBC has launched an ambitious initiative to conserve biodiversity while reducing poverty and reinforcing the economic viability of the countries in the region. These efforts of regional conservation and development have been controversial. Indigenous and local communities continue to be concerned about the implications of the program for traditional forms of land tenure, resource access and landscape management. Conservationists and other observers fear that development – accompanied by increasing market integration and other aspects of globalization – will imply greater resource degradation and economic disparity. Developers object to regulations that reduce their ability to remain competitive in international markets.

Conservation in Mexico

With the overall context of the MBC, Mexico has established its own program to create a *Corredor Biológico Mesoamericano en México* (CBMM). The CBMM comprises five linked corridors, two in Chiapas and three in the Yucatán Peninsula (Ramirez 2003:4). On paper, there is a broad awareness among the governmental and civil society partners of the need to negotiate collaborative management agreements with indigenous and local communities. One of the four basic components of the CBMM vision is participatory design and monitoring of the corridors that leads to community-driven plans for conservation and sustainable use of biodiversity. Among the specific activities that are slated for financing is the design of action plans that include participatory land use planning, designation of specific productive areas for forestry and beekeeping. There is also a concern for promoting successful local practices of sustainable biodiversity use in collaboration with women's group, communities, local governments and NGOs (Ramirez 2003:5).

Mexico also has a strong tradition of creating Biosphere Reserves, which are designated by Unesco under its Programme on Man and the Biosphere (MAB). Currently, the entire World Network of Biosphere Reserves includes 529 biosphere reserves in 105 countries. These protected areas are of special interest to community conservation efforts because, under the Statutory Framework of the World Network of Biosphere Reserves established by Unesco, they are created to "to promote and demonstrate a balanced relationship between humans and the biosphere."

Biosphere Reserve	Year decreed	Size (ha)	Location
Calakmul	1989	723,185	Campeche
Los Petenes	1999	282,858	Campeche
El Triunfo	1990	119,177	Chiapas

La Encrucijada	1995	144,868	Chiapas
La Sepultura	1995	167,310	Chiapas
Selva El Ocote	2000	101,288	Chiapas
Montes Azules	1978	331,200	Chiapas
Lacan-tun	1992	61,874	Chiapas
Volcán Tacaná	2003	6,378	Chiapas
Tehuacan-Cuicatlán	1998	490,187	Oaxaca y Puebla
Banco Chinchorro	1996	144,360	Quintana Roo
Arrecifes de Sian Ka'an	1998	34,927	Quintana Roo
Sian Ka'an	1986	528,148	Quintana Roo
Pantanos de Centla	1992	302,707	Tabasco
Los Tuxtlas	1998	155,122	Veracruz
Ría Lagartos	1999	60,348	Yucatán
Ría Celestún	2000	81,482	Yucatán y Campeche
Total area		3,735,419	

Table 2. Biosphere Reserves in Mexican states in Mesoamerica (CONANP 2007)

Mexico is one of four countries (along with the Russia, Spain and the United States) to have declared 35 or more biosphere reserves (CONANP 2007). Three were created in the late 1970s and four in the 1980s. The pace quickened over the last 17 years, with a total of 19 biosphere reserves designated in the 1990s and an additional 11 since 2000. In Mexico, biospheres are federally recognized sites administrated by the federal National Commission of Protected Natural Areas (*Comisión Nacional de Áreas Naturales Protegidas*, or CONANP).

Seventeen of the Mexican biosphere reserves are found in the nine states included in the broad definition of Mesoamerica, and they cover 37,354 km^2.

The CBMM, Biosphere Reserves and equivalent initiatives in other Mesoamerican countries should be able in theory to incorporate autonomous and officially declared community conserved areas. This would build on the recognition that indigenous and local communities have been creating multiple use ecosystems since prehispanic times, and that many of the contemporary practices constitute appropriate forms of sustainable resource use and landscape management that could enhance regional conservation initiatives (Toledo 2003).

Figure 4. Multiple use agroecosystems in San Pedro Tlatepusco, a Chinantec village of Oaxaca, Mexico

Whether CCAs will be respected in practice remains to be seen as there is much ambiguity and inherent contradiction in the diverse policies towards conservation and indigenous peoples in the region. For example, CONANP defines Mexican Biosphere Reserves in a way that stands in contrast to the international definition: "*Son áreas representativas de uno o más ecosistemas no alterados por la acción del ser humano o que requieran ser preservados y restaurados, en las cuales habitan especies representativas de la biodiversidad nacional, incluyendo a las consideradas endémicas, amenazadas o en peligro de extinction*" [They are areas that represent one or more of the ecosystems unaltered by people or needing to be preserved or restored in which species representative of national biodiversity are found, including ones considered endemic, threatened or in danger of extinction].

Community conserved areas in northern Mesoamerica

Within the IUCN classification of Protected Areas, Community Conserved Areas (CCAs) have been included among the governance categories that cross-cut the more commonly known management types, which range from Strict Nature Reserves to Managed Resource Protected Areas. CCAs are defined as "natural and modified ecosystems including significant biodiversity, ecological services and cultural values voluntarily conserved by concerned indigenous and local communities through customary laws or other effective means". Furthermore, they are characterized by several defining features: (1) "specific indigenous peoples or local communities (sedentary or mobile) are closely 'concerned' about the area (related to them culturally and/or because of livelihoods)'; (2) 'such communities are major players– i.e. hold power (*de jure* or *de facto*) in deciding, implementing and enforcing management decisions' and (3) 'the community voluntary management decisions and efforts achieve conservation results— through intentional conservation or other purposes'.

In Mesoamerica, this broad definition of CCAs comprises a great diversity of conservation initiatives that have ancient roots. CCAs range from localized sacred sites to vast expanses of territory, and from secret to widely publicized areas. Given this breadth of community conservation experience, an exhaustive survey of CCAs in northern Mesoamerica is currently unfeasible.

We have chosen to limit our review to sites – especially in Mexico – which have been recognized by communities, NGOs or academics in some explicit way, including through official governmental processes. We discovered that this process of self-denomination by communities and their collaborators to be much less advanced in Guatemala and largely absent in Belize, although there are indications that interest in community conservation is growing in both countries. Our total inventory now includes 93 sites, but this is surely an underestimation of the current and potential CCAs that merit recognition in the region. The process of publically declaring CCAs is a recent phenomenon, dating from the 1980s until the present.

Box 1. Community Territorial Planning in the Chinantla Alta Communities, Oaxaca (Mexico)

In the Chinantla Alta, deep in the Sierra Norte of Oaxaca, six Chinantec communities created the Regional Committee for Chinantla Alta Natural Resources (CORENCHI) in 2005. Their goal was to improve control of their natural resources, strengthen conservation efforts and obtain more socio-economic benefits from landscape management.

The CORENCHI communities are located in the Papaloapan river basin, between 200 and 2,900 masl. Five belong to the municipality San Felipe Usila: Santa Cruz Tepetotutla, San Antonio de El Barrio, Santiago Tlatepusco, San Pedro Tlatepusco and San Antonio Analco. The sixth community, Nopalera del Rosario, is part of the municipality San Juan Bautista Valle Nacional. The region is famous for its highly diverse tropical forests, which include over 800 inventoried plant species. Notable animal species include jaguar, puma, white tail deer, toucan, wild boar and others.

The nearly 2,000 residents are engaged in agriculture, agroforestry (including shade coffee plantations), extraction of non-timber forest products such as the edible palm called *tepejilote* (*Chamaedorea tepejilote*) and *pita* fiber (*Aechmea magdalenae*), and fish production, particularly in Santiago Tlatepusco. The subsistence and monetary benefits of these activities are supplemented with remittances from the large number of community members who migrate to the United States and urban areas of Mexico in response to persistent socio-economic marginalization.

Community Territorial Planning (CTP) started in Santa Cruz Tepetotutla between 2000 and 2002, with institutional support from the Mexican NGOs Estudios Rurales y Asesoría (ERA) and GeoConservación. The efforts were funded by Forest Resources Conservation and Sustainable Management Project (PROCYMAF) and Integrated Ecosystem Management (MIE). PROCYMAF is a Mexican programme led by the National Forestry Commission and funded by the World Bank, aiming to improve natural resource management and conservation by forestry-based communities and *ejidos,* as well as to raise income generated by forest resource production. MIE is a GEF-PNUD programme implemented in Mexico to protect biodiversity and sustain vital ecological functions in different eco-regions.

GeoConservación provided the technical supervision to extend CTP to the other communities, finishing with Analco and Nopalera de Rosario in 2006. WWF granted some funds for CTP studies and management plans. Separately, the Mexican enterprise *Grupo Modelo* (brewers of Corona and other popular beers) provided financial support for the construction of a biological field station in Santa Cruz Tepetotutla. This external support was in response to local requests – stimulated in part by the intervention of NGOs – for technical and financial assistance.

The CTP process, guided by regular community training workshops, led to proposed statutes on the use and management of natural resources and the demarcation of different land use zones. These include conservation areas – in which land use changes are not allowed – that protect biodiversity and ecosystems, including the maintenance of forest cover and water capture. Official validation of the statutes and land use categories are the responsibility of the general assembly of community members, an important local governance institution.

Parallel to the CTP, the community conservation process was stimulated by environmental services payments from CONAFOR, CCA certification by CONANP, and the Regional Accord for Forest Conservation in the High Chinantla.

The main results achieved by the CORENCHI CTP and these complementary actions are: (1) conservation of more than 26,000 ha of diverse tropical forests; (2) development of a common strategy for environmental services payment; (3) definition of a joint strategy among six communities to preserve common property within their borders; (4) development of strategic productive projects, aiming to strengthen community economy through sustainable resource management; and (5) creation of communal statutes to normalize and regulate the use of and access to common resources.

Following on the success of these measures, the communities are exploring further economic diversification, including through scientific tourism.

Adapted from Pérez, Anta and Mondragón 2006

Status of CCAs

Extent of the CCA phenomenon

The CCA phenomenon in the region is very extensive, especially taking into account the difficult historical conditions and sometimes limited governmental support for community-led organization in the region. According to our sources (literature review, workshops, interviews and field visits) there are 44 CCAs in Oaxaca, some 25 in Quintana Roo, at least two in Chiapas, at least one in Yucatán, 18 in Guatemala and perhaps three in Belize. In Oaxaca alone, the 44 communities engaged in declared community conservation projects comprise a total of 175,000 Ha of community areas, equivalent to 49% of the governmental protected areas and to 1.8% of the overall land surface of the state (Anta and Pérez 2004). In Mexico and Guatemala, we expect exponential growth in CCAs in coming years, but it is unclear if the same trend will appear in Belize.

Primary types of CCAs

In Mexico, we propose a preliminary classification that includes 11 categories of CCAs. We have cast our net relatively widely, including CCAs that are officially recognized at a national level as well as others that are exclusively community-based. We incorporate areas that have been intentionally set aside by communities as conservation areas as well as *de facto* sites such as traditional agro-ecosystems, where conservation of biodiversity is occurring.

Community reserve. Reserves set up by indigenous communities within communal land that may or may not have a legal document supporting the conservation activities. Communities are generally culturally and linguistically self-identified. They have an extensive and delimited territory (although there may be boundary conflicts) and may include one or many localities that have access to communal lands. Each member of the community (*comunero)* has the right to access communal resources and to cultivate personal land. *Comuneros* have the power to make decisions about the management of land and some resources, but the land cannot be sold. A community reserve implies that the community has decided to set aside some land to be conserved through communal administration and management. The reserves are regulated autonomously through the community's own statutes and representative assemblies. The government may recognize the CCA through an informal process set up by CONANP, and there is a new governmental initiative to formalize this recognition. This kind of reserve may include primary forest, enriched secondary forest and agro-ecosystems that constitute a genetic reservoir for domesticated and semi-domesticated plant species. Examples include the Chinantla Alta CCAs, Chimalapas, Mazunte and Sierra de San Felipe in Oaxaca, México (Anta *et al.*1999, Anta 2006; Ramírez n.d.), and Las Cebollas in Guatemala (Roma 2007d).

Ejido reserves. Reserves – that may or may not have a legal document supporting the conservation activities – set up by indigenous or mestizo *ejidos* within communal land. *Ejido* is a Mexican land grant scheme that allows a community of formerly landless farmers

to have access to common land. Each member (*ejidatario)* is allotted personal lands on a household basis, with the possibility of passing the usufruct rights onto his children as long as the land is under relatively continuous cultivation. Similar to members of indigenous communities, *ejidatarios* have the power to make decisions about distribution and management of the land and some of its natural resources, but the land cannot be sold. An *ejido* reserve implies that the community has decided to set aside some land to be conserved, administered and managed communally. The reserves are regulated autonomously through the communities' own statutes and representative assemblies. As with community reserves, the government may recognize the CCA through an informal process set up by CONANP, and there is a new governmental initiative to formalize this recognition. This kind of reserve may include primary forest, enriched secondary forest and agro-ecosystems that constitute a genetic reservoir for domesticated and semi-domesticated plant species. Examples include Mount Tepezcuintle, Nuevo San José Rio Manso and San Rafael Agua Pescadito in Oaxaca, along with *Otoch Ma'ax Yetel Kooh,* a Flora and Fauna Protection Area in Quintana Roo.

Permanent forest areas (PFA). These reserves are found in the state of Quintana Roo, where the process of tropical forest protection has been historically linked to timber and non-timber forest product use. Since the late 1800s, tropical forests in Quintana Roo have been used for the extraction of chicle, the resin from the chicozapote tree (*Manilkara zapota*), which requires maintenance of forest structure and density. During the Agrarian Reform in the 1930s, great extensions of land were granted to chicle-based *ejidos.* PFAs arose during the 1980s, when forestry-based *ejidos,* supported by an innovative National Pilot Forestry Plan, developed a forestry management model which requires sustainable forest management and use by communities (Bray 2004; Kiernan 2000). One of the main aims of PFAs was to avoid conversion of forests to agricultural use. This scheme was enthusiastically adopted by communities and *ejidos*, allowing them to create "official protected zones" as reservoirs of resources and seeds where they could still take decisions on their resources. Currently, the combination of PFAs and official Natural Protected Areas in Quintana Roo cover 30% of the state's area.

Community forest enterprise (CFE) reserves. This is a sub-type of community and *ejido* reserve, based on forest use for timber production to support community livelihoods. In this case, the community sets aside a forest area for protection, or establishes management plans for species or habitat conservation (Bray *et al*. 2003). The set of reserves set up by the Unidad de Comunidades Forestales Zapotecas y Chinantecas Communities (UZACHI) is an example (Anta 1999, Anta and Pérez 2004).

Community association reserve. Several indigenous communities, municipal agencies, or smaller communities belonging to different municipalities come together to conserve and manage areas for natural resource use. In most cases, the motivation that sustains the association is a common goal such as a sustainable community forestry initiative that promotes forest conservation and timber production. A prime example is the Pueblos Mancomunados in Oaxaca, an agrarian community formed by the communities of Amatlán, Lachatao, Yavesía, Benito Juárez, Cuajimoloyas, Llano Grande and Latuvi (Anta and Pérez Delgado 2004 and Anta Fonseca *et al*. 1999).

Sacred natural sites. Symbolic places or sacred natural sites (SNS) where productive activities are restricted, resulting in biodiversity and landscape conservation. Examples include Cerro Rabón and Giéngola in Oaxaca (Anta Fonseca *et al.* 1999).

Cellular reserve. Secondary vegetation areas – with *ejidal*, private or community land tenure – where the main aims are to have plant and animal extraction zones and to establish biological corridors. An example is the experience of Ecosta Yutu Cuii S.S.S. (Anta Fonseca *et al.* 1999, Anta and Pérez 2004).

Wildlife Management Units (Unidades de Manejo de Vida Silvestre or UMAs in Spanish). An official scheme of micro-territorial planning that allows diversification of the production of goods and services from wildlife, while minimizing impact on the ecosystem and biological resources. The main objective of a UMA is the sustainable management and production of specific animal or plant resources for subsistence, commerce, hunting, tourism, academic research or solely for conservation goals. Because they are a recognized unit in Mexican environmental law, established UMAs provide communities with easy access to technical and economic support from state institutions. Although technical support is given to the communities to set up the management plan, the communities make final decisions about resource use. UMAs are an alternative for communities interested in sustainable wildlife use. In Mexico, there are UMAs for collared wild boar, green and black iguana, butterflies, frogs, white tail deer, various bird species, crocodile and pita palm (*Aechmea magdalenae*). A notable experience with UMAs is the Municipal Committee of Flora and Fauna Vigilance (COMUVIAFAF) in Oaxaca (Anta *et al*. 1999, Anta and Pérez 2004).

Agroforestry and agroecology systems. From *milpas* (maize polyculture systems) to shade coffee plantations, the agroecosystems maintained by community members are important reservoirs of biodiversity. Coffee plantations are particularly relevant for conservation as they maintain a highly biodiverse canopy of original tropical forest trees (Bandeira et al. 2005). There are many examples of organic coffee production including San Juan Metaltepec and Santiago Teotlaxco in Oaxaca (Anta *et al*. 1999)

Soil and vegetation conservation area. Although not explicitly recognized as CCAs, these areas are characterized by soil and vegetation conservation and restoration activities. These land management practices can be the result of community territorial planning previous to the implementation of a protection zone.

Autonomous municipal reserves. Conserved areas may be maintained in autonomous municipalities in Oaxaca, Chiapas and other states in Mexico. In Chiapas, for example, autonomous indigenous communities make their own decisions about managing schools, health care, agriculture and resource management. Some communities have formally declared autonomous 'rebel' CCAs through the Zapatista movement (EZLN) and there are other areas of *de facto* community conservation under rebel control. One example is Mount Huitepec in San Cristobal de las Casas, Chiapas.

In Guatemala, there are additional categories of protected spaces that may be tentatively considered CCAs pending further study:

Regional park. Large territories dedicated to nature conservation, usually including territories of several communities within a single municipality. Examples include Los Altos de San Miguel Totonicapán Regional Park and Chuiraxamoló Park in Santa Clara La Laguna.

Multiple use reserve. Further information is needed about sites such as Atitlán Lake, and its potential as a multiple use reserve.

Community biological corridors. Emergent in Guatemala, for example Chimel biological corridor, but requiring further documentation.

Community farm reserve. Community farms were former private extensive farms, granted to indigenous people between mid-1800s and mid-1900s, though some were very recently created when communities were relocated and people displaced as the result of armed conflict. Examples are Finca Pacajal, Finca el Chilar and Finca el Palmar.

The interest in CCAs in Belize is too recent and limited in scope to characterize in a typology.

Predominance of communal and ejidal reserves

A proper analysis of the relative dominance of the various CCA types would require reorganization in spreadsheet or database format of the annexes to this report on individual CCAs, a task we have left for the future. A preliminary overview reveals that, both in terms of number of experiences and overall territory conserved, the communal and *ejidal* reserves dominate the community conservation landscape in Mexico. In Guatemala, community reserves and farm reserves are the most common types of CCAs. For Belize, the creation and analysis of CCAs is too recent and uncertain to allow a definitive answer.

Ancient and recent examples of CCAs

In Mexico, indigenous and some mestizo communities have historically managed their territory in a way that ensures the protection and sustainability of their resources. A long-standing common practice is to maintain a part of their territory in a forested area with minimal human impact. These sites are considered as "reserves" for the future, places to find medicinal plants, seeds and other non-timber forest products. There are many examples of traditional territorial division including protection zones, although this did not have the formal recognition that it has now (Ramírez n/d).

Box 2. Natural Chicle Producers Consortium of Quintana Roo and Campeche (Mexico)

The Natural Chicle Producers Consortium of Quintana Roo and Campeche is an organization that comprises 37 cooperatives from Quintana Roo and Campeche. The extraction of chicle – a natural resin from chicozapote (*Manilkara zapota*), a native tree species - is one of the oldest activities in Quintana Roo and Campeche. It attained particular economic importance in the last 60 years, after large extensions of land were granted to chicle extractors during the Agrarian Reform period in Mexico (1930s-1950s). The chicle producing *ejidos* created in those years contain extensive semi-evergreen tropical forests in which about a quarter of the trees are chicozapotes. Today, most ejidos with chicle extraction activities are also engaged in timber forest management, leading to the maintenance of a total of 254,386 ha of Permanent Forest Areas (PFA).

One of the Consortium's main achievements has been the creation of diverse monetary funds to support mechanisms of social security (medical insurance, loans, pensions, etc.) and financing mechanisms used to pay for technical and administrative services. The Consortium has also promoted studies of chicle sustainable management, taking into account market projections and estimated demand. The research has demonstrated that traditional chicle extraction activities have not caused deleterious impacts on individual trees or the forest in general.

Adapted from Anta and Pérez 2006

There are also many ancient sites with ritual importance recognized by community members, although only a few of them are registered in the literature. Some examples are the symbolic sites of Cerro Rabón, Mount Giéngola and Mount Huatulco, protected from the impact of productive activities by indigenous communities due to their religious and cultural importance (Anta *et al.* 1999). Nevertheless, most of the explicit CCA experiences in the region are new. In the 1980s, many communities developed forestry enterprises. The late 1990s and early 2000s witnessed an emergent interest in Community Territorial Planning (CTP) with the support of government agencies and local and international NGOs. Often, CCAs arise after an NGO has guided the community through a CTP process or helped to develop a forestry enterprise (Anta and Pérez 2004).

In Guatemala, there have been traditional conservation practices related to the cultural, biological, religious or material importance of natural landscapes and resources. For example, people used to ask the permission of the forest before entering, and to perform ceremonies to apologize before cutting any tree. These ancient conservation practices were disrupted to some extent during the armed conflict that the country suffered from the 1970s until the mid-1990s. Local and indigenous people were persecuted and the forest was degraded (Roma 2007b, 2007c).

There are at least two examples of existing CCAs established in the mid-1800s in Guatemala (Sicaché and San Miguel Uspantán, Quiché). There are also advanced experiences comprising important communal forestry experiences from the early 1970s that have developed into consolidated and strong organizational structures with significant human resources.

Among the most recent examples of community conserved areas in Guatemala is La Gloria in San Miguel Uspatán, Quiché, where proper forest conservation began in 1998 after a

severe drought affected the San Antonio River and the forest. In 2006 the forest was officially registered as a protected area, in part to obtain economic incentives.

Table 3 summarizes the size, biodiversity value and governance of the proposed CCA types. Data on biodiversity values are necessarily general in this broad overview, but specific information on biodiversity and ecological processes are available for some communities in our database that have been studied by external and community researchers.

CCA type	Typical size	Biodiversity value	Governance
Community reserve	Very variable, from 100 to 8 000 ha, with an estimated average of 3000 ha.	In general: A great diversity of plant and animal species inhabit the communal territory. In most cases these reserves are covered with different kinds of temperate and tropical forest and diverse cultural landscapes. External researchers have conducted species inventories and ecological studies of certain resources in some communities.	Indigenous communities in Mexico have access to communal land in addition to household land. Every *comunero* has rights over resource use on household plots. There is a community assembly (*asamblea*) which controls use and management of communal land resources. Most community reserves have been set up in the last 20 years, often following on CTP and communal forestry initiatives. In Guatemala – similar to Mexico – decisions are made in community assemblies.
Ejidal reserve	Very variable, from 100 to 8000 ha, with an estimated average of 3000 ha.	As in the general case	*Ejidos* in Mexico have communal land in addition to household land. Every *ejidatario* has rights over resource use on household land, and there is an *ejidal* assembly that takes decisions on use and management of communal land resources. Most of *ejido* reserves have been set up in the last 20 years.
Community forest enterprise reserve	Very variable, from 200 to 16,000 ha, with an average of 4,800 ha.	Mainly conifer and oak forest with associated biodiversity and cultural landscapes.	The community assembly and an enterprise board manage the community enterprises. Many CFEs have been set up in the last 30 years.
Community association reserve	Very variable, from 6 to 11,700 ha.	As in the general case	The members of the association make decisions on the basis of community statutes, association statutes and assembly decisions. Most reserves have been established within the last 15 years.
Sacred Natural Sites	Variable, from very localized areas of a few ha to larger sites of 7,000 to 11,500 ha	As in the general case. Diverse cultural landscapes of sacred and symbolic significance are present and there is speculation and some evidence that these are higher in biodiversity than neighboring areas.	Community assembly and statutes guide decision making. Symbolic sites have been traditionally managed presumably since the first people became established in the region.
Cellular reserve	From 0.25 to 300 ha	As in the general case, although in most cases the sites are covered by secondary forest.	Community assemblies and statutes guide decision making. Most cases have been in existence for less than 10 years.
Permanent	Variable, ranging	A great diversity of plant and	PFAs, as *ejidos*, have communal

CCA type	Typical size	Biodiversity value	Governance
Forest Areas	from 8,750 ha to 250,000 ha, with an average of over 80,000 ha	animal species found in tropical forests. Precious hardwood and softwood species are of particular interest because of their economic importance. *Manilkara zapota,* the chicle tree is a common and important species in the area.	land in addition to household land. Every *ejidatario* has rights over resource use on household land, and there is an *ejidal* assembly that takes decisions on use and management of communal land and resources. Permanent Forest Areas are part of communal lands.
Wildlife management unit	Very variable, from 2.5 to 800 ha.	The conservation activities are focused on the management of a few animal or plant species, but this supports the overall diversity of the entire ecosystem.	Community assemblies and statutes guide decision making. Most cases have been in existence for less than 10 years.
Agroforestry and agroecology systems	Variable household plots; mosaics of individual smallholdings in some communities may contain more than 250 ha	Apart from the significant diversity of shade trees in coffee plantations, there are various species of birds, small mammals, insects and associated flora which benefit from this agroforestry system. There is significant agrobiodiversity in *milpas* (maize polyculture systems).	Individual smallholder decision making on a household level guided by community assemblies and statutes. This mode of conservation has been in existence since pre-Hispanic times and was enhanced when coffee was introduced as a cash crop to the region in the 19th century.
Soil and vegetation conservation area	Very variable, from 4 to 450 ha.	As in the general case	Traditional mode of resource management guided by custom and more recently community assemblies and statutes.
Autonomous municipal CCAs	One declared site covers 100 ha while the informal ones are highly variable	As in the general case	As Zapatista indigenous communities, they rule natural resource management through “good government boards”, established in 2000.
Regional park	Variable between 1000 and 10,000 ha	A great diversity of plant and animal species inhabiting the municipal territory, which is covered by different tropical forest types.	The Community Association, from different communities or *cantones*, makes decisions during assemblies. Regional Parks are relatively new mechanisms (less than 10 years old) that formalize recognition of ancient conservation practices.
Community biological corridor	About 5,000 ha.	As for ‘regional park’ above	Decision making is by assemblies called by the directive board and made up of selected several community members. This form of association for conservation is relatively new (dating to less than 10 years ago) and it could be seen as a formal way to recognize ancient conservation practices.
Community farm reserve	Variable, between 3 and 160 ha with an average of 71 ha.	As for ‘regional park’ above	The community assembly through a directive board guides decision making. The establishment of community farms and their conservation practices began in the mid 1800s, though there are very recent examples of the creation of

CCA type	Typical size	Biodiversity value	Governance
			new farms.

Table 3. Typical size, biodiversity value and governance settings of Mesoamerican CCAs

Location and justification of CCAs

The question of why different CCAs exist in various areas merits a deeper analysis of the contemporary and historical conditions that have created incentives for community conservation in Mesoamerica. As a preliminary step, we can differentiate the various types of CCA in part by their location and objectives as follows:

Community reserve. Found in indigenous communal land, generally in areas where protection has taken place from ancient times, but also in places identified after CTP exercises. CCAs are a land use form that may complement or substitute community forestry initiatives. Some communities have obtained payments for ecosystem services (PES), providing an economic incentive for the establishment and maintenance of CCAs.

Ejido reserves. Found in *ejidal* communal lands, sometimes in places where protection has taken place from ancient times, but mostly in places defined according to technical parameters identified during CTP exercises. These reserves are a land use form that may complement or substitute community forestry initiatives.

Permanent forest areas. These productive reserves are found in the tropical lowland forests of Quintana Roo. They have been set up to allow communities to engage in the harvest of not only chicle resin but also valuable hardwoods such as mahogany (*Swietenia macrophylla*) and cedar (*Cedrela odorata*). Revenues from these products are growing steadily, providing community members with increased income and the incentive to sustainably manage the forests (Guillén 2002).

Community forest enterprise reserve. Set up in areas of timber production where communities need a reserve of strong and healthy tree populations to provide sustainable biomass offtake and genetic material for regeneration of the productive areas. These reserves were established after indigenous and mestizo communities won the right to manage their own forest resources in the early 1980s. They respond to communities' need for monetary income from their lands in addition to subsistence production, remittances and income from other sources.

Box 3. Ejidal Timber Forest Producers of Quintana Roo (Mexico)

The Southern Society of Timber Forest Producers, known by its Spanish acronym SPFEQROO, is an organization of forestry-oriented *ejidos* that was created in 1986 as part of the Forestry Pilot Plan of Quintana Roo. The Plan, in its commitment to conservation and long-term forest use, aimed to put land owners in charge of the administration and management of forest resources in Permanent Forest Areas (PFA). Anta and Pérez argue that the Pilot Plan succeeded thanks to the openness of federal and Quintana Roo state authorities who promoted this management scheme and provided economic resources to support it.

SPFEQROO currently includes 1,914 people from nine forestry-oriented *ejidos* in Othón P. Blanco municipality, which covers a total area of 262,708 ha. These *ejidos* (Caoba, Chacchoben, Francisco Botes, Divorciados, Manuel Ávila Camacho, Nueva Guadalajara, Plan de la Noria, Petcacab and Tres Garantías) manage 138,580 ha of PFA. Three of the nine *ejidos* (Petcacab, Tres Garantías and Caoba) have obtained certification for good forest management from Rainforest Alliance-Smartwood, following Forest Stewardship Council (FSC) principles.

Besides PFAs, Tres Garantías and Caoba have Wildlife Management Units (UMAs), while Petcacab, Caoba, Chacchoben, Botes and Nueva Guadalajara promote ecotourism on their lands.

Adapted from Anta and Pérez 2006

Community association reserve . Found in joint communal land from several communities (such as municipal agencies) these reserves allow communities to jointly manage resources for the greater good.

Sacred natural sites. Found in ancient protected places with a strong symbolic or sacred significance, where rituals take place or took place in the past. These areas are culturally important, and may continue to play a role in maintaining syncretic religious traditions.

Cellular reserve. Located in *ejidal,* private or community land, these reserves have been created to maintain or restore secondary forests and to increase wildlife that can be sustainably harvested for monetary or subsistence benefits.

Wildlife Management Units (UMA in Spanish). These relatively small reserves can be found in any kind of land owning scheme (communal, *ejidal* or private land). They provide one way for communities to use animals and plants in a sustainable way with explicit approval of the national government.

Agroforestry and agroecology systems. Found in agrarian communities or *ejidos,* these are productive reserves that allow communities to cultivate and manage a diversity of resources for subsistence and commercial purposes. In coffee plantations, the primary goal is to produce coffee – increasingly certified as organic – but the overall productivity includes a broad range of non-timber forest products.

Soil and vegetation conservation area. Set up in communal or *ejido* land with high population density or intensive levels of use, these reserves are created to ameliorate ecological disturbance, particularly erosion.
Autonomous municipal reserves. Found in autonomous municipalities in Chiapas, they are part of an overall movement of resisting the power of national and state authorities. Ecological reserves are part of an overall mosaic of civic action that include independent schools, health care, governance and agricultural production.

Apart from the specific incentives noted above, CCAs share general motivations that cross-cut the various initiatives (Anta 2006, Anta 2006c, Anta *et al*. 1999, Anta and Pérez 2004, Chapela 2006, Pérez *et al*. 2006, Roma 2007b, Roma 2007d, Toledo 2005). The following objectives will be further described and analyzed in an expanded report:

- Conserve biological resources
- Create small scale biological corridors
- Establish living seeds banks, useful species extraction, animal breeding areas, and natural heritage conservation sites
- Provide norms for the regulation of natural resource access and use
- Improve livelihoods through sustainable use of natural resources
- Maintain timber reservoirs that enable efficient forestry production
- Contribute to governmental initiatives, through the Natural Protected Areas National Commission (CONANP), whose main aim is to increase the national conservation area
- Obtain financial support from government agencies rewarding conservation activities through payment for ecosystem services and other mechanisms
- Fulfill international principles and criteria, such as those upheld by the Forest Stewardship Council (FSC), through which communities aim to sustainably use the resources in High Conservation Value Forests
- Ensure environmental services relevant to communities such as water capture
- Follow international or national guidelines of land management, for example through CTP exercises
- Establish better control of territories and access to natural resources, especially in the case of reserves based on CTP processes and those in autonomous municipalities
- Achieve more community and external involvement, education and research
- Protect sacred sites
- Set aside recreation areas for local people and tourists
- Recover areas damaged because of armed conflict, in the particular case of Guatemala

Status and sustainability

Community conserved areas, in all of their diversity, are growing in strength in the region. In general, national government policies in Mexico (and increasingly Guatemala) encourage the creation and recognition of community conservation experiences in order to increase the total area under protection. When well administered and funded, CCAs are likely to survive in the long run, and proactive government support can enhance their number and longevity.

Within this generally positive ambience, the official reaction to some CCAs has ranged from benign neglect to potential opposition. The attitude of the national and state government depends on the political situation of the community, and its historical and social context. CCAs may be barely surviving in some communities marked by poverty, weak social cohesion and deficient external economic and technical support.

Indigenous autonomy movements are a strong trend in Mesoamerica, particularly in Chiapas and Oaxaca. In these cases, CCAs are embedded in a wider struggle for liberty, democracy, justice, land tenure, control of natural resources, production, knowledge, technology, education and culture (Toledo 2005). The Mexican government has had a *de facto* opposition to these movements and the autonomous municipal CCAs they create, particularly in Chiapas (for example in the Mount Huitepec reserve).

Allies and external support

Northern Mesoamerican CCAs have had external support since the emergence of Community Conservation Area as a recognized conservation strategy. Many would not exist today as explicit CCAs without the intervention of outside actors, including national and international NGOs along with some government agencies and individuals.

Anta Fonseca (2006) and Chapela Mendoza (2006) have noted that support in Mexico comes from:

- environmental NGOs and community development consultants who promote sustainable use of natural resources and improvement of local livelihoods, through a participatory approach. In Oaxaca, the main NGOs involved in CCA experiences are: ERA, Geo-Conservación, GAIA, SERBO, IDESMAC, Grupo Mesófilo, Maderas del Pueblo del Sureste (MPS), Pronatura-Chiapas, and – also in Chiapas – the San Agustín Pro Human Rights Centre;
- committed academic and research institutes such as PAIR-UNAM and the Instituto Tecnológico Agropecuario de Oaxaca (ITAO);
- federal government agencies, such as SEMARNAT, INE, CONABIO, COINBIO, and CONANP whose goals include increasing the overall amount and coverage of protected areas, in part by financial and technical support to communities;
- international development agencies that give financial support, in particular the Global Environment Fund (GEF);
- private sector agencies interested in conservation and research activities, which give financial support.

The NGOs and technical agencies identified as local CCA allies embrace participatory methodologies. They consider that recognition of the land legally owned or controlled *de facto* by a community to be a necessary prerequisite to the creation of community technical boards. They always prioritize community decision making mechanisms (Lara 2006).

Another incentive to promote CCAs in the region is the Mesoamerican Biological Corridor and its strategy for sustainable regional development (see www.biomeso.net, the official CBM website in Spanish for details and www.cbmm.gob.mx for specifically Mexican

initiatives). In Mexico, the stated CBM strategy includes (1) strengthening local capacity to use sustainably natural resources and (2) channeling government resources to support community biodiversity conservation initiatives (Ramírez 2003).
In Guatemala (Roma 2007a, 2007b, 2007c, 2007d), support comes from:

Local and international NGOs, such as Community Forestry Net Utz´ Ché, Eastern Cooperatives and Associations Society (COASO), Cho'rti' Campesino Regional Association (ASORECH) through the Process of Environmental Self-Administration for the Cho'rti' Region (PROAM), ProPetén Foundation, Jupilingo-Las Cebollas project, MIRAS, Vivamos Mejor, Peace Corps, Amigos del Bosque, Hunahpú Foundation, FENOTUGUA, Vivamos Mejor, Private Natural Reserves Association of Guatemala (ARNPG), The Nature Conservancy (TNC), Solar Foundation, Aprobasank in Chisec, Alta Ulew Che'Já in Totonicapán, Itzamná Association in Belize; Well-Being in Action Association (APROBA), Saaq' Aach'ool Nimla K'aleb ál (Community harmony in q'equi') Association, Human and Environment Integral Development Foundation Calmecac, Nature Defensors Foundation (FDN), Cubulco Indigenous Community, Intervida (from Spain), and Movimondo (from Italy).

National government agencies and projects such as Indigenous Peoples and Civil Society Union-Upisc belonging to the National Protected Areas Commission; National Forestry Program; Guatemala Tourism Commission (INGUAT); National Forests Institute (INAB) and its projects: Municipal and Communal Forestry Strengthening Project (BOSCOM), Forestry Incentives Program for Reforestation and Conservation of Natural Forests, (PINFOR); Forestry Incentives Program for Small Property Owners (PINPEP); Forests and Water for Concordia Project; ProFruta project; National Fund for Nature Conservancy (FONACON); Agriculture, Cattle and Food Ministry (MAGA) through the Program of Support for Productive and Agriculture Conversion (PARPA); National Electricity Institute; Social Work Secretariat (SOSEP); Nature Protection Direction (DIPRONA), Tikal National Park; and Community Tourism Federation.

Regional governments and agencies such as Government of Petén Department; Quezaltepeque, San Miguel Uspantán, Palín, Santa Clara La Laguna, Cubulco, Chisec, Santa Catarina Ixtahuacán, San José, Flores, San Pedro La Laguna, San Juan La Laguna, Cobán, San Lucas Tolimán and Quesada municipalities; Board of Directors of El Palmar; Community Development Commitee (COCODE); and Sustainable Management of Atitlan Lake Basin Authority (AMSCLAE).

International agencies, such as Central American Coordinating Indigenous and *Campesino* Agrofoestry Association (Acicafoc), Global Alliance on Community Forestry (AGFC), FAO, International Association of Tropical Wood (OIMT), Ford Foundation, the Netherlands government, World Bank, European Union, Soros foundation, and British Embassy in Guatemala.

Academic centers, such as Centre for Tropical Agronomy Research and Teaching (CATIE), Latin American Faculty of Social Sciences (FLACSO), Rafael Landívar University (URL),

San Carlos University of Guatemala, and National Central Agriculture School, del Valle University; Conservation Studies Centre (CECON).

Threats to CCAs

In Mexico and Guatemala, community conservation, territorial planning and forest enterprises are part of a larger territorial control and livelihood improvement strategy. Unfortunately, efforts to conserve and manage resources by communities are sometimes threatened by particular social actors as follows (Ruiz *et al*. 2003; Roma 2007a, 2007b, 2007c; Bartra n/d, Lara 2006, Ramos 2005):

- Private economic interests in resources and territories
- Individuals' interests over collective rights
- Illegal hunters and poachers
- Commercial foresters
- Cattle farmers with insufficient control over grazing and fires
- National government large scale development projects which negatively influence social conditions of people and communities
- Regional and municipal governments projects established without environmental and social responsibility
- Corrupt leaders
- Private companies, local politicians (*caciques)* and neighboring communities with the support of political factions within local, regional and national government that promote conflicts within communities or regions
- Researchers, government employees and politicians who attempt to manipulate communities to reach a hidden agenda, sometimes through the use of putative 'participatory methods'
- Financing agencies which fail to fulfill their original commitments
- Government agencies and their representatives, technicians and consultants who consider that human activity is invariably a source of disturbance and a threat to ecosystem stability and therefore seek to displace local communities from conservation areas
- Drug traffic and organized crime
- Particularly in Guatemala, some resettled communities and former members of People in Resistance Communities (CPR) who have destroyed the forest due to their lack of traditional adaptive knowledge
- Also in Guatemala, National Land Funds (FONTIERRAS) is seen as a threat, because of their past tendency to distribute lands before appropriate study

Intra-regional CCA differences

Many differences in presence and status have been outlined in preceding sections. Regarding formal acceptance, in Mexico there are legal ways to recognize and support CCAs, whereas in Guatemala there are as yet no mechanisms to recognize them as community efforts. In Belize, the concept of community land and resource schemes is

significantly different from its Spanish-speaking neighbors. According to First Peoples Worldwide, an international NGO led by indigenous peoples, the Government of Belize does not grant official titles for Maya territories, although local people recognize which lands belongs to a particular community. It notes (First Peoples Worldwide 2007a:1) that historically, "the Government of Belize has denied the Maya rights to their land because original British colonial explorers claimed there were no people living in the area when they arrived. For years the Government systematically denied the Maya rights to their land by claiming that all Maya residents were Guatemalan immigrants." The Government has recently created nine Maya reserves that cover a little over 30,000 ha of land. This accounts for less than 16% of the nearly 197,000 ha claimed by the Toledo Maya Cultural Council.

The lack of secure land and resource tenure has probably inhibited a similar development of CCAs in Belize. We have been able to identify only three putative CCAs, Slate Creek Preserve, Community Baboon Sanctuary and Noj Kaax Meen Elijio Panti National Park, and their status needs to be further documented.

There are hopeful signs that a CCA movement could develop in the near future. Some indigenous communities, in collaboration with international and national NGOs, are involved in autonomous mapping experiences that are clarifying their land claims. In April 2007, some Maya communities sought legal recourse in the Supreme Court to obtain legal communal land titles (First Peoples Worldwide 2007a). In October 2007, as a result of this unprecedented lawsuit, the Supreme Court of Belize recognized the Aboriginal land claims of the Maya under provisions of Belize's constitution (First Peoples Worldwide 2007b). This ruling sets a precedent that will likely encourage other communities to follow a similar path towards recognition of their land and resource rights. Other communities are participating in collaborative management experiences which are encouraging community conservation initiatives, especially in the south of the country. These developments could favor the formal designation of community conserved areas on indigenous lands in the future.

Box 4. Collaborative management in Belize: a precursor to Community Conserved Areas?

In Belize, co-management initiatives arose when indigenous peoples sought a more active role in the management of recently created protected areas such as the Sarstoon Temash National Park. Established in 1994, the park includes some 16,500 ha of broadleaf, wetland and mangrove forest on lands traditionally used by the Garifuna and Maya communities who live in the area. In 1997, the communities around the park came together to stake a claim in the management of the land and natural resources in and around the park. They formed the Sarstoon Temash National Park Steering Committee, which later became formalized as the Sarstoon Temash Institute for Indigenous Management (SATIIM).

SATIIM has won the right, as a community based indigenous environmental organization, to co-manage the Park with the Belizean Forestry Department. The governance arrangement is described on the SATIIM website:

> "SATIIM's Board of Directors is made up of five elected community representatives, one from each of the buffer zone communities: Barranco, Midway, Sunday Wood, Conejo and Crique Sarco. In addition, representatives from the Q'eqchi Council of Belize, the Toledo Alcaldes Association and the Garifuna National Council have seats on the Board, with representatives chosen and appointed by those organizations. The Forest Department represents the Belizean government on the Board of Directors. The elected Board members serve two year periods and are elected at the General Gatherings, an event held every two years with all interested community members. This general assembly also decides overall policy and the strategic direction of the organization."

SATIIM's stated mission is "To safeguard the ecological integrity of the Sarstoon-Temash region and employ its resources in an environmentally sound manner for the economic, social, cultural, and spiritual well-being of its indigenous people."

The stated objectives of SATIIM are:

- "To protect the ecological integrity and cultural values of the Sarstoon Temash region;
- To develop and implement a park management strategy that recognizes the historical and ongoing relationship between the Garifuna and Maya Indigenous communities and the land and resources of the national park.
- To develop and implement a regional land management strategy for the indigenous communities.
- To facilitate community participation in regional conservation / natural resource management and development initiatives.
- To develop alternative conservation strategies that engages and benefits indigenous people.
- To encourage sustainable agricultural systems and environmentally sound economic alternatives"

Although SATIIM is currently occupied with urgent conservation issues, such as the threat of oil exploration and development in park and community lands, its approach could create a favorable ambience for the designation of community conserved areas in the future.

Information retrieved on 6 January 2008 from the SATIIM website www.satiim.org.bz

Legislation and policy

Legal and policy framework for CCAs

All three countries have recourse to international policy instruments for recognition of community conserved areas, including the Convention on Biological Diversity and ILO Convention 169 among others. Both national governments and local communities have been guided by these agreements when proposing CCAs. Below we discuss some of the specific national and state level mechanisms for recognizing and supporting CCAs in the various countries.

Mexico

In Mexico there are legal mechanisms to certify CCAs through the National Commission for Biodiversity Knowledge and Use (CONABIO in Spanish). However, certifying CCAs is not an official policy and does not have very clear guidelines that communities can easily follow.

In the cases where certification has taken place it is primarily a result of community and NGO pressure rather than a government initiative. In the first case of CCA certification, an area proposed by the community of Santa María Guienagati in Oaxaca in 2003 was recognized as a "conservation zone" by the National Commission of Natural Protected Areas (CONANP). Guienagati conducted a CTP in 2000 and 2001, which defined specific conservation, use, restoration and protection zones. After this experience, the community asked CONANP to certify the proposed zones. CONANP certification has allowed the community to receive economic assistance and support for other local initiatives, such as small scale economic development projects (Anta 2006a).

Other legal and financial instruments to recognize CCAs and stimulate their establishment that merit further analysis are:

- Certification of specific areas based on a Forestry Management Plan made according to Forest Stewardship Council guidelines
- Recognition of conservation zones proposed in Community Territorial Planning
- Areas approved for compensation under Payment for Ecological Services agreements

The National General Law on Ecological Equilibrium and Environmental Protection provides additional legal means of supporting CCAs. Article 59 states that indigenous communities and social organizations can voluntarily designate their land (or part of it) for the conservation of ecosystems and biodiversity. They can ask the Environment and Natural Resources Secretariat (SEMARNAT in Spanish) for legal recognition of the protected areas as productive lands set aside for the public interest. Moreover, Article 64bis establishes that SEMARNAT, in conjunction with the National Tax Secretariat and the state and municipal governments, will establish necessary economic and fiscal incentives for individuals and social, public or private organizations participating in the administration and monitoring of natural protected areas (Bartra n/d).

In the particular case of Oaxaca, where many CCAs are found, there are additional governmental agencies that have been involved in some form of CCA recognition, such as the State government and the National Forestry Commission (CONAFOR in Spanish). These agencies have encouraged the creation of the State's System for the Natural Areas Conservation Consultative Council (CC-SECAN) which has been working in part to foster local and regional initiatives defined by communities and their assemblies. This has promoted the participation of a variety of stakeholders interested in conservation activities (Anta *et al*. 1999). Oaxaca's Ecological Equilibrium Law establishes that the State will create agreements with *campesino* and rural communities to establish, administer and manage natural protected areas, making them eligible for technical ecological training (LEEEO 1991).

Ninety percent of Oaxaca State's forests (and a smaller but significant percentage in the rest of Mexico, but not in Guatemala and Belize) are the legal and constitutionally recognized property of indigenous communities (Anta *et al*. 1999). Consequently the State has recognized the indigenous communities' right to manage their forests, especially since the onset of ambitious community forestry initiatives in the 1980s.

Throughout Mexico and with particular intensity in Oaxaca, Semarnat has an active policy to promote and recognize the UMA type of CCA in coordination with other objectives that target the creation of large biological corridors. The National Tax Secretariat and the National Agrarian Register are other government agencies that legally recognize the rights of community organizations to own, manage and take decisions about their resources (Solís *et al*. 2003)

Areas designated through the Community Territorial Planning process have been recognized and regulated by Semarnat due to their importance in achieving good forestry management and obtaining environmental services payments (Chapela 2006).

These complex legal mechanisms to certify and regulate CCAs are not always easy to implement in practice. There are, for instance, countercurrents of social exclusion of local and indigenous communities and lack of recognition of the value of traditional knowledge and indigenous people's rights to land (Solís *et al*. n/d).

Guatemala

The legal framework through which Guatemala can officially recognize CCAs as indigenous territories and their respective rights includes the National Political Constitution, Decree 9-96 (ratification of ILO 169), Decree 5-95 (ratification of CBD), and Peace Accords Law (Decree 52-2005). Other legal tools relevant to CCAs are the Forestry Law (1996), Guatemala Forestry Policy (1998) and the General Decentralization Law (2002). On a local level, Urban and Rural Development Councils can grant more autonomy to communities to take decisions, guided by Municipal Codes (2002) (Roma 2007d).

In practice, the national government has shown some interest in integrating the non-governmental sector in natural protected areas administration, through participatory management or administrative concessions (Solís *et al.* 2003). There is legal support though the Protected Areas Law for *de facto* agreements that legally accredit specific NGOs to manage some protected areas (Solís *et al.* 2003).

When a group of people declare any property as a protected area, they officially maintain their rights over the land. The government recognizes that the land is being conserved for the benefit of society, and the communities can gain access to financial resources. The declaration of any area as protected can be set aside by land owners when they consider it pertinent to do so (Roma 2007d).

As in Mexico, there are strong countercurrents of social exclusion of local and indigenous communities and lack of recognition of the value of traditional knowledge and indigenous people's rights to their land (Solís *et al.*n/d).

Belize

The National Parks System Law recognizes *de facto* agreements made in protected areas that involve the community or an NGO in preparing an Action Plan that includes a proposal outlining their participation in protected area management (Solís *et al*. 2003). Currently, these *de facto* agreements govern collaborative management arrangements rather than CCAs *per se*.

Legal recognition of CCAs and inclusion in national protected area systems

None of the countries included in this study currently includes CCAs as part of their national protected area system, but there are some ways to legally recognize CCAs as conservation experiences.

In Mexico, for example, there are three ways of certifying CCAs and their activities:

- Direct certification, as in the case of Santa María Guienagati, certified as a "conservation zone" by CONANP
- Registration as Wildlife Management Units (UMAs);
- Recognized as areas with Community Territorial Planning (CTP) that include some zones destined for biodiversity protection.

In Guatemala and Belize, we were unable to find similar mechanisms for including CCAs in the National protected area system.

Legal and policy developments related to the Programme of Work on Protected Areas of the CBD

Mexico, Guatemala and Belize have ratified the Convention on Biological Diversity. As participants in the Global UNDP/GEF/UNOPS Initiative, they are eligible to apply for assistance under the "Supporting Country Action on the CBD Programme of Work on Protected Areas (PWPA)" project, which offers GEF funding plus co-financing to support country-driven action to establish comprehensive, ecologically-representative and effectively-managed national and regional systems of protected areas. Only Belize is candidate to apply as a "least developed country" (Global UNDP/GEF/UNOPS Project 2007).

In 1999, the GEF Small Grants Programme (SGP) along with the United Nations Foundation (UNF) launched a partnership initiative entitled 'Community Management of Protected Areas for Conservation' (COMPACT). In the context of the PWPA, the main objective of COMPACT has been to demonstrate how initiatives based on collaboration with local and indigenous groups can significantly increase the effectiveness of biodiversity conservation in globally significant protected areas including natural World Heritage Sites,

Biosphere Reserves, Ramsar sites, and globally important marine coral reefs (GEF SGP-COMPACT webpage).

Although extensive consultations with communities have been conducted, the COMPACT initiative is primarily working on governmental protected areas – not CCAs – in Mesoamerica: Sian Ka'an in Quintana Roo, Mexico, and the Belize Barrier Reef System. Sian Ka'an is a Biosphere Reserve in which 94% of the lands are under federal ownership (GEF SGP Central Programme Management Team 2004). In Guatemala, there has been some general support for the implementation of the PWPA, but only related to private protected areas (www.cbd.int/doc/world/gt/gt-nr-gti-en.pdf).

It would appear that the lack of experiences under the PWPA directly related to CCAs is partly due to the lack of interest from federal and states authorities to open more opportunities for community capacity building in relation to natural resources conservation.

Analysis

Effectiveness of CCA types for the conservation of biodiversity

In line with current debate about the comparative success of CCAs and government protected areas, the assessment of effectiveness should be carried out on a case-by-case basis according to established criteria. One suggestion has been to monitor the resilience of specific protected areas, although the precise parameters for assessment have not yet been agreed upon.

In the absence of a systemic review, we would venture that community reserves appear to be most effective since they are based on ancient land management and conservation practices that protect biodiversity, ecosystems and environmental services. In addition to satisfying basic needs for local communities, landscapes have a strong relationship with the cosmovision of particular ethnic groups, which implies that taking care of the forest brings spiritual and cultural rewards.

Examples of resilient community reserves are CORENCHI CCAs in Chinantla Alta region in Oaxaca, which include traditionally dedicated protection zones for the "Lord of the Forest", and the Todos Santos Cuchumatán Forest Reserve in Guatemala. A similar situation is found within the Community Farm Reserves in Guatemala, in which the traditional land use and management has historically matched protection of resources. Examples include Finca San Bernardino and Finca El Palmar.

Community Forest Enterprise reserves are also effective because they effectively meet the subsistence and financial needs of the communities involved. This also applies to *ejidal* reserves and community association reserves where providing permanent productive areas is the main conservation objective. An example of successful enterprise community reserve is the Community Union for Agricultural Production, Industrialization and Commercialization, Ixeco, which includes the communities of San Juan Bautista Jayacatlán, Nuevo Zoquiapam, San Miguel Aloapam, San Juan Bautista Maninanltepec in Oaxaca.

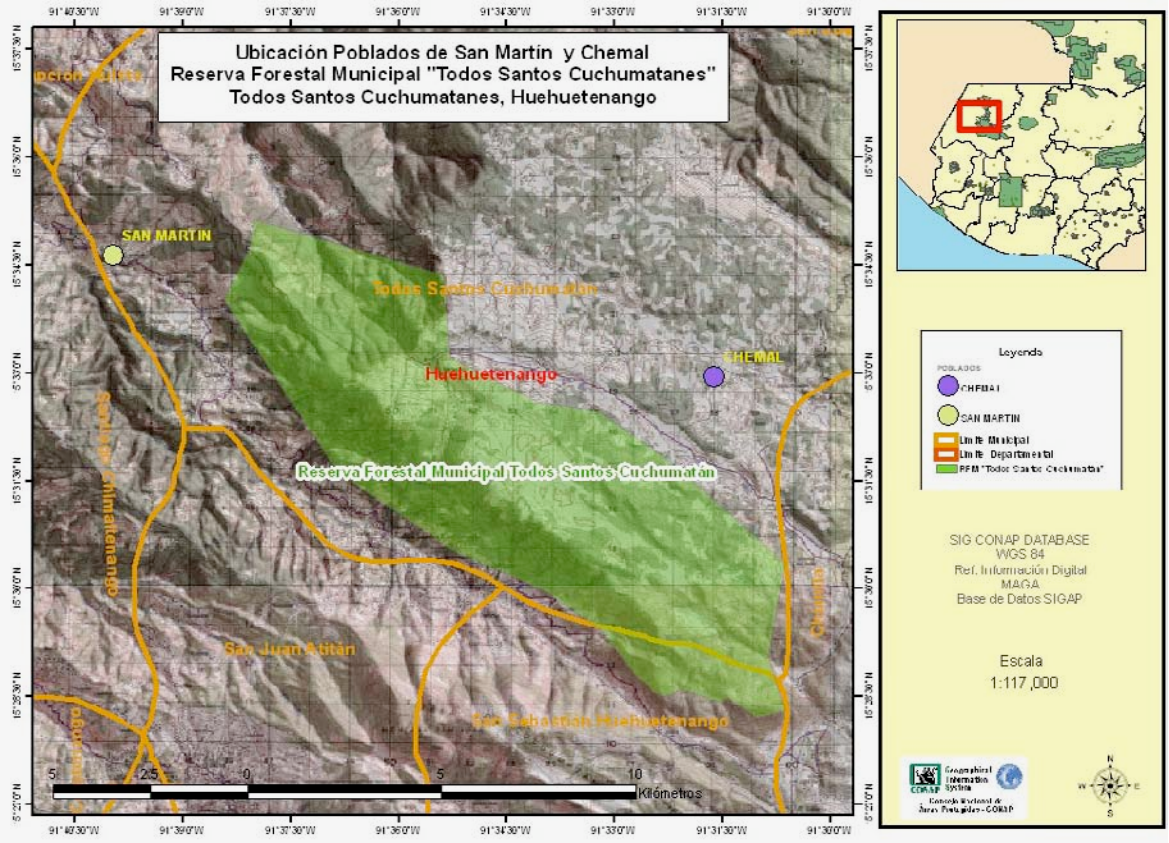

Figure 5. Map of Todos Santos Cuchumatán Forest Reserve in Guatemala, showing the location of some of San Martín and Chemal, two Maya communities

Conservation of cultural values associated with biodiversity

CCAs should be assessed for their capacity to maintain cultural values as well as biodiversity. Community reserves provide a particularly rich environment where indigenous communities have had a close relationship with biodiversity since ancient times. Indigenous knowledge systems in these communities include complex ethnobiological classification systems, detailed understanding of ecological processes and explanations of meteorological phenomenon. Individual plants, animals and landscapes have specific cultural values.

A similar situation is found in *ejido* reserves. If the *ejido* population comprises mestizo peoples instead of indigenous peoples, the relationship with the land may be of a more recent origin. An example of CCAs rich in cultural elements is *Otoch Ma'ax Yetel Kooh* Flora and Fauna Protection Area in Yucatan Peninsula.

Symbolic sites are by nature dedicated to conserve cultural values related to the history of a community or an ethnic group, ancient religious rituals or even to syncretic religious rituals adopted many centuries ago by indigenous communities. Some examples are Mount Rabon and Mount Giengola in Oaxaca and Chuiraxamoló Park in Santa Clara La Laguna, Guatemala. The recently created autonomous municipal CCAs – such as Mount Huitepec

in San Cristobal de las Casas, Chiapas – are protected areas that were conceived to conserve cultural values associated with biodiversity.

Figure 6. Hydrological resources of the Chinantla, Oaxaca, Mexico.
Clockwise from upper left: (1) local sign on cloud forest conservation; (2) small forest creek; (3) Rio Perfume, a primary river in the watershed and (4) riverside flowering plant.

Generation and equitable distribution of socio-economic benefits

The community forest enterprise reserve is the most effective approach to generating and distributing socio-economic benefits since it is created primarily to obtain profit from forestry activities. The continued existence of indigenous and *campesino* social institutions still allows an equitable distribution of the benefits in most cases.

The community association reserve is another effective mode of distributing socio-economic benefits. In this type of reserve, created by several communities, the distribution of all benefits is regulated by inter-community boards. One example of a community association reserve with control over benefit distribution is the Regional Committee of Natural Resources of the Chinantla (CORENCHI) in Oaxaca. All payments for hydrological environmental services are jointly managed by appointed representatives from the six member communities.

Traditional agroecosystems (including agroforestry systems such as shade coffee plantations) are another example of conservation areas in which the generation and distribution benefits are usually equitable. Many coffee producers are organized in inter-

community associations that manage the commercialization of coffee and the administration of revenues. Some examples of this kind of experience are San Juan Metaltepec and Santiatio Teotlaxco in Oaxaca.

Community support, governance and legitimacy

In the great majority of the cases, CCAs have been actively formulated and promoted by the communities, through their local government institutions such as community and *ejidal* assemblies and statutes, internal norms for control and access to natural resources, municipal regulations, community vigilance mechanisms and self-regulatory processes. Before a CCA can be declared formally or *de facto* by a community, it has to be supported and accepted by legitimate authorities at the most basic level.

There are also some other newer organizations and decision-making boards such as administrative bodies and consultative councils. The former regulates access to natural resources in the forest, and the second replace the traditional elders' council. These innovative organizational approaches are accepted and promoted by local communities (Chapela 2006).

When more formal CCAs are implemented, such as CTP protection zones and UMAs, communities embrace official legal frameworks and articulate them with their own decision-making mechanisms, resources use standards and internal regulation processes.

In Mexico, at the local and national levels, the law recognizes community and *ejidal* land tenure, with their respective governance institutions as traditional, ancient and legitimate forms of communal governance. These governance settings are the same for natural resource management as for general community affairs.

Factors determining effectiveness and overall success for the CCAs

Mexico

In Mexico, most of the well preserved ecosystems are in hands of indigenous and *campesino* communities (Ramírez n/d). They have repeatedly proved their capacity to effectively conserve natural resources with or without official support. Most of the reasons for this effectiveness are embedded in the social organization (participation and plurality, political willingness, linkages with external organizations, economic diversification) and ways of life of the communities, though there are also other external factors that encourage local efforts.

In many indigenous communities collective participation has been fundamental to resolving environmental and protected areas issues. These mechanisms of problem solving have reinforced community integrity as well as *campesino* and indigenous institutions (Ramírez n/d).

In some communities there are also some factors that could be seen as having a negative impact on livelihoods, but that have helped to conserve natural resources. These include geographic isolation of some communities, technological limitations to resource exploitation, cultural resistance to adopting western ways of life and incentives to migrate to urban areas of Mexico and the United States (Anta *et al*. 1999).

Chapela (2006) identified the following conditions determining effectiveness and success in the development of CTP by the Zapotec Chinantec Union (UZACHI), and these could be used as criteria to assess other experiences:

- strong community identity and organizational structures
- inclusion of community responsibility in conservation schemes
- continuity of community property and use rights
- openness to discuss questions and concerns on resource use, land tenure and governmental plans
- written internal community rules that regulate the CTP and its implementation
- local peoples' capacity to adapt to new conditions, sometimes exchanging some benefits for more relevant ones
- integration of different conservation schemes with landscape management and use
- suitability of conservation schemes for land owners
- guaranteed protection of community resources
- shared interests among communities, allowing associations and cooperatives to manage more extensive territories in a micro-regional initiative
- agreement of community initiatives with official environmental agency objectives
- presence of local community technical teams
- presence of committed NGOs (such as ERA, A.C.) to encourage communities in their pursuit to recover territorial use rights
- diversification of forest use after CTP planning, opening new opportunities for marginalized social groups such as women and youth
- availability of private funds and international funds such as Rockefeller Foundation grants
- changes in Mexican democratic life, which led to the liberalization of forest technical services, leaving communities freer to engage in a range of productive activities
- willingness of governmental institutions to work with communities and devolve responsibilities to them

Another example is the experience of *Otoch Ma'ax Yetel Kooh* Flora and Fauna Protection Area in Quintana Roo, whose main objectives are the promotion of ecotouristic activities along with biodiversity protection. As a result of decades of learning, the current local organization allows community members to make decisions democratically and distribute tourist revenues equitably. It has promoted the inclusion of neighboring communities and local institutions including rules, practices, accords and conventions regulating natural resources use. The presence of a viable population of spider monkey in the region and the few changes in vegetation maps over four years suggest that traditional land management and ancient productive activities such as *milpa*, apiculture and home gardens coexist in

Box 5. An *ejido* reserve in Punta Laguna, Yucatán Peninsula (Mexico)

Forty years ago people from chicle-producer towns in the Yucatán Peninsula of Mexico emigrated in search of fertile lands. They arrived in Punta Laguna, part of the Valladolid *ejido* located in the northeast Yucatán Peninsula, on the border of Yucatán and Quintana Roo states. Almost at the same time, the National Institute of Anthropology and History (INAH) registered a post-classical archaeological site in the region, and banned all productive activities in the surrounding area. Mr. Serapio Canul, whose family was one of the first to arrive to the region, became the official site ranger. In 1970s, when tourism activity increased in the Mexican Caribbean, Serapio's family started an eco-tourism business with the joint goal of obtaining economic benefits and conserving natural resources. During 15 years, Serapio's family was the only one receiving tourism revenues, causing economic and social inequities that led to community conflicts.

In the late 1980s, the local NGO Pronatura Yucatan Península (PPY) started community-based work in the region. In 1992, it helped community members of Punta Laguna to request an official decree as a natural protected area. Ten years later, in June 2002, a total of 5,367 Ha were decreed as a Flora and Fauna Protection Area, with the name of *Otoch Maáx Yetel Kooh*, which means house of the spider monkey and the jaguar, in Yucatec Maya. The main objectives are to preserve the habitat of spider monkey and to provide eco-tourism facilities. The official decree formalised the role of local community members as decision takers on local conservation issues.

When community disputes grew because of the tourism monopoly, PPY intervened as a mediator, ensuring that the official protected area was managed according to CONANP guidelines. As a result, a tourism cooperative was formed in which all members of Valladolid *ejido* currently participate and reap benefits. The cooperative is formed by representatives of 11 localities inside and in the surroundings of the protected area (approximately 250 Mayan Yucatec people) whose main economic activities besides tourism are traditional agriculture, home gardens, extraction of non-timber forest products and hunting. Four years of monitoring provide preliminary evidence – including a viable spider monkey population and little change in vegetation maps – that these traditional activities are sustainable and could be practiced in the future without affecting biodiversity.

Important lessons gleaned from Punta Laguna are that: (1) local institutions (such as indigenous rules, practices, accords and conventions which regulate natural resources use) may be disrupted when a new element like tourism comes onto the scene; (2) communities have the capacity to adapt optimally to new conditions in a way that ensures management of resources and personal relations; (3) this adaptation may need the intervention of an external stakeholder (such as PPY) if community conflict cannot be resolved internally. In this case, PPY maintained its role of facilitator and mediator, leaving all decision making to community members and allowing them to learn from previous experiences.

One of the problems the communities are currently facing is economic and social pressure from conventional tourism growth in the Mexican Caribbean, which in turns stimulates migration and increases demand for natural resources such as charcoal and firewood. Given the previous experience of adaptation and learning, Ramos-Fernández and his colleagues think there is a good possibility that the indigenous communities, with appropriate facilitation and support, will find a solution compatible with community and environmental needs.

Adapted from Ramos-Fernández *et al.* 2005

equilibrium with the rest of the ecosystem and even promote its biodiversity (Ramos-Fernández 2005)

Guatemala

The different groups working with CCA experiences in the country have recognized the following criteria – listed in random order – to assess the success of their efforts (Roma 22007a, 2007b, 2007d):

- capacity to include and reconcile opposite points of view
- internal administrative control within social organizations, so any kind of resources can be efficiently managed
- clear administrative and financial procedures
- community determination and perseverance in achieving nature conservation goals
- community interest and responsibility
- community organization
- indigenous values regarding social organization, community work and unity
- economic support for conservation and production from the National Commission of Protected Areas;
- technical assistance from the Program for Reforestation and Conservation of Natural Forests (PINFOR)
- technical assistance from local NGOs and support from diverse national and international NGOs
- political support from several government agencies and programs
- openness of different contexts in which to promote exchange of experiences
- support from the relevant municipalities
- official recognition of community land property
- regulated and diversified forest use which generates revenues and employment
- tourism potential of some places such as Chilascó in Salamá.

Threats for the effectiveness and sustainability of CCAs

In Mesoamerica, a series of social, environmental, economic and political factors currently threaten community conservation experiences. Although these factors vary from case to case, there are some general tendencies that weaken CCAs throughout the region.

On the political side, there is a conservative view held by some people within government environmental institutions such as CONANP in Mexico that no people should reside in protected areas. This is based on a belief that all human activity, regardless of its nature and scope, deteriorates biodiversity. This stance ignores general agreement that protected areas come in many categories (IUCN 1994), some of which can perfectly coexist with the presence of human communities. The implementation of this political position deprives people of access to the landscapes and biological resources they traditionally use.

Among the social factors that negatively influence CCAs we find the weakening of historical indigenous institutions that sustain collective action and cooperative working. As a consequence many practices that promote sustainable production and environmental conservation have disappeared or deteriorated. The drivers behind this social change

include migration of community members to urban areas and the United States and other aspects of integration in the market economy.

There are some individuals and indigenous organizations that view official interest in promoting CCAs as a threat to their autonomous efforts to maintain traditional ways of living, resource use and landscape management. They consider that government and private interest in regulating community conservation efforts could lead to a homogenization of a mosaic of biodiversity-related cultural expressions.

Some authors express concern about the forced inclusion of communities and their natural resources in the neoliberal economy movement. They critique in particular the commoditization of environmental services, which they argue opens the door to the biotechnology industry, privatization of natural resources and despoliation of indigenous peoples (Ribeiro 2005). Some indigenous communities fear that their local conservation areas will become Biosphere Reserves administered by the government (Anta 2006b). These apprehensions are linked to a local perception that the government can be inefficient and at times disrespectful to communities in its management of official protected areas.

This critique extends to the Puebla-Panama Plan, a multi-billion dollar development plan formally initiated in 2001, which seeks to promote regional integration and development in southern Mexico, all of Central America and Colombia. Called the *Plan Puebla Panamá* in Spanish, it is a neoliberal program that aims to increase investment and stimulate trade in the region by building or improving large infrastructure projects such as highways, air and sea ports, and electric and telecommunications grids.

Another large scale development met with skepticism is the Mesoamerican Biological Corridor (CBM in Spanish), a large habitat corridor that extends from Mexico southeastward through most of Central America, connecting several national parks. The MBC has its origins in initiatives from the late 1980s that focused on linking together governmental protected areas to protect endangered animals and other species. It has since developed an approach that integrates conservation with economic and rural development.

The CBM's conservation and development plans have been controversial in local and indigenous communities, which are concerned that protected area policy could deprive them of access to their traditional lands, and that economic development could open the rest of the territory to natural resource exploitation without adequate benefit sharing.

While there is now wider recognition of the importance of addressing the needs of local communities, there is continuing debate on the ultimate impact of the CBM on the millions of people who depend directly or indirectly on the areas included in the proposed Corridor. The ensemble of main partners in the initiative has not articulated a policy on the role of community conserved areas in the CBM.

In Mexico, the official CBM policy leaves indigenous communities in an ambiguous position. This is in part because of a complex set of laws that govern access to natural resources, including the Genetically Modified Organisms Law, the National Waters Law,

the Industrial Property Law, the Access to Biological and Genetic Resources Law, the Mining Law and the Law for Indigenous Communities Consultation. Some researchers think that this legal framework favors the privatization of natural resources by controlling access through contracts that do not guarantee an equitable distribution of costs and benefits. This could negate valuable community efforts to reach sustainability (Harvey 2005, González 2000, Bravo and Carrere 2004).

In the specific case of Oaxaca Chapela-Mendoza (2006) and Anta *et al*. (1999, 2006b) have identified a series of undermining elements that are worthy of further analysis:

- lack of specific funding mechanisms to maintain CCAs
- inherent contradictions between conservation and use in some management schemes
- weak existing institutional and legal recognition of CCAs as protected areas
- difficulty of establishing consultation mechanisms in small rural communities
- agricultural decline due to the expansion of protected areas, which generates dietary dependence and probable loss of associated traditional knowledge, thereby diminishing the economic viability of the involved community
- pressure from growing external expectations and regulation by the government, NGOs and other organizations
- land property conflicts with neighboring communities that lack commitment to conservation goals
- overemphasis on the economic revenues that CCAs can bring without a real understanding of the meaning of natural resource protection
- increase in environmental deterioration due to land use conversion from forest to agriculture and animal breeding zones, forest fires, illegal forestry, plant diseases and water contamination
- illegal commercialization of wild animals skins, living animals and bush-meat
- internal problems between community members, in part linked to involvement with drug trafficking, a factor which divides communities and makes conservation processes more difficult

General environmental degradation is another factor in Oaxaca, which has a large amount of land in need of ecological restoration and a continued annual loss of 30 thousand hectares of forest. It is estimated that half of Oaxaca's territory has some degree of ecological perturbation, with 20% of the State suffering from loss of its original soil after erosion.

In the case of *Otoch Ma'ax Yetel Kooh* Flora and Fauna Protection Area in Quintana Roo, one of the main threats comes from climate change. During the last 10 years, precipitation has changed drastically in volume and frequency. Since the *milpa* (maize polyculture) agricultural system is dependent on the abundance of rain, the yield of crops such as maize, beans and squash have diminished considerably. A large number of people have withdrawn from agricultural activities and to take up temporary jobs in tourism centers. This is driven by the exponential growth of tourism in the Mayan Riviera, another of the primary threats for *Otoch Ma'ax Yetel Kooh* conservation efforts. Tourism also increases the consumption of locally produced charcoal, which displaces other productive activities, decreasing the

availability of land for conservation and agriculture, and affecting biodiversity in general (Ramos-Fernández *et al*. 2005).

In Guatemala, there are several factors that affect resource conservation in general and CCA experiences in particular. According to the results obtained in community workshops compiled by Roma (2007a, 2007b, 2007c, 2007d) environmental threats include the rapid rate of forest loss (at an estimated rate of 1.4% of national forests per year, equivalent to 70 thousand ha annually), use of agrochemicals which damage soils, water and consequently biodiversity, forest fires and forest tree loss caused by pine beetles (*Dendoctonus* spp.).

The socio-economic factors which undermine CCAs efforts are complex:

- restricted market access for low volume forest products, which puts pressure on sustainable productive activities, combined with the dominance of forest markets designed to manage big volumes of timber
- lack of information, financial and technical assistance, which sometimes put community conservation projects at risk
- illegal or uncontrolled natural resource extraction and hunting conducted by neighboring communities
- poverty that exacerbates illegal and uncontrolled activities
- cardamom production in La Gloria, San Miguel Uspantán that promotes unsustainable and unregulated extraction of fuel wood for drying, which affects watershed conservation
- land conflicts (for example disputed boundaries between Santa Clara La Laguna and Santa María Visitación in Sololá department)
- lack of community participation in conservation as well as lack of capacity for management and administration
- drug production which threatens social cohesion, tourism and other productive activities in the region
- difficult access to some communities, particularly those in Cubulco (Baja Verapaz) and those belonging to Achi Indians, which limits external economic and political support
- conversion of land for agriculture and cattle farming – often promoted by neighboring communities – which leads to habitat fragmentation
- poor selection of lands for human settlements and re-settlements
- lack of studies regarding tourism capacity of protected areas

The political threats to community conservation efforts include:

- government support for mining and hydroelectric developments
- subordination of conservation and forestry policy to petroleum extraction activities, which allows big companies to profit from Guatemala's forests and people without adequate benefit sharing
- official restriction of the traditional use of natural resources
- uncertainty of land tenure in some areas
- continuous changes in municipal authorities leading to the interruption of specific projects and disruption of the overall vision for conservation

The second point is of particular concern to the *Madre Selva* Collective, which pointed out in 2000 that the region suffers from the negative effects of petroleum extraction. New roads, dynamite explosions, chemical mud, toxic gases, water, air and soil pollution, new human settlements and general environmental, social and health degradation contribute to a worsening situation (Bravo and Carrere 2004).

Conflict between local communities and other social actors

Some of the communities involved with the indigenous rights movement – which consider the protection of their natural resources and territory as a key aspect of their cultural identity and reproduction – are opposed to the attempts of any governmental agency to formalize autonomous indigenous initiatives.

Within communities that recognize private land owning, there is sometimes tension among people over communal and individual rights. Old agrarian conflicts limit some local experiences such as CTPs in Chimalapas, Oaxaca and Quezaltepeque, Guatemala, especially where one community is interested in conservation and a neighboring community is not. Agrarian conflicts have been almost permanent in some localities due to the lack of political will to resolve them and in the absence of a government rural sustainable development policy (Anta 2006 b, Roma 2007b). Some authors such as Orozco (2003) see CTPs as ways to resolve these conflicts through the creation of a communication channel between the different government agencies and the communities.

Evaluation

Lessons learned

Many of the communities engaged in formal and registered conservation processes have worked in collaboration with NGOs which have documented to varying degrees specific case studies, lessons learned and broader reflections on the overall experiences. One of the main lessons that Anta *et al*. (1999) draw from these reviews is that sustainable use of natural resources is only possible if conservation initiatives include social objectives. Inversely, natural resources deterioration may result if peoples' livelihoods do not improve.

Another essential lesson for external researchers and policy makers is that indigenous communities and *ejidos* are motivated and capable of defining by themselves the mechanisms and modalities for the establishment of community agricultural and conservation areas. This reality, documented in a large number of experiences, casts doubt on perspectives that characterize rural communities – and indigenous people in particular – as environment predators which are unable to adequately conserve their biological resources. Advocates of this latter position argue that community-held lands should be confiscated or purchased as a way of transferring them to the private sector, which they consider the only entity capable of guaranteeing biodiversity conservation or economic productivity (González-Ríos 2006).

Community capacity for conservation activities can be reinforced by various factors and processes cited by Anta (2006c) and González (2000):

- Information and technical support from civil society and academic organizations, which support community decision making about conservation and natural resource use
- Technical and legal instruments such as participatory rural appraisal, CTP, *ejidal* rules and communal statutes, national laws and management plans, all of which enable communities to make decisions and enter into agreements related to their cultural and natural heritage
- Generation of local employment opportunities related to the sustainable use of natural resources
- Community discussion and reflection on the relationship between ecosystem health and better livelihoods
- Regulation of the activities of external researchers, essential to avoid unrestricted appropriation and transfer of genetic resources and local knowledge without adequate compensation.

According to Solis *et al*. (1998) policy formulation must be based on concrete realities. Policies should:

- be reached through a process of negotiation, dialogue and consensus building, so they gain wide support
- legitimate processes that do not deprive people of their rights or adversely impact their quality of life
- incorporate constant feedback on the policies through a two-way process of communication
- be adaptable to changing realities, not static

Anta (2006) has noted that several lessons are revealed by CCA certification experiences, which:

- opens the door to community and private rights and responsibilities in different conservation schemes
- provides greater security and stability in conservation projects
- allows property and use rights to be maintained
- integrates conservation schemes with land use and management
- is well received by land owners
- promotes good stewardship of community resources

Anta (2006b) argues that CTP has proven itself as a good planning element for forest resource management. However, Orozco (2004) has cautioned that in some cases local people expect immediate results such as better income and livelihoods. He notes that CTP does not achieve instantaneous results, which makes some people miss its potential as a good community planning tool. In most cases, the usefulness of CTP depends on the internal organization of the community, since by itself it is not a solution to problems related to natural resources management and social change. As long as community basic

needs are not satisfied, territorial planning in the medium and long term is not very appealing to communities.

Another perhaps obvious but important lesson is reinforced by our CCA review is that there is a net benefit from assuring broad social participation in conservation initiatives. Solís *et al*. (2003, n.d.) argue that approaches that exclude people are more costly in terms of financial investment and social stability, making it more difficult to sustain the region's economy and conservation initiatives in the long run.

An adequate policy of social participation must recognize the right to:

- access accurate information
- free prior informed consent, which is a prerequisite for any community research or genetic transfer agreement to be legitimate
- refuse to provide information on any aspect of local belief, knowledge and practice, especially if it is culturally or spiritually sensitive
- well planned participation as a tool to improve natural resource management and use
- well designed and dynamic training programs

Key opportunities

Based on analysis and work on different CCA experiences from Chapela (2006), Anta (1999, 2006, 2006b and 2006c), Geo-conservación (2007), Solís (2003), Anonymous (2003), Ramírez (n/d), Ramos-Fernández (2005), Bravo and Carrere (2004), Pérez *et al*. (2006), Orozco (2004), Negrete and Bocco (2003), Osorio *et al*. (n/d), there is still a long way to go before good governance and conservation can be fully reached. Among the diverse CCAs processes, these authors have identified a series of opportunities and needs which we group into seven themes: (1) legislation and policy; (2) financial needs; (3) participation and communication; (4) productive activities and poverty alleviation; (5) human rights; (6) capacity building; and (7) research. No one is more important than the other, and they may be prioritized differently according to each particular social and environmental context. The bullet points below outline the main points that merit further analysis.

Legislation and policy

The government should:

- promote constructive enforcement of the existing legal framework by collaborating with NGOs and working through relevant official channels
- create adequate mechanisms, through environmental agencies, that generate additional legal and institutional recognition of CCAs
- establish a legal framework – drawing in part on ILO Convention 169 – that guarantees complete participation of indigenous peoples in the administration, conservation and management of any protected area that affects their landscapes and resources; this implies that particular attention should be given to CCAs established within indigenous territory

- contribute, along with relevant NGOs, to the creation of legal mechanisms of intellectual property certification, particularly concerning knowledge of local biological resources
- recognize, in collaboration with the private sector and society in general, the importance of indigenous territories and conservation practices in order to guarantee local peoples' traditional resource rights, and to protect their associated traditional knowledge
- respect, with the cooperation of the private sector and society in general, the collective rights of indigenous peoples over their territories, drawing inspiration from ILO Convention 169, the CBD and other international policy instruments
- seek the support of NGOs and communities to draw national and international attention to priority regions with immediate needs that lack institutional or civil support
- take action, especially at a state and local level, to resolve lingering agrarian conflicts that affect the success of some community conservation efforts
- ensure that official programs, such as PROCYMAF and COINBIO, monitor and continue to support communities that already have achieved conservation goals
- reduce administrative delays in project implementation to more efficiently satisfy local needs and timetables
- inform communities about any relevant legal decisions or changes in a timely manner, drawing upon communication channels established by NGOs where appropriate

Financial needs

Governments should:
- allocate specific financial, technical and administrative resources to strengthen CCA management, drawing support from international institutions when necessary
- provide economic and social incentives that directly benefit and compensate people who have established CCAs especially those depending primarily on natural resources extracted from the conservation area; this will reduce the costs to impoverished communities that bear most of the costs for conservation
- promote at every level a fair and equitable distribution of any *in situ* conservation benefits, ensuring that these benefits are used mainly for the development of CCA communities and restoration of ecosystems when needed

Participation and communication

In collaboration with local and indigenous people, various stakeholders (government, NGOs, private sector and the general public as appropriate) – should:
- establish conservation programs that respond to community consensus, context and needs, allowing them to be effectively integrated in national conservation policy
- open more opportunities for social participation where community needs can be expressed
- promote an efficient link between governmental institutions and civil society, through which all policies, procedures, tools and information would be directed to enhance a fruitful interaction

- strengthen coordination and communication between indigenous and non-indigenous communities, NGOs and official institutions to ensure more effective planning, execution and monitoring of projects
- enable participation of the whole society on environmental subjects, so conflicts can be overcome, consensus can be reached, informed decisions can be taken and responsibility over actions and decisions can be assumed
- encourage communal work (*tequio*), which has proven fundamental in facilitating social cohesion and sustainable resource use
- guarantee that conservation initiatives and any associated research are preceded by community consultation and free prior informed consent
- implement a socially fair and environmentally respectful vision of conservation, as a result of a real, informed and free participation of local people leading to improvement of local livelihoods
- ensure that NGOs and researchers commit themselves to share information generated within the CCAs with the community through a coherent communication strategy
- allow NGOs and academic centers to open a space for discussion between urban and rural stakeholders about the importance of CCAs for the environmental services that benefit cities
- promote collaboration between NGOs and local communities in order to strengthen local traditional values and practices

Productive activities and poverty alleviation

- Various social actors should:
- work with communities to overcome current contradictions between conservation and resource use in some working schemes
- document the contribution of small and medium scale agriculture systems to conservation
- promote cooperative development built on social solidarity, which implies allowing the participation of marginalized groups
- seek alternatives that favor local equitable development
- recognize the importance of food sovereignty as a basis of long term success of any local conservation project
- analyze the contribution of remittances and other contributions from transnational activities
- incorporate diverse agricultural systems within every community conservation project
- explore the role of tourism in depth to ensure that it strengthens fundamental human rights and that its economic potential is harnessed to support the weakest and most marginalized peoples
- foment new productive activities appropriate for communities to avoid migration, with a special focus on young generations

Figure 7. Participation and communication in the CCA analysis workshops in Xela, Guatemala. Clockwise from upper left: (1) Agustín Jacinto, presenting the Santos Cuchumatán Forestry Reserve, Huehuetenango, Guatemala (2) Ronny Roma discussing conservation on indigenous and community land (3) Participants from communities and technical facilitators during a group discussion; (4) Participants of the workshop on CCAs analysis held at Xela, Guatemala. From left to right: Miguel García, Ronny Roma, Agustín Jacinto, Víctor Ochoa, Armando Ismalej, Jesús de León, Hugo Ruiz and Lucio Gómez.

Human rights

- all conservation projects must respect peoples' rights, encompassing their basic needs as set out in the International Declaration on Human Rights: health, productivity, food security, income generation and vulnerability reduction, among others
- embrace the free determination of indigenous people, and respect for other provisions of the International Declaration of the Rights of Indigenous Peoples, as an integral part of any conservation process
- acknowledge the principle of equity in rights and opportunities in any decision making process

Capacity building

- build the capacity of communities and collaborating organizations in order to extend the surface area covered by CCAs

- promote the exchange of experiences between CCAs to achieve cross-learning from diverse experiences
- build an integral ecosystem vision where social, economic, cultural and ecological aspects receive the significance they deserve
- contribute to innovative forms of information transfer
- provide technical support in social and biological sciences to representatives of official institutions in charge of conservation within a country or region
- support capacity building that strengthens local organizations, enhances technical, administrative, legal and financial capacities, and extends the reach and perspectives of local initiatives
- give legal training to local people in subjects related to conservation and CCAs, including awareness of international agreements and instruments
- orient technical assistance and training to the specific environmental and social context of each field site
- attain a clear conceptual and methodological approach before providing technical assistance to local people involved in CCAs

Figure 8. Scientific research and conservation in Corenchi communities.
Clockwise from upper left: (1) trail sign indicating the certified CCA of San Antonio del Barrio; (2) construction of a community biological research center in Santa Cruz Tepetotutla; (3) traditional house made with forest resources and (4) 'camino real' trail that connects the communities.

Research

- study the status, scope and needs of CCAs in the region

- develop research programs based on criteria and indicators which facilitate decision making on natural resources management
- match community demands with environmental and institutional offers, ensuring that conservation and sustainable resources management can be socially legitimate
- support the mapping of community territories to support consensus building on land use planning

Box 6. Capacity building for CCAs in Mexico

The Global Diversity Foundation (GDF) is developing a project on "Building local capacity to manage community conserved areas in Oaxaca, Mexico" from January 2008 to April 2009 with support from the Sustainable Development Dialogues program administered by the UK Department for the Environment, Farming and Regional Affairs (Defra). We propose to innovate and disseminate approaches that strengthen Mexican CCAs by working with indigenous communities in the Chinantla, a large and well preserved area of forests and cultural landscapes in northern Oaxaca managed by Chinantec Indians.

We will be collaborating with representatives of CORENCHI, an indigenous organization that comprises six Chinantec communities which have asked GDF for assistance in building their capacity to study and manage CCAs created over the last five years. Certified by the National Commission of Natural Protected Areas, the CCAs cover over 26,770 hectares of primary cloud forest that is home to important populations of jaguar, tapir, spider monkey, toucans and other fauna.

GDF, in collaboration with CORENCHI representatives and leaders in the Mexican CCA movement, will develop a program that includes (1) capacity building for indigenous protected area personnel in community-based training workshops that focus on the sustainability of non-timber forest products, scientific tourism, and legal frameworks for collaboration; (2) practical experience for local people and outside researchers at biological stations and refuges that are being established by the indigenous communities with external funding; (3) participatory community biodiversity registers that highlight biological resources of potential economic value; (4) advanced courses in conservation biology and ethnoecology for university-trained colleagues from diverse non-profit research and teaching institutions in Oaxaca City interested in supporting our efforts and replicating our approach elsewhere in Mexico; and (5) dissemination of the project results to local, national and international audiences through cross-visits, exchanges of experiences, publications and participation in conferences.

Our field project will focus on communities included in the analysis of specific sites for this CCA consultancy: Santa Cruz Tepetotutla, San Antonio de El Barrio, Santiago Tlatepusco, San Pedro Tlatepusco, San Antonio Analco and Nopalera del Rosario.

Community development of new types of CCAs

The development of CCAs in Guatemala and Mexico is advanced, and there is no evidence – or perhaps need – for the creation of new categories. In contrast, Belize is divorced from this regional trend, perhaps because of the great differences in rural organization, land tenure and indigenous rights when compared with Guatemala and Mexico (CIDH 2004).

Although Belize has also signed international agreements regarding indigenous property rights the government does not in practice recognize or guarantee any territorial rights to indigenous people. Furthermore, there is no internal law that addresses the indigenous peoples' situation inside the country (CIDH 2004).

However, the national government and indigenous leaders signed an accord in 2000 that recognizes Mayan people's rights to access their lands and resources, based on their traditional use and tenure. This raises the possibility of legally recognizing "aboriginal titles" such as in other countries that were once British colonies (such as Canada and Australia). The recent decision of the Supreme Court of Belize to recognize the aboriginal land claims of the Maya is a step in this direction. Another possibility is that communities, inspired by successful collaborative management projects in the south of the country, begin to launch autonomous conservation initiatives.

Specific recommendations for the CBD COP 9, WCC 4 and MDG processes

To reiterate, one of the main needs and areas of opportunity of CCAs in the region is to reinforce the relationship between conservation activities and improvement of local livelihoods. If peoples' living conditions do not improve, community conservation efforts are likely to fail. Our general recommendation is to reinforce efforts to further understand and overcome poverty and migration in the areas that contain CCAs.

CBD COP 9

Recommendations directed in particular to the Programme of Work on Protected Areas (PWPA) include:

- To create the space for reflection, analysis and action planning on the theme of official protected areas versus community conserved areas. Although the number of official protected areas established in the region has more than doubled in the last 30 years (in Mexico covering almost 12% of the national territory Conanp (2007)), in many cases the protection is only on paper according Solís (n/d) and Ramírez (n/d). The region's difficult economic, social and political reality has kept protection from having the desired impact on biodiversity conservation. In many areas there is inadequate social participation, lack of personnel and economic resources, and exclusion of local people in conservation and management activities, all of which contribute to social unrest (Anta *et al*. 1999). In contrast, CCAs with a strong social basis appear to be a more effective means to maintain, manage and promote protection of areas and associated biodiversity.

- To explore the relationship between biodiversity protection and poverty alleviation, focusing on CCAs as a successful mechanism in conservation and community sustainable development.

- To create effective mechanisms to provide adequate financial resources and technical capacity within northern Mesoamerica and in developing countries of other regions to promote CCAs. This has been identified as a major impediment for effective implementation of the PWPA and is exemplified in many experiences in Belize, Guatemala and Mexico.

WCC 4

- To create a space for reflection, analysis and action planning about the relevance of CCAs for the binomial concept of Healthy environment – Healthy people.

- To address the controversial issue of whether local communities are the allies or enemies of biodiversity conservation. Although there is increasing evidence that indigenous peoples' traditional practices can contribute to biodiversity conservation, some conservationists and policy makers in Mesoamerica still believe that people are inherently the enemies of protected areas.

MDG

- Reflect on the ability of good CCA governance and management to eradicate extreme poverty and hunger in Mesoamerica. Development and conservation projects have the capacity to provide jobs and to reinforce food sovereignty for rural communities.

- Analyze the potential of CCAs to promote gender equality and the empowerment of women. Every CCA experience is a rich participatory process in which the active involvement of both men and women is essential. These experiences are a fertile field to provide equal opportunity to women in training activities, research and operation of projects.

- Explore how well-managed CCAs can contribute to reducing child mortality and improving maternal health. Higher household incomes and education for mothers, adequate reproductive health services and family planning are essential in improving maternal health (UN 2006). Health enhancement in general and better incomes as part of livelihoods development could be associated objectives of any formal, well planned CCA project.

- Promote action planning within Mesoamerican countries to study the environmental sustainability of CCAs, as many of them have proven to be effective means to reverse loss of biological resources and to enhance water capture.

Equitable and effective ways of managing natural resources and protected areas

In Mexico, as in the rest of Latin America, the best opportunity to encourage conservation success – whether in CCAs or collaboratively managed areas – is to provide financial and technical assistance. Good governance at the national and state level, including a reduction in political corruption, would improve the implementation of community conservation initiatives. International support can provide an incentive to create and implement national environmental policies.

In Belize, a specific need is the recognition of indigenous peoples' land and resource rights. To reiterate, this could be achieved as part of a package that involves technical and political

assistance for communities who wish to apply for "aboriginal titles" and the implementation of existing accords relevant to Mayan traditional land use and occupation.

In Guatemala, armed conflict contributed to forest destruction and to a loss of traditional values and conservation practices. Continuing post-conflict reconstruction and reconciliation should focus on reversing these trends. Another issue to be confronted is the government-promoted oil and mineral extraction that subordinates conservation activities and undermine CCAs.

Urgent needs

Within the generally favorable situation for CCAs in Mexico, a critical need is to consolidate lessons learned from community-based experiences and disseminate them widely to ensure replication elsewhere. In addition, it is critical to support community capacity to designate and manage conservation areas according to criteria decided by local assemblies. There is a danger that the current enthusiasm for national or state level certification could outpace the communities' own initiatives – based on their own goals and timescales – and lead to premature official registration of CCAs in a way that does not serve local interests.

One way to build this capacity is through community-to-community exchanges that allow local authorities and selected community members to share information on their conservation successes and failures, and to build regional networks. This can be achieved either through cross visits (in which delegations travel to witness conservation experiences in other communities) or in a forum that brings delegations from many communities to a central meeting place.

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