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GRANT

IN THE AMOUNT OF SDR11.5 MILLION
(US$14.84 MILLION EQUIVALENT)

TO

NACIONAL FINANCERA, S.N.C.

FOR A

MEXICO MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT

June 25, 2010

Sustainable Development Department
Colombia and Mexico Country Management Unit
Latin America and the Caribbean Region

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ABBREVIATIONS AND ACRONYMS

AECI	Spanish International Cooperation Agency (*Agencia Española de Cooperación Internacional*)
BNPP	Bank-Netherlands Partnership Program
CPS	Country Partnership Strategy (formerly Country Assistance Strategy)
CCAD	Central American Commission for Environment and Development (*Comisión Centroamericana de Ambiente y Desarrollo*)
CDI	National Commission for the Development of Indigenous Peoples (*Comisión Nacional para el Desarrollo de los Pueblos Indígenas*)
CEIBA	Interdisciplinary Center for Biodiversity and Environment (*Centro de Estudios Interdisciplinarios de Biodiversidad y Ambiente*)
CEPAL	Economic Commission for Latin America and the Caribbean (*Comisión Económica para América Latina y el Caribe*)
CICY	Scientific Research Center of Yucatan (*Centro de Investigación Científica de Yucatán*)
CINVESTAV	Research and Advanced Studies Center (*Centro de Investigación y Estudios Avanzados*)
CONABIO	National Commission for the Knowledge and Use of Biodiversity (*Comisión Nacional para el Conocimiento y Uso de la Biodiversidad*)
CONACYT	National Council for Science and Technology (*Consejo Nacional de Ciencia y Tecnología*)
CONAFOR	National Forestry Commission (*Comisión Nacional Forestal*)
CONANP	National Council for Natural Protected Areas (*Consejo Nacional de Areas Naturales Protegidas*) (The acronym CONANP is also used to designate the National Commission for Natural Protected Areas, created in 2000)
CTF	Clean Technology Fund
EA	Executing Agency
ECOSUR	The Southern Border College (*El Colegio de la Frontera Sur*)
Ejido	Territorial unit managed and owned by villagers under the Mexican Agrarian Reform Law
EZLN	Zapatista Army of National Liberation (*Ejército Zapatista de Liberación Nacional*)
FAO	Food and Agriculture Organization
FCPF	Forest Carbon Partnership Facility
FMCN	Mexican Conservation Fund (*Fondo Mexicano para la Conservación de la Naturaleza*)

GEF	Global Environment Facility
GIS	Geographic Information System
GOM	Government of Mexico
GTZ	German Technical Assistance Agency (*Deutsche Gesellschaft für Technische Zusammenarbeit*)
IBRD	International Bank for Reconstruction and Development
INE	National Ecology Institute (*Instituto Nacional de Ecología*)
INI	National Institute of Indigenous Peoples (*Instituto Nacional Indigenista*)
JICA	Japan International Cooperation Agency
LAFS	Latin American Food Show
MMBC	Mexico Mesoamerican Biological Corridor, The Project
NAFIN	National Financier (*Nacional Financiera*)
NCC	National Corridor Council
NEA	National Executing Agency
NGO	Non-governmental Organization
NPA	National Protected Area
NTFP	Non-timber Forest Product
NTU	National Technical Unit
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PDRS	Sustainable Rural Development Program of Marqués de Comillas (*Programa de Desarrollo Rural Sustentable de Marqués de Comillas*)
PECC	Special Program on Climate Change (*Programa Especial de Cambio Climático*)
PESA	Special Program for Food Security (*Programa Especial para Seguridad Alimentaria*)
PMR	Project Management Report
PPP	Puebla-Panama Plan (*Plan Puebla Panamá*)
PROCYMAF	Community Forestry Project (IBRD) (*Programa de Silvicultura Comunitaria*)
PRODER	Regional Sustainable Development Program, implemented by SEMARNAT (*Programa de Desarrollo Regional Sustentable*)
PRODESCA	Capacity Development Program in Rural Areas (*Programa de Desarrollo de Capacidades en el Medio Rural*)
PSMARN	National Environment and Natural Resources Program (*Programa Sectorial de Medio Ambiente y Recursos Naturales*)
REDD	Reducing Emissions from Deforestation and Degradation
RMBC	Regional Mesoamerican Biological Corridor
RTU	Regional Technical Unit
SAGARPA	Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (*Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación*)
SCC	State Corridor Council
SCT	Ministry of Communications and Transport (*Secretaría de Comunicaciones y Transporte*)
SEA	State Executing Agency
SECOFI	Ministry of Commerce and Industrial Development (*Secretaría de Comercio y Fomento Industrial*)

SEDESOL	Ministry of Social Development (*Secretaría de Desarrollo Social*)
SEMARNAT	Ministry of Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*) (formerly *Secretaría de Medio Ambiente, Recursos Naturales y Pesca, SEMARNAP)*
SEP	Ministry of Public Education (*Secretaría de Educación Pública*)
SHCP	Ministry of Finance (*Secretaría de Hacienda y Crédito Público*)
SINAP	National System of Protected Areas (*Sistema Nacional de Areas Protegidas*)
SRA	Ministry of Agrarian Reform (*Secretaría de Reforma Agraria*)
SSA	Ministry of Health (*Secretaría de Salud*)
UADY	University of Yucatan (*Universidad Autónoma de Yucatán*)
UNAM	University of Mexico (*Universidad Autónoma de México*)
UNDP	United Nations Development Programme
UMA	Management Unit for the Conservation of Wildlife (*Unidad de Manejo Ambiental*)

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MEXICO

MEXICO MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT

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MAP

1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

Country and Sector Background

1. Mexico is classified as one of the world's top five "mega-diverse" countries:[1] it represents approximately 12% of the world's biodiversity, compared to only 1.5% of its land surface, and has high levels of endemism.[2] At the national level, however, only about 12.9% of priority terrestrial sites for biodiversity actually coincide with federal, state and municipal natural reserves (3.91% of national territory).[3] This is also true in south and southeast Mexico: its Mesoamerican region.[4] Mesoamerica is considered a global "hotspot" in terms of biodiversity; it has a high level of species richness and is also one of the most threatened[5] regions in the world.

2. The four states of the project area (Chiapas, Campeche, Quintana Roo, Yucatan) comprise a variety of high-priority ecoregions and biomes, including Tehuantepec and Yucatan moist forests, Yucatan dry forests,[6] Quintana Roo wetlands, and Chiapas temperate cloud forests.[7] Flora and fauna in these states show a significant proportion of endemic species and a variety of ecosystems of high priority for conservation: lowland rainforests, cloud forests, dry forests, wetlands and savannas. Among these, the ecosystems bordering the Guatemalan and Belizean territory constitute the largest mass of continuous forest ecosystems in all of Mexico and Mesoamerica. The mosaics of different ecosystems and different age patches within each of these ecosystems constitute a unique laboratory of ecological relations and are of strategic importance for continuing speciation and sheltering of species in the face of the continuing reduction of forest cover and global climate change.

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[1] There are more than 170 countries in the world. Of these, 12 alone harbor between 60% and 70% of the planet's total biodiversity and thus earn the privilege of being called mega-diverse. Mexico is one of them. Mexico, together with Brazil, Colombia and Indonesia, is considered one of the most bio-diverse countries, ranking first place in reptile diversity, second in mammals, fourth in amphibians and vascular plants and tenth in birds.

[2] Endemism is the ecological state of being unique to a particular geographic location, such as a specific island, habitat type, nation or other defined zone. To be endemic to a place or area means that it is found only in that part of the world and nowhere else. Endemism reported on the national level: 50–60% of plant species (15,000 species); 32% of mammals; 10% of birds; 57% of reptiles; and 65% of amphibians. Ref: CONABIO. 2006. Capital natural y bienestar social. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, México.

[3] CONABIO. 2009. Capital natural de México, vol. II: Estado de conservación y tendencias de cambio. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, México. Urquiza-Haas, T., M. Kolb, P. Koleff, A. Lira-Noriega, and J. Alarcón. 2000. Methodological Approach to Identify Mexico's Terrestrial Priority Sites for Conservation. *Gap Analysis Bulletin* No. 16:61-71.

[4] Mesoamerica or Meso-America is a region and cultural area in the Americas, extending approximately from central Mexico to Guatemala, Honduras and Nicaragua. Prehistoric groups in this area are characterized by agricultural villages and large ceremonial and political-religious capitals. This cultural area included some of the most complex and advanced cultures of the Americas, including the Olmec, Teotihuacan, Maya and Aztec.

[5] www.biodiversityhotspots.org/ of the world's twenty-five biologically richest and most threatened ecosystems the Mesoamerican forests comprise the third largest among the world's hotspots. Their spectacular endemic species include quetzals, howler monkeys, and 17,000 plant species. The region is also a corridor for many neotropical migrant bird species. The hotspot's montane forests are important for amphibians, many endemic species of which are in dramatic decline due to an interaction among habitat loss, fungal disease and climate change.

[6] The Yucatan Peninsula boasts an impressive diversity of flora and fauna: over 900 plant species and 200 animal species have been found in a hectare of tropical evergreen forest, some 70 species of herpetofauna (amphibians and reptiles), 320 species of birds and 120 species of mammals are known to inhabit the peninsula.

[7] The temperate clouds forests in Chiapas are an ecosystem that covers 1% of the national territory but contains 10% of the country's floral diversity.

3. In addition to the biological importance of the project's area in its own right, these ecosystems form part of a critical link in the Regional Mesoamerican Biological Corridor (RMBC). The concept of a regional eight-country initiative was discussed at the Rio Summit in 1992. In 1994 the University of Florida published a report on the feasibility of establishing a corridor in Central America. The agreement formalizing the commitment of the region to establish a corridor linking five states in Mexico with Guatemala, Belize, Honduras, El Salvador, Nicaragua, Costa Rica and Panama was signed in February 1997 and officially adopted at the Presidents' Summit in July 1997.[8]

4. Historically, Mexico's many indigenous groups played an important role in shaping the region's biodiversity; they have domesticated a great array of plants, maintaining a high degree of genetic variation (including semi-domestic forms) and the knowledge on how to use the domesticated plants' wild relatives. This process is strongly linked to traditional patterns of land use, in which genetic exchange with wild relatives plays an important role in maintaining genetic variability and agro-biodiversity.

5. At appraisal, primary threats to natural resources and biodiversity in this region resulting from human activities included large-scale conversion of forests and other pristine ecosystems to agriculture as a stepping-stone to extensive cattle ranching (this process has been particularly intense in the tropical lowlands) and uncontrolled tourism development and overfishing along the coasts of Quintana Roo, Yucatan and Campeche.

6. The hypothesis was that these practices resulted from the interplay of two major forces: on the one hand, the demand for development opportunities and activities expressed by communities residing in the project area; and, on the other hand, the supply of development programs provided by government agencies. Without the integration of biodiversity considerations in both of these forces, many of the activities would result in continuing threats to biodiversity.

Government Actions

7. At appraisal, priority natural resources management conservation challenges for Mexico included: (i) high deforestation rate (one of the highest in Latin America); (ii) unsustainable land use practices, including slash-and-burn agriculture and extensive cattle ranching; (iii) unsustainable levels of exploitation and loss of habitat for aquatic resources; (iv) unsustainable tourism development and increased urbanization; (v) limited participation of rural populations in conservation and natural resources management efforts; and (vi) loss of biodiversity and agro-biodiversity.

8. To address these threats, key courses of action that the Government of Mexico (GOM) pursued included: the consolidation of the Ministry of Environment and Natural Resources[9] (SEMARNAT); a strategic shift toward increased decentralization of environmental management to states and municipalities; the development of an integrated

[8] Download the project document at http://www.biomeso.net/GrafDocto/PRODOC-CBMESPAÑOL.pdf.
[9] The Ministry of Environment, Natural Resources and Fishing (SEMARNAP) was established in 1994; it was converted into the Ministry of Environment and Natural Resources (SEMARNAT) in 2000.

model of sustainable development with a regional focus (PRODERs); increased public participation; and a stronger commitment to international environmental issues and the global commons.

9. A key step toward institutional coordination in order to put the above into practice came with the 1998 signing of a framework agreement—"Foundations for Inter-institutional Collaboration" (*Bases de Colaboración Inter-institucional*)—by the Ministries of Environment (SEMARNAT), Agriculture (SAGARPA), Social Development (SEDESOL), Transport (SCT) and Agrarian Reform (SRA), to be later joined by the Ministries of Education (SEP), Health (SSA) and Trade (SECOFI). The agreement represented ministerial commitments to join efforts in promoting sustainable development in priority regions of the country. Moreover, in early 1999, in an effort to mitigate damages from recent natural disasters (forest fires and floods) and to prevent future ones, the President of Mexico launched a countrywide initiative to promote the adoption of more environmentally conscious agricultural practices. For southeastern Mexico (one of the areas most vulnerable to natural and human-induced environmental degradation), this initiative was a good opportunity to move toward a path of sustainable development.

10. However, the GOM faced obstacles to achieving the harmonization of the different agencies' programs and implementing integrated, on-the-ground interventions that demonstrated the incorporation of biodiversity criteria into policy instruments. Chief among these obstacles was the lack of a unifying mechanism through which to reorient public expenditures along with the demand and supply of sustainable development initiatives. The creation of the Mexico Mesoamerican Biological Corridor using GEF resources proposed to meet this need, to induce in the medium to long term a much wider adoption of on-the-ground, tested practices compatible with biodiversity conservation and sustainable use.

Rationale for Bank Assistance and GEF Involvement

11. At the time of appraisal, the Bank had been assisting the GOM in the conceptual analysis of institutional coordination and regional development through Economic and Sector Work and in piloting, under the Rural Development in Marginal Areas Adaptable Program Loan (APL),[10] institutional mechanisms (such as regional councils) to promote participatory, decentralized management of rural development programs. Other natural resource management projects supported by the Bank at the time (Community Forestry Project P007700, closed in December 2003; On-Farm and Minor Irrigation Networks Improvement Project P007701, closed in March 2002) contributed to strengthening the institutional and regulatory framework for sustainable natural resources management.

12. In line with the government actions described above, at the time of appraisal the Country Partnership Strategy (CPS, June 1999) for Mexico identified three themes central to the support provided by the World Bank Group to Mexico: i) social sustainability, ii) removing obstacles to sustainable growth, and iii) effective public

[10] The Bank's Rural Development in Marginal Areas APL was implemented under the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) in two phases (P007711 and P057530).

administration. Within this broad framework, the CPS identified several priority areas for intervention by the Bank in the environmental sector, which guided the project: i) institutional development, ii) decentralization of environmental management, iii) improved management of natural resources (e.g., forests, water and biodiversity), and iv) design of sector policies.

13. With the support of various GEF operations, the World Bank assisted in strengthening the institutional policy and infrastructure responsible for the system of protected natural areas in Mexico, including the creation of a trust fund with resources from the pilot phase of the GEF. The purpose of this corridor project was to help the government to address the sustainable management of biodiversity beyond these protected areas. GEF funds for this project have augmented those already invested, in order to focus on biological corridors as a complementary strategy for biodiversity conservation. The involvement of the GEF is justified on the basis of the project's innovative approach to the integration of biodiversity criteria into development programs, and to biodiversity management within a productive landscape. During the implementation of the RMBC, together with its regional partners Mexico promoted the formation of an integrated system composed of protected areas. The MMBC strategy focuses on connectors for the conservation and sustainable management of natural resources, including biodiversity, in the natural and productive landscapes surrounding natural protected areas of southern Mexico.

1.2 Original Global Environment Objectives (GEO) and Key Indicators (*as approved*)

Original Global Environmental Objective

14. The project's global environmental objective is the conservation and sustainable use of globally significant biodiversity in five[11] biological corridors in southeast Mexico, through the mainstreaming of biodiversity criteria in public expenditure and in selected local planning and development practices.

15. At appraisal, the project was one of the first in the world to apply the innovative corridor concept for the purpose of biodiversity conservation hand-in-hand with sustainable local development. It covers a total of approximately 6.8 million hectares of land and 448,798 hectares of sea surface in the states of Campeche, Chiapas, Quintana Roo, and Yucatan, and it connects the habitats of 23 protected areas (2.86 million hectares).

Key Indicators

16. The project's key performance indicators for outputs and outcomes were included in the PAD (p. 8), as follows:

[11] Note: Although the PAD logframe mentions six corridors, the PAD Project Development Objective states five corridors. Unfortunately, the document's logframe was not updated after the Tabasco Corridor was dropped during the preparation, and the project focused on the remaining five corridors and four states.

a) After seven years, in focal areas (15% of the Corridor's[12] total surface):
   i. Rate of native habitat loss is decreased, and/or area under native vegetation cover is increased (with specific targets varying across individual focal areas);
   ii. Degree of perturbation of populations of corridor-specific indicator species (e.g., selected birds, mammals, insects, plants) is decreased.

b) Communities (and/or producer groups) in focal areas are engaged in different forms of local planning (depending on levels of organization) aimed at conservation and sustainable use:
   i. Awareness raising (in at least 80% of communities);[13]
   ii. Problem assessment (in at least 50% of communities);
   iii. Priority setting (in at least 30% of communities);
   iv. Development of action plans (in at least 10% of communities)

c) In focal areas, no more than 30% to 50% (depending on each focal area) of production (in area or producers) is associated with selected, high-impact resource use practices detrimental to biodiversity (e.g., uncontrolled use of fire in agriculture, inadequate waste disposal, overfishing, overhunting) in native ecosystems.

d) In focal areas, at least 30% to 50% (depending on individual focal areas) of production (in percentage of area, or of producers or value) is generated by financially sustainable, biodiversity-friendly practices of natural resources use (forest products, honey, maize, vegetables, ecotourism activities, etc.) in the productive landscape.

e) In the various corridors, at least 40% of existing and new public programs and at least 20% of public spending with impacts on the natural resource base take into account biodiversity considerations, including:
   i. Programs reoriented from potentially harmful to biodiversity-friendly or -neutral activities;
   ii. Programs actively promoting activities aimed at the sustainable use of biodiversity.

1.3 Revised GEO (*as approved by original approving authority*) and Key Indicators, and reasons/justification

17. Not applicable. The original Global Environmental Objective and Key Indicators were not revised.

[12] "Corridor" is used to refer to: the collective area of the five different corridors included in the project, the project itself, and as a recognized concept/initiative within Mexico. On the other hand, "corridor" is used to refer to the individual corridors included in the project or the associated concepts and strategies that are applicable in any location, not just within the project areas or in Mexico.
[13] The estimate of the number of communities referred to in original targets as 80, 50, 30 and 10% is based on the PAD reference of 130 target communities in focal areas: 80% = 104 communities; 50%=65 communities; 30%=39 communities and 10%=13 communities.

1.4 Main Beneficiaries

18. The project's main beneficiaries were communities and rural producer groups. The project's global environmental objective was the conservation and sustainable use of globally significant biodiversity through mainstreaming of biodiversity criteria in public expenditure in strategic lines, as defined in PAD Annex 7, by strengthening of productive practices of indigenous and rural populations to be compatible with conservation, including the production of aggregate value from local raw material. Among others, the project supported agroforestry and forest management activities, including chicle gum, vanilla and organic coffee production as well as apiculture.

19. Producers who live in the corridors were specifically targeted by project activities that promoted conservation and sustainable development. In these areas, most are organized in *ejidos* and indigenous communities. Indigenous peoples benefited in particular,[14] because they live in areas that still maintain extensive forest cover in southeast Mexico; they are considered the strongest allies in the conservation process due to their broad knowledge of the natural resource base and its uses. As anticipated during project design (see PAD), *mestizo*[15] people also benefited from the project; in many cases they manage forestry and agroforestry systems that are recognized for playing an important role in biodiversity conservation. Those who derive their livelihood from ecotourism and ethnotourism also benefited through the project's promotion of biodiversity and cultural diversity conservation.

20. Because the project focused on enhanced biodiversity conservation by developing and testing a bioregional approach to biodiversity management (e.g., improved ecological, biological and genetic connectivity of fragmented habitats), its activities also incorporated institutional-level beneficiaries throughout implementation (thus contributing to future national, regional and global replication and adaptation of the project's corridor model):

i. The research community and NGOs[16] with environmental and social objectives aimed at promoting biodiversity conservation and various forms of sustainable use of natural resources benefited from the project's reorientation of public expenditure in support of their common goals;

[14] Predominantly Maya. In Calakmul also Chol, Tzotzil, Tzeltal, Zoque, Nahua Mame, Lacandón, Mestizos, Mam, Mochó, Cakchiquel, Kanjobal, Tojolabal and Totonaco. See Ethnicity in table in Annex 2. Outputs by component.

[15] *Mestizo* literally means half-breed. In Mexico it refers to everyone—in this case peasants—who do not belong to an indigenous group or are not of European ancestry.

[16] Civil society participants included: *Tropical Rural Latinoamérica, A.C, UNAM Instituto de ICAAN-NABCI, Centro de Investigaciones Tropicales (CITRO), Universidad Veracruzana, Xalapa, Onca Maya A.C., Conservación de la Naturaleza, Universidad Autónoma de Juárez de Tabasco, UNAM Instituto de Ecología, Natura Mexicana A.C, Instituto de Tecnología Social, Centro de Investigaciones Tropicales, Instituto de Tecnología Social TECSO, Pronatura Chiapas A.C, Pronatura Yucatán AC, Ecosistemas A.C, Centro GEO, Jaguar Conservancy A.C., Ecosur, Quintana Roo, Centro Interdisciplinario de Biodiversidad y Ambiente, A.C. (Ceiba), CINVESTAV, Mérida, Yaax Beh A.C., Colegio de la Frontera Sur Unidad Chetumal, Ecosur Chetumal, Universidad Autónoma Metropolitana Iztapalapa, Consejo Civil para la Cafeticultura Sustentable en México, CICY Mérida, UNAM Instituto de Biología*.

ii. Federal, state and municipal governments[17] increasingly interested in conservation (through the provision of training and technical assistance) benefited, particularly on a national level, from project activities that helped to stabilize agricultural frontiers in primarily tropical forest areas of the Yucatan Peninsula and Chiapas and to maintain ecosystem integrity through sustainable natural resource management subprojects. This was one of the first projects to employ the innovative concept of biological corridors to target biodiversity conservation along with sustainable local development. Experiences from and lessons learned during project implementation will contribute to future national, regional and global applications and adaptations of the biological corridor model.

1.5 Original Components (*as approved*):

21. The project had four components: (A) Design and Monitoring of Biological Corridors; (B) Corridor Integration into Development Programs; (C) Sustainable Use of Biological Resources; and (D) Project Management and Coordination. Total project costs at appraisal amounted to US$90.05 million, with US$14.84 million from the GEF (expressed as 11.5 million SDR in the original Grant Agreement), US$1.24 million from CONABIO, US$0.29 million from project beneficiaries, US$2.44 million from GTZ,[18] US$66.99 million from the Government of Mexico, and US$4.25 million from IBRD.[19]

Component A. Design and Monitoring of Biological Corridors (US$5.91 million, GEF US$4.26 million)

22. The objective of this component was to finance the detailed definition of priorities in the focal areas for conservation and sustainable use of biodiversity, through processes of participatory community planning, and on the basis of expert scrutiny of biological/ecological field and cartographic information. It financed the establishment and operation of an integrated monitoring and evaluation system to track project performance through monitoring bio-ecological, socioeconomic and institutional indicators at the corridor and focal area levels.

[17] Government participants included *CONABIO Dirección de Análisis y Prioridades, Banchiapas, Secretaría de Medio Ambiente de Chiapas, Secretaría de Desarrollo Urbano y Medio Ambiente de Yucatán, SEMARNAT, Instituto Nacional de Ecología (INE), Comisión Nacional de Áreas Protegidas, Instituto de Historia Natural del Estado Chiapas. (IHNE).*

[18] GTZ cofinancing focused on the promotion of economy and commerce, state modernization and environmental protection. GTZ collaborates in the region's Indigenous Peoples Sector Network on Rural Development/Management of Natural Resources, through the Coordination Office for Indigenous Peoples in Latin America and the Caribbean.

[19] PAD Annex 4. Incremental Cost: "it is estimated that some US$4.25 million would be financed by the World Bank Loan 'Rural Development in Marginal Areas', which includes in its list of target areas two regions in Chiapas comprised in the Corridor project area." The Bank's Rural Development in Marginal Areas APL was implemented under the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) in two phases (P007711 and P057530) without having cofinanced MMBC activities.

23. Specific activities financed under this component included:

a) Analyzing relevant existing information to design and implement biological connectors, with a focus on biological data, current land use patterns, user rights and the role of agro-biodiversity.

b) Involving stakeholders in local planning for the management of biodiversity in focal areas to be implemented according to a typology of community capacities and organization designed for the project (PAD, Annex 11). This activity specifically included: (i) raising awareness among stakeholders on the economic and environmental benefits of the corridors; (ii) promoting the assessment of natural resource management problems and issues; (iii) assisting in the definition of priorities for natural resource and biodiversity management; and (iv) natural resource management strategies at community and organizational levels (local, regional).

c) Implementing a monitoring and evaluation (M&E) protocol at different scales with a geographic information system (GIS) that integrates biological, ecological, socioeconomic and institutional information. It includes both formal scientific aspects and evaluation of change by project beneficiaries. Implementation of the M&E protocol will entail the establishment of baselines for the project's indicators. This will be done by gathering, organizing, analyzing and validating existing data (biological, ecological, socioeconomic and institutional) on corridors and focal areas. Only when required data are not available would the project finance the ad hoc generation of baseline information.

Component B. Corridor Integration into Development Programs (US$71.72 million, GEF US$3.98 million)

24. The objective of this component was to remove institutional, technical and informational barriers that prevent the adoption, in regular rural development programs, of win-win natural resources and biodiversity management options. At appraisal, Mexico's Federal Government funded about 50 programs for social, agricultural and infrastructure development (some with state and/or municipal counterparts) in the project area. An analysis undertaken during preparation showed that at least half of them had direct relationships with the conservation and sustainable use of natural resources and biodiversity. To account for the variation across corridors (biodiversity relevance of the individual programs and the institutional, technical and political opportunities for their reorientation), the implementation modalities of this component were made specific to the characteristics of each corridor and its areas of intervention.

25. Specific activities financed by this component included: (i) studies and consultations to analyze the positive and negative biodiversity impacts of development programs; (ii) development and periodic update of corridor strategies in individual corridors, agreed upon at the level of the State Corridor Council (SCC) created by the

project and addressing short-, medium- and long-term threats and opportunities in order to promote conservation and sustainable use of biodiversity, taking into account the results of studies on biodiversity impacts, and current patterns of government programs for rural development in the corridors; (iii) institutional strengthening, capacity-building and awareness-raising activities, such as appropriate training of public officials, to promote provisions for conservation and sustainable use of biodiversity for inclusion in selected state and municipal development plans; and (iv) technical assistance to redesign development programs shown to have actual or potential negative biodiversity impacts, field-test modified programs, incorporate biodiversity indicators into M&E systems of development programs, and prepare and disseminate lessons learned.

26. Activities under this component were financed at no more than 80% by the GEF (with the exception of corridor strategies that could be financed 100% considering their importance to kick off the mainstreaming process). However, GEF resources would be incremental to baseline government funding of much larger amounts (with estimated ratios of 1 to 20), which were to be reoriented in biodiversity-compatible directions as a result of the project's interventions.

Component C. Sustainable Use of Biological Resources (US$9.31 million, GEF US$4.01 million)

27. The objective of this component was to develop an integrated approach to promote sustainable use of biodiversity in focal areas within the five selected corridors. The approach included activities aimed at: (i) maintaining native ecosystems (forests, coastal ecosystems, marshes, etc.), wildlife viewing, studies of population dynamics for targeted wild species (native only), rule establishment for ecotourism, forest enrichment with desirable species, extraction schemes for NTFP, etc.; (ii) restoring degraded ecosystems, such as the restoration of water flow to original ecosystems (wetlands, marshes known as "*ciénagas*" in the region), planting of native trees in patches of vegetation that are isolated and not close to a river (called "*petenes*" in the Mayan regions), reforestation with native species compatible with biodiversity conservation objectives, pilots for rebuilding dunes by replanting with native species, etc.; and (iii) developing the sustainable use of biological resources in productive landscapes, such as capacity building for alternative use of wood products (non-timber species), establishment of rules for extraction of ornamental plants, sustainable use of plant biodiversity in home gardens, tests of native species as cover crops, pilot projects for the improved use of local species and varieties (fauna and flora), studies on market access for organic products and/or "sustainably managed" biological resources, certification, etc.

28. Specific activities in this component included:

a) Capacity building and training programs on sustainable use of biological resources for producers and their organizations' front-line agents. These included workshops, field visits, short study tours, networking by producers, specific training in the development of organizational capacity and managerial skills, particularly for vulnerable groups such as women and indigenous peoples, for a

total amount of about US$0.6 million supported by the GEF grant;

b) Studies at rural community level to identify practical steps in the implementation of community- and producer group-based subprojects, including constraints and opportunities for developing biodiversity-friendly markets, and fine-tuning of selected practices to specific biophysical, social and cultural conditions. Studies and capacity building were considered barrier-removal activities and were therefore financed 100% by the GEF;

c) Development and implementation of pilot projects for the sustainable use of biodiversity. Pilot projects were to be demand driven, on the basis of broad categories of eligible expenditure, and were to be financed by GEF resources either at 80% or at 33%, depending on a) the level of organization of the requesting community or other legal entity, and b) the presence of vulnerable groups. (See PAD, Annex 2.)

Component D. Project Management and Coordination (US$3.10 million, GEF US$2.59 million)

29. This component financed the establishment and operation of a National Technical Unit (NTU), and of two Regional Technical Units (RTU) (one for Chiapas; one for the Yucatan Peninsula: Campeche, Yucatan and Quintana Roo), as well as operational costs of the National Corridor Council and State Corridor Councils.

30. The RTUs were responsible for day-to-day management of project activities, ensuring compliance with project objectives and procedures, procurement, reporting to the NTU, informing the National Corridor Council and State Corridor Councils about project progress and operation, and taking into account their recommendations.

31. The NTU, in coordination with the RTUs, prepared and executed the Consolidated Annual Operational and Budget Plan (AOP), based on annual corridor operational plans proposed by the Regional Units. The NTU ensured the liaison between the project and related activities in the broader Mesoamerican Corridor initiative.

1.6 Revised Components

32. Not applicable (no revisions)

1.7 Other significant changes

33. **Effectiveness**. The Grant Agreement was signed on November 30, 2000, on the last day of the then out-going GOM administration, followed by three extensions of effectiveness (original date: February 28, 2001) until the project was declared effective

on January 30, 2002.[20] Three amendments were made to the Grant Agreement (November 2001, September 2004, November 2005), as follows:

34. **First amendment (November 2001)**: The integration of the State and National Corridor Councils (SCCs and NCC, respectively) with representatives from state and municipal governments as well as local producers, as a condition of project effectiveness, was revised to specify that only the eight state and municipal membership positions in each SCC needed to be filled before the project could access GEF grant resources.[21] This allowed the Project Coordination Unit to access resources to carry out consultation workshops (with rural producers, NGOs, academia and the private sector) in order to achieve the full SCC representation, but which had not been conducted during the final stages of project preparation. The consultation workshops were held between 2002 (after the project became effective in January 2002) and 2004.

35. **Second amendment (September 2004)**: The amendment included the redenomination of GEF funds, originally expressed in terms of SDR (Special Drawing Rights), to United States dollars (USD). The amount of GEF grant for the project was from then on quoted as US$14,840,000.

36. **Third amendment (November 20, 2005)**: With the results of the External Evaluation conducted as part of the Midterm Review process, changes included:

a) The trigger indicators (signaling transition of the project from phase I to phase II) were adjusted.
b) Changes were made to the schedule of expenditures based on project progress.
c) The term "primary tropical moist forest", used in the Grant Agreement and the Implementation Letter, was aligned with 2002 OP/BP 4.36, Forests Safeguard Policy.
d) Funding for expenditure categories "goods," "consultant services and training," "subprojects" and "operating costs" was increased to 100%.
e) The amount of GEF resources available for each subproject was increased from US$20,000 to US$50,000, which led to the adjustment of the target of 565 total subprojects to 120 (Operating Rules, Annex 4).
f) The Procurement and Consultant Guidelines, May 2004 edition, were officially adopted.
g) The project's focal area concept was expanded: "focal area" means a locality, identified in the Implementation Letter as a "Phase I" or "Phase II" area, and located within a biological corridor and any other locality to be agreed between CONABIO and the Bank.

[20] Project effectiveness was delayed for over one year due to what proved to be an incorrect design assumption. The need for an amendment was identified by the new task manager appointed in September 2001, during his first mission that same month. The project became effective in January 2002. (For further details, see ISR #6. 09/26/2003.)

[21] While this condition was meant to achieve broader participation from civil society from the start, it proved to be unrealistic and turned into an obstacle. The amendment granted CONABIO access to GEF resources to complete the task for which it could not or would not devote its own resources.

37. It is important to re-emphasize that throughout all the three amendments, the Project's Objectives and Key Indicators as specified in the PAD, were never revised or amended through the formal Bank procedures. This is not surprising given the fact that, as summarized above in paragraphs 32-34, the amendments were not meant to address the indicators.

Project Extensions

38. On January 22, 2007, the project closing date was extended from June 30, 2008 to December 31, 2009. This request was made by the GOM, taking into consideration new projections of implementation progress based on the improved performance of the new Project Coordination Unit appointed by the GOM after the Midterm Review to turn around the project's unsatisfactory performance at that time.

Reallocation

39. As a result of the extension of the project closing date, authorized by the World Bank and the GEF, the GOM (through SEMARNAT) agreed to provide compensation for local staff during 2008 and 2009, thus making more resources from the GEF grant available for equipment and subprojects. In light of this, a request was made to reallocate "unallocated" funds from the grant and the remainder available in "goods." This request was approved by the World Bank (Table 1).

40. A standard four-month grace period was approved by the Bank in 2009 in order for the Borrower to submit documentation for expenses incurred prior to the December 31, 2009 closing date. By the end of this period (April 30, 2010), NAFIN submitted documentation supporting total disbursement of the grant (US$14.84 million) including the special account (US$650,000).

Table 1: Reallocation of grant proceeds by expenditure category

#	Category	Original	Amendment 2001	Amendment 2004	Amendment 2005	Reallocation 2009	Actual	%
		SDR Equivalent		USD				
1	Goods for Parts A and D of the project	183,315	190,000	245,183	245,182	114,624	204,004	178%
2	Consultants' services and training	8,954,817	8,950,000	11,549,391	9,044,783	9,175,343	8,718,373	95%
3	Goods and works under Part C of the project	1,127,522	1,130,000	1,458,191	0	0	0	0
4	Operating costs under Part D of the project	916,003	920,000	1,187,200	2,700,000	3,100,033	2,896,158	93%
5	Unallocated	318,343	310,000	400,035	400,035	0	0	0
6	Sustainable Use Subprojects	0	0	0	2,450,000	2,450,000	3,021,465	123%
Subtotal		**11,500,000**	**11,500,000**	**14,840,000**	**14,840,000**	**14,840,000**	**14,840,000**	

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

Project preparation

41. A large body of research and scientific evidence was produced or gathered to strengthen the project concept, which was innovative and carried a number or risks, including the challenge to communicate project objectives to the GOM agencies involved in rural development, and the lack of information on sustainable practices.

42. A cross-sectoral coordination experience became the foundation of the corridor approach: the *Foundations for Inter-institutional Collaboration Agreement* was signed in 1998 to coordinate regional and rural development efforts from the Ministries of Environment (SEMARNAT), Agriculture (SAGARPA), Social Development (SEDESOL) and six other ministries. In the September 28, 2000 PAD Review Meeting minutes, it was agreed that the overall risk rating for the project should be "Substantial" given the change in GOM administration, and the project team was advised to consult with the new administration in order to ensure its support for the project. This seminal initiative was discontinued when the GOM administration changed (December 1, 2000).

Lessons learned and incorporated

43. Lessons learned regarding institutional development and the broader policy environment led to the identification of key activities: Resources for training of officials at different levels were budgeted; the policy environment was to be systematically improved through the promotion of public participation to strengthen social organizations and build capacities on sustainable development. The project built on the experience of the Technical Advisory Committees of the Protected Areas and adopted State Corridor Councils as participatory and transparent forums at the corridor level to make decisions on strategic aspects of the projects.

44. Similarly, the main lesson of working with small rural producer organizations is that one must identify the existing patterns of natural resource management and build on them, combining local traditional knowledge with modern technology and working together in search of technological alternatives that are appropriate for current socioeconomic conditions. In addition, it is important to provide support and incentives to improve crop marketing.

Corridor design[22]

45. Workshops conducted with stakeholders in the four participating states (Campeche, Quintana Roo, Chiapas and Yucatan) included discussions on the project's goals and components and were held with officials of federal and state institutions, NGOs involved in environmental issues, academia and local producers. Workshops were also organized with experts to identify criteria for Corridor design and potential project focal areas in order to develop pilot subprojects with the communities.

46. Corridor consultation groups in each state also contributed to the creation of an agreed list of sustainable development subprojects to be financed with project resources and eventually lead to the creation of the State Corridor Councils (SCCs), with institutional, social and private sector participation.

47. To ensure the continued participation of stakeholders and officials throughout project implementation, workshops were designed for officials, partners, small producers and rural organizations to share experiences, combine local traditional knowledge with modern technology, and publicize relevant economic incentives, fair trade and niche market opportunities.

Social Considerations

48. A social assessment (SA) was performed for each of the corridors, with special attention to indigenous peoples and gender, including participatory workshops with communities with the support and participation of social specialists. As a result of the social assessment, five key issues were identified for project implementation:

- the need to consider the region as a living space

[22] Although the process of appointing representatives to the corridor councils was not completed during preparation, numerous meetings were held with stakeholders, officials and experts who contributed to the project design.

- the relationship between local culture and environment
- land tenure and distribution
- economic activities
- social organization

49. Of the total 1,163,490 inhabitants living within Corridor areas, 45% are indigenous: 23 indigenous languages are spoken, eight of which originate in the region.[23] An Indigenous Peoples Plan (IPP) (see PAD, Annex 12) was formulated in order to ensure that local indigenous peoples would be able to participate in the project, receive culturally compatible benefits and not be negatively impacted by project activities. The studies conducted as part of the SA analyzed the degree of organization of the indigenous groups and opportunities to increase their access to improved technologies applicable to their management and use of natural resources. The following key factors were identified to enhance indigenous peoples' effective participation in the project: a) strengthening of social organization; b) training in legal issues (such as land tenure); c) promotion of a gender approach to the generation and distribution of income and to community decision making; and d) enhancement of their technical capacity to manage sustainable development projects.

50. In response to the SA's results, a special window was created to finance pilot projects presented by vulnerable groups (such as indigenous communities and women's groups), representing approximately 10% of total project resources during project implementation. This special window was created due to the low level of organization among some 70% of these vulnerable groups, in order to improve their access to resources to fund their sustainable development initiatives. Project design also envisaged their access to project resources through capacity-building workshops, pilot projects, studies and involvement in local planning activities for biodiversity management in focal areas. In the end, the project design took into account differences in the degree of organization of stakeholder communities and groups by creating and applying a typology that included a spectrum from weak (type 1a) organization to strong (type 2b) organization. (See PAD, Annex 11.)

51. Taking into consideration the particular conditions of one project focal area—La Cojolita, in the Lacandona Jungle, Chiapas—characterized by social conflicts over land tenure (between resident communities and the federal and state governments), the project IPP specified that additional consultation activities would be carried out during the first year of implementation in order to develop a site- and context-specific Indigenous Peoples Plan with and for the three indigenous communities living in the focal area. Project design also allowed the National Corridor Technical Unit to use GEF resources in order to assist the indigenous communities through a training in agricultural legal issues so that they could better negotiate the land tenure conflict. These activities were included as an obligation in the Grant Agreement and were considered a condition for the use of project resources in La Cojolita.

[23] Updating of data related to the indigenous population living in the corridors was conducted by the National Commission for the Development of Indigenous Peoples (CDI, previously the National Institute of Indigenous People, INI), through a collaboration agreement with the MMBC in 2007.

Risk Assessment

52. Risks identified during project preparation were classified in two main categories: i) technical aspects related to the design of corridors and the subprojects to be carried out in the focal areas; and ii) institutional, political, social and public policy aspects to integrate biodiversity into public programs and to encourage local development practices. Classification of the risks showed that, in general, they were manageable. (See PAD, p. 30.)

53. To mitigate the first risk, project design incorporated a series of activities that combined the efforts of NGOs and institutions in order to promote the sharing of technical information on: i) the creation of corridor maps based on consensus; ii) the definition of focal areas based on technical studies; and iii) the reorientation of public policies, development plans and programs to be favorable to biodiversity.

54. In terms of institutional, political, social, and public policy risks, mitigation measures included: i) inclusive participation of all stakeholders in project activities in each of the corridors; ii) efficient and useful training for all stakeholders, emphasizing training on the project's technical aspects for public officials at different levels and in different sector agencies in order to facilitate the implementation of plans and programs that integrate biodiversity criteria, as well as to highlight the importance of supporting local development agendas that have conservation-friendly aspects; and iii) a comprehensive communication strategy.

55. Despite the deficiencies in design and implementation, monitoring activities contributed to mitigate institutional risk by bringing together academia, NGOs and other institutions in an M&E network (formed in 2006) and by promoting the flow of information and knowledge among different local groups and policy makers.

56. During the project's final design stage, a small NGO led by a former Bank social development specialist working in the La Cojolita focal area in Chiapas demanded that the team carry out a more in depth consultation with the three indigenous communities within the Lacandona community. In order to avoid any delays, highly detailed mitigation measures for this area (more so than in any other area of the Corridor) were incorporated into the IPP as well as the Grant Agreement. They included ongoing consultations with stakeholders and participatory planning to define the specific actions to be financed as part of the design and sustainable use of the part of the Corridor in La Cojolita. During supervision, the Bank team and the MMBC team within CONABIO maintained a constant presence in the area, conducted consultation workshops and created a detailed social and agricultural diagnostic to facilitate smooth implementation. The same NGO had suggested that the project coordinator to give a presentation of the project's achievements at the Fourth GEF Assembly held in Uruguay in May 2010.[24]

[24] The World Bank ended up supporting the project director to attend the GEF Assembly and present on the MMBC project.

Borrower Commitment

57. During preparation, the GOM fully supported the MMBC initiative. The eight ministries that had signed onto and participated in the Institutional Coordination Framework (Foundations for Inter-institutional Coordination; *Bases de Colaboración Inter-institucional*) pledged to refocus their development programs to better integrate biodiversity criteria. During the design and preparation of the project, the GOM indicated that relevant ministries could designate parts of their budgets for activities within the project area in order to encourage the reorientation of development activities within the individual corridors. The National Council for Natural Protected Areas (CONANP)—composed of researchers, NGOs, industry and local producer organizations—and Mexico's GEF Focal Point also supported the Corridor project proposal. In addition, during negotiations an agreement was reached on a Schedule of Obligations of Counterpart Resources, including projections regarding the counterpart funding (federal resources) to be allocated to the Corridor areas for the duration of the project.

58. During the first part of project execution, the GOM was not supportive of the project. The outcome of a national election signaled an impending change in the government administration.[25] The outgoing administration had supported the preparation of the project and thus accelerated the signing of the Grant Agreement on November 30, 2000, before having the opportunity to complete the social consultations for the formation of the State Corridor Councils (SCCs). A new Minister of Environment was appointed in September 2003. The project operated under 90-day plans closely monitored by the Bank, NAFIN and the Ministry of Finance (SHCP) in 2004. After the MTR in January 2005, a new project team was appointed, followed by the appointment of a new head of CONABIO. The project took off with a renewed commitment from the GOM, but with the handicap of a four-year delay in implementation, overcoming major shortcomings that had led to an Unsatisfactory rating in the ISRs from September 2003 to December 2004. These ratings were gradually upgraded to Moderately Satisfactory in June 2005 and Satisfactory in June 2007.

Institutional Arrangements

59. As the financial agent for the project, the Borrower was *Nacional Financiera* (NAFIN). The role of the financial agent is critical in reviewing project execution and processing disbursements, but the agent had limited experience in project execution. The National Commission for the Knowledge and Use of Biodiversity (CONABIO), a federal-level, public-sector, inter-ministerial commission in charge of developing the National Biodiversity Strategy and Action Plan, was appointed as the executing agency due to its experience in and international recognition for work on environmental issues, and because the project's objectives coincided with CONABIO's mandate to promote the integration of biodiversity criteria into the development programs of the eight Ministries that signed the Foundations of Inter-institutional Collaboration agreement and that make up its Board. The National Technical Unit for the project was incorporated as a

[25] The project's Grant Agreement was signed on November 30, 2000, the last day of the administration of President Ernesto Zedillo.

department in CONABIO with two Regional Technical Units located in the Yucatan Peninsula (for the states of Campeche, Quintana Roo and Yucatan) and Chiapas.

2.2 Implementation

60. The project became effective on January 20, 2002, more than a year after it had been approved by the Board of Executive Directors and signed by the GOM on November 30, 2000. The Grant Agreement was signed with CONABIO, which seemed the best institution to host the project but it had not participated in the preparation. The Bank team underestimated both the difficulty of meeting the effectiveness conditions and the lack of experience of the new administration. For the first time in 70 years, a different political party had won the election, and new, inexperienced officials took office. Major programs were nearly paralyzed, particularly the more complex projects with international donors. Other Bank projects were equally affected.

Creation of the National and State Corridor Councils

61. Creation of the four SCCs and the NCC was originally a condition of effectiveness, because the consultations to form the councils had not been completed during preparation. The GOM would not or could not provide support for this activity. As previously explained, the project's Grant Agreement was signed at the same time that newly appointed officials took office throughout the government leading to paralysis in many sectors. Grant resources were needed to fund social sector workshops that would contribute to the formation of State Councils. As a result, project effectiveness was delayed for over one year until the first amendment (November 2001)[26] was signed, thus freeing up these resources. The social sector information workshops were then held between 2002 and 2004.

62. The election of national and state government officials, members of NGOs, academia and the private sector as representatives to each SCC was a relatively quick process. Workshops with producers in the project focal areas and their election to the SCCs constituted a much longer process, since their organizations are weaker and divided by region or product. This was especially the case in Chiapas,[27] where the MMBC and the Puebla-Panama Plan were identified by stakeholders as two parallel projects in the same geographical area. This situation created confusion and reactions against the MMBC[28] in a context characterized by polarized views of regional development as a result of the 1994 armed conflict. Expectations raised by the change in the federal government in 2000 altered the dormant conflict and the *Zapatista* rebel group marched to Mexico City to negotiate with the new administration.

[26] The need for an amendment was identified by the new task manager appointed in September 2001 during his first mission, and the project was declared effective in January 2002.

[27] By July 2003, the other three SCCs (Yucatan, Campeche and Quintana Roo) had been formed while that in Chiapas was still being constituted.

[28] The Plan Puebla-Panamá was an infrastructure project launched by the previous GOM administration (Zedillo), which had not been well received by affected stakeholders. The confusion stemmed from subsequent presentation, by the incoming GOM administration (Fox), of the MMBC as the "green" arm of the PPP.

63. In the end, the Chiapas SCC was established in late 2004 with a well-represented social sector: 11 representatives of producer organizations (from the 11 areas in which the project would intervene), whereas, in accordance with the Operations Manual, only three producers were elected to each of the SCCs of the Yucatan Peninsula (Campeche, Quintana Roo, and Yucatan). However, the more extensive and comprehensive consultations together with greater producer representation in Chiapas contributed to increased MMBC project visibility, leading to the implementation of a greater number of subprojects in that state relative to the other participating states. (See Section 3.2, Key Performance Indicators.)

Implementation Risk and Personnel Changes

64. In accordance with Bank Procurement Guidelines, selection of the project coordinator began in the first quarter of 2001 with a public invitation to apply posted on CONABIO's website and the creation of a multisectoral selection committee.[29] Without providing an explanation, SEMARNAT objected to hiring the candidate chosen by the selection committee, who happened to be a former high-level official of the outgoing administration. The World Bank task team leader attempted to support the selection of this candidate based on Section 3.04 of the Grant Agreement,[30] but was unsuccessful in convincing SEMARNAT to agree.[31] As a result, during the first years of project implementation, the project had a coordinator whose lack of vision and experience contributed to poor project performance[32] as well as to the slow recruitment process for Regional Technical Unit staff in both the Yucatan Peninsula and Chiapas. The perceived absence of management leadership further hindered progress in achieving results between 2002 and 2004.

65. From September 2003 (ISR #6) through April 2005 (ISR #11), the project was rated Unsatisfactory[33] due to slow project progress and the corresponding lag in disbursement. In response, an external institutional specialist from the FAO/CP was hired to support the Project Coordination Unit and to improve its administrative capacity (2003–2007). However, implementation obstacles due to poor staff qualifications persisted.

66. During the June 2004 supervision mission, the Bank task team and CONABIO created a 90-day plan that included CONABIO's commitment to have an external evaluation[34] and to change the project coordinator. Stricter supervision was also provided by *Nacional Financiera* (NAFIN), the Ministry of Finance (SHCP), the Ministry of Environment and Natural Resources (SEMARNAT) and the World Bank. The Bank team

[29] The committee consisted of a researcher from the National University, a representative of indigenous and peasant producers from Chiapas, the Director of the Mexican Conservation Fund (FMCN), and a representative of the Ministry of Environment and Natural Resources (SEMARNAT).
[30] Section 3.04 of the Grant Agreement: "[The United Mexican States], through its representatives on the [selection committee], shall: (a) cause the Recipient, acting as trustee of the Trust, to hire and thereafter maintain throughout project implementation, personnel in numbers and with experience and qualifications satisfactory to the Bank."
[31] June 8, 2001, the World Bank gave its no objection to the contract for the project coordinator.
[32] Including a greater focus on localized actions at the expense of the project's broader objectives (i.e., public policy mainstreaming and corridor connectivity).
[33] Unsatisfactory ratings were given for Agreed Procedures and Schedules, Monitoring and Evaluation and Project Management.
[34] The external evaluation was conducted as part of the project's Midterm Review (January 2005).

conducted a supervision mission every 90 days in order to review project progress. The first and second 90-day plans, covering the period from July to December 2004, were satisfactorily completed.

67. The Midterm Review (including a third 90-day action plan) was conducted in January 2005 (after the external evaluation was completed in the second half of 2004). The main conclusions of the independent evaluation were: (i) project objectives continued to be relevant and feasible; (ii) the institutional design, approach and instruments continued to be valid; (iii) the main change the project required was to focus on reorienting policy and public expenditure; and (iv) the main areas requiring attention were the operation itself and technical assistance to support communities' demands to take advantage of a reoriented government "supply." The Bank mission concurred with the main conclusions of the independent evaluation after discussing it with relevant stakeholders, including members of the NCC and SCCs. The full report can be downloaded from the project files and CONABIO's website.

68. As a result, a third amendment was approved (November 2005) and a more qualified project coordinator, with appropriate administrative and management skills, was recruited. New technical staff members were also selected, and were better able to link local development interests with available institutional programs (i.e., reoriented public spending) to successfully support local efforts for sustainable development, conservation and natural resource management (the subprojects). The new team's increased capacity for project management in conjunction with federal, state and municipal partners was readily observed during Bank supervision missions. As a result, implementation of project components improved because they were now more in line with project goals. The project was reclassified as Moderately Satisfactory in June 2005 (after 19 months).

Fostering Local Support in Light of Implementation Delays

69. Because on-the-ground project implementation was delayed longer than expected, the confidence of local producers and communities in the project (and in the general idea of the Mesoamerican Biological Corridor, MBC) began to wane (especially as local perceptions increasingly associated the MMBC project with the negatively viewed PPP). To bolster interest in and positive opinions of the MBC and the project (both in Mexico and regionally), the social experts on the Bank's task team applied for a US$350,000 grant from the World Bank-Netherlands Partnership Program (BNPP) Global and Regional Initiatives to implement a series of workshops collectively titled *Strengthening Social Participation in the Regional Mesoamerican Biological Corridor (RMBC) in Guatemala, Panama and Southeast Mexico*. The objectives were to strengthen: (i) the participation of indigenous communities, small-scale producers and women's organizations through the sharing of experiences in conservation and local organization in the context of the Mesoamerican Biological Corridor; and (ii) individual and community decision making in corridor areas so that local communities could help guide governmental institutions toward efficient decentralization and local and municipal development through informed participation and by making their preferences known. The workshops provided a forum for these exchanges, which were held in MBC areas in

Panama, Guatemala and in Southeast Mexico (Yucatan, Campeche, Chiapas and Quintana Roo) between 2003 and 2004. The workshops allowed the MMBC to reposition itself in order to retain necessary local interest in MMBC objectives and activities during the unexpected and prolonged lag in project implementation. It also provided innovative and practical instruments for engaging local communities within the MMBC through opportunities to demonstrate the importance of the MMBC in their daily lives and for the future of economic development in the region.

Implementation of Community Capacity Typology

70. The typology of community capacities and organization proposed in Component A of the project (see PAD, Annex 11) contributed to improved targeting of resources for subprojects by enabling the project team to better tailor Corridor activities to communities, for example by: i) identifying communities and producers in need of assistance and training in order to improve their awareness of the economic and environmental benefits of the corridors; ii) monitoring the use of the resources provided; iii) including a wide range of beneficiaries with respect to the disparity among their levels of organization; iv) implementing, with Bank Procurement Guidelines, the allocation and control of resources awarded to producer organizations; and v) publicizing the project in Corridor areas and prioritizing natural resource management activities within them.

71. Although the logical framework provided benchmarks to ensure the achievement of anticipated project goals outlined in the PAD and to reinforce the relevance of biodiversity mainstreaming, during implementation some indicators limited project interventions to only 16 predefined focal areas. The Midterm Review highlighted this obstacle and proposed that the focal areas be expanded to include *ejidos* throughout the Corridor. This allowed the project to incorporate a greater number of local producers and to maintain the demand-driven structure of subproject implementation while achieving project objectives. This change was reflected in the third amendment (November 2005), providing the opportunity to work in new areas while using the same budget. The amount of GEF resources available for each subproject was increased from US$20,000 to US$50,000, which led to adjusting the target of 565 total subprojects to 120, so as not to increase the total amount available under the subproject disbursement category (Operating Rules, Annex 4).

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

72. An M&E protocol was developed during preparation.[35] Based on this protocol, CONABIO was to prepare a M&E system to link monitoring indicators to project activities in order to track both project impact (overall development) and process (component activities and specific outcomes) at project, corridor, focal area and community levels. The M&E system should be based on the key project indicators (Section F above) which are also identified as the main indicators in the project's logical framework. (See PAD, Annex 1.)

[35] PAD p. 27: A Monitoring and Evaluation protocol has been developed during project preparation, based on indicators listed in the project's logical framework.

73. The M&E system's design and implementation were affected by the delay in effectiveness and weak institutional capacity. The MTR highlighted this shortcoming and the need to update M&E indicators during the MTR. The midterm evaluation mission (January 18–28, 2005 Aide-Mémoire) recommended that a consultant be hired to develop a conceptual framework and the methodology to produce M&E indicators for the MMBC focal areas.

74. On June 2005, the FAO/CP consultant prepared a basic proposal for M&E. However, the team focused on critical actions to put the project back on track and upgrade the project to avoid cancellation. By the time the new team was appointed in 2005, developing a protocol to capture all the logical framework indicators proved technically and economically more costly and less useful than anticipated. Under a second FAO/CP contract in December 2005, the specialist assisted CONABIO in implementing the managerial component of the M&E system.[36] The project teams from CONABIO and the World Bank decided to focus activities on the field and monitoring efforts in reorienting investments and mainstreaming biodiversity criteria into development programs as well as initiating a longer-term effort to build a network of research institutions and researchers willing to embrace the corridor concept and related activities in their own work.

75. The recommendation to develop an M&E system focused on the project indicators, highlighted by the MTR, did not produce the comprehensive M&E framework required to make up for the deficiencies of the original M&E design. However, the project sought opportunities for collaboration and exchange with local organizations (NGOs, academic institutions) that have the necessary capacity for monitoring. This resulted in the Multiscale Monitoring Network being formed in 2006 which brings together specialists in the area for conducting biological monitoring on a regular basis. The NTU entered into contracts with qualified academic or research organizations to be able to report on relevant habitat and species indicators with robust research findings. This, together with the use the biological monitoring system of CONABIO helped to address the significant shortcomings in the M&E protocols. But the issue of tracking performance using the key indicators as specified in the PAD continued to plague the Project.

76. There is no record of habitat loss or change in the native vegetation cover in the focal areas (15% of Corridor surface). The proxy reported shows deforestation rate was reduced from 1.5 to 1.0%/year (National Forest Inventory: 2002–2007; 1993–2002) in the 4 corridor states.

[36] For further details see Aide-Mémoire March 6–16, 2006, attached to June 1, 2006 ISR #13.

Presence of indicator species was reported for four (4) corridors:

Sierra Madre del Sur

77. *Panthera onca, Puma concolor, Leopardus pardalis, Leopardus weidii, Herpailurus yaguaroundi, Tapirus bairdii, Pecari tayacu, Mazama americana, Odocoileus virginianus, Nasua narica, Agouti paca, Dasypus Novemcinctus* and *Ateles geoffroyi* were monitored through Cybertracker, direct and indirect observations and surveys in the Chiapas Sierra Madre del Sur Corridor.[37]

Selva Maya Zoque

78. *Didelphis sp, Dasypus novemcinctus, Tamandua mexicana, Sciurus sp., Cuniculus paca, Galictis vittata, Panthera onca, Leopardus wiedii, Herpailurus yagoaroundi, Conepatus semistriatus, Nasua narica, Ateles geoffroyi, Pecari tajacu* and *Mazama americana* were monitored in the convergence of the Sierra Madre del Sur and the Selva Maya Zoque Corridors in Chiapas, using still-picture traps, footprint identification and direct observation inside transects and outside transects, and processed using the EstimateS program (available at http://viceroy.eeb.uconn.edu/estimates).[38]

Sian Ka'an–Calakmul

79. *Panthera onca* was monitored with transponders in the Sian Ka'an–Calakmul Corridor, which allowed their movements to be modeled, confirming the connectivity function of the corridors. In 1930 Mexico hosted around 20,000 jaguars. The current population is estimated at 3,500. The Chiapas Corridors and the Campeche and Quintana Roo Sian Ka'an–Calakmul Corridors represent key habitats, linking relicts of tropical forest in the Ocote, Sepultura, El Triunfo, Montes Azules, Calakmul and Sian Ka'an natural protected areas. In the Calakmul area alone, the jaguar population is estimated at 900 individuals (Ceballos et al., 2002; Chávez et al., in press). The protection of the jaguar can save 70,000 species of flora and fauna. (Ceballos 2007: Censo Nacional de Jaguares). The jaguar is at the top of the trophic chain, regulates a large number of species in the ecosystem and requires large extensions of conserved habitat (Miller and Rabinowitz, 2002). The study[39] cofinanced by the project in the two Sian Ka'an–Calakmul Corridors used the results of the jaguar habitat modeling produced by a well-known longitudinal study by Amor Conde et al. in 2006.

80. Moreover, the project commissioned a comprehensive study of the impacts of fragmentation and infrastructure on the jaguar populations in the Quintana Roo and Campeche Sian Ka'an–Calakmul Corridors. The study produced an evaluation of threats to habitat and jaguar populations, based on the potential jaguar habitat map produced by the Selva Maya-Zoque-Olmeca Project (Amor Conde et al., 2006), using the algorithm

[37] Rabeil, Thomas 2009: Implementación de un sistema de monitoreo de los mamíferos en el Corredor Sierra Madre del Sur.
[38] Muench, Carlos 2007: Evaluacion de especies clave de mastofauna mayor como indicadoras de la salud del ecosistema en Marqués de Comillas.
[39] Unidos para la Conservación [2007]: Modelos de control y conservación para el mantenimiento de corredores.

developed by Miradi™. It was instrumental in the effort to mainstream biodiversity criteria in the public utility Comisión Federal de Electricidad's investment planning process, leading to relevant modifications and mitigation measures in the original design for a high-tension transmission line that was planned through the Sian Ka'an—Calakmul Corridor in Quintana Roo and the establishment of a compensation fund for cattle ranchers when their livestock is harmed by wild felines.[40]

Biological Monitoring Network

81. In 2006, the MMBC's biological monitoring network was formed with the participation of GOM institutions, researchers from various disciplines, members of NGOs, universities, research centers, institutes and independent consultants, all focused on the conceptualization and development of multiscale monitoring and identification of ecological indicators to assess and guide public policies in the region (as part of M&E activity ii). The biological monitoring network has contributed to the systematization of the information and data already generated (Component A), including data generated through coordination workshops organized twice a year and participation in relevant seminars and congresses in which progress reports are shared. Many participating researchers and research centers have incorporated into their institutional agendas studies and research programs linked to the MMBC's thematic and geographical scope. For example, some NGOs collaborated to develop systems to monitor jaguars, tapirs, spider monkeys and birds. To consolidate Corridor information, the MMBC team is also being assisted by the Jorge L. Tamayo Center for Geography and Geomatics (part of the National Council for Science and Technology network). Because these activities only began after the change in the Project Coordination Unit in 2005, the process is not yet complete; comprehensive data for every corridor and focal area are not yet available.

82. In general, the generation of relevant baselines, data collection and analysis for project indicators (biological, ecological, socioeconomic and institutional) as part of the M&E protocol remains an ongoing process and a significant shortcoming in measuring the achievement of the operation's objectives. On the positive side, the network approach is proving highly efficient; mainstreaming the Corridor monitoring and knowledge sharing objectives in the scientific community's agenda highlights the relevance of the project's contributions.

2.4 Safeguard and Fiduciary Compliance

Safeguards

83. Safeguard compliance was Satisfactory throughout project implementation. The Bank supervision team included biologists, foresters, environmental specialists and social scientists to supervise the project's compliance with Bank policies: i) Environmental Assessment (OP 4.01), ii) Natural Habitats (OP 4.04); iii) Forests (OP 4.36); iv) Physical Cultural Resources (OP 4.11); v) Indigenous Peoples (OP 4.10); Gender (OP 4.20) (in the

[40] Jaguar Conservancy [2010]: Aportación para atender el programa emergente de grandes felinos que se tornan perjudiciales en la zona dañada por el Huracán Dean.

original documents although not in subsequent ISRs); and vi) Involuntary Resettlement (OP 4.12).

84. Environmental Assessment (OP 4.01): This Category B project was designed to be positive from an environmental standpoint, specifically through the promotion of conservation and sustainable use of globally significant biodiversity in selected communities, *ejidos* and private lands. The Satisfactory rating is based on the various activities undertaken to assess the current trends and threats to biodiversity in the project area, and to identify the interventions necessary to reverse the accelerating loss of biodiversity. These activities included: i) environmental assessment; ii) a study by the Department of Plant Sciences, University of Oxford, United Kingdom, which proposed a number of criteria to identify activities in terrestrial corridors; iii) a study of the specific problems in the northern corridor in the State of Yucatan; iv) technical reports; and v) direct consultations with producers, fishermen and other stakeholders to identify pilot projects for sustainable development. (See PAD, Annex 2.) This information was analyzed together with the data generated through the social assessment.

85. During project implementation, subprojects were also screened to verify their eligibility. All assessments made by the RTU were based on a typology and checklist of potential environmental impacts contained in the Operations Manual. These assessments were in turn delivered to the National and State Councils responsible for subproject approval screening (this included the national environmental authority, SEMARNAT). Selection criteria included whether the subproject comprised activities for: i) restoration, ii) maintenance of ecosystem quality, and iii) sustainable use of biodiversity. As described in Annex 2 of the PAD, the goal of the subprojects was to promote sustainable development for local producers and indigenous communities.

86. Natural Habitats (OP 4.04): The question of whether pristine and valuable habitats should shape the design of the corridors was discussed thoroughly among specialists during project preparation. The solution was to use the Natural Protected Areas—which included pristine areas and were subject to federal protection—as the "anchors" to be connected by the corridors in order to enhance effective biodiversity protection, reduce anthropogenic pressures (e.g., by promoting agro-ecological and silvopastoral activities while containing urban expansion and the production of crops dependent on large quantities of agrochemicals), and preserve natural forest cover to facilitate movement of species. The southern states of Mexico have a large proportion of their territory under protection (e.g., nearly 60% of the municipality of Calakmul is composed of private areas, or is under state and federal protection decrees). During implementation, all project activities facilitated the above goals as embodied in Corridor design. Compliance with this safeguard was therefore Satisfactory because the impact of the project on natural habitats was positive, reducing pressure from human activities and even reversing (in selected areas) the deforestation produced by past livestock expansion (by promoting silvopastoral practices and allowing pastures to revert to tropical forest[41]).

[41] Fragmented areas of tropical forests where extensive livestock grazing took place for decades are reverting to forests in a process known as "acahualamiento de potreros" in which surrounding parent trees provide seed and environment for natural regeneration of forest patches.

87. Forests (OP 4.36): In line with the Bank's forestry policy at that time (Forests, OP 4.36), for the first half of project implementation no subprojects involving forestry activities were funded. Based on the experience of World Bank Community Forestry projects in Mexico and the region, and in order to allow sustainable forest management practices to be promoted by the MMBC, during the Midterm Review (January 2005) the updated forestry policy (November 2002: Forests, OP 4.36) was included in the project's Implementation Letter. This allowed the project to develop a best-practice framework to support silvicultural (sustainable forest management) activities and the sustainable use of NTFPs and wildlife. These activities were regulated through management programs approved by SEMARNAT and supervised by a Bank senior natural resources specialist, leading to the Satisfactory rating for this safeguard. The update in the safeguard also allowed additional areas of the Corridor to be included in project activities and to receive resources for implementing sustainable development subprojects (i.e., Marqués de Comillas). Subprojects supported sustainable forest management activities in Corridor areas only when they followed the best-practice guidelines and had a management plan (approved by SEMARNAT).

88. Indigenous Peoples (OP 4.10) and Gender (OP 4.20): An Indigenous Peoples Plan (IPP) was designed to identify practical ways of involving indigenous communities in the design and implementation of the project, particularly through technical assistance and organizational strengthening so that they could better harness the benefits of their environmentally friendly productive activities. (See PAD, Annex 12.) In essence, this involved the creation of a special window to finance pilot projects presented by vulnerable groups (i.e., indigenous communities and women's groups); these projects represented approximately 10% of total project resources; indigenous communities were also given access to those resources dedicated to Component C activities. (See also Section 2.1, "Social Consideration.")

89. The January 2005 supervision mission detected an alarming rate of indigenous youth emigration (national and international) from project areas. In response, the project included a focus on youth within awareness-raising and environmental education activities, in addition to promoting their participation in productive subprojects. In the case of La Cojolita, Lacandona Rainforest, Chiapas (one of the project's original focal areas), a series of additional consultation actions were considered during the early years of project implementation in order to adapt the overall strategic guidelines of the IPP. In addition, the Project Coordination Unit gave support to several indigenous communities in the form of consultancies that provided training in existing land law and conflict resolution. (For additional details, see Section 2.1, "Social Considerations" and "Risk Assessment.") As a result of these efforts on the part of the World Bank and MMBC project teams, compliance with this safeguard was rated Satisfactory.

90. In addition, the series of workshops financed with BNPP resources reinforced actions taken as part of the IPP (Section 2.2, "Strengthening Social Participation in the Regional Mesoamerican Biological Corridor (RMBC) in Guatemala, Panama and Southeast Mexico").

91. Physical Cultural Resources (OP 4.11) and Involuntary Resettlement (OP 4.12) were triggered in order to ensure that if during implementation a situation arose which required the application of these safeguards, an appropriate plan would be in place. However, such a situation was never encountered, and thus compliance with these safeguards was rated Satisfactory throughout.

Fiduciary

92. During the first four years of the project, the NTU required intensive training in administrative management. World Bank financial management and procurement specialists provided support to the NTU and RTU management teams.

93. NAFIN, as the financial agent, maintained adequate records to reflect the project's operational and financial conditions, complying with Bank requirements and providing adequate support for project implementation, and thereby contributing to the successful management of the project and ensuring that financial arrangements were employed in accordance with the terms of the grant. NAFIN staff accompanied the Bank and GOM missions throughout the project's life.

94. Monitoring of the financial and procurement aspects was conducted on an ongoing basis during supervision missions (twice a year) by the Bank's Country Office staff.

95. Financial management implementation during the project was rated Satisfactory (in terms of timeliness and complete documentation) by *Nacional Financiera* (NAFIN) and the Bank. Audit reports have been acceptable to the Bank (Audit Report Compliance System, ARCS), as have Project Management Reports (PMR), including the last PMR for the fourth quarter of calendar year 2009, dated April 13, 2010. The Grant was fully disbursed and the final audit is due June 30, 2010.

96. Capacity for procurement and contracting was consolidated and rated Highly Satisfactory in the May 2009 ex post assessment and Satisfactory in the last ex post review completed on December 1, 2009.

2.5 Post-completion Operation/Next Phase

97. During National Corridor Council meetings, participating ministries and stakeholders demonstrated consensus on and commitment to: i) the significant role played by biological corridors as connectors for genetic exchange between populations otherwise condemned to isolation in NPAs; ii) the possibility of government actions to refocus development; iii) the ability of local planning activities to develop awareness and capacities of local governments and landowners; and iv) the capacity of local sustainable development projects to drive the reorientation of public programs and to provide economic, social and conservation benefits. Through the framework of the State Corridor Councils, CONABIO has demonstrated the importance of involving local producers and

communities through participatory and consultation processes so that they become allies of biodiversity conservation.

98. In 2009, the Mexican Congress and the Minister of SEMARNAT reaffirmed their commitment to the corridor concept by expanding the program to include the States of Tabasco, Oaxaca and Veracruz and allocated a budget to support the commencement of MMBC activities in these states. The expansion of the MMBC to other Mexican states is consistent with SEMARNAT's National Environment and Natural Resources Program 2007–2012 (PSMARN), and its focus on the transversality[42] of public policies for sustainable development and territorial integration (Section 6.9).

99. This program emphasizes the role of biological corridors in promoting habitat connectivity—allowing movement of species between conserved habitat patches—while also stressing their importance in those areas most affected by climate change. The PSMARN also highlights the need for biological corridors to promote the integration of development policies in relevant regions, emphasizing policies for regulation, ecotourism, wildlife, forestry and rural development, among others. For the PSMARN, the strategic use of biological corridors is as "*a public policy tool for transversal environmental management and an urgent task that should be extended by the present administration to various parts of the country and linked to disaster prevention, payment for environmental services and the National Climate Change Strategy.*"[43]

100. Since 2008, core MMBC project personnel have been funded by the GOM with an annual budget of approximately US$2 million (MXN$25 million) to continue their work toward achieving national Corridor objectives. The MMBC has been incorporated into the structure of CONABIO/SEMARNAT and MMBC staff members are currently working on: i) diagnostics for the new corridors (Tabasco, Oaxaca, Veracruz), to which around 59% of the resources provided by the GOM have been allocated; ii) management of the Sustainable Rural Development Program (PDRS) in Chiapas jointly with SAGARPA, and in two similar programs in the Sian Ka'an–Calakmul Corridor and in the El Triunfo region in Chiapas; iii) the establishment of the MMBC "eco-label" and payment for environmental services; iv) studies on environmental economics (jointly with CEPAL, 2009); v) promotion and continuity of the multiscale ecological monitoring network; vi) financing of subprojects under the MMBC's strategic guidelines; and vii) the provision of logistical support to the State Corridor Councils.

101. In an effort to comply with the framework of the Special Program on Climate Change (PECC), the MMBC and SAGARPA are working together under the PDRS program in Marqués de Comillas, Chiapas to reorient 25,000 hectares/year of land under production toward sustainable management, and to reduce the use of fire as an agricultural practice in at least 30% of the participating area by 2012.

[42] In this case, transversality is used here to describe the intersection of public policies from various sectors when applied to sustainable development across states and regions. Such public policies invariably overlap and influence one another as they implement programs and incentives on the ground with similar target groups. Such programs and incentives often influence the decision-making prioritization process of local communities who live off the land and thus influence land use decisions, no matter whether the original program/incentive focused explicitly on land use or not.

[43] Programa Sectorial de Medio Ambiente y Recursos Naturales (PSMARN) 2007–2012.

Next Phase

102. To take the work done by the MMBC a step further, the MMBC team is preparing a new GEF-financed project for Mexico, with the Bank's assistance, to be implemented from 2011 to 2016: "Fostering Sustainable and Competitive Production Systems Consistent with the Conservation of Biodiversity." Building on the foundation and corridor context of the MMBC project, the new GEF project focuses on green product and market development in biological corridors through socially and environmentally responsible production and marketing of goods and services, with a specific focus on the protection of biodiversity. The new project also proposes to support MMBC activities that are expanded into new states (i.e., Tabasco, Veracruz, Oaxaca). Sustainable production sectors targeted by this new GEF/IBRD-financed intervention include those that were piloted during MMBC project implementation, such as cacao, coffee, forestry, honey, gum, etc. The initial project concept was approved by the GEF on June 7, 2010 signaling its further development and the availability of GEF resources for its future implementation.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

103. Ten years later, the project objectives, outcomes and activities are relevant for the country's development priorities, as reflected in the Bank's current CPS for Mexico (2009) and the National Development Plan (2007) which emphasize the environmental issues central to both reviving the economy and securing an environmentally sustainable path.

104. The long-term sustainability of corridors and NPAs is strongly linked to their capacity to provide multiple services to regional and local society. These services go beyond the conservation of biodiversity and include the generation of economic opportunities for local people who live and depend on the natural resources. Unlike the creation of protected areas, corridors provide geographical and institutional spaces to promote conservation and good management by refocusing investment for sustainable development.

105. The MMBC concept is helping to shape future biodiversity conservation and climate change initiatives in the country. For example, the MMBC was particularly instrumental to Mexico's first Environmental Development Policy Loan (SAL/DPL) in its shaping of the agreement between SEMARNAT and SAGARPA for the conservation of the humid tropics in southern Mexico.

106. Finally, the design and implementation of the MMBC project has provided breakthroughs in necessary crosscutting approaches, offering insights into climate change adaptation alternatives for Mexico. These insights include experiences with regard to:

variety of crops (including native species/varieties and traditional multi-product plots), variety of spaces (corridors incorporating conservation and production areas in a landscape management approach), hillside management (reducing vulnerability with integrated watershed management techniques), and conversion to silvopastoral systems (improving yields and quality while restoring tropical forest areas that had been converted to pastures).

107. For the GOM, the National Strategy of Integrated Biological Corridors (which emerged from the MMBC project) links directly with Objective 8[44] of the National Development Plan (2007–2012). Moreover, the project's close ties with the larger Mesoamerican region (through the RMBC initiative) has helped prioritize this regional ecosystem in the framework of Mexico's actions for: (i) South-South cooperation, (ii) its National Development Plan and the Special Program on Climate Change, which is linked to the Climate Change DPL, and (iii) the GOM's interest in scaling up the implementation and furthering the innovative approach of the MMBC as reflected in the new GEF project proposal under preparation: "Fostering Sustainable and Competitive Production Systems Consistent with the Conservation of Biodiversity."[45]

3.2 Achievement of Global Environmental Objectives

108. The project's global environmental objective was the conservation and sustainable use of globally significant biodiversity in five[46] biological corridors in southeast Mexico by **mainstreaming** biodiversity criteria in public expenditure and in selected local planning and development practices.

Mainstreaming

109. The project contributed to mainstreaming biodiversity criteria in public expenditure (both in terms of operational rules and investments) and private efforts that combined to achieve reduced deforestation and improved management of natural resources and biodiversity conservation.

110. Specifically, the MMBC contributed to mainstream biodiversity criteria in the operational rules[47] of SAGARPA, which is the single largest source of public spending in the four corridor states. Last year alone SAGARPA allocated US$30.9 billion[48] to its rural development programs in the country. In the field, the MMBC directly reoriented investments potentially harmful to biodiversity and promoted bio-friendly activities on the order of US$34,869,811[49] (ca.

[44] Objective 8 of the National Development Plan (2007–2012): "To ensure sustainability through responsibility in the care for, protection and rational use of natural resources, thus securing both economic and social development without compromising the natural heritage of Mexico nor quality of life for future generations."

[45] The project concept for the new GEF-financed proposed operation: Fostering Sustainable and Competitive Production Systems Consistent with the Conservation of Biodiversity, submitted by CONABIO, was approved by the GEF (June 2010). The project preparation grant was approved on May 12, 2010.

[46] Although the PAD logframe mentions six corridors, the PAD Project Development Objective states five corridors. Unfortunately, the document's logframe was not updated after the Tabasco Corridor was dropped during the preparation, and the project focused on the remaining five corridors and four states.

[47] See SAGARPA's operational rules: http://sagarpa.gob.mx/programas/Paginas/default.aspx The operational rules state as one of SAGARPA's five objectives: Reverse the deterioration of ecosystems, through actions to preserve water, soils and biodiversity.

[48] See 2009 Federal Government Budget in http://www.apartados.hacienda.gob.mx/presupuesto/temas/pef/2009/temas/tomos/08/r08_afpe.pdf

[49] The amount allocated to subprojects is relevant as a counterpart funding target of the project.

MXN$439,708,312.28) in the Corridor areas (see Table 7). Through project activities, the operating rules of SAGARPA, the federal institution that provides more subsidies to the country, were adjusted to take into account biodiversity criteria in addition to directly funding various programs through the MMBC. Furthermore, the project was successful in influencing and working directly with other key institutions to promote in-situ conservation and sustainable use of biodiversity in the target areas. Among these institutions are: the National Forestry Commission (Conafor), Ministry of Social Development (SEDESOL), National Institute of Women (*Inmujeres*), and the National Commission for the Development of Indigenous Peoples (CDI).

111. During project life, 2,238 officials at federal, state and municipal level were trained and are now contributing to design and implement selected development plans and programs in ways that integrate biodiversity considerations Additionally, the MMBC worked closely with 14 federal, state and municipal programs in the Corridor areas to include criteria for conservation of biodiversity. Rural Development Programs where MMBC[50] cofinanced subprojects, now include these criteria in their operational rules. In some cases, the cofinancing provided by MMBC to implement subprojects in accordance with the objectives of MMBC allowed agencies to include some communities in their programs for the first time.

Habitat loss and perturbation of populations

112. There was no satisfactory monitoring in place from the start of the project that would have made it possible to monitor populations of indicator species and to record its evolution during the project implementation. This represents a significant shortcoming in the project design, which does not allow the achievement of the stipulated indicators to be properly measured. That said, using a proxy for assessing the expected outcomes: rate of native habitat loss decreased and degree of perturbation of populations reduced are likely to have been accomplished since over 40,000 producers improved their capacities and sustainable use/conservation practices in focal area plots.

[50] Regional program to combat poverty (CDI), Local Development Program Regional Microregions (SEDESOL), Integrated Management Units Flora and Fauna SEMARNAT (UMAs), Special Program for Food Sovereignty (Programa Especial de Soberanía Alimentaria, PESA), Proarbol program (Conafor):

113. There is no record of habitat loss or change in the native vegetation cover in the focal areas (15% of Corridor surface). The proxy reported shows that the deforestation rate was reduced from 1.5 to 1.0%/year (National Forest Inventory: 2002–2007; 1993–2002) in the four corridor states.

114. Presence of indicator species was reported for four corridors, and the general conclusion of the regional monitoring network hosted by the project is that indicator species are present in larger numbers in corridors than in isolated patches.[51]

- Chiapas Sierra Madre del Sur Corridor:[52] *Panthera onca, Puma concolor, Leopardus pardalis, Leopardus weidii, Herpailurus yaguaroundi, Tapirus bairdii, Pecari tayacu, Mazama americana, Odocoileus virginianus, Nasua narica, Agouti paca, Dasypus Novemcinctus* and *Ateles geoffroyi* were monitored through Cybertracker, direct and indirect observations and surveys.

Table 2: Species and methods for monitoring

Species Local Name	Family	Scientific Name	Monitoring Method
Jaguar*	Felidae	*Panthera onca*	Cybertracker: direct and indirect observation (surveys)
Puma*		*Puma concolor*	Cybertracker: direct and indirect observation (surveys)
Ocelote**		*Leopardus pardalis*	Cybertracker: direct observation
Margay**		*Leopardus wenndii*	Cybertracker: direct observation
Jaguarundi**		*Herpailurus*	Cybertracker: direct observation
Tapir*	Tapiridae	*Tapirus bairdii*	Cybertracker: direct and indirect observation (surveys)
Jabali de collar**	Tayassuidae	*Pecari tayacu*	Cybertracker: direct observation
Temazate***	Cervidae	*Mazama americana*	Cybertracker: direct observation
Venado cola blanca***		*Odocoileus virginianus*	Cybertracker: direct observation
Tejon***	Procyonidae	*Nasuanarica*	Cybertracker: direct observation
Tepexcuintle***	Agoutidae	*Agouti paca*	Cybertracker: direct observation
Armadillo***	Dasypodidae	*Daspus novemcintus*	Cybertracker: direct observation
Mono araña*	Cebidae	*Ateles geoffroyi*	Cybertracker: direct and indirect observation (surveys)

**Key umbrella species*
***Monitored species with interspecific competition for key species*
****Monitored species as key prey species*
These census methods were included in a more general monitoring system (cf. 3) that will make it possible to maintain biodiversity and the main functions of the Sierra Madre del Sur Corridor.
Source: Thomas Rabeil, Implementation of a monitoring system of mammals in Chiapas (Sierra Madre Sur Corridor, Pico del Oro focal area, 2007, MMBC

[51] Because there was no baseline at the time of design/approval nor was one produced during execution, Corridor monitoring was completed in isolated patches chosen by graduate students in order to prepare their dissertation papers. The patches chosen had similar conditions to the corridors, but were located outside of them in areas with no project interventions. See Section 2.3 (below), Monitoring and Evaluation (M&E) Design, Implementation and Utilization and www.cbmm.gob.mx
[52] Rabeil, Thomas (2009). Implementación de un sistema de monitoreo de los mamíferos en el Corredor Sierra Madre del Sur.

- Sierra Madre del Sur and the Selva Maya Zoque Corridors in the Chiapas convergence area in Marqués de Comillas:[53] *Didelphis sp, Dasypus novemcinctus, Tamandua mexicana, Sciurus sp., Cuniculus paca, Galictis vittata , Panthera onca , Leopardus wiedii, Herpailurus yagoaroundi, Conepatus semistriatus, Nasua narica, Ateles geoffroyi, Pecari tajacu* and *Mazama americana* were monitored in the convergence area, using still-picture traps, footprint identification, direct observation inside transects and outside transects, and processed using the EstimateS program (available at http://viceroy.eeb.uconn.edu/estimates).

- Campeche and Quintana Roo Sian Ka'an–Calakmul Corridors:[54] *Panthera onca* was monitored with transponders in the Sian Ka'an–Calakmul Corridors, which made it possible to confirm the connectivity function. In 1930 Mexico hosted some 20,000 jaguars. The current population is estimated at 3,500. In the Calakmul area alone, the jaguar population is estimated at 900 individuals (Ceballos et al. 2002). The protection of the jaguar can save 70,000 species of flora and fauna. (Ceballos 2007: Censo Nacional de Jaguares). The jaguar is at the top of the trophic chain, regulates a large number of species in the ecosystem and requires large extensions of conserved habitat. (Miller and Rabinowitz 2002). The study cofinanced by the project (Unidos para la Conservación [2007]: Modelos de control y conservación para el mantenimiento de corredores) in the two Sian Ka'an–Calakmul Corridors used the results of the jaguar habitat modeling produced by a well-known longitudinal study by Amor Conde et al. in 2006.

115. There was no satisfactory monitoring in place from the start of the project that would have made it possible to monitor populations of indicator species and to record their evolution during project implementation. This likely represents a significant shortcoming in the project design; it does not allow the achievement of the operation's indicators to be properly measured. However, the efficiency of the operation improved significantly after the MTR and its relevance is widely recognized by the GOM and civil society. Although there are no reports on analysis of nonlinear models to assess the impact of the perturbation[55] or the change in parameters that determine the demographic dynamics of these populations in the focal areas, the expected outcomes (rate of native habitat loss decreased and degree of perturbation of populations reduced) is likely to have been accomplished since over 40,000 producers improved their capacities and sustainable use/conservation practices in focal area plots.

[53] Muench, Carlos (2007). Evaluación de especies clave de mastofauna mayor como indicadoras de la salud del ecosistema en Marqués de Comillas.
[54] Unidos para la Conservación (2007). Modelos de control y conservación para el mantenimiento de corredores.
[55] Caswell, Hal (2008) Demographic Research, January. Perturbation analysis examines the response of a model to changes in its parameters. It is commonly applied to population growth rates calculated from linear models, but there has been no general approach to the analysis of nonlinear models.

Engagement of communities in focal areas:

116. Subprojects required promotion, training and technical assistance, and a questionnaire was answered by a large proportion (97%) of subproject participants: 98% of those surveyed[56] perceived that the MMBC significantly supported regional development; 96% said that the MMBC is helping to conserve the tropical forest; and 88% were aware of the MMBC's objectives. Land management and planning activities were completed in 62 communities (47%). 111 community promoters received training (85%)[57] and technical assistance to set community priorities for the conservation of biodiversity. Participatory action plans were developed for 15 social and productive organizations (11%).

Table 3: Participant communities implementing subprojects by corridor and 16 focal areas

Corridor	Focal Area	Participant Communities, Subprojects	Corridor	Focal Area	Participant Communities, Subprojects
Sian Ka'an–Calakmul (Campeche)	1. Montaña 2. X Pujil-Zoh Laguna	**Montaña:** Xmaben, Ich Ek, Dzibalchén, Hopelchen, Xmejia, Ich Ek, Suc Tuc, Xmaben, Sahacabchén, Pachuitz, Bolonchén **Xpujil-ZohLaguna**: Nueva Vida, La Lucha, Zoh Laguna, Santa Lucia, Nuevo Becal Calakmul, Cristobal Colón, Ejido Arroyo Negro, Ejido Kiché Las Palias, 20 de noviembre, Puebla de Morelia, X Pujil, Ejido Santa Lucía, Conhuas Ejido Kiché Las Palias	Sian Ka'an–Calakmul (Quintana Roo)	**3. Carrillo Puerto Sur** **4. Sur José María Morelos**	**Carrillo Puerto:** Xhazil, Tiho Suco, Xhazil sur, Tepich, Melchor Ocampo, Petcacab, Chacchoben Felipe Carrillo Puerto **Sur José Ma Morelos y Othón P. Blanco**: Pedro Santos, Buena Vista, Kantemó , Palmar , Reforma, Paraiso, Fco. J. Mujica, Ejido El Cedralito, Maya Balam, Sacalaca, Sabán, Huay Max, Ejido Altos de Sevilla, Graciano Sánchez
Chiapas Sierra Madre del Sur (South Chiapas)	**5. Pico del Loro** **6. Cintalapa** **7. Frailesca**	**Pico del Loro:** El Rodeo, El Suspiro, Las Brisas, Cumbre, Ventanas del Porvenir, Cambil, El Malé ,	Selva Maya Zoque (North Chiapas)	**8. La Cojolita** **9. Ixcan** **10. Nahá Metzabok** **11. Selva Chol**	**La Cojolita:** Frontera Corozal, Lacanja Chansayab, Nueva Palestina, Ignacio Zaragoza **Ixcan** La Nubes, Maravilla Tenejapa, Benemérito de las

[56] Of a total of 215 subprojects implemented by the MMBC between 2005 and 2009, 209 assessments were conducted in 29 locations in the five corridors (see Section 3.6: Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops; Survey II).
[57] No evidence was provided to confirm that the trained promoters completed the community priority-setting exercises after they were trained.

Corridor	Focal Area	Participant Communities, Subprojects	Corridor	Focal Area	Participant Communities, Subprojects
		Canadá, Aquiles Serdán, Cabañas, Cuauhtemoc Toxchamen, Bellavista, Rincón del Bosque, M. Hidalgo, Unión Buenavista, El Porvenir, Siltepec y La Grandeza, Belisario Domínguez, Villa Hermosa, Nuevo Paraíso, Las Cruces, Cárdenas, Ojo de Agua, Monte Redondo, Escobilla, Monte Ordóñez **Cintalapa:** Ashlum Tierra Nueva Nueva Reforma, Los Cacaos, Santa Rita de las Flores, Las Maravillas, Nueva Colombia, Nueva Palestina, Loma Bonita, Monterrey, Pablo Galeana, Plan de la Libertad, Las Violetas, Cerro Bola, San Juan, San Pablo, San Diego, El Pacayal, San Francisco y Emiliano Zapata **Frailesca:** Villaflores, Chapa de Corzo, Ángel Albino Corzo, Monte Cristo de Guerrero, La Concordia, Guadalupe Victoria, Pijijiapan		**12. Selva Zoque**	Américas, Guadalupe Victoria Acapetahua, Ejido La Bella ilusión **Nahá Metzabok** "Empresa de tostado, molido, empacado y comercialización de café organico Lacandonia"; "Sociedad de Productores Orgánicos de la Selva Lacandona" **Selva Chol:** Alan Bolontina, Bawitz, Emiliano Zapata, Guayaza, Jomulculja, Nuevo Tepeyac, Pamal Navil, San Miguel Carataya, Peñalimonar Taquiton, Diamante, Nueva Jerusalen, Joltulina, Actiepa Yochib, San Miguel, Las Delicias, Punta Braba, La Victoria, San Antonio Bulujib, Nuevo Jerusalen, Bella Ilusión, Ignacio Allende, Santo Tomas, Mamal ik' Santa Rosa, Ejido Venustiano Carranza **Selva Zoque**: Ocotepec, Tapalapa
Northern Yucatan	**13. Hunucmá** **14. Oriente** **15. Area Progreso** **16. Centro Oriente**	**Hunucmá:** Sisal, Sinanché, Telchac Pueblo **Oriente:** Ixil, Dzidzantún, Dzumel, Riá Lagartos,			

Corridor	Focal Area	Participant Communities, Subprojects	Corridor	Focal Area	Participant Communities, Subprojects
		Dzilam González **Area Progreso:** Progreso, Chuburná, Telchac Puerto, Chelem **Centro Oriente**: Dzilam de Bravo, Chabihau, San Crisanto, Ixil,			
			Total:	***149***	***communities***

117. Awareness-raising activities (workshops, training, trade promotion of bio-friendly products) were completed in the target communities. In addition, new focal areas were incorporated, as approved in the amendment to the Grant Agreement signed on November 20, 2005, which expanded the concept and number of focal areas by including in the definition the localities identified in the Implementation Letter, and any other locality to be agreed between CONABIO and the Bank. As a result of the incorporation of additional areas, a total of 628 communities participated in at least one of the abovementioned activities. (See Annex 2.) Training and technical assistance to develop action plans were provided under the strategic line[58] Knowledge Sharing, complemented by additional activities leading to design and implementation of action plans under other strategic lines. (See Annex 2).

118. On the Bank's side, there were significant shortcomings in the reporting scheme for the achievement of the operation's objectives since the Project Indicators were not updated/revised to ensure consistent reporting after the amendment was signed. This did not reflect on the project's efficiency or its relevance, but it did affect the consistency of the Bank's reporting instruments.

Reduction of high-impact resource use practices detrimental to biodiversity

119. The project did not produce a baseline to follow up on this indicator. The proxy used: a total of 47,042 producers in 15 of the 16 original focal areas and in new communities within the corridors incorporated after the MTR[59] have adopted sustainable, biodiversity-friendly productive activities, which would be equivalent to more than 50% of the number of producers[60] estimated in the focal areas.[61]

[58] Strategic lines are defined in PAD Annex 7. Strategic lines: Strengthening of productive practices of indigenous populations compatible with conservation, including production of aggregate value from local raw material. The project will support agroforestry and forestry management activities, including chicle gum, vanilla and organic coffee production as well as apiculture.

[59] The MTR highlighted the lack of definition of corridors and focal areas, and the lack of understanding of the purpose of the mainstreaming effort to reorient, rather than replace, investments in sustainable development. During the MTR, CONABIO proposed to review the limits of the original 16 focal areas to adjust them to ecoregional and socio-economic characteristics, and in particular suggested the incorporation of the southern and western forest areas in the State of Quintana Roo, because of their relevance to the conservation of Calakmul and its vicinity to Selva Maya in Guatemala. (MTR Aide-Mémoire, January 18–28, 2005). The amendment to the Grant Agreement signed on November 20, 2005 expanded the concept (and number) of focal areas by including in the definition the localities identified in the Implementation Letter, and any other locality to be agreed between CONABIO and the Bank.

[60] Total population in the focal areas was estimated at 374,999 (PAD). Based on INEGI's estimate of the proportion of producers among the total population, the total number of producers in the focal areas is estimated at 31,263. Thus, the reported figure of 47,042 producers who are effectively engaged in reducing their high-impact resource use practices that are detrimental to biodiversity exceeds the original target (30–50% of 31,263 producers).

120. The capacity to appropriately measure the achievement of the operation's indicators was limited by the lack of an appropriate baseline of all producers associated with high-impact resource use practices detrimental to biodiversity in native ecosystems in focal areas. Such a baseline would have helped to appropriately respond to the question of whether no more than 30–50% of producers continue to use such practices after the project's intervention. However, the proxy indicator used does suggest that the involvement of producers in sustainable management with improved livelihoods is more likely to have the expected result.

Increased share of production is generated by selected, financially sustainable, biodiversity-friendly practices of natural resource use

121. Sustainable/biodiversity-friendly production was established through subprojects financed or cofinanced by the MMBC in 22,580 ha, which represent approximately 32% of the productive areas of the focal areas. CONABIO used the following proxy: area under sustainable production initiatives supported by subprojects to estimate the share of sustainable production with regard to the total estimated productive land.[62] There were shortcomings in the design of the indicator to assess the share of sustainable production achieved: the measurement and verification means were left undefined for number of producers or hectares, since the project did not have a baseline for either. This did not compromise the achievement of the operation's objectives, its efficiency or its relevance, but it did affect the consistency of the reporting on the progress and performance.

Increased proportion of public programs and spending take into account biodiversity criteria

122. The PAD indicator requires that in the various corridors, at least 40% of existing and new public programs and at least 20% of public spending with impacts on the natural resource base take into account biodiversity considerations, including: a) programs reoriented from potentially harmful to biodiversity-friendly or -neutral activities; b) programs actively promoting activities of sustainable use of biodiversity. However, no baseline was defined during preparation.

123. The mainstreaming target was accomplished by incorporating biodiversity criteria in objectives and operational rules of public spending with impacts on the natural resource base, achieving the objective of ensuring that at least 40% of existing and new

[61] The PAD defined Focal Area as the area in which actual project activities are targeted and where progress and impact indicators will be monitored. The basic building blocks of a focal area are land tenure units (*ejidos*, communities, private properties); therefore, the boundaries of a focal area result from the boundaries of the land tenure units that constitute it. When the project was designed, the ministries participating in the National Corridor Council had signed the Institutional Coordination Agreement to assist priority regions. The focal areas were selected in the priority regions to ensure specific assistance from the institutions (as committed in the project's Implementation Letter). When the new administration was inaugurated, the priority regions strategy was discontinued and the project asked the Bank to allow the new focal areas to be incorporated in the work program, adding new ones or replacing those where the project's work was no longer promising or feasible. (Amendment to the Grant Agreement signed on November 20, 2005).

[62] On average 20% of the land is devoted to primary productive activities in the country. This represents 68,477 ha in the focal areas. The area under subprojects (22,580 ha) represents 32.9% of the productive area in the focal areas. This is also true for Chiapas (1,515,175 ha agriculture; 7,421,100 ha total) and even less for Campeche: 18,900 ha agriculture+21,499 ha forestry; total 5,792,400 ha). (INEGI)

public programs and at least 20% of public spending with impacts on the corridors take into account biodiversity considerations.[63] Given the project's objective to mainstream biodiversity criteria in public spending, baseline government programs were considered an integral part of the project's financing package: if the project was successful in its mainstreaming efforts, funds for regular development programs that would have had a negative impact on biodiversity conservation in the corridors, would be reoriented in a biodiversity-friendly direction, including: a) programs reoriented from potentially harmful to biodiversity-friendly or -neutral activities; b) programs actively promoting activities for the sustainable use of biodiversity. (See PAD, p. 14, Component B and Annex 4 for details.)

124. The proxy used by CONABIO to report at the policy level was that the MMBC contributed to mainstreaming biodiversity criteria in the operational rules[64] of SAGARPA which is the single largest source of public spending in the four corridor states, and last year alone allocated US$30.9 billion[65] to its rural development programs in the country. The proxy indicator for the work in the field[66] was that the MMBC directly reoriented investments potentially harmful to biodiversity and promoted bio-friendly activities on the order of US$34,869,811[67] (MXN$439,708,312.28) in the Corridor areas.

125. Qualitatively speaking, it is possible to confirm that SAGARPA has been the most benefited by the MMBC work, including changes in operational rules, increasing allocation to Corridor areas and a coordination agreement with SEMARNAT to improve the environmental performance of the sector in the Corridor areas (see reference above and contribution to EnvDPL in Section 3.1. below). SEDESOL incorporated a new objective in its sectoral program: "Objective 5. Integrate conservation of natural capital in the country's social and economic development" (http://www.sedesol.gob.mx/archivos/1/file/Prog_Sectorial_WEB.pdf).

126. The inter-institutional coordination for investments in the field with relevant partners such as SAGARPA has placed the corridor concept on the political agenda. Most of the achievements reported have a problem of attribution, since deforestation rates and landowners' decisions depend on multiple factors. However, in the case of the corridor concept as a public policy approach that is embraced by relevant federal agencies and state governments other than in the participating states, such impacts can be fully attributable to the project since the concept has not been promoted by any other relevant initiative in the country. The collaboration agreement signed between the Ministry of

[63] In a study commissioned by the MMBC for the Bank's MTR (Aguilar 2005), 52 relevant programs were identified in the Corridor area: Ministry of Environment (SEMARNAT, 17); Ministry of Agriculture (SAGARPA, 9); Social Development/Indigenous Peoples (SEDESOL/CDI, 13). SEMARNAT's programs already had sustainability/biodiversity criteria and the project focused on increasing their contribution to the Corridor areas; SAGARPA has been the most impacted by the MMBC work (see reference above and contribution to EnvDPL in Section 3.1 below) and SEDESOL incorporated a new objective in its sectoral program: "Objective 5. Integrate conservation of natural capital in the country's social and economic development" http://www.sedesol.gob.mx/archivos/1/file/Prog_Sectorial_WEB.pdf

[64] See SAGARPA operational rules: http://sagarpa.gob.mx/programas/Paginas/default.aspx The operational rules state that one of SAGARPA's five objectives is to "Reverse the deterioration of ecosystems, through actions to preserve water, soils and biodiversity."

[65] See 2009 Federal Government Budget in http://www.apartados.hacienda.gob.mx/presupuesto/temas/pef/2009/temas/tomos/08/r08_afpe.pdf

[66] There are two dimensions to mainstreaming: a) policy design, norms and operational rules; and b) increased reorientation of public expenditure for sustainable use/conservation projects. (MTR Aide-Mémoire, January 18–28, 2005)

[67] The amount allocated to subprojects is relevant as a counterpart funding target of the project.

Environment (SEMARNAT) and Ministry of Agriculture (SAGARPA) to halt the expansion of agriculture and livestock and to redirect investment toward conservation and sustainable natural resources management (NRM) best practices compatible with corridor connectivity objectives, was endorsed by SAGARPA and SEMARNAT as a prior action for the rural sector, in the Environment DPL (P095510) that closed in December 2009.[68]

127. During field visits, the team witnessed effective intersectoral coordination and the impact of reoriented investments. Based on this experience, SAGARPA is expanding its agreement with SEMARNAT—promoted by the MMBC—to mainstream biodiversity criteria in rural development programs and redirect investments in the region, which in turn contributes to its objectives and obligations within the Climate Change Special Program.[69]

128. In coordination with the MMBC project (but not transferred to the project unit for direct execution), GTZ (German Technical Cooperation) on behalf of German Federal Ministry for Economic Cooperation and Development (BMZ) has supported the national commission for protected areas CONANP in the management of the Calakmul biosphere reserve, mainly in the field of land use planning ("ordenamiento territorial").

129. Other donors have renewed their interest in the region. The Japan International Cooperation Agency (JICA) co-sponsored the first and second International Connectivity Workshops in 2008–2009, hosted by the MMBC in Chiapas. The project continues to support target communities and corridor strategies, while the project's administration has been restructured to incorporate three new states in the program. Sustainability and expansion have been secured through the formalization of the program and the creation of a dedicated department in CONABIO. Congress has allocated US$2 million to the corridors in the 2009 budget.

130. The reorientation of public expenditure toward sustainable/biodiversity-friendly options (e.g., apiculture, shade coffee, reduced tillage, compost, organic production, improved forest management, non-timber forest products, extractive reserves, silvopastoral practices, ecotourism) has reduced the volume of resources available for—and promotion of—activities that negatively impact biodiversity. As such, the project has contributed to the stabilization of the agricultural frontier as documented in vegetation maps generated by the project, and as demonstrated by the presence of indicator species, according to the records of the research groups that collaborated in the MMBC multi-scale monitoring network. (See www.cbmm.gob.mx .)

131. On the ground, the project's success has been due to its ability to reduce deforestation and thus habitat degradation by consolidating the work of technical groups, NGOs and local producers who, over several decades, have demonstrated the usefulness

[68] http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P095510

[69] http://beta.worldbank.org/climatechange/news/mexico-seeking-low-carbon-growth-path

of agro-ecological activities and subprojects for biodiversity-friendly sustainable development.

Table 4. Key Performance Indicators

PAD and Implementation Letter	Progress Reported in ICR	Comment
Global Environmental Objective: Conservation and sustainable use of globally significant biodiversity through the mainstreaming of biodiversity criteria in public expenditure.	Biodiversity criteria incorporated in objectives and operational rules of public investment programs and greater allocation of funds.	The project was successful in promoting the corridor concept and mainstreaming biodiversity criteria in all major investment programs in the region, and did the follow-up of individual subprojects, including a survey in all,[70] focal areas and plots as originally planned (see details below).
1. After 7 years, in focal areas (15% of Corridor total surface): a) rate of native habitat loss is decreased, and/or area under native vegetation cover is increased (with specific targets varying across individual focal areas); b) degree of perturbation of populations of corridor-specific indicators species (e.g., selected birds, mammals, insects, plants) is decreased.	1. After 9 years: There is no record of habitat loss or change in the native vegetation cover in the focal areas (15% of Corridor surface). The proxy reported shows that the deforestation rate was reduced from 1.5 to 1.0%/year (National Forest Inventory: 2002–2007; 1993–2002) in the 4 corridor states. Presence of indicator species was reported for four corridors: --Chiapas Sierra Madre del Sur Corridor:[71] *Panthera onca, Puma concolor, Leopardus pardalis, Leopardus weidii, Herpailurus yaguaroundi, Tapirus bairdii, Pecari tayacu, Mazama americana, Odocoileus virginianus, Nasua narica, Agouti paca, Dasypus Novemcinctus* and *Ateles geoffroyi* were monitored through Cybertracker, direct and indirect observations and surveys. --Sierra Madre del Sur and the Selva Maya Zoque Corridors in Chiapas convergence area in Marqués de Comillas:[72] *Didelphis*	There was no satisfactory monitoring in place from the start of the project that would have made it possible to monitor populations of indicator species and record their evolution during project implementation. While this represents a shortcoming in the project design, the proxy indicators used suggest that expected targets are likely to have been achieved. The expected outcomes (rate of native habitat loss decreased and degree of perturbation of populations reduced) are likely to have been accomplished since over 40,000 producers improved their capacities and sustainable use/conservation practices in focal area plots.

[70] Keeping track of public investment programs was not possible because the new administration designed a new approach, reducing and regrouping many of the existing rural development programs. The Bank's Rural Development in Marginal Areas APL I was closed in June 2003 (P007711) and the APL II in June 2005 (P057530).
[71] Rabeil, Thomas (2009) Implementación de un sistema de monitoreo de los mamíferos en el Corredor Sierra Madre del Sur.
[72] Muench, Carlos (2007) Evaluación de especies clave de mastofauna mayor como indicadoras de la salud del ecosistema en Marqués de Comillas.
[73] Unidos para la Conservación (2007): Modelos de control y conservación para el mantenimiento de corredores.
[74] Because there was no baseline at the time of design/approval nor was one produced during execution, Corridor monitoring was completed in isolated patches chosen by graduate students in order to prepare their dissertation papers. The patches chosen had similar conditions to the corridors, but were located outside of them in areas with no project intervention. Section 2.3 (below), Monitoring and Evaluation (M&E) Design, Implementation and Utilization and www.cbmm.gob.mx

PAD and Implementation Letter	Progress Reported in ICR	Comment
	sp, Dasypus novemcinctus, Tamandua mexicana, Sciurus sp., Cuniculus paca, Galictis vittata , Panthera onca , Leopardus wiedii, Herpailurus yagoaroundi, Conepatus semistriatus, Nasua narica, Ateles geoffroyi, Pecari tajacu and *Mazama americana* were monitored in the convergence of the use of still-picture traps, footprint identification, direct observation inside transects and outside transects, and processed using the EstimateS program (available at http://viceroy.eeb.uconn.edu/estimates). --Campeche and Quintana Roo Sian Ka'an–Calakmul Corridors: [73] *Panthera onca* was monitored with transponders in the Sian Ka'an–Calakmul Corridor, which made it possible to confirm the connectivity function. The study cofinanced by the project (Unidos para la Conservación [2007]: Modelos de control y conservación para el mantenimiento de corredores) in the 2 Sian Ka'an–Calakmul Corridors used the results of the jaguar habitat modeling produced by a well-known longitudinal study by Amor Conde et al. in 2006. The general conclusion of the regional monitoring network hosted by the project is that indicator species are present in larger numbers in corridors than in isolated patches.[74]	
2. Communities (and/or producers' groups) in focal areas are engaged in different forms (depending on levels of organization) of local planning aimed at conservation and sustainable use: a) Awareness raising (at least 80% of focal areas' surface and/or 80% of communities); b) Problem assessment (at least 50%); c) Priority setting (at least 30%); d) Development of action plans (at least 10%).	a) Project activities were implemented in all 16 focal areas, leading to subprojects implemented in 149 communities: Montaña (11), Xpujil-ZohLaguna (14): Sian Ka'an–Calakmul Campeche Corridor; Carrillo Puerto (7), Sur José Ma Morelos (14): Sian Ka'an–Calakmul Quintana Roo Corridor; Hunucmá (3), Oriente (5), Area Progreso (4), Centro Oriente (4): Northern Yucatan Corridor; Pico del Loro (26), Cintalapa (18), Frailesca (7): Chiapas Sierra Madre del Sur Corridor; La Cojolita (4), Nahá Metzabok (2), Ixcan (6), Selva Chol (24), Selva Zoque (2): Chiapas Selva Maya Zoque Corridor. Subprojects required promotion, training and technical assistance, and a questionnaire was answered by a large proportion (97%) of	Besides the subprojects carried out in the Chiapas Selva Maya Zoque Corridor focal areas---- the technical assistance to the Lacandona community in La Cojolita and Nahá Metzabok focal areas was satisfactorily completed as reported in Section 2(i) "Social Considerations" of the project's ICR. In terms of efficiency and relevance, the project increased the resources allocated by SAGARPA, SEMARNAT and SEDESOL in the area, cofinanced subprojects in all of the 16 focal areas, and incorporated additional

PAD and Implementation Letter	Progress Reported in ICR	Comment
	answered by a large proportion (97%) of subproject participants: 98% of those surveyed[75] perceived that the MMBC significantly supported regional development; 96% said that the MMBC is helping to conserve the tropical forest; and 88% were aware of the MMBC's objectives. b) Land management and planning activities were completed in 62 communities (47%). c) 111 community promoters received training (85%)[76] and TA to set community priorities for the conservation of biodiversity. d) Participatory action plans were developed for 15 social and productive organizations (11%).	communities within the corridors through Component C: Sustainable Use of Natural Resources. Awareness-raising activities (workshops, training, trade promotion of bio-friendly products) were completed in the target communities. Moreover, new focal areas were incorporated, as approved in the amendment to the Grant Agreement signed on November 20, 2005, which expanded the concept (and number) of focal areas by including in the definition the localities identified in the Implementation Letter, and any other locality to be agreed between CONABIO and the Bank. As a result of the incorporation of additional areas, a total of 628 communities participated in at least one of the abovementioned activities. (See Annex 2.) Training and technical assistance to develop action plans were provided under the strategic line[77] Knowledge Sharing, complemented by additional activities leading to design and implementation of action plans under other strategic lines. Nevertheless, there were significant shortcomings in the reporting scheme for the achievement of the operation's objectives since the Project Indicators were not formally updated to ensure consistent reporting after the amendment was signed. This did not reflect on the project's efficiency or on its relevance, but it did affect

[75] From a total of 215 subprojects implemented by the MMBC between 2005 and 2009, 209 assessments were conducted in 29 locations in the five corridors. (See Section 3.6: Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops; Survey II.)

[76] No evidence was provided to confirm that the trained promoters completed the community priority-setting exercises after they were trained.

PAD and Implementation Letter	Progress Reported in ICR	Comment
		the consistency of the Bank's reporting instruments as specified in the PAD.
3. In focal areas, no more than 30% to 50% (depending on each focal area) of production (in area or producers) is associated with selected, high-impact resource use practices that are detrimental to biodiversity (e.g., uncontrolled fire use in agriculture, inadequate waste disposal, overfishing, overhunting) in native ecosystems.	3. The project did not produce a baseline census to follow up on this indicator. The proxy used for reporting: a total of 47,042 producers in 15 of the 16 original focal areas and in new communities within the corridors incorporated after the MTR[78] have adopted sustainable, biodiversity-friendly productive activities, which would be equivalent to more than 50% of the number of producers[79] estimated in the focal areas.[80]	There were shortcomings in the capacity to appropriately measure the achievement of the operation's objectives, since the project did not produce a baseline of all producers associated with high-impact resource use practices that are detrimental to biodiversity in native ecosystems in focal areas, in order to appropriately respond to the question of whether no more than 30–50% of producers continue to use such practices after the project's intervention. The proxy used does reflect on efficiency and relevance since the involvement of producers in sustainable management with improved livelihoods is certain to have had the expected result.
4. In focal areas, at least 30% to 50% of production (by area, number of producers or total value of products) is generated by selected, financially sustainable, biodiversity-friendly practices of natural resources use (forest products, honey,	Sustainable, biodiversity-friendly production was established through subprojects financed or cofinanced by the MMBC in 22,580 ha, which represent approximately 32% of the productive areas of the focal areas.	The indicator selected to assess the share of sustainable production achieved did not specify the means of measurement and verification; in addition, an appropriate baseline was lacking. Therefore, the following proxy indicator was used: Area under sustainable production

[77] Strategic lines are defined in PAD Annex 7. Strategic lines: Strengthening of productive practices of indigenous populations compatible with conservation, including production of aggregate value from local raw material. Among others, the project will support agroforestry and forestry management activities, including chicle gum, vanilla and organic coffee production, as well as apiculture.

[78] The MTR highlighted the lack of definition of corridors and focal areas, and the lack of understanding of the purpose of the mainstreaming effort to redirect, rather than replace, investments in sustainable development. During the MTR, CONABIO proposed to review the limits of the original 16 focal areas to adjust them to ecoregional and socioeconomic characteristics, and in particular suggested the incorporation of the southern and western forest areas in the State of Quintana Roo because of their relevance to the conservation of Calakmul and its vicinity to Selva Maya in Guatemala. (MTR Aide-Mémoire, January 18–28, 2005). The amendment to the Grant Agreement signed on November 20, 2005 expanded the concept (and number) of focal areas by including in the definition the localities identified in the Implementation Letter, and any other locality to be agreed between CONABIO and the Bank.

[79] Total population in the focal areas was estimated at 374,999 (PAD). Based on INEGI's estimate of the proportion of producers among the total population, the total number of producers in the focal areas is estimated at 31,263. Therefore, the reported figure of 47,042 producers effectively engaged to reduce their high impact resource use practices detrimental to biodiversity exceeds the original target (30–50% of 31,263 producers).

[80] The PAD defined focal area as the area in which actual project activities are targeted and where progress and impact indicators will be monitored. The basic building blocks of a focal area are land tenure units (*ejidos*, communities, private properties). Therefore, the boundaries of a focal area are a result of the boundaries of the land tenure units constituting it. When the project was designed, the ministries participating in the National Corridor Council had signed the Institutional Coordination Agreement to assist priority regions. The focal areas were selected in the priority regions to ensure specific assistance from the institutions (as committed in the project's Implementation Letter). When the new administration was inaugurated, the priority regions strategy was discontinued and the project asked the Bank to allow the new focal areas to be incorporated in the work program, adding new ones or replacing those where the project's work was no longer promising or feasible. (Amendment to the Grant Agreement signed on November 20, 2005).

PAD and Implementation Letter	Progress Reported in ICR	Comment
maize, vegetables, ecotourism activities, etc.) in the productive landscape.		initiatives supported by subprojects to estimate the share of sustainable production with regard to the estimated total productive land.[81]. While the target is likely to have been met as tracked by the proxy indicator, the consistency of reporting on this indicator was limited.
5. In the various corridors, at least 40% of (existing and new) public programs and at least 20% of public spending with impacts on natural resource base take into account biodiversity considerations, including: a) programs redirected from potentially harmful to biodiversity-friendly or -neutral activities; b) programs actively promoting activities for the sustainable use of biodiversity.	The project design did not identify which programs would be targeted during implementation. CONABIO commissioned a study (Aguilar 2005) that identified 52 programs with relevant impact in the Corridor area: Ministry of Environment (SEMARNAT, 17); Ministry of Agriculture (SAGARPA, 9); Social Development/Indigenous Peoples (SEDESOL/CDI, 13); but throughout implementation, programs were regrouped and budget allocations varied significantly,[82] which made it impossible to report compliance with this goal in terms of number of programs or public spending. The proxy used by CONABIO to report at the policy level: the MMBC contributed to mainstreaming biodiversity criteria in the operational rules[83] of SAGARPA which is the single largest source of public spending in the 4 corridor states, and last year alone allocated US$30.9 billion[84] to its rural development programs in the country. The proxy for the work in the field[85]: the MMBC directly reoriented investments potentially harmful to biodiversity and	The lack of specificity in the programs to be targeted is considered a moderate shortcoming because neither the Bank's preparation team nor the GOM could have anticipated that investment programs would change. On the other hand, the baseline study was completed prior to the MTR and made it possible to identify the target programs that were reoriented with efficiency, and with relevant outcomes stemming from the magnitude and impact of public expenditure involved. The mainstreaming target was accomplished by incorporating biodiversity criteria in objectives and operational rules of public spending with impacts on the natural resource base, achieving the objective to ensure that at least 40% of existing and new public programs and at least 20% of public spending with impacts on the corridors take into account biodiversity considerations.[87]

[81] On average 20% of the land is devoted to primary productive activities in the country. This represents 68,477 ha in the focal areas. The area under subprojects (22,580 ha) represents 32.9% of the productive area in the focal areas. This is also true for Chiapas (1,515,175 ha agriculture; 7,421,100 ha total) and even less for Campeche: 18,900 ha agriculture+21,499 ha forestry; total 5,792,400 ha). (INEGI)

[82] In 2001, SAGARPA reorganized over 40 product-oriented programs into four programs defined by type of intervention: Organization, Training, Production, Commercialization; in 2007, SEMARNAT reorganized six forestry programs into one umbrella program and doubled the budget for the new program: Proarbol.

[83] See operational rules SAGARPA: http://sagarpa.gob.mx/programas/Paginas/default.aspx The operational rules state that one of SAGARPA's five objectives is to "Reverse the deterioration of ecosystems, through actions to preserve water, soils and biodiversity."

[84] See 2009 Federal Government Budget in http://www.apartados.hacienda.gob.mx/presupuesto/temas/pef/2009/temas/tomos/08/r08_afpe.pdf

[85] There are two dimensions to mainstreaming: a) policy design, norms and operational rules; and b) increased reorientation of public expenditure for sustainable use/conservation projects. (MTR Aide-Mémoire, January 18–28, 2005.)

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	promoted bio-friendly activities on the order of US$34,869,811[86] (MXN$439,708,312.28) in the Corridor areas.	
COMPONENT A: PARTICIPATORY DESIGN AND MONITORING		
Maps of vegetation, land use and geomorphology available at corridor level: --5 maps per theme[88] at scale of 1:250,000 --16 maps per theme at the focal area level at scale of 1:100,000 or better.	--30 thematic maps at a scale of 1:500,000 (North Coast of Yucatan Corridor) --37 maps at a scale of 1:500,000 for Calakmul – Balan ka'ak --12 different thematic maps for focal areas in the r Sian Ka'an, Balan Ka'ak and Calakmul Balan Ka'an Corridors	All the cartographic information on the Corridors, at different scales, is available in the GIS module produced by CONABIO. Maps were produced in response to demands from communities and projects: 12 maps per theme at the focal area level at a scale of 1:100,000 or better were produced. This approach contributed to its efficiency and relevance, since buy-in and usefulness were guaranteed by the demanding party. CONABIO is in the process of uploading all maps to its website, but only 10 maps can currently be downloaded from the project's webpage (www.cbmm.gob.mx)
2. Communities in focal areas become involved in local planning for corridors in different ways (awareness raising, problem assessment, priority setting, strategies) 2.1. Raising awareness in 120 communities; 2.2. Problem assessment in 72 communities; 2.3. Priority setting in 36 communities; 2.4. 12 community-level maps and strategies (scale of 1:10,000, designed in a participatory manner).	2.1. 628 communities (including most of the original 120 communities identified for the focal areas) were incorporated in promotion, training and subprojects. 2.2. Problem assessment and Corridor planning activities were completed in 62 communities (see Annex 2) 2. 3. Technical assistance and training were provided (under the strategic line of Knowledge Sharing) to 111 community promoters, to lead priority-setting participatory processes in 111 communities. (See Annex 2.) 2.4. 37 community level maps: 4 maps at 1:10,000, Yucatan Coast Corridor 8 maps at 1:10,000, Sian Ka'an–Calakmul, Quintana Roo	2.1. Of the 628 communities that participated in project activities, 149 correspond to the original focal areas (where subprojects were financed and implemented), thus surpassing the original target. 2.2. Problem assessment in 62 communities represents 86% of the original target (72 communities). There were significant shortcomings in the operation's capacity to assess the achievement of this indicator since, although the number of participant communities exceeded the original target

[86] The amount allocated to subprojects is relevant as a counterpart funding target of the project.
[87] http://www.sedesol.gob.mx/archivos/1/file/Prog_Sectorial_WEB.pdf
[88] For a list of themes see PAD. Annex 2. Table 7.:Wood-based artesanal production, Resins, Promotion of crop rotation, Promotion of agroforestry, Ornamental plants, New/non marketed timber species, Maintenance of local agrobiodiversity, Integration crop and animal husbandry, Integrated Pest Management, Integrated Nutrient Management, Fibers, Fauna based artesanal production, Chicle, Beekeeping, Aquaculture, Restoration of ecosystems, Wildlife Viewing, Wildlife Ranching, Hunting, Forestry, Medicinal plants, Ecotourism.

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	13 maps at 1:50,000, Quintana Roo 12 maps at 1:20,000 , Sian Ka'an–Calakmul, Campeche	(120), the incorporation of new focal areas and communities[89] and the lack of individual tracking of the original focal areas does not make it possible to assess exactly how many communities in the original focal areas were "involved in problem assessment". 2.3. The report on training and technical assistance was received but not an assessment of the priority-setting participatory processes. 2.4. There were no shortcomings in this indicator since three times the target number of community level maps were produced for the Yucatan Peninsula corridors.
3. A monitoring and evaluation system (comprising biological, ecological, socioeconomic and institutional indicators) is established and functions regularly GIS and database system: 3.1 General protocol of the M&E system 3.2 Data collected initially (baseline) and periodically to feed M&E system 3.2.1 Ecological information (baseline, midterm, end of projects) 3.2.2 Biological information (baseline, midterm, end of project) 3.2.3 Socioeconomic information (baseline, and then every other year) 3.2.4 Institutional data (baseline, and then every year)	GIS and database are operating since 2004 and have integrated the following information: GIS website (www.cbmm.org.mx) --Active monitoring network since 2006 with annual meetings with NGOs, research centers and government institutions. --10 maps of Mesoamerica --36 scientific studies with research centers --68 consultancies carried out by NGOs, academia and producers' organizations --2 CDs with territorial and socioeconomic information at the municipal level in areas of the Corridor: 2006, 2007. CONABIO website contains ecological and biological information and geographical information. It is updated monthly. The MMBC is hosted on the CONABIO website.	The generation of relevant baselines, data collection and analysis for project indicators (biological, ecological, socioeconomic and institutional) as part of the M&E protocol remains an ongoing process and a significant shortcoming in the measurement of the achievement of the operation's objectives. On the positive side, the network approach is proving to be highly efficient, and mainstreaming the Corridor monitoring and knowledge sharing objectives in the scientific community's agenda highlights the relevance of the project's contributions.
COMPONENT B: CORRIDOR INTEGRATION		
1.1. 35 Studies of biodiversity impacts of	1) 79 public programs analyzed 2) 15 studies to promote integration of	The 5 strategies were not developed (one for each

[89] New focal areas were incorporated, based on the amendment to the Grant Agreement signed on November 20, 2005, which expanded the concept (and number) of focal areas by including in the definition the localities identified in the Implementation Letter, and any other locality to be agreed between CONABIO and the Bank.

PAD and Implementation Letter	Progress Reported in ICR	Comment
public programs 1.2. 14 Studies to promote integration of biodiversity into state/municipal development plans 1.3. 5 Corridor strategies developed with stakeholder consensus	biodiversity at municipal level completed 3) 5 strategies with stakeholders --Ecological Program Planning of the State of Yucatan. --Development of regional strategy of compensation for environmental services in the area of MMBC --Regional low environmental impact tourism strategy for the focal area of Felipe Carrillo Puerto, Quintana Roo --Strategy for building a tourism policy for the corridor states in southeast Mexico --Strategy for institutional coordination for the management and use of natural resources with environmental criteria in the MMBC: Marketing of honey from the Yucatan Peninsula	corridor) as originally conceived but with a sectoral approach that responded to the needs of the strategic lines identified during preparation[90] and consolidated throughout implementation, such as environmental services, ecotourism and organic honey.[91] These changes should have been formalized and reflected in a revised Indicator Matrix for the Project.
2. Biodiversity considerations are integrated in the design, execution and monitoring of selected public programs and policy instruments 2.1. At least 2 state development plans include biodiversity priorities 2.2. At least 15 municipal development plans address biodiversity priorities 2.3. At least 5 sectoral programs include negative filters (activities with negative impacts on Corridor are ineligible for funding) 2.4. At least 10 sectoral	2.1. Two plans for the States of Yucatan and Chiapas have incorporated biodiversity priorities with the assistance of the MMBC 2.2. 14 municipal plans incorporated biodiversity criteria aimed at sustainability. 2.3. Three sectoral programs include negative filters (activities with negative impacts on corridor are ineligible for funding)[92] --Conditional Cash Transfers (PROCAMPO) --Support for Livestock Production (PROGAN) --Rural Roads (Caminos Rurales, SCT) 2.4. Ten sectoral programs contain positive incentives (priority for activities with both development and biodiversity): --Risk Capital Trust Fund (FIRCO); --Umbrella[93] Rural Development Program:	There were no shortcomings in this indicator because goals were achieved. In responding to communities' and producers' demands, the project completed over 40 additional studies and strategies in Chiapas, including feasibility studies for ecotourism in 13 municipalities in the Zoque region and participatory strategies in 30 communities and *ejidos* in 2 focal areas.

[90] Strategic lines are defined in PAD Annex 7. Strategic lines: Strengthening of productive practices of indigenous populations compatible with conservation, including production of aggregate value from local raw material. Among others, the project will support agroforestry and forestry management activities, including chicle gum, vanilla and organic coffee production, as well as apiculture. (See Annex 3.)

[91] More information on the project's strategic lines can be found in Annex 3 and the reports can be consulted on the project's website: www.cbmm.gob.mx

[92] After the project was designed, and before it was declared effective, SAGARPA reorganized 38 rural development programs into four programs. The three programs cited here concentrate the largest budget and potential (and track record) of environmentally harmful investments.

[93] "Alianza Contigo" was one of the new programs launched by SAGARPA after the reorganization/regrouping of its subsidy programs. Alianza Contigo consolidated 12 programs that were operating separately at the time of the MMBC's preparation.

[94] The first three of the CONAFOR programs cited were regrouped with six other programs under the ProArbol umbrella program starting in 2007. Now the operational rules for the larger program contain positive incentives assigning priority for activities with both development and biodiversity benefits.

PAD and Implementation Letter	Progress Reported in ICR	Comment
programs contain positive incentives (priority for activities with both development and biodiversity) 2.5. Biodiversity concerns consistently integrated in M&E procedures of at least10 public programs	"Alianza Contigo" (SAGARPA); --Rural Aquaculture (PRONAR); --Regional Funds Program (CDI); --Micro-Regions (SEDESOL); --Wildlife Management Units (SEMARNAT); --Food Security (PESA); --Forest Plantations (CONAFOR)[94]; --Soil Restoration (CONAFOR); --Payment for Environmental Services (CONAFOR); --Forestry Compensation Fund (CONAFOR). 2.5. Since biodiversity concerns were mainstreamed through "objectives" and operational rules, each SAGARPA, SEDESOL and SEMARNAT program receiving allocations to grant subsidies is regularly evaluated by third parties reporting to Congress, and the ToRs consistently integrate biodiversity/environmental impacts in M&E procedures for each program.	
3. Capacity of government officials at federal, state and municipality levels is strengthened to design and implement selected development plans and programs in ways that integrate biodiversity considerations 3.1. 60 officials trained at federal level 3.2. 60 officials trained at state level 3.3. 140 officials trained at municipal level	2,238 officials trained at federal, state and municipal levels. - 464 federal - 557 state - 1,023 municipal	A total of 2,044 officials were trained. All in all, training was a major (and successful) effort of the project that is paying dividends through a more effective mainstreaming and allocation of resources from the different programs[95], and even in the lobbying for budget allocations for the operation of the Corridor Program in the state legislatures.
COMPONENT C: SUSTAINABLE USE		
Strengthened capacity building for diversified production, and improved managerial and organizational skills 1.1. 64 training workshops 1.2. 112 learning courses 1.3. 64 dissemination activities (including farmer-to-farmer	1.1. 318 training workshops 1.2. 361 learning courses 1.3. 301 dissemination activities	There were no shortcomings in this indicator because goals were achieved. Moreover, "Knowledge Sharing" was defined as a strategic line and the project prioritized knowledge management activities among officials, experts (with the support of JICA) as reported above, and

[95] Most of the rural and social development programs are cofinanced by the federal government (up to 70%), while the rest are frequently divided among the state, municipal governments and beneficiaries.

PAD and Implementation Letter	Progress Reported in ICR	Comment
extension)		with peasants and landowners in *ejidos* and communities.
2. Sustainable use of biodiversity promoted through pilot projects for maintenance of native ecosystems' functions, restoration of degraded ecosystems, sustainable use in the productive landscape 2.1. 305 small pilots to promote awareness in communities with limited levels of organization 2.2. 130 pilots reserved for vulnerable groups' initiatives (indigenous, women) 2.3. 130 pilots for communities with higher levels of organization (financed with matching funds from government programs)	The total number of subprojects implemented was 215 (179% of subproject target adjusted to 120). Of these: 2.1. Small pilots: --74 subprojects (34.4% of 215) 2.2. Vulnerable groups: --144 pilots for indigenous (66.9% of 215) --50 pilots for women (23.2% of 215) 2.3. Higher level of organization: --141 subprojects (65.6% of 215)	There were no shortcomings in this indicator because goals were achieved. Leveraged investments were a major achievement of the project.[96] During the operation, leveraged investments provided 90% of the investment cost, while the MMBC budget directly contributed 9.7%. This became even more relevant since the amount of GEF resources available for each subproject was increased from US$20,000 to US$50,000, reducing the original target of 565 subprojects to 120.[97] Thanks to the counterpart funds raised, a total of 215 subprojects were implemented, including 144 pilots for indigenous peoples with an estimated investment of US$0.6 million.
3. Knowledge of conditions required for local adoption of sustainable use options improved (including market access and certification, prefeasibility, local adaptation of alternative technology) 3.1. 32 focused studies	88 prefeasibility, local adaptations of alternative technology, best practice, certification, and market access studies were completed for the project's strategic lines: honey, coffee, cocoa, pepper, chicle gum, sustainable forest management, aquaculture, alternative technologies, ecotourism, sustainable trade, and fair trade.	There were no shortcomings in this indicator because goals were achieved. The focus on strategic lines allowed the project to make good use of these resources in response to producers' demands, contributing to strengthen biodiversity-friendly productive options.
Effective communication outreach 4.1. Clear understanding of project objectives and components by primary audiences at regional and local levels, averaging 40% for rural stakeholders	4.1. A questionnaire was answered by a large proportion (97%) of subproject participants: 98% of those surveyed[98] perceived that the MMBC significantly supported regional development; 96% said that the MMBC is helping to conserve the tropical forest; and 88% were aware of the MMBC's objectives. In addition, 97%	4. The only support to infer that officials are also well informed is their large-scale participation (over 2,000 participants) in training activities sponsored by the MMBC, since no such survey was carried out with public officials.

[96] Given the project's objective to mainstream biodiversity criteria in public spending, baseline government programs are considered an integral part of the project's financing package: if the project is successful in its mainstreaming efforts, funds for regular development programs that would have had a negative impact on biodiversity conservation in the corridors, would be reoriented in a biodiversity-friendly direction, including: a) programs reoriented from potentially harmful to biodiversity-friendly or -neutral activities; b) programs actively promoting activities for the sustainable use of biodiversity. See below the description of Component B and Annex 4 for details. (PAD, p. 14.)

[97] Grant Agreement, 3rd Amendment, 2005.

[98] From a total of 215 subprojects implemented by the MMBC between 2005 and 2009, 209 assessments were conducted in 29 locations in the five corridors. (See Section 3.6: Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops; Survey II.)

PAD and Implementation Letter	Progress Reported in ICR	Comment
and 60% for institutional stakeholders 4.2. Timely production and distribution of outreach materials based on communications strategy and social and cultural backgrounds	stated that the subprojects are approved in community assemblies, which means that not only the producers' groups involved in the 209 subprojects that responded are informed of the MMBC objectives and activities, but a large proportion of the community is informed through their assemblies. 4.2) 6 Documentaries and videos. 2 videos in indigenous languages were produced and disseminated. --10 books were published with various topics on the sustainable use of biodiversity in the areas of MMBC --10 radio spots were produced --4 posters promoting the activities of the Corridor were printed and distributed --2,238 officials were trained at the federal, state and municipal levels --628 communities and 75 municipalities (with 85,000 inhabitants) participated in technical assistance, subprojects and training activities --250 indigenous peoples communities attended workshops	4.2) The project was very successful in producing relevant instruments to disseminate lessons, build support and provide technical information to producers and officials. The Bank distributed one of these products in particular at the Fourth GEF Assembly in Uruguay (May 2010) where the project coordinator gave a presentation of the project's achievements. From 2002 through 2004, there was lack of implementation of the communications strategy exactly as planned in the PAD. This may be considered a moderate shortcoming. However, from 2005 on, CONABIO did a good job focusing on the project and beneficiaries' needs, and building partnerships that effectively contributed to the achievement of the project's objectives, its efficiency and its relevance.
COMPONENT D. PROJECT MANAGEMENT		
1. Effective performance of the National Corridor Council 1. NCC meets twice a year to review operational plans and execution, and to discuss courses of action and strategies	8 meetings held: • April 3, 2002 • June 26, 2003 • April 12, 2004 • April 26, 2005 • May 18, 2006 • May 7, 2007 • October 12, 2008 • October 20, 2009	Planning to organize a National Corridor Council meeting twice a year was clearly not realistic, unless it is decided to settle for a smaller group of lower-level officials. Although only one meeting was held per year, the performance of the NCC has been effective and commendable, as witnessed by the Bank's Country Director who attended the 2009 meeting. Although this does not represent a shortcoming in the achievement of the operation's objectives, in its efficiency or its relevance, it does reflect on the Bank's performance, since the team failed to formalize these and other changes in a revised Indicator Matrix.

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2. Effective management and coordination of project at the national level 2.1. Timely preparation and distribution of information to the National Corridor Council 2.2. Timely preparation of the Annual Operational Plan 2.3. Timely disbursement of project funds in compliance with applicable procurement and audit procedures	2.1. The project's coordination complied with the delivery of information required for NCC meetings (8 meeting reports and 18 progress reports are on the MMBC website) 2.2. 8 operational plans reviewed by the NCC and executed by the coordination of the project 2.3. Disbursement of funds in compliance with procurement and financial management guidelines. Capacity for procurement and contracting was consolidated and rated Highly Satisfactory in the final ex post assessment (May 2009).	
3. Effective performance of the State Corridor Councils 3.1. SCC meets four times a year to review operational plan preparation and execution and discuss courses of action and strategies.	The mechanism operated satisfactorily, meeting once or twice a year as needed to review work program and policy orientation. • Campeche: May 2003, September 2003, March 2004, April 2005, May 2006, April 2007, August 2009 • Chiapas: June 2004, September 2004, April 2005, April 2006, April 2007, October 2009 • Quintana Roo: July 2001, August 2002, August 2003, February 2004, April 2005, May 2006, April 2007, August 2009 • Yucatan: April 2003, August 2003, April 2005, May 2006, April 2007, August 2009	SCCs met every year, sometimes twice a year, since participants found it difficult to participate more often. The project design's original plan proved unrealistic. The preparation team underestimated the difficulty of conducting the consultations required to form the SCCs (which led to a legal amendment) and also miscalculated what it takes to bring community representatives and state officials together four times a year. No SCC meetings were held in 2008, since the project was originally scheduled to close on June 2008. Although this does not represent a shortcoming in the achievement of the operation's objectives, in its efficiency or its relevance, it does reflect on the Bank's performance, since the team failed to formalize these and other changes in a revised Indicator Matrix.
4. Effective management and coordination of project at regional level 4.1. Timely preparation and distribution of information to the State Corridor Councils 4.2. Timely preparation of	After initial delays and a long learning curve assisted by an FAO/CP institutional development expert, the project teams started to speed up in 2005. 4.1. The RTUs complied with the delivery of information required for NCC meetings (27 reports) 4.2. 24 Operational Plans were effectively	

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the State Corridor Annual Operational Plan 4.3. Timely disbursement of project funds in compliance with applicable procurement and auditing procedures	reviewed by the SCCs, executed by the RTUs and monitored by the Project Coordination Unit. 4.3 Funds were disbursed in compliance with Bank procurement guidelines.	

132. Although it is still too early to effectively attribute any part of observed gains to a single intervention, there is a definitive link among (i) the project's mainstreaming efforts, (ii) the rural development interventions by relevant actors, (iii) the trends in the land and resource use that drive, or contain, the rate of native habitat loss[99], (iv) the impact of specific human-economic activities promoted in the region, and (v) the prevalence of wildlife, illustrated by their presence in the corridors[100], where research and monitoring activities are carried out. With regard to the corridor concept as a public policy approach that is embraced by relevant federal agencies and state governments other than participating states, such impacts can be fully attributable to the project since the concept has not been promoted by any other relevant initiative in the country.

Local Planning

133. Planning activities to improve organizational and technical capacities were identified early in the preparation of the project as key tools for the Corridor strategy.

134. Subprojects, training and technical assistance were the means to approach the above objective: although the original number of subprojects was reduced from 565 to 120 when the amount of GEF resources available for each subproject was increased from US$20,000 to US$50,000 (3rd Grant Agreement Amendment, 2005); demand kept growing as promotion progressed and project allies and cofinanciers became increasingly important.

135. Direct financing for subprojects was modest compared to federal investments in the region. They were designed to leverage resources from other government programs in order to reorient those programs' objectives in order to sustain the biodiversity-friendly impacts beyond the execution of the subprojects. Screening criteria for a subproject to receive cofinancing support from the MMBC included both the activity's potential contribution to the economic and social development of the Southeast Mexico and the extent of its environmental sustainability/biodiversity friendliness.

136. Additional activities supported by the MMBC were guided by the need to strengthen the core activities in the field with:

[99] The five corridors cover more than 10% of the total area of the four states (21,976,200 ha total), while the focal areas represent an estimated 347,388 ha (15% of the Corridor area). The rate of habitat loss remains high at 195,773 ha/year, which is equivalent to more than half the land surface in the project focal areas where habitat loss has been contained. Source: National Forest Inventory (2010) National Forestry Commission, SEMARNAT.

[100] For further reference, see documents in the MMBC Monitoring Network web site: http://www.cbmm.gob.mx/CBMM/TEM/DOC/41/41_001.htm and in particular the report on mammalian fauna monitoring in the Chiapas Corridor: Muench, Carlos (2006) Monitoreo de especies claves de mastofauna mayor como indicadoras de la salud del ecosistema en Marqués de Comillas, Chiapas. http://www.cbmm.gob.mx/CBMM/TEM/DOC/41/41_001.htm

- Environmental education and capacity building of local communities and government officials regarding biodiversity conservation and sustainable use of natural resources;
- Improvement of the existing biodiversity monitoring systems with participation of local communities, NGOs and academia (Environmental Monitoring Network);
- Research and management projects addressing key biodiversity management needs;
- Expanding partnerships and supporting conservation initiatives from local NGOs;
- Active monitoring network since 2006 with annual meetings including NGOs, research centers and government institutions.
- 36 scientific studies with research centers;
- 68 studies commissioned by MMBC from NGOs, academia and producer organizations, and 18 publications with academic centers in Mexico;
- 2 CDs with territorial and socioeconomic information at the municipal level in areas of the Corridor for 2006 and 2007;
- CONABIO website contains ecological, biological information and geographical information. (www.conabio.gob.mx)

Community Engagement

Table 5: Subprojects by Sector

Sector	No. Subprojects
Aquaculture	14
Agrobiodiversity	38
Beekeeping	46
Coffee Production	20
Ecotourism	30
Forestry and Agroforestry	18
Biodiversity Management and Wildlife	15
Maintenance and restoration of ecosystems	16
Handcrafts (wood and others)	10
Environmental health	8
TOTAL*	**215**

** Number of projects does not correspond with the reported number (149) of subproject participant communities, since there might be more than one project in a community. (Total communities that participated—628—represent those that participate in at least one of the project activities including trainings, workshops, dissemination events, in addition to subprojects).*

Indigenous Peoples and Gender

137. The project was based on socially- and culturally-appropriate means of technology transfer, organization and decision making through traditional community processes.

138. The MMBC project has facilitated local producer access to many institutional regional and rural development programs.[101] In the case of indigenous peoples, a "coaching" approach was employed to ensure that communities were assisted through the many steps required to help them

[101] It has been able to do so in part by building on the achievements of the IBRD Community Forestry project (P007700, closed in December 2003) and its ability to facilitate strengthening the technical and organizational capabilities of local producers.

manage their resources. Community planning tools mainstreamed through the project helped them to develop a broader vision of their own future. Consensus building and the participation of community members in decision making to increase social capital helped to ensure the sustainability of the project's impacts and achievements. In the region covered by the MMBC, with 85,000 people attended by the project, 36% of the population is indigenous.

139. An estimated 30,600 indigenous producers and over 600 women from 226 indigenous communities participated in MMBC subprojects: 73 subprojects for indigenous peoples, including 38 subprojects for women, represent an estimated investment of MXN$12.4 million pesos (ca. US$977,979.68).

Table 6: **Number and percentage of subprojects per community capacity typology**

MMBC	**type a**	**type b**	**TOTAL**
No. Subprojects	74	141	215
	(34.4%)	*(65.6%)*	*(100%)*
Amount Invested (MXN$)	$12,376,266.40	$24,386,183.29	$36,762,449.69
	(33.7%)	*(66.3%)*	*(100%)*

Table 7: **Reorienting public investment**

Actions	Number of sub-projects	Financing MMBC (MXN$)	Financing from other sources (MXN$)	Total (MXN$)
Subproject CBM-M	190	$29,130,200.05	$98,154,941.39	$127,285,141.44
Project Sagarpa- Prodesca Yucatan Peninsula	12	$0.00	$1,730,000.00	$1,730,000.00
Projects Sagarpa- Prodesca Chiapas	6	0	910,714.28	$910,714.28
Project Banchiapas- Chiapas	25	8,230,887.06	157,283,559.37	$165,514,446.43
Other resources		0.00	113,592,241.00	$113,592,241.00
Consultancy and events CBMM	28	7,377,021.93	23,298,747.00	$30,675,768.93
Total	233	$44,738,109.04	$394,970,203.24	$439,708,312.28
%		**10.2%**	**89.8%**	**100%**

Note: Subprojects with MMBC financial investment are 215 + 18 SAGARPA financed projects where the MMBC contributed in-kind resources, technical assistance and coordination, but not financial assistance.

3.3 Efficiency

140. The project did not have an economic analysis in the original PAD. During appraisal, a choice was made to base the economic chapter on an Incremental Cost Analysis, instead of doing a cost-benefit, or other type of economic analysis.

3.4 Justification of Overall Outcome Rating

Rating: **Moderately Satisfactory**

141. While over its nine years of implementation the project did not report on some of the indicators that were intended to measure progress and results (as specified in the PAD), evidence suggests that the overall Global Environment Objective of mainstreaming biodiversity into public investments has been achieved. The substantial shortcomings in achieving the operation's objectives (or difficulty to appropriately assess the results), and in its performance during the first part of its implementation (2001–2004), was largely overcome in the second period (2005–2009).

142. As shown in table 7 above, during 2009 the MMBC directly reoriented investments potentially harmful to biodiversity and promoted bio-friendly activities by significant amounts in the Corridor areas. Additionally, there is general agreement among the Borrower, the partners, and the donors about the relevance and contributions of the operation.

143. The project's accomplishments and impacts described above explain why the GOM, the NCC and the SCCs consider it successful. Biodiversity criteria were incorporated into the objectives and operational rules of various public investment programs and Corridor areas received greater allocations of funds for sustainable use and biodiversity conservation activities.

144. The GOM, the NCC and the SCCs have expressed their perception that the establishment of the five biological corridors has helped to preserve ecosystem connectivity between 24 protected areas. **A**s such, the corridor concept has become a model for other regions of Mexico. Since 2009, the GOM has established new corridors to ensure the conservation of biodiversity in the states of Tabasco, Oaxaca and Veracruz. The demarcation of the new corridors was conducted by the MMBC team within CONABIO to include territories that enhance connectivity and conservation of landscapes between NPAs in order to stem direct threats of further ecosystem fragmentation.

145. When approved, this project was one of the first in the world to apply the innovative corridor concept, in an area of 4.5 million hectares of land in Campeche,

Chiapas, Quintana Roo and Yucatan.[102] Monitoring activities were not appropriate to report on progress of the project indicators defined in the PAD, but fieldwork has provided data confirming that biological corridors promote the survival of emblematic species through improvements in habitat integrity by coupling sustainable use initiatives with conservation of habitats. It also indicates that the landscape mosaic including remaining forest patches within the corridors provide essential resources for the survival of species that require less space, such as the ocelot (*Leopardus pardalis*), contributing to genetic connectivity between sub-populations, promoting their regional persistence and thus the maintenance of their current population levels.

146. It is important to note that both qualitative and quantitative evidence suggests that the use of adequate indicators (for example through a formal revision in a project restructuring), would have allowed to appropriately assess the project achievements, which might have earned the Project an overall Satisfactory rating.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

147. During preparation, the results of the social assessment highlighted the need to tailor the activities of the project to the specific conditions of the communities located in the Corridor, taking into consideration their socioeconomic and cultural differences. To enhance the social impact of the project, the following activities were identified: (1) strengthening social organization; particularly where oriented to income-generating activities; (2) promoting a gender approach in the generation and distribution of income as well as in communal decision making and distribution of labor; and (3) increasing technical capacity to manage sustainable development projects in different fields (as discussed above, Section 2.1 “Social Considerations”).

148. Thirty-four percent of the subprojects supported by the MMBC were directed to women: family vegetable gardens, wood-saving stoves, solid waste management, and mangrove reforestation. 151 (42%) subprojects were directed to indigenous communities in the corridors. In total, 628 communities benefited in 75 municipalities: 59 located in Chiapas, 2 in Campeche, 4 in Quintana Roo, and 16 in Yucatan. The total project investment directed toward indigenous communities was equivalent to the US$1 million resources described in the PAD. (See PAD, Annex 2, p.6.)

149. Those communities and producer organizations that receive project resources have been equipped to take advantage of opportunities to promote their products in fair and “green” markets, which value sustainable natural resource use, biodiversity conservation and the biological corridor context. This can help producers achieve a premium price for their products. In addition, the use of zero tillage, composting and other biodiversity-friendly practices reduce the need to buy agrochemicals, while

[102] PAD, Annex 13.

generally demanding additional labor. The outcome of this equation: is that the investment remains largely within the same community, contributing to strengthen social capital, providing additional livelihood and income opportunities (the additional labor), while improving income and quality of life. One idea the MMBC team has been pursuing is the creation and use of a Corridor "eco-label" as a mechanism to strengthen marketing of products from MMBC communities.

150. With the aim of developing the potential "eco-label" niche market, the MMBC team signed an agreement with the Latin American Food Show (LAFS) to allow producers to exhibit their products in LAFS fairs held each year, the first being in Cancun (Quintana Roo) in September 2008. The MMBC also participates in the Biological Resource Collective (PRBC), established by CONABIO in 2002, which provides support those producers who use natural resources sustainably in order for them to develop commercial products. As a result of these experiences, the MMBC organized two promotional shows with products from the five corridors, presenting them to the dynamic tourism sector of Quintana Roo and the international Fair Trade market: X Caret 2008 and Cancun 2009.

(b) Institutional Change/Strengthening

151. The National and State Corridor Councils have been institutionalized as participatory spaces where environment sector government institutions can collaborate with stakeholders to promote activities to harmonize public development programs and spending with local demand for sustainable development activities. This participatory approach has established trust and cooperation among institutions and communities, strengthening the function of the councils in future MMBC activities. Moreover, the transparency associated with the councils' participatory decision-making process has helped establish mechanisms for resolving conflicts and improving governability in the region. GOM resources designated for the MMBC region (i.e., to finance logistics for meetings and transportation of stakeholders to attend council meetings) guarantee the operational sustainability of the SCCs after the close of the project.

152. The project also contributed to strengthening academia and NGOs, since the corridors and associated conservation and sustainable development subprojects became a subject of discussion in seminars and a theme of research projects. Seventeen books on project management, sustainable management and use of resources, information systems, fair trade, assessment of forest plantations, etc., were published as a result of this impact. These publications provide rich and varied information that will facilitate not only MMBC-based promotion of community efforts of biodiversity conservation and sustainable use of natural resources, but also similar activities and interventions throughout Mexico and the region to be lead by strengthened and informed institutions (See Annex 2: Publications).

153. In particular, government institutions such as SEMARNAT and SAGARPA (as well as the other Ministries that had signed on to the Foundations for Inter-Institutional Collaboration agreement) benefited from the MMBC project. Through project promotion

of and activities for reorienting public investments and development programs, in addition to facilitating the flow of project data and information, many public officials and decision makers were exposed to and trained in the importance of including biodiversity considerations in their investment programs. As a result, not only did the MMBC contribute to supporting the mandate of the collaboration agreement (signed in 1998, prior to project implementation) and reinforcing sustainable development activities in Corridor areas, but it also strengthened the individual institutions so that their subsequent investment impacts might extend beyond the MMBC region to other areas of Mexico.

(c) Other Unintended Outcomes and Impacts (*positive or negative, if any***)**

154. The project facilitated institutional re-direction within CONABIO. Before, CONABIO focused primarily on ecological and biological research and lacked experience working with stakeholders. Now, the organization values and actively supports participatory conservation with local communities, helping to manage and lead that process. Moreover, the MMBC team within CONABIO has emerged as a credible institutional stakeholder: a consensus-building institution capable of implementing successful sustainable development projects to the point where it is a sought-after partner in other regions of Mexico with governments and stakeholders from other Mexican states petitioning to be included in the Corridor initiative. Similarly, the MMBC team has been invited to facilitate dialogue and collaboration between actors among different levels of government (municipal, state, national), and with various stakeholders and governments of Central American countries: as a result of this project, the MMBC team is stepping into the role of facilitating south-south cooperation and exchanges to support sustainable development initiatives within the Regional Mesoamerican Biological Corridor.

155. Considering the complex social and environmental nature of the region, the MMBC succeeded in establishing itself as a highly respected program with a great degree of influence and consensus in order to achieve alignment between bottom-up community-driven development and top-down operational policy-driven development, ultimately reinforcing its overall goal to promote the conservation and sustainable use of biodiversity. As a part of that process, it brought together diverse institutions across all levels (national, state, local) into a participatory network for sustainable development and biodiversity conservation. The capacity-building opportunities provided by the project through implementation of project activities, has strengthened institutions (and thus the network) to the point where they are leading follow-on initiatives in which they incorporate activities and priorities piloted in during the MMBC project (see Section 2.5).

156. Corridor activities have contributed to a strategy for adaptation to climate change. Following the impact of Hurricane Stan (2006) in the coffee-producing region of Motozintla-Chiapas, an assessment supported by GTZ, Banchiapas and UNAM identified five measures that would reduce vulnerability of the region to such extreme climatic events: i) conservation and use of diversity of species and varieties for intercropping (maize-field poly-culture: native maize, beans, squash, chili); ii) diversification of productive activities of land along altitudinal gradients (corridors), iii) watershed management and slope stabilization; iv) protected agriculture (greenhouses); and v)

silvopastoral systems. The MMBC helped to establish the importance of such activities as part of its broader sustainable development objective. Based on the MMBC experience, it is clear that such actions constitute valuable inputs into any strategy that targets climate change adaptation in rural areas of Mexico.

157. In Mexico's national strategy for Reducing Emissions from Deforestation and Degradation (REDD)[103], the set of actions that the MMBC promotes has also been identified as a valuable contribution to preventing negative changes in forest use and soil degradation. In the REDD pilot project for the state of Michoacán (2009–2010), the strategy consists of four instruments: Forest Programs (PROCYMAF, COINBIO, PSA, etc.); the Special Program for Food Security (PESA-FAO); the Land Management Program (UNFCCC); and Biological Corridors.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

158. During 2009, the Project Coordination Unit commissioned the following survey:

Sustainable Rural Development Program MMBC-CONABIO-SAGARPA in the Region of Marqués de Comillas, Chiapas.[104]

159. The Sustainable Rural Development Program in the region of Marqués de Comillas (PDRS-MC), Chiapas, has been executed by the MMBC since 2008. The program seeks to integrate the conservation of natural resources (mainly tropical rainforests) into improved production and social development in local communities. It is an initiative attempting to provide continuity to efforts in Mexico and Chiapas aiming to achieve environmentally sustainable and socially equitable rural development and production. The Marqués de Comillas region forms part of the MMBC given its importance for Corridor connectivity. However, subsistence farming is the most prominent activity (85% of the population is in "asset poverty"[105]), contributing to a cumulative loss of forest cover in this area ranging from 40% to 50%.

160. The PDRS-MC is coordinated by SAGARPA, MMBC, CONABIO, SEMARNAT and the Government of Chiapas. It initially operated in 29 *ejidos*, in three focal areas within the Municipalities of Marqués de Comillas, Benemérito de las Américas, Ocosingo and Maravilla Tenejapa. The total area of participating *ejidos* is 120,447 hectares.

161. The first stage of the fieldwork included interviews, a socioeconomic assessment, and a workshop with *ejidatarios*, municipal and *ejido* authorities, civil servants and researchers. The main findings of the survey were:

[103] This activity is supported by the World Bank with resources from the Forest Carbon Partnership Facility (FCPF).
[104] The study was conducted in September 2009 by the Centro Interdisciplinario de Biodiversidad A.C (CEIBA) with the help of the United States Agency for International Development (USAID), focusing on achievements/results from 2008.
[105] In Spanish, *pobreza patrimonial* is defined as the proportion of homes whose per capita income is less that what is needed in order to cover basic consumption costs: food, clothing and footwear, housing, health, public transport and education.

162. Preliminary quantitative findings:

(i) The stabilization of 20,000 ha was achieved, based on agreements with production units, which reward conservation and promotion of biological connectivity associated with productive investment plans for local agricultural and forestry development;
(ii) 1,500 families have been incorporated into sustainability processes;
(iii) Actions are helping to stabilize 422 hectares of farmland that produce maize with sustainable use methods. This area excludes the use of fire, and around 50 tons of dry matter was incorporated into the soil by adding *Mucuna pruriens*[106]. As a result, the need for rotating the use of agricultural lands is reduced and there is a possibility for converting 4,222 hectares that are currently abandoned and form part of the fallow lands (of the maize fields). The recovery of 350 hectares of abandoned land is ensured by enrichment with useful forest species;
(iv) 173 silvopastoral modules were established, which planted 260,000 trees and shrubs, and launched the restoration of 795 hectares of degraded pastures;
(v) 53 riverbank restoration modules were established, corresponding to five kilometers of streams or runoff systems.

163. Technical evidence:

(i) The MMBC team documented scientific evidence regarding the biological connectivity of forest ecosystems and processes of fragmentation in the humid tropics and in the region of Marqués de Comillas;
(ii) The MMBC team, as executor of the PDRS-MC, integrated and formalized the program's working rules at different levels: through the MMBC-CONABIO-SAGARPA agreements, and with the producer organizations;
(iii) The MMBC team helped to avoid duplication of programs and actions and to achieve confluence with programs for environmental services, protected natural areas, timber forests, and ecotourism, among others.

164. Perception of the participants:

(i) 78 % of participants were involved in the design of the subprojects, objectives of the Corridor and implementation of activities as opposed to other public programs, which have not requested such input from local producers;

[106] A leguminous shrub (known as velvet bean or cowitch) whose leaves act as natural fertilizer when they fall to ground and mix with the soil.

(ii) Municipal officials who were interviewed approve of the program as it made efforts to involve them in its planning and operation;
(iii) In general, participants expressed that the program has brought various economic and environmental benefits.

Economic and social impact in the Corridors of Chiapas and the Yucatan Peninsula

165. From a total of 215 subprojects implemented by the MMBC between 2005 and 2009, 209 assessments were conducted in 29 locations in the five corridors. The summarized findings are as follows:

Economic:

(i) 98% of those surveyed perceive that the MMBC has significantly supported regional development through the subprojects and associated training;
(ii) 38% felt that both production and marketing have improved;
(iii) 18% have their product on the market;
(iv) 54% consider that their income has improved.

Environmental:

(i) 96% think that the MMBC is helping to conserve the tropical and/or temperate forest;
(ii) 88% are aware of the objectives of the MMBC.

Social:

(i) 97% stated that the subprojects are approved in community assemblies;
(ii) 86% believe that the transparency with which the MMBC reports on the project objectives has improved relations within the community and organizations and everyone is aware that they are directed to conservation; and
(iii) 57% of the subprojects were implemented in indigenous communities.

166. One of the conclusions of the above evaluation is that the socioeconomic impact of the MMBC since 2005 is evident in production processes that have been improved (ecotourism, cocoa, honey, coffee, gum, pepper, vegetables, etc), and by products currently sold through alternative market channels and in markets for environmental services; as well as by the inclusion of gender and cultural equity in production activities and incentives. Another impact identified is the strengthening of social capital by supporting activities that improve local capacities for design, management, evaluation and monitoring of productive projects and activities.

4. Assessment of Risk to Development Outcome
Rating: **Low**

167. The corridor concept has gained wide acceptance in government, academia and civil society. Therefore, risks that would endanger continued development of project results are low. Since the end of 2009, project activities in the corridors of southeast Mexico have been funded by SEMARNAT/CONABIO. Integration of conservation and sustainable management objectives into public policy planning is a long-term task that requires generating consensus. The MMBC has become a program of the GOM with the ability to foster that consensus in the four states where the corridor approach was piloted.

168. Since 2008, the State of Tabasco has allocated resources to perform diagnostics for the new corridors supported by its State Corridor Council (formed outside of MMBC activities). These will connect the Biosphere Reserve Pantanos de Centla (302,707 hectares), the private area Rancho la Asunción (572 hectares), the Laguna de Términos Protected Areas of Flora and Fauna (705,017 hectares) and Usumacinta Canyon (46,128 hectares). These corridors have been named "Humedales costeros – Sierra de Huimanguillo", "Pantanos de Centla – Cañón de Usumancita" and "Sierra de Tabasco". Togethr, they comprise 56.6% of the land area of Tabasco.

169. Furthermore, CONABIO/SEMARNAT is currently preparing with the World Bank a GEF-financed project: "Fostering of Sustainable and Competitive Production Systems consistent with the Conservation of Biodiversity", to be implemented from 2011 to 2016. The objective of the project is to promote sustainable production chains for goods and services that take into consideration biodiversity criteria, in order to underpin a development strategy in the region and to reinforce this project's actions and gains made from 2001 to 2009.

5. Assessment of Bank and Borrower Performance
(relating to design, implementation and outcome issues)

5.1 Bank
(a) Bank Performance in Ensuring Quality at Entry
Rating: **Moderately Unsatisfactory**

170. The performance of the Bank in identifying, preparing and appraising the operation was Moderately Unsatisfactory given its underestimation of political and institutional obstacles. As mentioned earlier, the uncertainty posed by the imminent change in the government administration moved the Bank team to appraise without including in project design the baselines for key indicators, leading to over-ambitious indicators (i.e., indicators to monitor and report on perturbation of habitats and species populations), which were too general in the sense that it was unrealistic to measure and monitor them effectively. Yet, linking mainstreaming objectives to the biological corridor concept in project design made it innovative, bold and the first of its kind. There were no

preceding corridor projects from which to draw lessons; rather, the task team relied on prior protected area and community forestry projects from which to glean applicable inputs for design and implementation.

171. The resulting project was highly pertinent to both Bank and national priorities. The Bank conducted an assessment of the current state of key biodiversity and social issues, associated threats and alternatives for confronting them, highlighting the need for a highly participatory process. The Bank focused its efforts on contributing to better management of natural resources by promoting planning and monitoring tools based on the biological corridor concept. The goal was to better balance conservation and use of biodiversity and agro-biodiversity within a sustainable development framework.

172. The accelerated signing of the Grant Agreement complicated the completion of the stakeholder consultation process (later recognized in the ISR) that was essential to the creation of strategic alliances. The Bank task team should have anticipated that a change in GOM administration would have presented complications, such as less commitment to the project and the selection of a poorly qualified project coordinator. In response, the Bank task team provided additional training and institutional support. Although mounting evidence suggested that project administration was still not improving, it remained slow to insist that more qualified staff be contracted at both the national and regional levels. In light of the unresolved and rushed social consultations at the time of the signing, the Bank task team coordinated the amendment process in order to facilitate access to GEF resources and complete the consultations. However, considering this option sooner could have greatly benefited project implementation.

173. Sufficient support from the incoming GOM administration did not materialize until the new Minister of Environment, various Undersecretaries, head of CONABIO and a new project coordinator were appointed. The incoming officials saw the project as an opportunity to promote mainstreaming with a territorial approach and embraced the concept. As a result, project implementation picked up and it was then that the new GOM administration became an ardent supporter of the project.

174. Overall, while the Bank's focus on substantive goals for the project was satisfactory, its ability to anticipate and respond to political and social obstacles expeditiously during design could have been improved in order to ensure timely project implementation.

(b) Quality of Supervision
Rating: **Moderately Unsatisfactory**

175. Project effectiveness was delayed for over one year due to what proved to be an incorrect design assumption that it would be possible to establish the project's State Corridor Councils prior to and as a condition of effectiveness. The role of the SCCs was such that unless they were credible entities in the eyes of project actors they would not function well and subsequently, achieving goals at the state and local level would be difficult. Without project funding it was impossible to establish the state councils. In late

2002, the Grant Agreement was amended to include processes for establishing the state councils with civil society participation; they were no longer part of preparation and a condition of effectiveness. The amendment also conditioned subsequent actions in the states on first forming the state councils and delinked the states to allow each one begin implementation as it formed its respective council. Original design demanded that all states must form their councils before any state could move forward. The need for an amendment was identified by the new task manager during the September 2001 mission, who was appointed the same month. The project became effective in January 2002. (for further detail, see ISR #6. 09/26/2003)

176. In December 2002 the supervision team reported that "the project continues to rate as Satisfactory", with a focus on putting in place the implementation framework and developing institutional arrangements at the state and local level. At the time, the team saw no critical risks that threatened the project's ability to achieve the GEO (ISR #4, 12/19/2002).

177. By June 2003, the supervision team recognized that the project coordination unit lacked necessary experience for successful project management. In response, the task team worked closely with them to provide short-term assistance for training in strategic planning and developing critical actions to move the project forward. The Bank team reported the PCU had been strong in beginning in forming partnerships required to achieve mainstreaming objectives and that the project coordinator had good experience, credibility and skills in interacting with indigenous groups and local dynamics. However, this resulted in setbacks to implementation efficiency early on for the project's larger goals (i.e., institutional mainstreaming). The expectation was that in the long run the PCU's strengths would allow the project to catch up. (ISR #5, 06/18/2003.)

178. Given the importance of measuring and demonstrating results, the Bank should have (a) insisted on the collection of baselines early on during implementation, and (b) formally revised the indicators through a deliberate project restructuring process. However, this was never done and as a result, at project closing it was very difficult to credibly measure and attribute specific outcomes to project interventions as specified in the PAD. This is a significant shortcoming in the quality of supervision by the Bank.

179. In June 2004, the project completed one year with an Unsatisfactory rating after failing to comply with agreed actions necessary to improve implementation. The World Bank's Country Management Unit (CMU) and SHCP agreed to a series of 90-day action plans. The project's compliance with recommendation in each plan was to be closely monitored by the Bank, SHCP and NAFIN. The second 90-day action plan was successfully completed in January 2005, allowing for the project's midterm review as well as a review of CONABIO's proposal to reprogram the project. Among the key elements that allowed the project to move forward were: (i) the completion of an excellent independent evaluation that provided an opportunity for all relevant actors to objectively discuss problems and obstacles that needed to be overcome; (ii) the appointment of a new project coordinator, who had the necessary vision, background, experience, and personal and institutional skills to direct implementation; (iii) establishment of basic conditions for moving forward in all participating states, including

the formation of the state councils; and (iv) the support and commitment from the highest levels of SEMARNAT (Minister Alberto Cardenas and Undersecretary Fernando Tudela) with assistance to help the project its mainstreaming objectives.

180. It was not until 2005, after reviewing project advances as part of the third and final 90-day action plan, that the project would finally be rated Satisfactory in the ISR.

181. Early in 2005, the quality of project implementation improved greatly with the new project coordinator. It showed promise of meeting its development objectives: in the last year it became one of SEMARNAT's key instruments for achieving biodiversity conservation mainstreaming objectives. Among other actions, project management had: (i) put in place the planning, budgeting and internal monitoring instruments necessary for successful project implementation; (ii) established formal alliances and agreements with relevant GOM entities (especially CONAFOR, SAGARPA, SEDESOL, INI) for mainstreaming biodiversity in public expenditures; (iii) completed priority studies and strategies at the national and state level in order to implement investment programs for biodiversity conservation in the project area; and (iv) identified and prepared with communities and producer groups a first series of subprojects to receive financing through the principal public rural investment programs.

182. Although activities in 2005 advanced satisfactorily with regard to strategic interventions at the national, state and institutional levels for mainstreaming biodiversity and reorienting public expenditure, the advances were imbalanced. The bulk of the achievements were on the institutional side with more limited advances in the field, aside from local-level planning and participatory processes.(ISR #13, 06/01/2006.)

183. By November 2006, the supervision team recognized that despite significant advances in meeting its central objectives to reorient public policy—with a high degree of appropriation/ownership on the part of the key sectoral institutions (e.g., SEDESOL, SAGARPA, CONAFOR, CDI) that provide the bulk of rural development financing to the MMBC area—the project could not meet its development objectives within the original timeframe (original closing date: June 30, 2008). At least 18 additional months were required. The following supervision mission focused on evaluating the merits of a project extension. The World Bank's GEF Regional Coordinator for Latin America and the Caribbean joined the mission to provide an objective opinion; her conclusion was that the extension appeared justified, assuming certain conditions were met.[107] (ISR #14, 12/27/2006; site visit 11/17/2006.)

184. Three task managers managed the project throughout its life. On average, supervision missions were carried out two or three times a year, with a total of 20 supervision missions. The FAO-World Bank Cooperative Program (FAO-CP) made strong contributions to project supervision and provided key technical supervision that would otherwise not have been available. The Bank team: (i) processed three amendments to the Grant Agreement to address the need for more comprehensive social

[107] Conditions such as keeping up project implementation pace, demonstrating that with the extension it would be able to achieve the project development objective within the new timeframe, and to show progress in mainstreaming and acceptance of the corridor concept.

consultations as well as recalibration of project activities given the implementation lag (though recognizing the need for such amendments may have been slower than expected); (ii) provided extensive training and assistance to both phases of the PCU to encourage more efficient implementation; and (iii) ensured compliance with all Bank norms and procedures.

(c) Justification of Rating for Overall Bank Performance
Rating: **Moderately Unsatisfactory**

185. The preparation and supervision teams failed to highlight the fact that there were significant shortcomings in the operation's capacity to monitor the achievement of its objectives, even after the MTR. The team did focus on improving the efficiency of the implementation, initially assisting an inexperienced PCU and later advocating for a change in the project coordination team. The Bank team never lost perspective of the operation's relevance and continued to focus on its innovative mainstreaming approach.

186. CONABIO reported on project achievements using proxy indicators because (i) it seemed impossible to follow the PAD's territorial restrictions and to operate exclusively in the original focal areas[108], and (ii) the absence of clearer definitions of the project goals in order to make them operational and to produce a baseline for evaluation of concepts such as "reduced loss of habitat" or "population perturbation". Although this was not highlighted as a priority by the independent midterm evaluation, the team mentioned it in the MTR Aide-Mémoire, but failed to restructure the project to better reflect indicators and to include verification guidelines in order to report on them in ISRs. The Bank team should have formally revised the indicators through a project restructuring process in order to facilitate improved reporting that would better reflect important and relevant project achievements. Indeed, there were significant shortcomings in the operation's capacity to measure and report on the achievement of its objectives, which prevailed during the whole period of execution. As a result, the Borrower used proxy indicators that were accepted by the Bank supervision teams.[109] On the other hand, the team was probably too risk averse with regard to the La Cojolita focal area in Chiapas, which led to detailed implementation restrictions[110]. Considering the Bank's performance during project preparation and supervision, the overall rating is Moderately Unsatisfactory.

187. However, the Bank team was proactive in promoting partnerships with institutional stakeholders and civil society and in providing technical assistance through FAO/CP staff to overcome the delays resulting from the steep learning curve and expectations raised by the project. The Bank team promoted the integration of gender and culture and obtained additional resources (BNPP) to promote awareness and consensus-building in the region; all of which contributed to strengthen CONABIO to achieve the GEO and promoting the corridor concept nationwide.

[108] The definition of the focal areas was expanded in the amendment to the Grant Agreement approved in November 2005, but the Bank team failed to update the monitoring indicators that this amendment affected.
[109] The Bank's performance is being rated Moderately Unsatisfactory precisely because the team failed to update the indicator matrix and propose a project restructuring accordingly.
[110] Considering the special conditions of the focal area La Cojolita, during the first year of project implementation there were additional consultation activities carried out in this focal area. The conclusion of these activities was a condition for the application of investment resources in La Cojolita. (PAD, Annex 12, p.9).

5.2 Borrower
NOTE: When the government and implementing agency are indistinguishable, provide rating and justification only for Overall Borrower Performance.

(a) Government Performance
Rating: **Moderately Unsatisfactory**

188. The GOM supported the preparation of the project as it became a high priority for biodiversity conservation in the states of southeastern Mexico. They collaborated with the entire project team when the new PCU was hired in 2005. Prior to this, however, lack of support from the GOM to ensure selection of qualified and experienced project staff contributed to implementation delays. During the period in which the project was declared Unsatisfactory, the support of SHCP and NAFIN were key to prompting SEMARNAT and CONABIO to recognize the need for greater attention to the project. (At the same time, the Bank recognized that the social consultation and integration of state councils would require additional time and resources, leading to the first amendment of the Grant Agreement.) CONABIO, SEMARNAT, NAFIN and SHCP followed up on the three 90-day plans (2004–2005) in order to achieve the Moderately Satisfactory rating in June 2005. At the close of the project, SEMARNAT assumed responsibility for its operation and continuity as part of the overall environmental agenda. SEMARNAT also increased its operation to the states of Tabasco, Oaxaca and Veracruz with resources from the federal government.

189. Project implementation was severely limited during the period 2002 to 2005. Although the initial efficiency of project implementation had significant shortcomings, the GOM was instrumental in getting a new coordination team appointed in 2005, recognizing its relevance.

(b) Implementing Agency or Agencies Performance
Rating: **Moderately Unsatisfactory**

190. In light of significant shortcomings in the operation's capacity to measure and report on the achievement of its objectives, the GOM used proxy indicators that were accepted by the Bank supervision teams, even though the indicator matrix was not updated formally. Although initial project implementation efficiency suffered significant shortcomings, these were appropriately dealt with and minimized by the new coordination team appointed in 2005 at the same time that they increased the project's visibility and strengthened its relevance.

191. It should be clarified that CONABIO was not involved in the preparation phase, which was led by SEMARNAT (General Directorate of Sustainable Development Programs). CONABIO's performance suffered many setbacks during the first stage of implementation, in contrast to the performance of their new project management team during the second stage (2005—2009), which was much improved. CONABIO-SEMARNAT made the necessary changes identified in the midterm review (2005), such

as the appointment of a new project coordinator with the required technical and management skills to guide the project. Because CONABIO did not have sufficient experience dealing with Bank operations, NAFIN provided relevant support and overall guidance. As a result, procurement was rated Highly Satisfactory in the penultimate ex post review and Satisfactory in the last ex post review (2009). Since 2002, the project has been audited by an external private firm that issued an unqualified opinion on both the project's and NAFIN'S financial statements for FY2008. The audits have been received in a timely manner. The last project audit report, corresponding to the CY2009, will be furnished to the Bank before June 30, 2010 and will include all withdrawal applications, as well as any expenditure documentation that was processed before April 30, 2010.

(c) Justification of Rating for Overall Borrower Performance
Rating: **Moderately Unsatisfactory**

192. Overall borrower performance is considered to be Moderately Unsatisfactory. There were major shortcomings during the September 2003–June 2005 period when the project was rated Unsatisfactory, before the GOM appointed a new project coordination team. Nevertheless, during that period the GOM was closely in contact with the Bank to seeking appropriate solutions. The resulting series of 90-day action plans were closely monitored and finally allowed the project to be gradually upgraded to Moderately Satisfactory and then to Satisfactory in June 2007. Although initial project implementation efficiency suffered significant shortcomings, these were appropriately dealt with and minimized by the new coordination team appointed in 2005 at the same time that they increased the project's visibility and strengthened its relevance. If one could rate the second stage of project implementation (2005—2009) separately, it would be Satisfactory.

193. The National Corridor Council, which included institutions linked to the environmental sector, committed to promoting the operation's objectives, thus facilitating project management with institutions at all three levels of government. It is worth noting that the active and committed participation of members in the State Corridor Councils, particularly in Chiapas, resulted in a great number of actions implemented at local level that had the consensus of all council members. Considering the scale and great diversity of stakeholder interests, the project incorporated relevant risks during the design phase; some risks were unexpected and posed challenges to the Borrower, however they were managed in the end, with assistance from the Bank team and other partners (i.e., specialist from the FAO/CP). Due to its innovative biodiversity conservation activities, positive project results and the high level of impact generated and reflected in the surveys conducted during 2009, the project's approach has been adopted by other states of Mexico.

6. Lessons Learned

Strategic operationalization of the project PDO was not captured by the output and outcome indicators

194. The project pursued a policy development objective that contributed to the reorientation of development programs and Mexico's first Environmental Structural Adjustment Loan. The mainstreaming objective was difficult to measure quantitatively while also capturing the project's direct impact on policy development. CONABIO reports that the project achieved significant policy development objectives given the success in mainstreaming biodiversity criteria in public expenditures as evidenced by their incorporation into the objectives and operational rules of relevant SAGARPA, SEDESOL and SEMARNAT investment programs. It also became apparent that that while monitoring of vegetation cover and perturbation of species populations and habitats (the original indicators in the PAD) is important, they cannot fully grasp nor reflect biodiversity mainstreaming achievements, especially within institutions.

Guiding criteria to define working areas

195. While some indicators were vague and no baseline defined, other parts of the project were defined in detail, reducing the capacity for adaptive management. Conceptually, focal areas were originally designed to provide geographical structure for specific and targeted interventions in the Corridor area. It was also thought that their limited geographical scope would aid in monitoring and measuring indicators to report on project achievement and impacts. However, the a priori definition of focal areas, led to difficulties in expanding project activities to the most promising product lines and as opportunities to work with institutional partners and communities emerged. In order to do so, the Grant Agreement was amended to redefine the scope of the focal areas. *Instead of selecting specific project intervention sites prior to implementation, agreed-upon site selection criteria should be used to identify intervention areas during implementation.* This allows the project to adjust to changing circumstances on the ground, to take advantage of unforeseen opportunities to expand project impact and achievements, and to adequately respond to the demand-driven nature of subproject implementation to achieve wide participation.

Additional sources of support

196. *Trust funds and other assistance available through the World Bank can complement project resources when ad hoc trainings, consultations, or assessments are needed.* This was the case for the MMBC: the Bank team applied for a US$350,000 grant from the World Bank-Netherlands Partnership Program (BNPP) Global and Regional Initiatives to implement a series of workshops and activities collectively titled *Strengthening Social Participation in the Regional Mesoamerican Biological Corridor (RMBC) in Guatemala, Panama and Southeast Mexico*. The workshops contributed to improving to the MMBC project by financing and fostering additional cooperation,

learning opportunities, technical assistance and facilitating access to other sources of technical and financial support.

Investments in regional development

197. The project's success has lain in its ability to consolidate the work of technical groups, NGOs and local producers who, over several decades, have demonstrated the usefulness of agro-ecological activities and use this evidence to promote reorientation of public investment. *Through training and organization, development and conservation can be harmonized if we learn from local groups' experience and build bridges with public officials.*

Conservation based on community participation has great transaction costs, but is more sustainable

198. In order to achieve community-based agreements for conservation in the corridors, the MMBC worked with *ejidos* and communities (with the consent of their assemblies). *The process of designing, implementing, and enforcing a set of rules to conserve public goods in the corridors is equivalent establishing a local collective good in the community.*[111] In Chiapas, prolonged consultation processes ultimately led to a greater buy-in and demand for subprojects and thus increased investments in the area.

Activities for strengthening social capital[112] should be targeted to organizational networks (NGOs, academia, research institutions, etc.)

199. *Investments in strengthening institutional and local social capital (NGOs and producers) contributed to the project's monitoring network. Investing in institutional partners also contributed to cost-sharing for the more intricate/extensive/expensive monitoring activities*: the project helped to establish long-term alliances with regional and mid-level organizations that collaborated on monitoring responsibilities and activities. These organizations will also contribute in future activities to develop regional markets for MMBC sustainable products.

Building political buy-in and capital for a project

200. During preparation, the Bank team and management identified that Chiapas was a high-risk, high-reward place to work (especially after the 1994 *Zapatista* social uprising). With a new federal administration taking office on December 1, 2000, there was an additional risk that political support for project activities would wane and undermine goals to conduct extensive consultations in socially complicated areas of the country. At the decision meeting[113], the Bank team was advised to contact the incoming federal administration in order to start building the necessary political buy-in and capital to

[111] Ostrom, Elinor. 1990. Governing the Commons. The Evolution of Institutions for Collective Action. Cambridge University Press, New York.
[112] "The set of norms, networks, and organizations through which people gain access to power and resources, and through which decision making and policy formulation occur" (World Bank, 2003)
[113] May 26, 2000.

support project implementation and strengthen alliances with government institutions. The fact that this was not achieved contributed to the slow implementation pace from 2000-2005.

Corridors are relevant for Adaptation to Climate Change:

201. During project preparation, the Central American isthmus suffered the brunt of Hurricane Mitch (1998), the impact of which reached the Yucatan Peninsula. During implementation, the project area was hit by two more hurricanes: Wilma (2005) on the peninsula, and Stan (2006) in Chiapas. All three extreme events severely affected producers in the Corridor areas, especially those involved in apiculture, coffee, silviculture and tourism.

202. The extent of the hurricanes' impacts demonstrated that the MMBC can provide breakthroughs in the necessary crosscutting approaches to achieve relevant mitigation goals, and it has provided yet more insights into the adaptation alternatives in the field. Following the impact of Hurricane Stan (2006) in the coffee-producing region of Motozintla, Chiapas (that had been supported by the MMBC), an assessment by GTZ, Banchiapas and UNAM confirmed that the practices promoted by the MMBC project had reduced the vulnerability of the region to such extreme climatic events.[114]

Project Level

New approaches to intersectoral work

203. The intersectoral nature of CONABIO made it possible for the MMBC to play a role in facilitating the reorientation of public spending and as a mediator in the promotion of municipal development plans. *When dealing with challenges that require intersectoral collaboration, the project design should involve public institutions which have an intersectoral mandate in order to facilitate the cross sector efforts required by environment, climate change and social issues*.

Some projects might require more than one (independent) review as an opportunity to promote required changes, and to support an Intensive Learning ICR

204. From September 2003 to April 2005, the project was rated Unsatisfactory. The MTR that was carried out in January 2005 focused on the feasibility of achieving the Global Environmental Objective. The MTR was instrumental in identifying key actions to put the project back on track, but because there was no significant progress in execution, it was not possible to produce a new indicator's matrix to adjust to reality. A partial cancellation and/or and extension of the project were considered at the time, but the independent evaluation did not strongly recommend either course of action.

[114] In particular, four practices were highlighted for their contribution to reducing vulnerability: variety of crops (including native species/varieties and traditional multiproduct plots); variety of spaces (corridors incorporating conservation and production areas in a landscape management approach); hillside management (reducing vulnerability with integrated watershed management techniques); and conversion to silvopastoral systems (improving yields and quality while restoring tropical forest areas that had been turned into pastures).

205. *Notwithstanding, the Bank team should have taken advantage of the opportunity to restructure the project at that time. When an opportunity to improve project design is missed, the team should consider conducting an additional external evaluation to realistically evaluate design or implementation flaws and inadequacies that can be corrected. Though it may be bureaucratic, such changes can help realign project objectives, indicators and activities to on-the-ground implementation realities and significantly improve performance. It also allows project design to incorporate to-date lessons learned.* At project closure, an Intensive Learning ICR can also help to highlight important lessons and experiences, particularly from project participants. For this ICR, the team requested FAO/CP resources to embark in an Intensive Learning ICR (BP 13.55); however, they were not available. Instead, CONABIO offered to conduct some of the recommended consultation-survey activities on their own, which rendered useful information for this report.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies

(b) Cofinanciers

(c) Other partners and stakeholders
(e.g. NGOs/private sector/civil society)

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

Table 1: Actual/PAD estimate of GEF and cofinancing

Components	Appraisal Estimate Total (USD millions)	Appraisal Estimate GEF (USD millions)	Reallocation GEF (USD millions)	Actual GEF (USD millions)	Percentage of Appraisal	Percentage of Reallocation	Counterpart funds	Percentage of Appraisal Total
Participatory design and monitoring of corridors	**5.91**	**4.26**	**4.11**	**1.93**	**45%**	**46%**	**2.97**	**83%**
Corridor integration into development programs	**71.72**	**3.98**	**3.56**	**5.56**	**140%**	**156%**	**38.2**	**61%**
Sustainable use of biodiversity	**9.31**	**4.01**	**4.46**	**4.46**	**111%**	**100%**	**17.00**	**230%**
Project management and coordination	**3.1**	**2.59**	**2.71**	**2.89**	**112%**	**107%**	**1.27**	**134%**
			14.84	**14.84**			**59.44**	**82%**
Total Baseline Cost	**90.05**							
Physical Contingencies	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Price Contingencies	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Project Costs	**90.05**							
Project Preparation Facility (PPF)*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Front-end fee IBRD **	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Total Financing Required	**90.05**							

** Note: In Annex 3 of the PAD, there is an estimate of US$897,600 for Physical Contingencies and US$10.1 million for Price Contingencies, but this is not later reflected in the final cost by Component, therefore we chose to keep the Component Cost recorded in the main body of the Document.*

*** Preparation was financed with a GEF PDF B grant + PHRD resources*

**** Front end fee not found in PAD or legal documents*

(b) Financing

Table 2: Financing

Source of funds	Appraisal Estimate (USD $m)	Actual (USD $m)	Percentage of Appraisal
GOM	66.99	38.2	57.0%
IBRD *	4.25	*	
CONABIO	1.24	1.27	102.4%
Beneficiaries	0.29	17.0	5851.7%
Grand Total	**72.77**	**56.47**	**77.6%**

** The Bank's Rural Development in Marginal Areas APL was implemented under the Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) in two phases. The first phase closed in June 2003 (P007711).*

Table 3: Additional sources of financing (not in PAD)

Source of funds	Appraisal Estimate (USD $m)	Actual (USD $m)	Percentage of Appraisal
International and private cooperation			
Fomento Social Banamex,A.C.	0.00	0.01	N/A
BNPP Trust Fund	0.00	0.35	N/A
Subtotal additional sources	0.00	0.36	N/A

Table 4: Disbursement at closure by category

Category	Description	USD
1	Goods for Parts A and D of the project (except as covered by Category (4) below) :	
	(A) expenditures which are incurred pursuant to Part A.2(b) of the project	7,022.79
	(B) other	196,981.15
2	Consultants' services and training:	
	(A) expenditures which are incurred pursuant to Part A.2(b) of the project	248,458.06
	(B) other	8,469,915.41
3	Goods and works under Part C of the project	0
4	Operating costs under Part D of the project	2,896,157.75
5	Unallocated	0
6	Sustainable Use Subprojects	3,021,464.84
	Total Disbursed	**14,840,000.00**
	Original Loan Amount	**14,840,000.00**

Table 5: Reallocation by category

#	Category	Original allocation (USD)*	Disbursed (USD)	Available (USD)	Reallocation (USD)	Modified allocation (USD)
1	Goods Part A and D	114,624	114,623	1	118,253	232,877
2	Consultant services and training	9,175,343	8,441,356	733,987	-417,502	8,757,841
3	Operating costs Part D	3,100,033	2,811,846	288,187	-150,704	2,949,329
4	Subprojects	2,450,000	1,962,819	487,181	449,952	2,899,952
Subtotal		**14,840,000**	**13,330,645**	**1,509,355**	**0**	**14,840,000**
DA		-	650,000	-650,000	-	-
Total		**14,840,000**	**13,980,645**	**859,355**	**0**	**14,840,000**

** Amendment signed Nov 23, 2004 exchanged SDR denomination into US dollars. Therefore the allocation (in USD) above does not correspond with the PAD/Grant Agreement amount in SDR.*

Table 6: Reallocation by component

Component	Category	Original (US$M)	Reallocation (USD)	Modified (US$M)
Participatory design and Monitoring	Consultant services and training Goods Part A	4.26	-150,704	4.11
Corridor Integration into Development	Consultant services and training	3.98	-417,502	3.56
Sustainable use	Subprojects	4.01	449,952	4.46
Project Management	Operating costs Part D Goods Part D	2.59	118,253	2.71
Total (US$M)		**14.84**		**14.84**

Table 7: Disbursement at project closure versus original and reallocation by category

#	Category	Original allocation	Modified allocation	Actual	Percentage
1	Goods Part A and D	114,624	232,877	204,003.941	88.0 %
2	Consultant services and training	9,175,343	8,757,841	8,718,373.47	99.5 %
3	Operating costs Part D	3,100,033	2,949,329	2,896,157.75	98.2 %
4	Subprojects	2,450,000	2,899,952	3,021,464.84	104.1 %
Total		**14,840,000**	**14,840,000**	**14,840,000**	**100.0 %**

Annex 2. Outputs by Component

Consultancies and subprojects by strategic line	Total (MXN$)		Beneficiaries	Principal Results Achieved	Implementing
	GEF	Others			
Yucatan Peninsula Corridors					
Development, Land Management and Planning of Corridors **Components A, B, C, D** **11 consultancies**: support the formulation and implementation of land use and sustainable rural development plans in the Corridor areas.	$3,872,180	$7,696,141	-22,970 people -14 municipal plans -61 communities -Indigenous (18%), Women (49%), Men (51%)	Ecological regionalization identified as priorities: (a) Preservation, protection, restoration and sustainable use of natural resources; (b) Location of production activities and human settlements, consistent with other laws and regulations and existing programs in the field; (c) Maintenance of environmental goods and services; (d) The protection of critical habitats for conservation of wildlife refuge areas to protect aquatic species and other instruments for the conservation of ecosystems and biodiversity; (e) Resolution of environmental conflicts and promotion of sustainable development; (f) Incorporation of environmental variables in the programs of government (federal, state and municipal). For the North Coast of Yucatan Corridor 30 thematic maps were generated at a scale of 1:50,000. For the Calakmul-Balan Ka'ax Corridor 37 maps were created at a scale of 1:50,000. 12 different thematic maps were created for focal areas in the same corridor at a scale of 1:50,000.	COMADEP, A.C. Tropica Rural CINVESTAV Instituto para el Desarrollo Sustantable de Mesoamerica, A.C. El Colegio de la Frontera Sur (ECOSUR), Unidad Campeche

Exchange of Knowledge and Strengthening of Local Capacities **Components A, B, C** **10 consultancies and 2 subprojects**: workshops were held to empower producer organizations as well as training courses to coordinate/alight their conservation efforts.	$3,182,638.75	$1,815,750.00	-17,794 people -129 communities -Men (51%), Women (49%)	MMBC project attended 136 organizations through awareness campaigns, evaluation of prioritization problems, project strategy design and/or planning through training courses, workshops, experience exchanges, technical advice, and support and management of pilot projects. All these activities were included in the key performance indicators for the relevant components.	Universidad de Quintana Roo COMADEP, A.C. Organización de Ejidos Productores Forestales de la Zona Maya, S.C. Niños y Crías, A.C. Unión de Cooperativas de Chabihau, S.C. de R.L. 6 consultants
Working with Women **Component C** **50 subprojects**: promote participation of women in economic activities in the region by strengthening and developing organizational capabilities that are conducive to the sustainability of their initiatives.	$3,598,296.98	$6,141,082.83	-624 people -36 communities -Indigenous (66%), Women (92%), Men (8%)	Strengthened the organizations and groups of indigenous and rural women through sustainable management of their subprojects, conservation and restoration activities, and sustainable income-generating activities. Promoting their participation in decision making related to environmental, social and economic sustainability in the biological corridors. Subprojects included : production of octopus, organic vegetables, cultivation and marketing of bananas, vegetables, native melipona (Apidae, *Melipona yucatanica*), beekeeping, organic honey production, dragon pearl of pitahaya fruit (*Hylocereus* cacti), environmental sanitation, restoration of mangroves, production of compost-based marine kelp (algae), production and marketing of handicrafts.	50 women's organizations

Beekeeping for Conservation **Component C** **36 subprojects and 4 consultancies**: contribute to improving beekeeping activities in the Yucatan Peninsula with special attention to the following aspects> organizational strengthening, conservation of collective biological resources, productive efficiency, compliance with quality control standards (safety and traceability), new marketing strategies for the benefit of small producers (differentiation, certification, fair trade, labeling and packaging, etc.).	$4,120,511.00	$9,249,872.00	-1,226 people -45 communities -Men (77%), Women (23%), Indigenous (92%)	36 organizations have been strengthened with an impact on beekeeping activities in 45 communities.	36 producer organizations 4 consultants
Development of Low-impact Ecotourism (aka Environmental Tourism) **Components A, B, C** **21 subprojects and 3 consultancies**: strengthen the capacities of local initiatives and promote low-impact tourism with a focus on social inclusion.	$3,357,726.50	$17,093,490.45	-3,245 people -Indigenous (59%), Women (43%), Men (57%)	Provided mechanisms for support and advice through backing these subprojects, including (i) improvement in equipment, infrastructure and training, (ii) resources and management guidance for resolution of legal issues, (iii) definition of environmental load limits (i.e., number of tourists), and (iv) access rights and use, among others.	Yaxché Árbol de la Vida, A.C. 2 consultants 21 producer organizations

Biodiversity Management (Management Units for the Conservation of Wildlife) **Components B, C** **8 subprojects and 3 consultancies**: strengthening the Management Units for the Conservation of Wildlife (UMAs) as an instrument of sustainable use of biodiversity in areas with conservation gaps, through technical assistance and support for networking with business approaches and improving biological connectivity.	$1,366,614.00	$2,355,200.00	-252 people -Men (84%), Women (16%), Indigenous (100%)	Extensive UMAs have registered having comprehensive land uses (research, commercial exploitation, songbirds, ecotourism) as well as proper maintenance. Management plans were prepared to monitor and adjust use impacts (frequency and intensity). Additional improvement included: (i) strengthening infrastructure—camps, composting toilets, sighting towers, fire breaks and trails, tools and equipment; (ii) improved signaling—20 signal flags with 50 signals for UMAs; and (iii) training for 125 UMAs members and technical assistance for 8 UMAs areas.	U YOOL CHE, A.C. 2 consultants 8 producer organizations
Sustainable Use of Non-timber Forest Products (NTFPs) **Component C** **3 subprojects**: to ensure the viability for a productive activity that allows for the conservation of forest areas and maintaining biodiversity. It generated significant benefits for chicle gum producers (mostly indigenous).	$973,000.00	$2,602,000.00	-1,385 people -53 communities -Women (2%), Men (98%), Indigenous (95%)	Provided support for the consolidation of management and integration of the chicle gum production chain consortium composed of 53 cooperatives. The finished product that was marketed (mainly in Europe) is the first product to incorporate the “Corridor” eco-label as a part of its international marketing. Its sales volumes are increasing. The product was certified as Chiczá natural gum brand.	Consorcio Corporativo de Productores y exportadores en forestería, S.C. de R.L. Unión de Productores de Chicle Natural Plan Piloto Chiclero, S.P.R. de R.L.
Chiapas Corridors					
Aquaculture with Native Species **Component C** **12 subprojects**: supporting producer groups working to strengthen aquaculture production systems in their region	$189,150.00	$574,400.00	-104 people -7 communities -Women (20%), Men (80%), Indigenous (30%)	Construction of 12 modules of aquaculture harvesting on the banks of streams and tributaries to the Lacantun River, with the participation of SAGARPA.	12 producer organizations

Support for Honey Production **Component C** **9 subprojects**: strengthen organizations that keep honey bees..	$3,230,311.75	$17,035,368.00	-900 people -35 communities -Women (22%), Men (78%), Indigenous (95%)	Production and organization processes were consolidated for nine beekeeping/honey producing organizations, including support for the purchase of hives extraction and storage equipment, labels and packaging. Support was also provided for the design of new products and reforestation of beekeeping areas. MMBC resources were used to leverage resources from Banchiapas, CDI and SAGARPA.	9 producer organizations
Establishment and Development Shade Coffee Production **Components A, B, C** **21 subprojects and 7 consultancies**: support to coffee producers and organizations to strengthen their systems of shade coffee production.	$14,613,514.70	$292,476,023.64	-9,934 people -206 communities -Women (22%), Men (78%), Indigenous (85%)	41 organizations were registered with 5,366 coffee producers representing 297 locations in 18 municipalities in the southern corridor of the Sierra Madre of Chiapas. The MMBC team developed 17 subprojects to obtain resources from ProArbol program from CONAFOR. 21 subproject proposals were made to strengthen coffee organizations that are located in Chiapas corridors, all of which were submitted to various institutions for funding and are in the process of being accepted. 13 organizations with sustainable coffee production are in the process of obtaining organic certification. MMBC has supported their training.	PATPO IDESMAC, A.C. CERTIMEX 4 consultants 21 producer organizations

Payment for Environmental Services **Components B, C** **1 subproject and 1 consultancy**: contribute to the integration of a State Payment for Ecosystem Services Group (GESE) in the State of Chiapas, to take advantage of opportunities to generate proposals and projects for the payment of environmental services.	$840,000.00	------	-1,598 people -1 community -Men (95%), Women (5%), Indigenous (70%)	1 subproject: Preparation of the project "Reforestation, ecological restoration and carbon sequestration in the Ejido May 3, Mapastepec, Chiapas." 1 consultancy: Preparation of the State program for payment for ecosystem services for Chiapas.	Cooperativa AMBIO Working Group in Ejido Tres de Mayo (May 3)
Training, Technical Assistance and Consolidation of Ecotourism in State Processes **Components A, B, C** **9 subprojects and 5 consultancies:** develop a program for consolidation of alternatives for ecotourism centers of the State using working proposals for ecotourism routes in Chiapas corridors. Strengthen and support organizations, working groups and producers in the region for the proper management of their workplaces in order to promote ecotourism in Chiapas.	$4,385,258.00	$31,775,668.60	-3,040 people -8 communities -Indigenous (75%), Women (50%)	Support for the construction of trails, training workshops, capacity building and skills regarding creation of ecotourism routes, including Palenque Lagos de Montebello, Sierra Soconusco Route and Route Zoque.	Asesores en Desarrollo Turístico Sustentable, S.C. La Otredad 3 consultants 9 organizations

Knowledge Sharing **Components A, B, C, D** **17 consultancies and 3 subprojects:** share and agree on strategies developed by the MMBC work in Chiapas, and to disseminate and extend to participating producers training opportunities/processes with different institutional sectors, academia and social organizations.	$20,493,929.17	$3,906,211.00	-3,089 people -28 communities -Indigenous (85%), Women (20%), Men (80%)	Project was successful in supporting the stated goal of the knowledge sharing activities, already described. Three subprojects were financed: wood saving stoves, cultivation of vanilla, and ecological technologies.	IDESMAC CAMADDS PATPO Instituto de Historia Natural y Ecología Grupo GEA Espacios de Educación Tecnológica 9 consultants
Monitoring and Evaluation **Components A, B** **9 consultancies:** to know and identify the main species used as indicators of biodiversity and to create a baseline for monitoring. Educate and train a network of local monitors that will follow up.	$8,467,845.00	$1,909,065.00	-2,536 people -56 communities	Establishment of a monitoring system and network that allows for biodiversity evaluations in the corridors.	Consejo Civil para la Cafetícultura Sustentable, A.C. CentroGEO 5 consultants
Land Use **Component A, B, C** **32 subprojects and 5 consultancies:** inhabitants of communities and municipalities within the Corridor are involved in the design and elaboration of subprojects and who are committed to conservation in an integrated and sustainable manner.	$1,962,236.20	$733,968.00	-9,453 people	5 municipal plans were developed with comprehensive consideration of such issues including: education, health, infrastructure, communications, employment, and conservation and sustainable use of natural resources of the municipality. Municipal authorities and local producers attended the workshops (men, women and youth).	32 producer organizations 5 consultants

Sustainable Agricultural Practices and Watershed Management **Components B, C** **32 subprojects and 6 consultancies:** reduce environmental impacts by promoting sustainable livestock practices that help prevent soil and water loss; do so through supporting watershed management, silvopastoral practices and reduced use of fire.	$9,535,621.93	$49,954,212.00	-5,260 people -45 communities -Women (80%), Men (20%), Indigenous (70%)	32 subprojects for the establishment of new forms of production and proper management of biodiversity and ecosystems as "community heritage".	Pronatura Sur, A.C. Natura y Ecosistemas Mexicanos 32 indigenous organizations
Sustainable Forest Production **Components B, C** **9 subprojects and 7 consultancies:** promote sustainable use of forest resources.	$2,073,120.22	$11,779,653.50	-1,754 people -19 communities -Men (60%), Women (40%)	A group of palm (*Chamaedorea*) producers created for its cultivation and marketing in the southern corridor of the Sierra Madre of Chiapas. Two tree production organizations created to support reforestation and use/cultivation of medicinal plants (in the Lacandona forest).	Pronatura Chiapas 6 consultants 9 producer organizations
Management Units for Wildlife Conservation (UMAs) **Component C** **6 subprojects:** promote and strengthen productive practices that support wildlife management units (UMAs) as an alternative for the sustainable management of biodiversity.	$1,417,980.00	$4,027,820.00	-99 people -6 communities -Indigenous (45%), Women (41%), Men (59%)	6 subprojects designed by the MMBC for the management/production of white-tailed deer and 18 subprojects that were presented to SEMARNAT (General Directorate of Wildlife) in the two Chiapas corridors.	6 producer organizations

Table 2: Subprojects by sector

	Sector	No. Subprojects
1.	Aquaculture	14
2.	Agrobiodiversity	38
3.	Beekeeping	46
4.	Coffee production	20
5.	Ecotourism	30
6.	Forestry and Agroforestry	18
7.	Biodiversity Management and Wildlife	15
8.	Mantenance and restoration of ecosystems	16
9.	Handicrafts (wood and others)	10
10.	Environmental health	8
	TOTAL	**215**

Table 3: Capacity-building workshops

Events	Academia		Beneficiaries		Officials		Others		Total	
	No. Events	No. People	No. Events	No. People	No. Events	No. People	No. Events	No. People	No. Events	No. People
a) Community Planning	6	57	231	3,847	79	396	2	100	318	4,400
b) Technical Assistance and Support	16	33	341	10,445	4	24	0	0	361	105,02
c) Specialized	9	263	324	4,746	14	191	0	0	347	4,988
d) Monitoring and Evaluation	15	613	110	775	40	216	0	0	165	1,604
e) Dissemination	23	494	244	17,544	34	1,411	0	0	301	19,449
TOTAL	69	1,460	1,250	37,357	171	2,238	2	100	1,492	40,943

PAD Indicator: 260 staff trained; 2,238 staff were trained by MMBC from all levels of government (federal, state, municipal).

PAD Indicator: 64 training workshops; the MMBC conducted 318 community planning workshops.

PAD Indicator: 112 training courses: the MMBC conducted 361 technical assistance and support activities.

Consultancies

One hundred eighty nine (189) consultancies were funded with a total cost of US$2,953.240 over the nine years of implementation. These resources were directed to financing the activities of the four project components, such as: i) training the technical staff of the project; ii) training of stakeholders and senior officials; iii) technical and cost-benefit studies; iv) technical advice for the formulation of municipal and community participatory plans and projects; v) identification of land conflicts in the Lacandona region of Chiapas; vi) training for bird monitoring and evaluation in focal areas; and vii) scientific studies, which can be found on the GIS website of the MMBC.

Table 4: Publications

Books	Documentaries and videos	Posters	Digital cartography
"Protecting What Is Ours." Manual for community environmental management, use and conservation of biodiversity by rural indigenous communities in Latin America.	Trails of Life(Dutch Grant)	"Diversity of Honey from the Yucatan Peninsula"(map)	Module of basic land information in the region, 2006. Mexico Mesoamerican Biological Corridor CD.
"Biodiversity and Responsible Consumption" (in English and Spanish)	*Chujúm*, a traditional alternative forest management in the Lacandona forest.	"Living Spaces." Mesoamerican Biological Corridor in the Yucatan Peninsula"	Module of basic land information in the region, 2007. Mexico Mesoamerican Biological Corridor CD.
"Monitoring and Evaluation of Natural Resources"			
"Sustainable Trade." Catalogue of products and services	"Red Wind: Hurricane Dean. The impact of Hurricane Dean in Quintana Roo."	"Living Spaces." Mexico Mesoamerican Biological Corridor in Chiapas	
Technical manual for the establishment and management of pepper plantations in the region of Calakmul, Campeche	"Voices in the Lacantún, Echoes of the Lacandona"	"Connectivity in Biological Corridors"	
"Importance of ecological capital of the region of the Mesoamerican Biological Corridor – Mexico"	"For the Corridor"		
"Evaluation of forest plantations in the area of Sian Ka'an–Calakmul"	From *Kantemó* to *Las Nubes"*		
"Model for information and knowledge services within a framework of public management for development."	"About Honey"		
"Honey varieties from the Yucatan Peninsula and their market niches."	"Among Women"		
"State program for payment for environmental services. A proposal for Chiapas."	"Among aromas and flavors"		
"Management Units for Conservation of Wildlife and the Mexico Mesoamerican Biological Corridor"	10 one-minute video clips on sustainable use		
"Mahogany of the Yucatan Peninsula: ecology and regeneration"			
Catalogue of alternative technology. Directory of products and producers.			
"Municipal Plan for Sustainable Development of Siltepec, Chiapas"			
Strategy for payment for environmental services in Quintana Roo: hydrological performance			
"Complex systems and environmental management"			
"Anatomy of an environmental agrarian conflict in the north of the Lacandona"			

Annex 3. Economic and Financial Analysis

The project did not have an economic analysis in the original PAD. During appraisal, a choice was made to base the economic chapter on an Incremental Cost Analysis, instead of doing a cost-benefit, cost-effectiveness or other type of analysis.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Rafaello Cervigni	Environmental Economist	LCSEN	TTL (1998-2000)
Ricardo Hernandez Murillo	Environmental Specialist	LCSEN	Environment
Lucia Grenna	Communication Specialist	LCEXT	Communication
Silvia Moran-Porche	Procurement Asst.	LCSPT	Procurement
Victor Manuel Ordonez Conde	Financial Management Specialist	CTRLP	Financial Management
Monique Pelloux Patron	Program Assistant	LCSIS	Assistant
Teresa M. Roncal	Operations Analyst	LCSAR	Procurement
Tania Carrasco	Consultant	LCSEN	Social and Indigenous
Jozef Draaisma	Sr Country Economist	LCSPE	Economic Analysis
Lea Braslavsky	Procurement Advisor	LC1SD	Procurement
Supervision/ICR			
Rafaello Cervigni	Sr. Environmental Economist	LCSEN	TTL (2000-2001)
James Smyle	Sr. Natural Resources Specialist	LCSAR	TTL (2001-2005)
Brenna Vredevelt	Junior Professional Associate	LCSEN	ICR CoTTL (2010)
Ricardo Hernandez Murillo	Sr Environmental Specialist	LCSEN	TTL (2005-2010) ICR CoTTL (2010)
Efraim Jimenez	Consultant	EAPCO	Procurement
Juan Martinez	Sr Social Scientist	LCSSO	Social
Takako Mochizuki	Consultant	LCSAR	Gender
Silvia Moran-Porche	Procurement Asst.	LCSPT	Procurement
Victor Manuel Ordonez Conde	Financial Management Specialist	CTRLP	Financial Management
Monique Pelloux Patron	Program Assistant	LCSIS	Assistant
Gabriel Penaloza	Procurement Analyst	LCSPT	Procurement
Teresa M. Roncal	Operations Analyst	LCSAR	Procurement
Gerardo Segura Warnholtz	Senior Rural Development Specialist	LCSAR	Forestry
Andrea Semaan	Consultant	LCSDE	Institutional Development
Juan Carlos Serrano-Machorro	Financial Management Specialist	LCSFM	Financial Management
Tania Carrasco	Consultant	LCSEN	Social and Indigenous
Jozef Draaisma	Sr Country Economist	LCSPE	Economic Analysis
Dmitri Gourfinkel	Financial Management Analyst	LCSFM	Financial Management
Klaus Urban	Institutional Development Specialist	CP/FAO	Institutional Development
Karina M. Kashiwamoto	Language Program Assistant	LCC1C	Assistant
Lea Braslavsky	Procurement Advisor	LCSPT	Procurement

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY99		110.28
FY00		215.63
FY01		65.45
FY02		3.96
Total:		395.32
Supervision/ICR		
FY01		21.42
FY02		44.38
FY03		78.10
FY04		85.64
FY05		87.66
FY06		109.99
FY07		98.54
FY08		49.83
FY09		60.0 *
FY10		60.0 *
TOTAL		1,486.20 *

** Estimated based on WPA*

Annex 5. Beneficiary Survey Results

Survey I. Evaluation of the Sustainable Rural Development Program CBMM-CONABIO-SAGARPA in the region of Marqués de Comillas, Chiapas PDRS-MC

1. Of the four participating states, Chiapas is the one with the highest potential for the implementation of the corridor strategies. Within Chiapas where the Sierra Madre del Sur and Selva Maya Zoque Corridors meet,the Marqués de Comillas municipality is key both for social and ecological reasons.

2. During preparation, the social situation in this area (adjacent to the Montes Azules Biosphere Reserve and the Maya Biosphere Reserve in Guatemala, the largest rainforest reserves in the northern hemisphere) required special provisions in the PAD[115]. During the implementation, the Chajul Biological Research Station in Montes Azules became the meeting point for training and knowledge sharing activities promoted by the MMBC. This area also became the laboratory for collaboration with the Ministry of Environment and the Ministry of Agriculture in order to concentrate efforts and resources and to develop demonstration areas for the strategic lines of the MMBC.

3. Since 2008, the Sustainable Rural Development Programme (PDRS-MC) has been executed by the MMBC. The PDRS-MC seeks to integrate the conservation of natural resources, especially tropical rainforests, with improved production and social development for local populations. It is an initiative to give continuity to the efforts being made in Mexico and Chiapas to achieve environmental, productive and social sustainable rural development. The PDRS-MC is carried out in a coordinated manner by SAGARPA, MMBC, CONABIO, SEMARNAT and the Chiapas state government.

4. With funding from the United States Agency for International Development (USAID), the Interdisciplinary Center for Biodiversity and Environment (CEIBA) carried out an evaluation of the first implementation cycle of the PDRS-MC in September 2009. The study includes interviews, a socioeconomic survey and workshops with *ejidatarios*, municipal and *ejido* authorities, government officials and researchers.

5. The importance of the Marqués de Comillas region as part of MMBC has to do with its geographical role in connecting two important protected areas—Montes Azules Biosphere Reserve and Selva Maya (Guatemala). In this region, increasing livestock and "slash and burn" corn production is leading to deforestation with a loss of 40% to 50% of forest area. Despite the depletion of these natural resources and capital, 85% of the population is in food poverty.[116] According to the National Agrarian Registry (RAN) *ejido* participants in the project own 79,606 ha; but according to the *ejidatarios* it is 72.851 ha. Of this, 8% is designated for community use, 34% for corn production, and the rest for farmland, fallows and meadows.

6. During FY2008, PDRS-MC implemented in Chiapas Corridors had a budget of MXN$26,500,000 divided into three components: a) MXN$6,800,000to team of technicians; b)

[115] PAD, page 27: Considering the special conditions of the focal area La Cojolita (high level of social conflicts and land tenure problems), the IPDP specifies that during the first year of project implementation there will be additional consultation activities carried out in this focal area. The activities will involve participatory planning to adapt the global strategic lines of the IPDP to the particular conditions of the area. The conclusion of these activities will be a condition for the application of investment resources in La Cojolita.

[116] The National Council responsible for the evaluation of social policy in Mexico (Coneval) distinguishes three levels of poverty: Nutritional (Income), Capacities, and Assets. See: http://www.coneval.gob.mx/contenido/med_pobreza/3967.pdf

MXN$13,100,000 for sustainable use of natural resources for primary production (productive restoration), and c) MXN$6, 600,000 for the acquisition of productive assets (equipment).

7. During 2008 the following results were achieved:

Indicator	Measurement unit	2012 Target	2008 Progress
Local arrangements for forest conservation	Ha	50,000	20,000
Families with income > MXN$50,000 per year	Families	2,680	1,500
Recovery/restoration of forest frontier	Ha	3,600	350
Sustainable diversified agriculture	Ha	1,800	422
Sustainable Commercial Agriculture	Ha	320	40
Recovery/restoration of degraded pastures	Ha	30,000	795
Silvopastoral conversion	Ha	10,000	440
Livestock production units	Production Units	800	75

Results of the component of Sustainable Use of Natural Resources for the Primary Production (Productive Reconversion)

8. 1802 Productive restoration subprojects were supported in 2,212 ha by 1802 beneficiaries in 29 communities from four municipalities including:

- 173 to reorient the widespread agricultural and livestock activities that cause deterioration of forestcover in the area of Marqués de Comillas;
- 920 for backyard improvement;
- 420 for *milpa* settling;
- 68 for *acahuales* enrichment, introduction of fodder trees and pasture land subdivision;
- 205 for renovation of pastures and pastureland improvement and restoration of riverside.

Results of the Productive Assets component

9. 23 subprojects associated with productive chains were financed through the productive assets component including:

- 10 aquaculture;
- 2 ecotourism;
- 1 for housing livestock;
- 5 Environmental Management Units of Wildlife (UMA);
- 3 greenhouses;

- 1 organic agriculture.

10. The beneficiaries included 285 people: 77 women and 208 men.

11. Training

- 59 community producers (26 women and 33 men) on technical skills, capacity building and use of tools;
- 952 workshops in *ejidos* (117 men and 775 women) on environmental issues and natural resource management;
- 55 young people (21 women and 32 men) participated in the youth network for the conservation and sustainable management;
- Centro-GEO (GIS, mapping and data collection service for the project) generated a GIS for the region. (See GIS website www.cbmm.gob.mx .)

12. Progress of PDRS-MC as of 2008, and next steps

a) Sustainable productive restoration. The survey showed that 85% of the beneficiaries of the PDRS-MC are not burning the brushwood in their fields. The geographical baseline established by the PDRS-MC will be used to make comparisons to measure restoration over time.

b) Encourage changes in attitude toward the sustainable use of biological resource potential available to the region. 67 people (5.19%) are involved in the *acahuales* enrichment, out of a total 1290 participants. The low percentage of participation is due to the many limitations associated with timber, including the overexploitation of the rainforest and the fact that there is a lack of forestry organizations to help land owners better use their rainforest resources. As a result, the PDRS is increasing farmer awareness on sustainable use of their natural resources in order to incorporate them into the timber resource use scheme.

c) Provide tools to reorganize the management of the territory based on the status of the environment, and the requirements for sustainable production and development of infrastructure and services. This is an activity that has not been carried out yet and is scheduled for the second stage which will generate useful land use tools and practices for the *ejidos* and their inhabitants.

d) Promote productive chains to ensure livelihoods and ensure participation in markets, especially those that recognize the environmental value of products.
The next step is to support producers in entering markets, establishing long-term business relationships and meeting standards for quality and quantity that markets will demand. Obstacles that these projects will have to overcome include: remoteness from major markets, lack of entrepreneurial skills, lack of knowledge about the behavior of markets and few organizational capabilities of the producers. To meet this goal, the next stage of the PDRS-MC will require a focus on overcoming these obstacles and the integration of (participation among) those businesses already developing under production chain models.

e) Orient public investment to support synergies between increased efficiency in primary production activities (agriculture) and the containment of natural resource degradation processes.
1802 subprojects were cofinanced by the landowners in order to improve natural resource management. Design of subprojects for the restoration of riversides will need to incorporate economic incentives so that they result in tangible benefits for landowners in the medium term.

f) Increase the efficiency of local institutional management to strengthen the municipalities, *ejidos* and economic organizations.
In the area where the PDRS-MC operates, *ejidatarios* have little experience organizing economic groups. As a result, the MMBC team has provided continuous training to strengthen human and social capital, and thus local institutional management (municipalities and *ejidos*).

13. 80% of the beneficiaries reported in the survey that during 2008 they participated more in MMBC meetings as opposed to meetings with other governmental programs.

Survey II. Evaluation of the Economic and Social Impact of Mexico Mesoamerican Biological Corridor in the Peninsula and Chiapas

14. In September 2009, the MMBC team used GEF resources to conduct a survey in order to determine the impact of the project from 2005–2009, specifically focusing on the subprojects granted to communities located in the focal areas of the five corridors.

15. From a total of 215 subprojects[117] (8 persons by subproject) 209 surveys were conducted in 29 villages of the five corridors: 105 surveys in Chiapas in 13 communities (both Selva Maya Zoque and Sierra Madre del Sur Corridors), and 104 surveys in 16 communities in the focal areas of the Yucatan Peninsula (Campeche, Yucatan and Quintana Roo). The basic indicators chosen to measure the progress of the MMBC focus on ecology, improvement in the quality of life and strengthening of local community capacities.

16. The summary of the findings are:

- Of the total beneficiaries of these projects, 34% are men and 66% women, indicating strong participation of women. Resources for the subprojects began to flow in 2007 and have a wide variety of subjects that are detailed in Annex III.
- 86% said they know what the MMBC does: “it promotes the conservation of natural resources.”
- 96% said the support they have received has served to preserve the forest and/or rainforest.

[117] Includes MMBC subprojects and proyects coordinated with SAGARPA for Marqués de Comillas.

- 40% of the surveyed population said that they receive the minimum wage, which at the most is MXN$51.95 per day; 14% receive up to two times the minimum wage; and only 25% earn more than that, while the remaining 21% includes housewives who participated in the project without pay or those who did not answer the question.

- 90% of respondents said that both the production and marketing of their products have improved since the introduction of the corridor subprojects.

- 90% said that since the MMBC began working in their community they have higher incomes, have improved their quality of life and have more training and communication with others working in similar activities.

17. Quotes from government officials and external technicians

- SAGARPA: "Commitment was made from producers".

- SEMARNAT: "Community self-management and coordination with federal and state agencies has been strengthened".

- CONANP: "From a perspective of conservation and development, the MMBC is one of the best programs. While the NPAs are representative; they have an island effect for genetic viability, so this project is essential as a tool for development".

- CONAFOR: "The project has had a positive effect because it helps people's awareness, especially in waste management."[118]

- SEMARNAT: "It [the MMBC project] has become provided important groundwork and documentation support, allowing different government institutions and NGOs to be connected to important resources made available through workshops and studies".

18. Quintana Roo

- *Executive Director of Consorcio Chiclero, of Quintana Roo* "The Corridor is a tool that enhances organizational initiatives and economic aspects of community forestry. Its contribution is not only financial, but it is an element that connects the regional level and the social alliance of forest communities on a common principle: sustainable management and forest economics".

- *National Commission for the Development of Indigenous Peoples.* "The actions of the Corridor and the benefits it has brought are more visible, particularly for members of some indigenous groups. One problem has been that funding comes

[118] Although waste management is not usually considered in agroecology approaches, the MMBC and the CONAFOR recognized the relevance of reducing waste, reusing and disposing appropriately in the integrated management of watersheds. This also was considered relevant by communities and governments in the Yucatan Peninsula.

at the wrong time and when it comes, it is a mix of resources with other agencies, and work started in the communities is not completed within the allotted time".

- *Director of the Forests in the municipality of Othon P. Blanco, Quintana Roo*
  "There is no doubt that the Corridor has enhanced awareness among the population …. The Corridor has provided support serving as seed capital for communities and producers to obtain complementary resources".

Information analysis

Impact of MMBC resources

19. MMBC activities have included two phases of intervention. During the initial stage of preparation, efforts where focused on carrying out studies and consultancies. The second stage was characterized by subproject implementation, which consolidated Corridor work in the reorientation of public program investments into a new conservation, restoration and management of biodiversity model.

20. Socioeconomically, MMBC impacts are supporting production processes and products to enter alternative market channels and markets for environmental services. Those markets that are targeted take into consideration environmental sustainability, gender equity and the value of cultural origin of the products that the communities offer. Progress made along these lines in tourism services, cacao products, coffee, honey, gum, pepper, *copal*, vegetables and handicraft production demonstrate the Corridor's relevance and its potential for even greater achievements in its next stage of implementation

21. Another outstanding aspect that the survey reveals is the strengthening of social capital including: strengthening the capacity of design, management, evaluation and monitoring of productive projects, mediation and resolution of land conflicts (especially in Chiapas and particularly in the Lacandona community), and the consolidation of producer networks.

Annex 6. Stakeholder Workshop Report and Results

Not applicable.

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

El Prestatario considera que el proyecto del Corredor Biológico Mesoamericano México (CBMM) fue la plataforma desde la cual es posible hablar actualmente en México de una política nacional de corredores biológicos. El proyecto cimentó esta política. Es por ello que el resultado global es altamente exitoso.

Se reconoce que durante la primera etapa el proyecto tuvo un arranque difícil, debido a errores de diseño, por ser un concepto nuevo y por inexperiencia. Con el refuerzo de la Coordinación y del equipo técnico en una segunda etapa, el Corredor cumplió con la totalidad de los objetivos y metas planteadas en el proyecto, como fue monitoreado de acuerdo a los indicadores establecidos tanto en las enmiendas al convenio de donación como en los acuerdos con el Banco Mundial formalizados en las ayudas memoria.

El Prestatario está satisfecho con el proyecto ya que, además de la experiencia que se forjó en el camino, ha innovado en mecanismos que promueven la conservación del entorno natural en zonas críticas de biodiversidad a la par de brindar a la población local alternativas importantes de desarrollo económico.

Actualmente, el concepto de corredor biológico es mejor comprendido en un país en el que hace 10 años no existía un mecanismo transversal de esta naturaleza. El donativo GEF desarrolló la base con la cual se seguirá trabajando en corredores biológicos en México durante muchos años. Es un proyecto que logró instaurarse en el país y es parte ahora de la agenda ambiental a nivel nacional.

A continuación se describe lo que el proyecto ha realizado a nivel nacional y la importancia que tiene en la actualidad.

Casi diez años de actividades en uno de los proyectos ambientales más novedosos e importantes del continente, por su pertinencia, integralidad regional y por conciliar la conservación de la biodiversidad con su uso y manejo sustentable, es un acontecimiento del que México debe estar satisfecho: El Corredor Biológico Mesoamericano México ha trabajado junto con siete países centroamericanos, para unir ecosistemas naturales en un esfuerzo por preservar el 10 por ciento de las especies de plantas y animales conocidas, y propiciar, al mismo tiempo, mejores oportunidades y calidad de vida para los legítimos dueños de esos espacios del sureste de México.

El trabajo se ha enfocado en favorecer la conectividad entre zonas conservadas - mediante esquemas federales, estatales, municipales y privados- y las zonas en las que los recursos naturales son manejados y usados, principalmente por población rural e indígena que habita en cientos de localidades alrededor de esas áreas protegidas.

El mecanismo fue con una apuesta diferente a las aplicadas hasta hace un decenio en el país: contribuir a la conservación de la biodiversidad a través del aprovechamiento sustentable de los recursos naturales en el trópico húmedo mexicano.

A esta distancia del camino se puede afirmar que dicha apuesta se logró con buenos resultados. Con su estrategia, el Corredor ha brindado acompañamiento técnico, capacitación y financiamiento a organizaciones en más de 600 comunidades rurales e indígenas asentadas en Campeche, Chiapas, Quintana Roo y Yucatán, con la finalidad de favorecer su desarrollo económico a través del uso sustentable de su entorno.

Esto ha permitido a miles de productores cafetaleros, apícolas, forestales, chicleros, ganaderos, agrícolas y otros utilizar, por ejemplo, abonos orgánicos, bancos vegetales de proteínas, cercas vivas, estufas ahorradoras de leña, manuales de observación de aves y en general producir conservando, lo cual los ha llevado, entre otras cosas, a obtener certificados y sellos orgánicos y por lo mismo a ampliar las posibilidades de comercialización de sus productos, o promover servicios turísticos "amigables" con el entorno.

El aprendizaje ha sido en ambos sentidos: durante el acompañamiento técnico y a través del desarrollo de planes participativos y estudios diversos, se han podido conocer las formas tradicionales en las que las organizaciones rurales e indígenas aprovechan conservando, como en el caso de los chicleros, con lo cual se han desarrollado modelos de aprovechamiento sustentable que incluyen estas formas tradicionales y que pueden ser replicados en otras zonas.

El CBMM ha podido ir mejorando poco a poco sus propuestas, incorporando experiencias, aprendiendo de los errores cometidos en el camino y adaptando su trabajo a las necesidades detectadas en su zona de acción.

En todo este proceso, la conectividad biológica se ha visto favorecida con un impacto importante a favor de la biodiversidad en el territorio del trópico húmedo mexicano, y se han creado redes de monitoreo que permiten un avance en el conocimiento del entorno, lo que ha permitido a otras instituciones conocer la problemática local y de esta manera reorientar sus políticas públicas hacia criterios ambientales.

Los corredores biológicos han mostrado ser herramientas útiles de manejo durable del territorio para la conservación de la biodiversidad en México, y sobre todo, que es posible conciliar el cuidado de la naturaleza con un beneficio económico sensato y sustentable para sus pobladores.

El trabajo desarrollado muestra que los conectores biológicos, aunque no sean estrictamente una extensión del hábitat natural de las especies y exista en ellos población humana, permiten la supervivencia de ecosistemas de valor mundial y de especies bandera, como el caso de jaguar. Se ha mostrado que los corredores funcionan como espacios para la transmisión de material genético de un lugar a otro.

Se ha concluido la etapa en la que el proyecto operó con financiamiento del GEF-Banco Mundial y se inicia ahora una nueva etapa en la que los logros alcanzados y las lecciones que han derivado de todo el proceso permiten vislumbrar la continuidad de las acciones, mediante una política nacional de corredores biológicos,

con el ánimo de seguir contribuyendo a los objetivos plantedos desde el año 2000.

El Gobierno Federal otorga a esta región una atención prioritaria, en el marco de las acciones de cooperación Sur-Sur, del Plan Nacional de Desarrollo, y en congruencia con el esfuerzo por hacer frente a los retos que impone una economía mundial cada día más globalizada.

Ante la crisis económica que vive el mundo, las zonas rurales se perfilan como verdaderas oportunidades para el desarrollo, en las cuales se pueden impulsar proyectos de perspectiva ambiental. Es ahí donde se insertan las actividades de los corredores biológicos y donde una política nacional encaminada en este sentido encontrará un terreno fértil para ayudar a sostener políticas anticíclicas, que apoyen sustantivamente a los pobladores de las zonas vulnerables con acciones concretas para mejorar su economía.

Los corredores biológicos son sobre todo espacios territoriales de consenso y armonización de políticas públicas, en los que pueden converger estrategias, programas e instrumentos de política pública social, económica y ambiental, y que consolidan una verdadera transversalidad.

Los retos de estabilizar la cobertura de los ecosistemas remanentes, incluso aumentando su superficie, restaurar las áreas críticas deterioradas y reconvertir las prácticas productivas hacia el manejo sustentable, deben enfrentarse con instrumentos de política ambiental que incentiven estas actividades para que representen una alternativa económica viable para la población y se puedan multiplicar en otras regiones del país.

Desde su creación, el Corredor ha desarrollado y puesto en marcha una serie de modelos en busca de una mejor conectividad en los ecosistemas del trópico húmedo mexicano, que permitan conservar el entorno natural y a la vez coadyuvar a una mejora en la calidad de vida de la población local.

Estos modelos han sido probados y rediseñados con base en los resultados y probados nuevamente con el fin de tener las mejores herramientas para el logro de objetivos. A esta distancia del camino, se puede afirmar que muchos de estos modelos son replicables en otras regiones del país, lo cual puede llevar a un mejorado manejo durable del territorio. Ello, con el fin de crear corredores biológicos entre fragmentos conservados, como espacios en los cuales la conservación de la biodiversidad será una alternativa para el desarrollo sustentable y el bienestar social.

El camino por recorrer aún es vasto, pero se puede afirmar con toda certeza que los modelos que ha desarrollado el CBMM en apenas dos lustros abren la puerta para replicar esta experiencia con muchas posibilidades de éxito en otros espacios del país y que por ello es necesario ampliar esta experiencia como una auténtica política de índole nacional.

Existen seis indicadores básicos en los que se puede vislumbrar el trabajo realizado por el Corredor, algunos de ellos previstos en el PAD y otros alcanzados adicionalmente. A continuación se enumeran:

a) *Mejoramiento de la conectividad*

La conectividad se ha fomentado mediante acciones que promueven la estabilización de la cobertura de ecosistemas remanentes (mecanismos de conservación diversos como ordenamientos, reservas comunitarias, etc.), promoviendo el manejo sustentable en áreas pobladas y restaurando áreas críticas deterioradas.

En este sentido, se ha puesto mucho énfasis en la planeación participativa. Ejemplo de ello han sido los trabajos relacionados al ordenamiento territorial en Península de Yucatán: a) Propuesta e implementación de planes piloto de buen manejo apícola, vinculados a una propuesta de ordenamiento apícola y monitoreo de la calidad de miel en las áreas focales del CBMM en el estado de Quintana Roo y sus áreas de influencia; b) Convenio (Con Cinvestav) para la realización del «Programa de Ordenamiento Ecológico del Territorio del Estado de Yucatán. Etapa 3 de las Fases de Caracterización y Diagnóstico»; c) Ordenamiento ecológico territorial e identificación de proyectos prioritarios de manejo sustentable en las comunidades de X-Hazil y Felipe Carrillo Puerto, Quintana Roo; y d) Creación de bases para el ordenamiento ecológico regional participativo y fortalecimiento de líneas de acción detonante en el área focal de La Montaña, Campeche.

También la formulación de cuatro planes municipales participativos en Chiapas: Coapilla, Solosuchiapa, Escuintla y Siltepec, para la integración de criterios de conservación de la biodiversidad.

El CBMM plantea como uno de los indicadores clave de conectividad y sustentabilidad ambiental el estado de las poblaciones de especies indicadoras específicas. Para el mantenimiento de la conectividad del paisaje, las especies indicadoras recomendadas son aquellas que muestran una mayor sensibilidad a la fragmentación de su hábitat: vertebrados de gran tamaño corporal, amplios requerimientos de espacio y densidades poblacionales bajas. Para la biota mesoamericana, las especies que mejor representan este conjunto de características pertenecen al grupo de los mamíferos.

Por ello, se realizaron varios trabajos de monitoreo de este grupo biológico en el área de trabajo del CBMM, sobre todo en el estado de Chiapas, que ponen en evidencia el papel del Corredor en términos de mantenimiento de la biodiversidad por medio de la presencia, aún esporádica, de la mastofauna, así como para asociar y empoderar a la población local en el monitoreo de algunas especies claves de mamíferos como indicadores del bienestar del ecosistema.

Se diseñaron sistemas de monitoreo adoptando una visión sistémica a diferentes escalas en el tiempo y en el espacio, en algunos casos con trampeo fotográfico, y se capacitó a la población local en el sistema de monitoreo sobre las actividades susceptibles de afectar la calidad del medio, en particular de los suelos.

Los resultados del muestreo de mamíferos mayores constituyen una línea base, de manera que la información recabada en muestreos futuros permita detectar cambios en el sistema e identificar acciones pertinentes para mitigarlos o facilitarlos. Es una evidencia más de que los corredores biológicos favorecen la supervivencia de especies

emblemáticas.

De manera paralela, se efectúan una serie de acciones para capacitar a organizaciones y comunidades locales en la observación y monitoreo de aves, sobre todo en espacios en los que se promueve el ecoturismo, que además de representar un ingreso adicional para estos centros, se convierte en una actividad de monitoreo de la conectividad de ecosistemas locales.

b) *Impacto en reversión de la tasa de deforestación.*

La cobertura forestal es el primer factor asociado a la condición de un hábitat natural. La deforestación no sólo causa detrimento de la biodiversidad, sino que afecta la calidad de los recursos hídricos, incrementa la erosión de suelos, aumenta los riesgos de inundaciones y actúa en detrimento de los servicios ambientales.

Por ello, uno de los enfoques principales del trabajo del CBMM es precisamente el de evitar la pérdida de la cobertura forestal en las áreas de conectividad, mediante estrategias diversas.

La acción central en este tenor ha sido la promoción de actividades rurales distintas a la agricultura como alternativa de desarrollo económico local, que incluyen principalmente a la apicultura, el ecoturismo y el cultivo de café de sombra, atenuando con ello la presión sobre los recursos forestales y fortaleciendo los incentivos para su conservación.

Esta serie de herramientas, sumadas a la elaboración de la Guía de Campo de Buenas Prácticas Forestales y una serie de criterios y tipologías de productores, han permitido orientar la gestión de los apoyos del CBMM en regiones forestales y evitar que éstos tuvieran resultados negativos.

Esto ha ayudado a garantizar que los apoyos realmente se traduzcan en impactos positivos y contribuyan a la sustentabilidad. Además ha permitido inducir cambios o robustecer a las propias organizaciones sociales así como a las políticas públicas que afectan al sector forestal para orientarlo hacia la sustentabilidad.

Las evidencias del impacto de estas acciones se han ido manifestando en diversas localidades en las que la preservación de la cobertura forestal se ha convertido en una actividad cotidiana de la mano con el desarrollo de actividades económicas alternativas.

c) *Impacto en acciones de adaptación al Cambio Climático*

Con el generalizado aumento de las temperaturas y las alteraciones en los ciclos de lluvias, aún con reservas naturales, los territorios fragmentados no permitirán a las especies movilizarse hacia lugares con condiciones climáticas más parecidas a las de sus hábitats naturales y muchas de ellas, que se enfrentan ya a otros problemas por la afectación humana de sus hábitats, no podrán adaptarse, provocando la pérdida hacia el final del siglo de numerosas especies. Tanto plantas como animales contribuyen al

funcionamiento de los ecosistemas que proveen al hombre con diversos servicios ambientales, y su pérdida provocará al mismo tiempo un colapso de estos ecosistemas.

Es mediante los corredores biológicos que las especies contarán con esos pasajes para moverse de un lugar a otro y encontrar zonas con condiciones climáticas similares a las de sus hábitats originales. Hará el espacio territorial mucho más permeable a las migraciones de especies y facilitará su adaptación a las nuevas condiciones inducidas por el cambio climático.

El CBMM participa en el Programa Especial de Cambio Climático (PECC) para ampliar e interconectar los remanentes de vegetación natural, incluyendo aquellos en Áreas Naturales Protegidas (ANP), para mejorar sus posibilidades de adaptación al cambio climático y de desplazamiento de especies y zonas ecológicas.

Las metas específicas acordadas formalmente con Sagarpa en el primer convenio que compromete a la Secretaría encargada del desarrollo rural con la conservación de la biodiversidad y que desarrolla actualmente el CBMM se orientan a destinar 25,000 hectáreas anuales, que actualmente se dedican a la producción primaria, al manejo sustentable, y a reducir el fuego como práctica agropecuaria en al menos el 30 por ciento de la superficie atendida al 2012.

Asimismo participa en el esfuerzo Semarnat-Conafor-INE-Conabio para que el 20% de la superficie reforestada a 2012 (es decir, 80 mil de las 400 mil hectáreas a reforestar), interconecte remanentes de vegetación natural en zonas de prioridad identificadas por las autoridades ambientales.

El trabajo en materia de adaptación al cambio climático es una de las principales aportaciones del CBMM al país, que permitirá hacer frente de una mejor manera a los retos que comienzan ya a vislumbrarse de este fenómeno causado por el hombre.

d) *Impacto en reorientación de las políticas públicas*

Uno de los impactos principales del trabajo del CBMM ha sido sin duda lograr que muchos de los lineamientos y requisitos de los programas públicos de inversión federal en trópico húmedo mexicano incluyan criterios ambientales.

Este ha sido un paso decisivo en un país en el que ciertos proyectos de corte conservacionista se contravenían con los principios de otros programas públicos de índole económica, provocando una dualidad de criterios que terminaban por afectar seriamente a la biodiversidad en los ecosistemas más importantes del sureste.

Adicionalmente, el Corredor ha logrado que otras instituciones que normalmente no invertían o invertían poco en acciones ambientales orienten su gasto hacia proyectos de sustentabilidad ambiental.

El trabajo se ha llevado de la mano con instituciones como Sagarpa, el Instituto Nacional de las Mujeres (Inmujeres), la Comisión para el Desarrollo de los Pueblos Indígenas (CDI), Sedesol, Conafor, etc.

e) *Mejoramiento en el nivel de vida de la población local*

Muchas comunidades han mejorado sus ingresos directos a través de la realización de actividades alternativas a las tradicionales como la apicultura, cultivo de hortalizas orgánicas, artesanías diversas, café de sombra, ecoturismo, etc., todas ellas con valor agregado al ser producidas en condiciones de sustentabilidad, y que en muchísimos casos cuentan ya con certificación nacional e internacional, lo cual les ha permitido insertar sus productos en mercados internacionales.

Se han realizado trabajos que han permitido a diversas localidades acceder a estufas ahorradoras de leña, capacitación sobre disposición de residuos sólidos, mejoras a la infraestructura y equipo en lugares de trabajo, etc., que han permitido a la población local mejorar sus condiciones de vivienda y trabajo, y por consiguiente de salud.

Otro aporte esencial ha sido el de la reinserción de localidades en extrema pobreza a la dinámica económica de su municipio, a través de la participación de sus productos de valor agregado en las economías locales, nacionales e internacionales a precios más justos; su capacidad de participar en procesos de planeación municipal; y la posibilidad de tener capacitación regular para organizarse legalmente y producir sustentablemente.

Todo esto nos habla de comunidades que se insertan mejor en las economías locales, con mejores herramientas para tomar decisiones comunitarias y con productos mucho más competitivos, es decir, con mayor bienestar.

f) *Fortalecimiento de capacidades de las comunidades locales*

El mejoramiento de vida de los pobladores de las comunidades en las que trabaja el CBMM va de la mano con el fortalecimiento de las capacidades locales.

Este ha sido uno de los principales esfuerzos realizados por el Corredor desde su creación bajo el principio de que a mejores capacidades, las organizaciones comunitarias podrán insertarse mejor a la lógica del mercado y mejorar de manera consecuente sus productos e ingresos.

El objetivo fundamental es que a los productores les llegue dinero directo para invertir en rubros que no son objeto de crédito o financiamiento en otras instituciones, como para la adquisición de activos productivos en cafeticultura, apicultura, establecimiento de UMA, producción de hortalizas orgánicas en invernadero, reconversión productiva, etc; o financiamiento en proyectos que deben justificar que existe una contraparte, o para que otras instituciones que no financiaban planes de este tipo reorienten sus inversiones hacia proyectos productivos sustentables.

Esta meta se ha alcanzado mediante la realización de innumerables talleres y eventos, acompañamiento técnico así como mediante la provisión directa de recursos para el mejoramiento de infraestructura y equipo en proyectos turísticos y productivos promovidos directamente por las comunidades.

Como resultado, numerosas organizaciones locales se han constituido legalmente y sus productos son reconocidos ya a nivel nacional e internacional.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders
Not Applicable

Annex 9. List of Supporting Documents

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Annex 10. Original Description of Project Sites – Corridors and Focal Areas

1. The MMBC project promoted conservation of natural resources and biodiversity in 5 corridors and 16 focal areas.

The Corridors

Box 1: Terminology used

Corridor: a mosaic of land patches under various land-uses situated in between protected areas. Corridors generate global biodiversity benefits through three main mechanisms: (i) by serving as habitats with various degrees of importance for specific types of biodiversity; (ii) by allowing the flow of genes, individuals, and species among protected areas; and (iii) by maintaining ecological processes over large landscapes. Corridors are mainly identified on the basis of type, quality and quantity of vegetation cover or other ecological criteria. Corridors are the project's broad planning tool; however, in recognition of their large territorial extension, and of the variable degree of ecological and biological integrity within them, priority or focal areas have been identified for the purposes of project design and implementation.

State	Corridor	Protected Area	Extension	Ecosystems
Campeche	Sian Ka'an–Calakmul	Calakmul Biosphere Reserve	723,185 ha	Tropical forest, aquatic ecosystems, secondary vegetation

The two focal zones, Xpujil–Zohlaguna (focal zone 1) and Montaña (focal zone 2), are the contact point with the Calakmul Biosphere Reserve, which is part of the forest stand of the Sian Ka'an–Calakmul Corridor. Primary production predominates in both focal areas and is greatly determined by the area's relationship with the forest and the use of its biodiversity. Even though both focal areas are located in the same zone, they represent different realities: focal area 1, with its 31 *ejidos* and a population of 10,464, is an area characterized by recent immigration (of *mestizos resettled from different parts of the country*); focal area 2, with its seven *ejidos* and a population of 2,613, is predominantly an indigenous Maya area. In both focal areas, the *ejido* is the central system for land tenure and for natural resource management. There are two types of *ejido*s that predominate in the region: (i) forestry *ejido*s with large extensions of which 12 *ejido*s (of the 38 total) cover 80% of the forest stand; (ii) twenty-six *ejido*s with less than 5,000 ha each, which are mostly used for agriculture and livestock activities. Between the two focal areas, the farmers have formally assigned approximately 215,000 has for common use for forest-based activities; taken together, the *ejido* extensions (both forest-based and agricultural use) help to maintain a large forest stand since the individual agricultural plots assigned to each farmer continue to an important extent under forest cover.

Although forests cover large areas of the Sian Ka'an-Calakmul Corridor, forest-based activities alone do not allow *ejidatarios* to earn an income above the minimum wage due to the lack of organization in the production (leading to overuse) and marketing of timber. In reality, the income provided by beekeeping and honey production is currently the most stable monetary income in both focal areas. Possibilities exist for timber and non timber forest products, as well as for the sustainable use of fauna, honey, archeological and natural areas ecotourism and other environmental services. In general, the region produces primary materials that are processed in other parts of the country or abroad. State and federal institutions, along with NGOs, have invested programs in this region with goals to improve the use of natural resources for local processing and production and to promote reforestation. However, there has not been sufficient alignment of policies from the various levels of government to ensure long-term success of such initiatives.

State	Corridor	Protected Area	Extension	Ecosystems
Chiapas	Selva Maya – Zoque	Montes Azules Biosphere Reserve	331,200 ha	Selva baja caducifolia, mediana subcaducifolia, bosque de pino encino, timbales, sabana.
		Lacantún Biosphere Reserve	61,874 ha	Tropical forest
		"Selva del Ocote" Biosphere Reserve	48,140 ha	Tropical forest
		"Yaxchilan" Natural Monument	2,621 ha	Tropical forest and riparian vegetation
		"Bonampak" Natural Monument	4,357 ha	Tropical forest
		"Chan Kin" Flora and Fauna Protected Area	12,185 ha	Tropical forest
		"Cascadas de Agua Azul" Flora and Fauna Protected Area	2,580 ha	Tropical forest
		"Metzabok" Flora and Fauna Protected Area	3,337 ha	Tropical forest
		"Na-Ha" Flora and Fauna Protected Area	3,833 ha	Tropical forest
	Sierra Madre del Sur	"El Triunfo" Biosphere Reserve	119,177 ha	Cloud forest, tropical and températe forest.
		"La Sepultura" Biosphere Reserve	167,310 ha	Cloud forest, tropical forest, dry forest.

The Chiapas corridors have distinct geographic characteristics: one of them runs the length of the Sierra Madre del Sur with degraded forests and a population that is primarily *mestizo*. The other is located in the Selva Maya Zoque with a much more diverse and less degraded swath of highland and lowland forests and farmlands. This second corridor is also more socially complex: approximately three-quarters of the landowners are either Mayan or Zoque (indigenous groups), and politically the communities are more divided. It is important to note that in Mexico indigenous communities frequently use a semi-collective, or "social," land tenure structure (either in the form of "communal lands" or "*ejidos*"). In the Selva Maya Zoque Corridor, there are small rural landholders (having less than 10 hectares), both indigenous and *mestizo*, who may form associations to create similar semi-collective forms of natural resource management. In the Sierra Madre del Sur Corridor, large private landholdings also coexist with abovementioned forms of social land tenure. Population growth in general is approximately 4.5% annually and in the area of Ixcan it may be as much as double that.

Economically, Chiapas is classified among the four Mexican states suffering extreme poverty. The rural poor—and virtually the entire population of the corridors—are "*milperos*," a few sell corn and beans although much of the population is (nearly) self-sufficient in at least the staple food of corn. The traditional slash-and-burn production system still prevails in this region. Forest lands and non-timber forest products (e.g., fauna, mushrooms, edible and medicinal plants) are declining due to deforestation that results from various causes, from commercial harvesting to little investment in sustainable forest management practices. Despite such strong deforestation pressures, rural populations—especially the original indigenous areas—still retain specialized knowledge of local flora and fauna representing an opportunity to develop sustainable use alternatives.

In general, one observes processes of forest degradation in the corridor regions with wood-gathering occupying more woman-hours and hunting sharply declining in importance; increased erosion and the impoverishment of soils with declining production, income, and consumption levels; increasing water pollution and health problems. Development policies and programs targeting the marginalized poor have tended to change constantly. For example, the opening of national forest lands to farmers without lands and the promotion of extensive cattle ranching have escalated deforestation in these regions. Coffee production, a relatively benign product environmentally-speaking, now faces strong fluctuations in price. Rural migration has increased, with most heading to cities and to the United States. Even with the above scenarios, the majority of the actors involved in the processes above clearly perceive the environmental degradation problems that are quickly worsening and those steps needed to counter it: (i) a greater importance on sustainable use and production systems; (ii) application of specialized indigenous cultural knowledge; and (iii) strengthening of social organizational capacity.

State	Corridor	Protected Area	Extension	Ecosystems
Quintana Roo	Sian Ka'an–Calakmul	Sian Ka'an Biosphere Reserve	528,148 ha	Tropical forest, dry forest, mangrove, wetlands, dunes, coastal zone.
		"Uaymil" Flora and Fauna Protected Area	89,118 ha	Tropical forest, dry forest, mangrove,

The Sian Ka'an-Calakmul Corridor is a critical area connecting the northern and southern blocks of the Calakmul Biosphere Reserve as well as the Sian Ka'an Biosphere Reserve. In this area, there have been strong changes in forest cover. Currently, there are four settlements with considerable forest cover to form two connectors: one on the west side of the Reserve and another on the east side. The area between the two connectors has suffered severe deforestation. Among the causes of deforestation are: (i) chili cultivation, for which farmers cut and burn the highland forests; (ii) indiscriminate use of insecticides, which has affected apiculture; and (iii) excessive extraction of wood from large forested areas, leading to the creation of forest fragments. Contributing to exacerbation of these trends includes: (i) the existing pattern of colonization of small *ejidos*; (ii) government programs that favor the production of chili and the use of insecticides; and (iii) the lack of policies that could help guide sustainable soil use by considering ecological principles. Challenges that lay ahead in order to combat these trends and causes: (i) small forest areas are not an attractive economic alternative; (ii) impoverished forests (from which timber has been excessively extracted) are no longer attractive for conservation; and (iii) the internal organization of the *ejido* is not adequate to manage the forest effectively while also complying with market requirements and demands.

Among the possible actions that favor sustainability and conservation are the diversification and intensification of production systems in order to reduce pressures on forests. Such opportunities are found in agroforestry and sustainable agricultural practices. Large *ejidos* with important forest resources have applicable forest management experience as well as experience in management of fauna. There are also archealogical sites with great potential which could contribute to tourism as an additional source of income. However, the reorientation of government policies is still important, especially regarding: (i) the production of chili, particularly when it comes to the property rights of *ejidos*; (ii) the adaptation to local circumstances of programs targeting *milpa* production; and (iii) activities that directly foster environmental protection.

Even with the challenges described above, the natural resources of Quintana Roo—in its forested areas, in its aquatic ecosystems, as well as in its agricultural areas—are still in a state where biological diversity can be conserved and recovered to ensure the survival and continuity of important species. Nevertheless, future planning and use of natural resources require serious consideration of the impacts of productive activities on biodiversity conservation. This in turn implies the need to involve all social actors who are in a position to make decisions about the use of natural resources, especially governmental agencies. The sample of *ejidos* studied indicates that their land has been demarcated and there are no internal conflicts. In the traditional Mayan communities, there is a strong tendency to maintain the collective use of land, while the immigrant communities favor division of ejido lands into individual parcels. The older *ejidos* have an average of 500 has of land per family, in contrast to *ejidos* formed in the 1980s which average 40 to 50 has per family. There are also landless people in immigrant communities, often known as *pobladores* and *repobladores* and who usually work as laborers on the farms of the larger landholders. There are great opportunities for biodiversity conservation and sustainable use of natural resources in the area of the Sian Ka'an-Calakmul Corridor.

State	Corridor	Protected Area	Extension	Ecosystems
Yucatan	Northern Yucatan	La Ría Lagartos Biosphere Reserve	47,840 ha	Tropical forest, dune, mangrove, flooded lands, coastal zone.
		La Ría Celestún Biosphere Reserve	59,130 ha	Tropical forest, dune, mangrove, flooded lands, coastal zone.
		Dzilam State Reserve	61,707 ha	Tropical forest, dune, mangrove, flooded lands, coastal zone.
		El Palmar State Reserve	50,177 ha	Tropical forest, dune, mangrove, flooded lands, coastal zone.

The northern coast of Yucatan is a socially, economically and ecologically complex region. It has a population of approximately 60,000 people, who make use of the multiple coastal ecosystems. The diversity of local users live in the coastal areas permanently, seasonally or otherwise irregularly providing a mix of common and contradictory resource use interests; they utilize resources and ecosystems differently, based on schemes of responsibilities and rights acquired by tradition and formal right. The Yucatan coast is currently, and will continue to be, an essential region for the state's economy, mainly for the implementation of future plans and programs such as eco-tourism and traditional tourism. Currently, the greatest and most important source of income for the majority of these coastal populations comes from fishing in rivers and the use of marine resources, marshes, lagoons, and other reservoirs (e.g., shrimp, crustaceans, mollusks and some fish). The population of the northern coast of Yucatan is primarily *mestizo.* In the coastal ports, new sociocultural dimensions emerge, since part of the population is composed of farmers who immigrated after the 70s and who practice agrarian traditions mixed with a fisheries culture with specific patterns of space appropriation mediated by the technology of the last three decades (e.g., outboard motors on ships, synthetic materials for fishing, compasses, telescopes, etc.). One of the principal challenges here is to slow fishing in rivers, to promote offshore fishing and to implement and strengthen legislation for the fishing sector. Reorganizing the fishing sector and implementing programs for natural protected areas is one of the most difficult challenges for conservation and protection of coastal natural resources and ecosystems.

The Focal Areas

Box 2- Terminology used

Focal Area: is the area in which actual project activities are targeted, and where progress and impact indicators will be monitored. The basic building blocks of a focal area are land tenure units (*ejidos*, communities, private properties); therefore, the boundaries of a focal area results from the boundaries of the land tenure units constituting it.

Transition Area: areas situated inside a corridor, which are adjacent to focal areas, or encompass them. Even though transition areas will not be the target of specific investments, it is expected that some of the project activities, such as planning at the corridor level or investment for sustainable use at the focal area level, will generate ecological benefits spilling over to transition areas. The project will furthermore support mainstreaming of biodiversity concerns into rural development programs undertaken in the biological corridors, through improved program design and execution. By replication and extension to other locations in Mexico and elsewhere, the project can generate benefits well beyond the focal areas targeted by the project.

Corridor	Focal Area	Extension	No. Communities	Year 1-2-3-4-5-6-7
Selva Maya – Zoque (northern Chiapas)	La Cojolita Ixcan Nahá–Metzobok Selva Chol Selva Zoque	51,297 ha 23,010 ha 27,489 ha 65,574 ha 48,912 ha	5 7 1 16 6	--------- ------- ------- ------- ---------
Sierra Madre del Sur (southern Chiapas)	Pico del Loro Frailesca Cintalapa	86,529 ha 73,966 ha 69,313 ha	10 3 2	--------- ------- -------
Sian Ka'an–Calakmul (Quintana Roo)	Carrillo Puerto Área sur de José Ma. Morelos	461,000 ha 134,000 ha	16 14	--------- ---------
Sian Ka'an–Calakmul (Campeche La Montaña)	Zoh Laguna – Xpujil	120,000 ha 180,000 ha	7 18	--------- ---------
Norte de Yucatán (northern coast of Yucatan)	Oriente Centro Oriente Progreso Hunucmá	45000 ha 36000 ha 55000 ha 85000 ha	6 3 3 3	---------- --------- --------- ----------

2. It was decided to concentrate project efforts on smaller—"focal"—areas within the broad areas of the corridors. The focal areas were selected based on the opportunities and immediate needs of conservation and sustainable use of biodiversity. The selection process also took into account aspects of social organization and information available. For example, in terrestrial corridors, the areas selected have important forest vegetation cover, which presents an opportunity to maintain and restore connectivity between NPAs.

3. The various studies conducted during project design highlighted the biodiversity threats and opportunities in each of the focal areas and root causes. In all of the corridors it was apparent that there are multiple threats to biodiversity. However, the relative importance of each threat varied from one corridor to another. The global calculation that was carried out indicated that training in the three levels of government (municipal, state, national), particularly institutional coordination at the regional level, is vital for biodiversity conservation.

4. The MMBC covers a total of approximately 6.8 million hectares of land and 448,798 hectares of sea surface, equaling 25% of Campeche, 37% of Chiapas, 31% of Quintana Roo and 26% of Yucatan and connecting the habitats of 23 protected areas (2.86 million hectares).

Annex 11. Institutions, NGOs, and research centers that comprise the monitoring network of the MMBC

1. National Commission of Protected Areas *Comisión Nacional de Áreas Protegidas (CONANP)*	*14*. Ministry Environment Chiapas *Secretaría de Medio Ambiente de Chiapas*
2. Institute of Natural History of the State of Chiapas (*Instituto de Historia Natural del Estado Chiapas IHNE*).	15. Onca Maya, A.C.
3.- Tropical Rural Latin America (*Tropical Rural Latinoamérica, A.C*)	16. Conservation of Nature, A. C. *Conservación de la Naturaleza, A. C*
1. National Commission for the Knowledge and Use of Biodiversity *Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO)*	17. Ministry of Urban Development and Environment of Yucatan *Secretaría de Desarrollo Urbano y Medio Ambiente de Yucatán*
5. Tropical Research Center of the University Veracruzana, Xalapa *Centro de Investigaciones Tropicales (CITRO) Universidad Veracruzana, Xalapa, Veracruz*	18. Institute of Ecology of the National University of Mexico (UNAM) *Instituto de Ecologia de la Universidad Autónoma de México (UNAM)*
6. Natura Mexicana, A.C	19. Scientific Research Centre of Yucatan, Merida *Centro de Investigación Científica de Yucatán. CICY Mérida*
7. Institute of Social Technology *Instituto de Tecnología Social (TECSO)*	20. Pronatura Yucatan, AC
8. Pronatura Chiapas A.C	21. Center for Research in Geography and Geomatics *Centro de Investigación en Geografía y Geomática (CentroGEO)*
9. Ecosistemas A.C	22. Jaguar Conservancy, A.C
10. The Southern Border College *Colegio de la Frontera Sur, Quintana Roo (ECOSUR)*	23. National Institute of Ecology *Instituto Nacional de Ecología (INE)*
11. Interdisciplinary Center for Biodiversity and Environment, A.C. *Centro Interdisciplinario de Biodiversidad y Ambiente, A.C (CEIBA)*	24. Yaax Beh, A.C.
12. Center for Research and Advanced Studies of the National Polytechnic Institute, Yucatan *Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional, Yucatán (CINVESTAV)*	25. Metropolitan University of Iztapalapa *Universidad Autónoma Metropolitana Iztapalapa (UAM)*
13. University of Tabasco *Universidad Autónoma de Juárez, Tabasco*	26. Civil Council for Sustainable Coffee Production in Mexico/Banchiapas *Consejo Civil para la Cafeticultura Sustentable en México/Banchiapas*

Figure 1. Map of five corridors