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**MITIGATING CLIMATE CHANGE
THROUGH SUSTAINABLE FOREST MANAGEMENT AND CAPACITY BUILDING
IN THE SOUTHERN STATES OF MEXICO
(CAMPECHE, CHIAPAS AND OAXACA)**

PROJECT DESIGN REPORT

MAIN REPORT

July 2011

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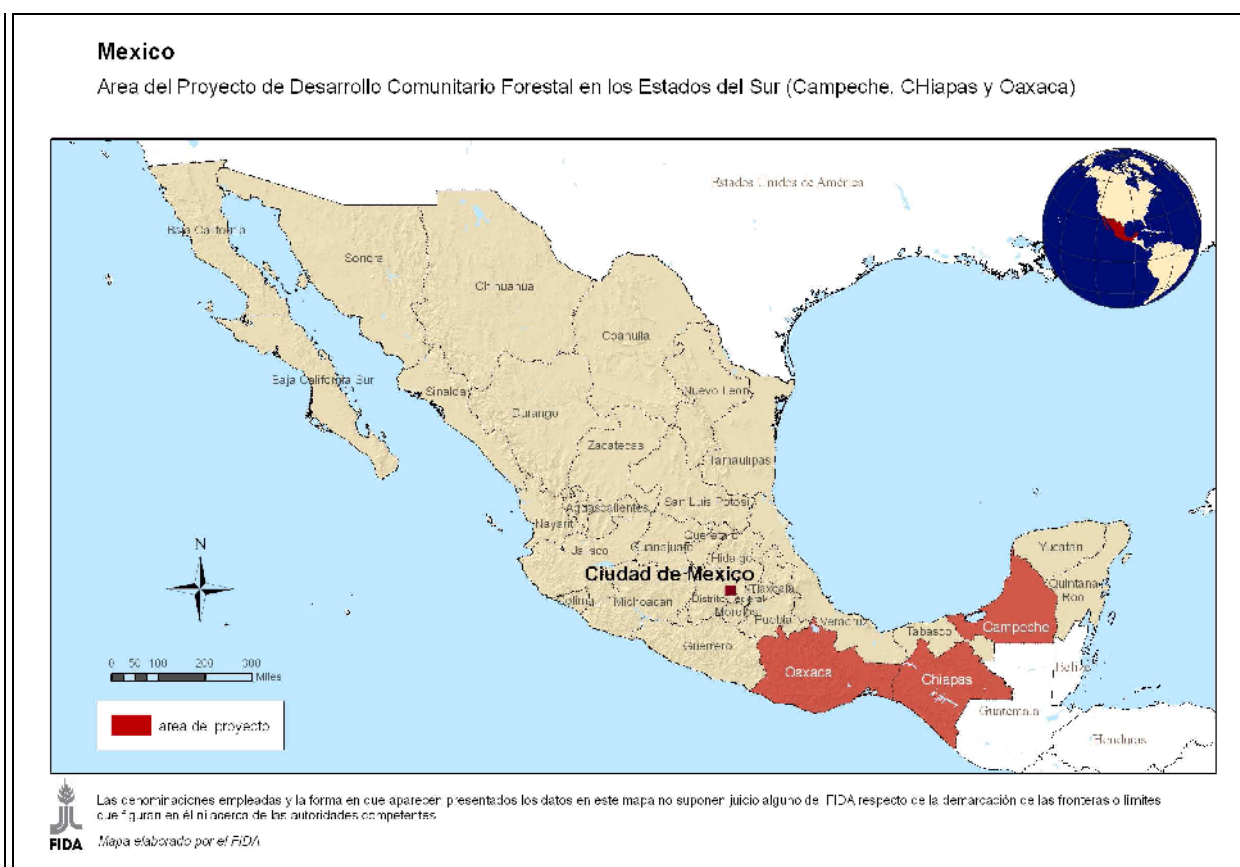
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Acronyms and Abbreviations

CO ₂	=	Carbon dioxide
CATIE	=	Tropical Agriculture Research and Higher Education Center
CIFOR	=	Center for International Forestry Research
CONAFOR	=	National Forestry Commission
cm	=	Centimeter
DBH	=	Diameter at breast height in woody plants
NCCS	=	National Climate Change Strategy
FAO	=	Food and Agriculture Organization of the United Nations
FCPF	=	Forest Carbon Partnership Facility
FIDA-Sur	=	Community Forest Development Project in the Southern States (Campeche, Chiapas and Oaxaca)
FMP	=	Forest management programs
FRA	=	Forest Resources Assessments
FSC	=	Forest Stewardship Council (<i>Consejo Mundial de certificación Forestal</i>)
GEF	=	Global Environmental Facility
GHG	=	Greenhouse Gases
Gg	=	One thousand metric tons
ha	=	Hectares
IFAD	=	International Fund for Agricultural Development
INE	=	National Ecology Institute (Instituto Nacional de Ecología)
INEGI	=	National Institute of Statistics, Geography and Informatics (<i>Instituto Nacional de Estadística, Geografía e Informática</i>)
INFyS	=	National Forestry and Soils Inventory (<i>Inventario Nacional Forestal y de Suelos</i>)
IPCC	=	Intergovernmental Panel on Climate Change (<i>Panel Intergubernamental de Cambio Climático</i>)
LGDFS	=	Law for Sustainable Forest Development
LULUCF	=	Land Use, Land-Use Change and Forestry
m ²	=	Square meter
m ³	=	Cubic meters
Mg	=	Megagrams (tons), 1000 kg
MgC	=	Megagrams (tons of carbon)
MgCO ₂	=	Megagrams of carbón dioxide
M ha	=	Million of hectares
mm ³ r	=	Million of cubic meters roll
mtm	=	Million of metric tons
NPA	=	Natural Protected Areas
NTFP	=	Non-Timber Forest Products
PECC	=	Special Climate Change Program (<i>Programa Especial de Cambio Climático</i>)
PIF	=	CONAFOR 2007-2010 Institutional Program
PRODEFOR	=	Forestry Development Program (<i>Programa de Desarrollo Forestal</i>)
REDD	=	Emission Reduction by Deforestation and Degradation (<i>Reducción de Emisiones por Deforestación y Degradación</i>)
REDD+	=	Emission Reduction from Forest Deforestation and Degradation (<i>Reducción de Emisiones procedentes de la Deforestación y Degradación de Bosques</i>)
RPP	=	REDD+ Preparation Proposal
SAGARPA	=	Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación)

SCT	=	Ministry of Communications and Transport (<i>Secretaría de Comunicaciones y Transportes</i>)
SE	=	Ministry of Economy (<i>Secretaría de Economía</i>)
SEDESOL	=	Ministry of Social Development (<i>Secretaría de Desarrollo Social</i>)
SFM	=	Sustainable Forest Management
SHCP	=	Ministry of Finance and Public Credit (<i>Secretaría de Hacienda y Crédito Público</i>)
SEMARNAP	=	Ministry of the Environment, Natural Resources and Fisheries (<i>Secretaría de Medio Ambiente, Recursos Naturales y Pesca</i>)
SEMARNAT	=	Ministry of the Environment and Natural Resources (<i>Secretaría de Medio Ambiente y Recursos Naturales</i>)
SENER	=	Ministry of Energy (<i>Secretaría de Energía</i>)
SRE	=	Ministry of Foreign Affairs (<i>Secretaría de Relaciones Exteriores</i>)
UMAS	=	Management Units for Wildlife Conservation
UNFCC	=	Convention on Biologic Diversity and United Nations Convention to Combat Desertification.
UNFCCC	=	United Nations Framework Convention on Climate Change
USAID	=	United States Agency for International Development.
WWF	=	World Wildlife Fund

Map of the project area

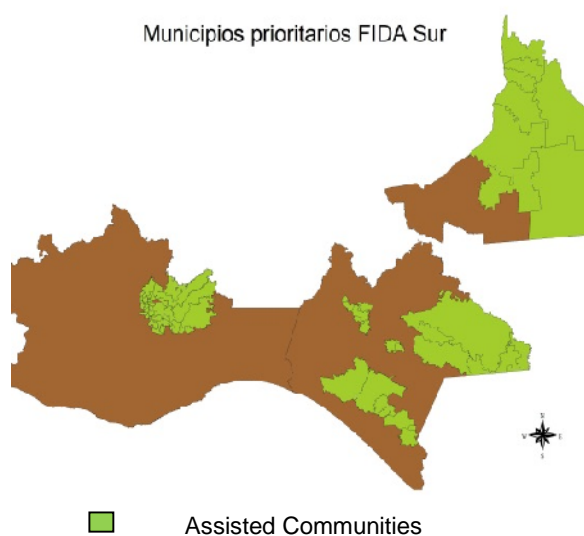


I. INTRODUCTION

1. **Background of IFAD associated project (FIDA Sur).** Responding to priorities presented by the Office of the General Coordinator for the Mesoamérica Project of Mexico to develop the forestry value chain, the Government of Mexico and the International Fund for Agricultural Development (IFAD) prepared a proposal on social forestry development, to be managed by the National Forestry Commission (CONAFOR), in charge of national forestry policy. The Executive Board of IFAD approved in September 2009 the “Community-based Forestry Development Project in the Southern States (Campeche, Chiapas and Oaxaca)”, known as FIDA-Sur. FIDA-Sur is a strategic instrument that complements operations of the National Forestry Commission (CONAFOR) of Mexico, facilitating access of beneficiaries to public resources that offer and will contribute to income options for improving the living conditions of the populations with a high deprivation index in forest areas, through the development of sustainable productive activities.

2. **Objectives of FIDA Sur and geographical scope.** The FIDA-Sur project is aimed at people living in poverty and extreme poverty in marginal areas of 74 communities in the States of Campeche, Chiapas and Oaxaca, located in the South-East of Mexico. The three States have a total area of 225,007 km²¹, having 17,459,473 ha of forests². These communities were selected considering: (i) their influence in the Mexican Gulf Basin Forestry Development Project; (ii) deprivation level; (iii) indigenous presence; and (iv) priority given by CONAFOR.

Figure 1: Implementation Area of the FIDA-Sur Project



Source: CONAFOR, 2010

3. **Environmental situation of Southern States.** In general, the Southern and South-Eastern parts of Mexico have the highest ecosystem productivity levels, as well as the highest biodiversity indexes. The States of Oaxaca and Chiapas, for example, are considered as numbers 1 and 2, respectively, in biodiversity indexes related to species, populations and types of ecosystems. Campeche has the highest number of variants of tropical forest ecosystems and the largest diversity of tropical timber species.

¹ <http://www.inegi.org.mx> consulted October 9, 2010

² <http://mapserver.inegi.org.mx> consulted October 9, 2010

4. **Rationale of additional support requested to the GEF.** Considering, on the one hand, the commitment of the Mexican Government, at the national and international levels, to define a climate change mitigation and adaptation strategy with measures to increase CO₂ sequestration and reduce emission of Greenhouse Gases (GHG); and on the other, FIDA-Sur Project's characteristics, most notable its implementation area and target population, the Government of Mexico felt that it was a huge opportunity to pursue an additional project that would link two aspects: global agreements on climate change and actions at the local level that incorporate the participation of the most vulnerable population, owner of forestry resources. This is why the Government proposed to complement the implementation of the FIDA-Sur project with GEF resources aimed at carrying out CO₂ sequestration/GHG emissions reduction activities, that have other co-benefits (environmental, economic, social and institutional).
5. **Approval of the GEF complementary project.** The Council of the Global Environment Facility (GEF), in their March 4, 2010 session, approved the preparation of the Mitigating Climate Change through Sustainable Forest Management and Capacity Building in the Southern States of Mexico (Campeche, Chiapas and Oaxaca) Project, that will be financed by the GEF through a grant of US\$ 5 million, complementing the FIDA-Sur investment by IFAD, the Government of Mexico (GoM) and potential beneficiaries of the FIDA-Sur project.
6. **Objective of GEF grant.** The GEF project shares the general objective of FIDA-Sur: to contribute to improve living conditions of poor and extremely poor people living in forest areas of the States of Campeche, Chiapas and Oaxaca, through the development of sustainable and environmentally sound productive activities. It will also help to improve CONAFOR's expenditure efficiency and effectiveness, facilitating access of beneficiaries to public resources.
7. **Project focus and expected results.** The GEF project will complement FIDA-Sur with climate change mitigation activities (carbon sequestration and reduction of GHG emissions by land use, changes in land use and forestry). The project will seek direct benefits regarding mitigation of climate change, through the improvement of land and forest use. It will reduce GHG emissions and increase carbon sequestration through the generation of subsistence alternatives, the improvement of forest management and the use of better production techniques. During the project's lifespan, it will avoid deforestation in 83,000 ha through forest management diversification and the planting of 20,000 ha of new plantations each year, while forest recovery will take place in 317,000 ha through SFM and in another 450,000 ha through PES schemes. By the end of the project, it is estimated that a total of 20.8 million tons of CO₂ will be captured or will not be emitted, reaching up to a total of 110 million tCO₂eq over a twenty-year period.
8. **Integration of proposals.** Both interventions, FIDA Sur and the GEF proposal, form an integrated project with a common intervention strategy that will thus be executed in a complementary manner, with shared management, using the same Operations Manual and to be supervised jointly by IFAD. It will be referred to as the "combined FIDA-Sur" throughout this document.
9. **Project costs and financing.** The total cost of the combined FIDA-Sur Project is US\$ 18,498,693 and includes US\$ 5,000,000 from a GEF grant. Other financial sources for the Project are: IFAD, US\$ 5,000,000 (27 % of total investment); CONAFOR, US\$ 7,039,358 (38 %) and the beneficiaries, US\$ 1,459,335 (8 % of the overall investment).
10. **GEF project design.** GEF provided resources in the amount of US\$ 100,000 for the formulation of this complementary project. These funds were administered by IFAD and used in close coordination with CONAFOR, entity responsible for the execution of the FIDA-Sur Project and who will also be the recipient of the GEF grant.

II. STRATEGIC CONTEXT AND JUSTIFICATION OF IFAD'S AND GEF'S PARTICIPATION, COMMITMENTS AND ASSOCIATIONS

A. Strategic context and current situation

11. The United Mexican States (Mexico) is the tenth largest world economy, with a per capita income of US\$7,830 dollars; however, wealth is very uneven. In 2008, 19.5 million people in Mexico suffered from extreme poverty. In 2005, the indigenous population was estimated at approximately 13.5 million people belonging to about 60 ethnic groups, having the highest poverty and vulnerability indexes (CONAPO, 2005). These indigenous groups are concentrated in the Southern States, especially in Chiapas and Oaxaca.

12. Mexico ranks 11th in the world in population, with 103.3 million people (INEGI, 2005). The UN considers it a Medium Development Country, having a Human Development index of 0.829 (52nd place in the world, of a total of 177 countries). In any case, there are inequities between the North and the South, as well as between the urban and rural populations. Despite efforts to reduce poverty, almost 47% of Mexicans live below the poverty line and 28% are extremely poor (World Bank, 2005).

13. Seventy-three percent of the country's area, 140 million hectares (M ha), has vegetation: xeric shrub lands, 41%; temperate forests, 24%; and jungles, 23% (CONAFOR, 2008). It must be noted that according to official information, the largest part of forestry ecosystems (about 80%) is owned by ejidos and rural communities³. These ecosystems provide environmental services such as regulation of the hydrologic cycle, water capture and storage, CO₂ sequestration, soil fertility, biodiversity production and maintenance, among others. These resources are vital for the subsistence of approximately 12–13 million people that live in the ecosystems. Of these, approximately 5 million are indigenous people (CONAFOR, 2007). About 56% of the temperate forests are mainly pine-oak, pine, oak and mixed pine-fir. Forty-four percent are tropical forests, including rain forests, cloud forests and tropical deciduous. Main forest formations are summarized in the following table.

Table 1: Forest Formations and their extension in Mexico

FORMATION	1,000 HA	% FOREST COVER	% TOTAL AREA
Temperate	31,235	56.4	16.1
Pine	7,001	12.6	3.6
Pine-oak	12,250	22.1	6.3
Fir	191	0.3	0.1
Oak	10,058	18.2	5.2
Mesophyll	1,735	3.1	0.9
Tropical	24,110	43.6	12.5
Tropical and Sub-tropical	8,990	63.2	4.7
Deciduous	14,233	25.7	7.4
Mangroves	887	1.6	0.5
Total	55,345	100	28.6

Source: Adapted from CONAFOR, SNIF http://148.223.105.188:2222/snif_portal/

14. In the case of the three States of the Project, total forest cover is approximately 15 M ha, of which more than 5.5 M ha are in beneficiary communities.

³ The term *ejido* or community defines rural communities which possess collectively lands that were allocated through the agrarian reform. *Ejido* and forestry community will be used equivalently in this report). As owners, these communities are responsible for the rehabilitation, conservation and sustainable utilization of these natural resources.

Table 2: Vegetation in the States of Campeche, Chiapas and Oaxaca

TYPE OF VEGETATION	CAMPECHE		CHIAPAS		OAXACA	
	STATE	COMMUNITIES	STATE	COMMUNITIES	STATE	COMMUNITIES
Coniferous forest			402 492	183 562	537 944	14 385
Mixed forest			682 588	298 006	1 610 802	186 273
Hardwood forest			807 945	346 232	1 330 633	206 163
High and medium-rise jungles	3 256 684	2 861 805	1 896 339	928 742	1 515 878	145 930
Low-rise jungles	1 113 514	535 511	447 327	40 281	1 408 830	2 975
Total	4 370 198	3 397 316	4 236 691	1 796 823	6 404 068	555 726
% State forest area		78 %		42%		9 %

Source: Elaborated using INEGI's data base (Vegetation chart, Series #4) provided by CONAFOR.

15. Variety, in terms of forest cover, type of vegetation, land use and threats, stands out in the three States, which are included among the most important forestry entities of the country. Two of the most severe threats to forestry resources are deforestation and forest fires. It is important to emphasize that recent studies indicate that timber extraction is one of the main causes of forest degradation and has a relevant weight in deforestation. (Madrid, L.; Núñez, J.; Quiróz, G.; and Rodríguez, Y., 2009). Campeche communities in the Project have between 2 and 6 times more forest cover than the Chiapas and Oaxaca communities, respectively. While the stratus of high and medium-rise jungle prevails in the communities of the Campeche State (84%), forests prevail in the communities of Oaxaca (73%) and there is a more equitable distribution between forests and jungles in Chiapas. Mangroves and low-rise jungles are represented in the three States.

16. The volume of timber varies between 14 and 51 m³/ha in high and medium-rise jungles of Campeche, and low-rise jungles of Oaxaca, respectively. Crop volume and value of timber harvesting is higher in comparison to harvesting of non-timber products, and differs between States, having Oaxaca a higher volume and value (48 pesos/ha of forest in 2004) than Campeche (20 pesos/ha) and Chiapas (12 pesos/ha)⁴. The highest price seems to obey to the presence of a social culture and organization oriented towards forest management. Products also vary among States: (i) Timber: Chiapas, only scantlings; Campeche, scantlings, coal and crossbeams; and Oaxaca, a combination of scantlings, cellulose, poles, firewood, coal and crossbeams; (ii) Non-timber: resins in Oaxaca, gums in Campeche and a mixture of products in the three States, although of lesser quantity in Chiapas.

17. The state of these layers of vegetation differs between States (Table 3). The low basal area and low density strata in Chiapas, the relatively low basal area with a very high density in Campeche's jungle, and the apparently "normal" state of Oaxaca's forests and jungles are highlighted (in relation to other similar forests in other geographic areas).

Table 3: State of forest vegetation in terms of basal area (m²/ha) and tree density per hectare (# trees/ha), volume (m³/ha) and canopy cover (percentage of cover)

STATE	STRATUS	DENSITY (# TREES/HA)	BASAL AREA (M2/HA)	VOLUME (M3/HA)	COVER (%)
Campeche	Mangrove	339.6	NA	NA	34.13
	High-medium rise jungle	720.4	13.57	51.64	55.34
	Low-rise jungle	683.9	11.05	37.55	48.45
	Underwater	7.1	0.58	0.94	1.16
Chiapas	Forest	250.6	8.88	39.88	37.24
	Gallery	583.3	NA	NA	40.79
	Mangrove	453.8	NA	NA	43.25
	High-medium rise jungle	290.3	9.34	45.87	37.57
	Low-rise jungle	254.7	4.98	16.64	35.11
	Underwater	20.2	1.04	3.08	5.55
Oaxaca	Forest	382.0	11.36	46.65	61.84
	Mangrove	504.3	NA	NA	86.6
	Palm grove	139.8	NA	NA	11.85
	High-medium rise jungle	365.3	18.8	73.56	56.98
	Low-rise jungle	348.9	5.88	13.53	43.73
	Semi-arid	207.3	NA	NA	24.33

Source: INFyS website

⁴ Own calculations based on the value of total forestry production per State in 2004 (Statistical Yearbook of Forestry Production 2004) divided by the area with forest cover in each State (reported in <http://www.inegi.org.mx/inegi/default.aspx?s=geo>)

18. The above information suggests that forestry ecosystems have varying degrees of degradation, especially in Campeche and Chiapas. In the forestry inventory, the Lacandona jungle, the forest with the highest density and biomass in Chiapas, was registered as inaccessible and its data is not incorporated in these figures, skewing the information to larger human intervention sites. It is also important to note the high tree density in Campeche, meaning that these forests are probably under recovery (young trees). In any case, the smaller size of the forests impacts the carbon density they contain, in comparison to IPCC reference averages.

19. Regarding areas under conservation nationwide, 22.2 M ha are under the Protected Natural Areas Regime, 26.3 M ha are Management Units for Wildlife Conservation (UMAS), and 678,000 ha receive Payment for Environmental Services (CONAFOR, 2010).

20. Approximately 22 M ha (about 40%) of the forest area has production potential; however, in 2007 only 6.1 M ha had technical management (SEMARNAT, 2007), mainly in temperate and tropical climate forests. Of this area, approximately 700,000 ha⁵ have a good forestry management certificate.

21. Mexico is considered among the 12 “megadiverse” countries of the world, that together hold between 60 and 70% of the total global biodiversity. In addition, more than 55% of the country’s area is part of Mesoamerican hotspots or pine-oak forests of the Sierra Madre (they are of the 34 global biodiversity hotspots defined by Conservation International⁶). Both sites cover almost 1.1 million km² in México and are a refuge for endemic flora and fauna.

22. As mentioned before, the highest percentage of forests nationwide is owned by ejidos and communities (80%). Although agricultural plots in those agrarian nuclei are generally of individual usufruct, forests are of common property (Agrarian Law, Article 59) and are managed collectively (Commission of Ejido/Community Assets) under the mandate of a General Assembly (Agriculture Act, Article 11).

23. Analyses show that community forest management contributes to local development through employment generation and building of collective benefits such as schools, clinics, water systems, electricity, social services, medical services and pensions, allowing for community cohesion (in and between communities), the creation of social capital and social peace in areas considered conflictive and violent, which help mitigate rural migration. These analyses also show that community management has the potential of preserving the forests to an extent similar to national park preservation (Bray et al 2008). Unfortunately, only a small percentage of ejidos and communities practice good forest management, most of them do not take advantage of their potential or use it inefficiently. The Project will directly strengthen community forest management, including carbon sequestration aspects.

24. However, there is a lack of producer involvement in planning, operation and monitoring of forestry operations, which translates into unsustainable management (over-exploitation of some species and, sometimes, by operations damaging soils and water sources). Also, the lack of training contributes to the deterioration of forest resources, biodiversity and other forestry services, taking away from community forestry social improvements and economic contributions, mentioned in the previous paragraph. In any case, forestry will still be important in local and regional economies, particularly in areas where the Project will focus its activities, since these forests have great potential to mitigate climate change through carbon sequestration and the maintenance of existing carbon stocks; this would be possible if technical, social and economic barriers are eliminated to offer the *ejido* and community populations economic alternatives to avoid the conversion of forest lands into other uses.

B. Threats to forest resources

25. These livelihoods are threatened by deforestation, degradation and the conversion of forest ecosystems into other uses, with great consequences to climate change. According to the 2010 FAO evaluation of the world forest resources, Mexico has lost approximately 402,000 has per year between

⁵ http://www.fsc.org/fileadmin/web-data/public/document_center/powerpoints_graphs/Global-FSC-Certificates-2010-09-16-EN.pdf

⁶ Regions with, at least, 1 500 plants of endemic species that have lost 70% of their original habitat.

1990 and 2000. If deforestation continues at this pace, around 70% of Mexico's forests will be in danger of disappearing in the next 20 years.

26. Forest degradation is a phenomenon that does not involve its conversion, but has an impact on the removal of species, alteration of the habitat and functions of the ecosystem. Degradation occurs most aggressively in the borders where high deforestation levels have been found, i.e., close to roads and human settlements (De Jong, B., Iglesias, L. and J.A. Alanis de la Rosa. 2008). The overexploitation of timber also contributes to forest degradation, for example, the consumption of firewood for fuel, which is approximately 36 mm³ per year (Torres-Rojo, J.M. 2004). In addition, there is an estimate of 1,500 non-timber forest products (NTFP) most of which comes from areas that do not have technical management.

27. Various authorized timber uses lack sustainability since, although they avoid deforestation risks, frequently degrade forests. Extraction of a reduced number of commercial species lacking adequate management, as frequently occurs with mahogany and red cedar, undermines genetic integrity of species and alters standard structures and dynamics of local sites. The application of forestry systems in pine forests to obtain even-aged forests reduces the diversity of species and the natural distribution of age classes.

28. The Mexican Government has made significant efforts to reverse deforestation tendencies and reduce human pressure on forests, consolidating the sustainable forest management (SFM) as an element for its achievement. The FIDA-Sur Project aims at strengthening this SFM; however, it must be complemented with actions for carbon sequestration and storage, since as pointed out by Mexico's Third Communication to the United Nations Framework Convention on Climate Change (2006), carbon sequestration in the forestry sector reduces GHG emissions⁷, and its monetary compensation will contribute to profitable investments in the sector.

29. Deforestation and forest degradation contribute to carbon emission levels and to GHG. According to the most recent National Inventory on Greenhouse Gas Emissions (2009), emissions related to changes in soil uses and loss of biomass due to different management types during the 1990-2006 period, were estimated at a range of 69 674 to 86 188 Gg⁸ CO₂, with an average of 80 162 Gg CO₂ (approximately 5,000 Gg CO₂ per year). Most of these emissions (71%) are generated by the conversion of forest ecosystems into other uses. Regarding changes in the use of forest land, main generating processes of carbon emissions are: change from forest to grasslands, the slash and burn, forest fires, uncontrolled harvesting (over-exploitation and illegal logging) and soil degradation.

1. *Deforestation*

30. Although the rate of deforestation has decreased in recent years (FAO 2010), national forests are undergoing a continuous process of deforestation and degradation. FAO data (FRA 2005) show that in 2005 Mexico had 65.6 M ha of forests and a deforestation rate of 260,000 ha/year (0.4%). For 2010 it reports a forest area of 64.8 M ha, with an annual loss of 155,200 ha (0.23%). Between 1990 and 2000, the national deforestation rate was 0.52%. In the southern States it was lower in Oaxaca and higher in Campeche and parts of Chiapas, up to six and eleven times higher, respectively (FAO 2004, Table 4). Even if the deforestation rate in the three States follows the national trend, it remains high in Campeche and Chiapas. Sixty-two percent of areas with forest cover were lost or altered between 2002 and 2007 in areas of the Mesoamerican Biological Corridor⁹ of the three States, while recovery reached 38% of the area with forest cover (Figures 2, 3 y 4). During the same period, 241,567 ha were lost in Campeche and 266,469 ha in Chiapas.

31. In Campeche, the loss of forest cover appears in small patches and few of them have a large extension, all concentrated to the North of the communities of interest (Figure 2). This is not the case in the communities of Chiapas, where the loss of forest cover is spatially heterogeneous in all the area of interest (Figure 3). The largest focalization of forest cover loss and recovery is in Oaxaca, where

⁷ The RPP mentions a reduction of 10,000 ha/year in degradation and deforestation through REDD+, with an associated mitigation of 8.97 MtCO₂e by 2012.

⁸ It refers to 1,000 metric tons

⁹ Overview of the "surge" (18%) and "loss (44%) categories in MIS coverage of "change dynamics 2002-2007 in the MBC" provided by CONAFOR for the three States. The remaining 38% is classified as "recovery".

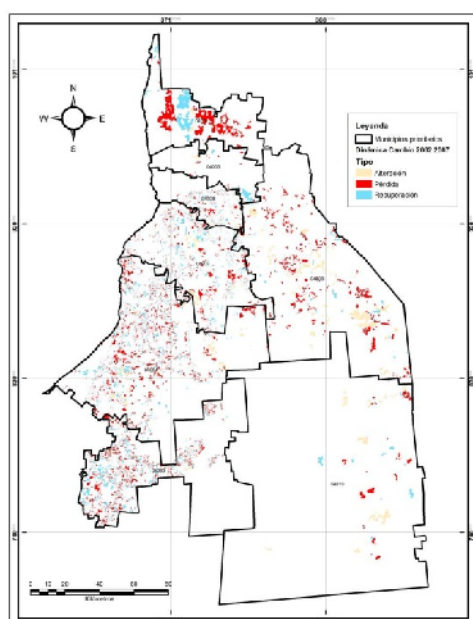
most of the loss is in only one community (San Juan Cotzocon). The recovery pattern in the area of interest of Oaxaca also draws attention, maybe because of the high incidence of forest fires (Figure 4).

Table 4: Deforestation. Comparison of historical rates in Mexico and in the Project States

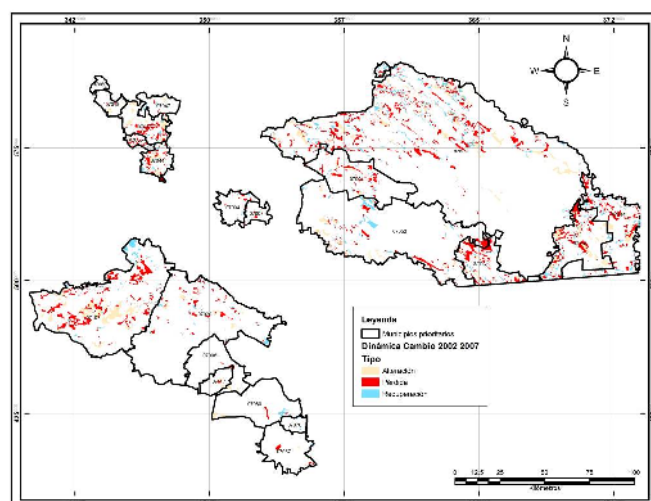
STATE	DEFORESTATION RATE		SOURCE
	YEAR OR PERIOD	%	
Mexico	1990-2000	0.52	FAO (2005)
	2000-2005	0.4	
	2005-2010	0.23	FAO (2010)
Campeche	1987	6.2	Turner II et al (2001)
	1987-1997	2.8	
	1997	3.9	
Oaxaca	1993-2001	0.4	Blackman et al (2005)
Chiapas			
State	1970-1993	2.14	Ecosur (1996)
State	1990-2000	4.8	Cayuela (2006)
High-rise jungle Tuxtla	1998	4.3	Ortiz and Toledo (1998)
Lacandona 1 high-rise jungle	1998	4,5	
Lacandona 2 high-rise jungle	1998	2,3-1,6	
Las Cañadas high-rise jungle –Temperate forests	1998	5,7	

Source: FAO (2005); FAO (2010), Turner II et al (2001), Blackman et al (2005), Ecosur (1996), Cayuela, Ortiz and Toledo (1998) (2006)

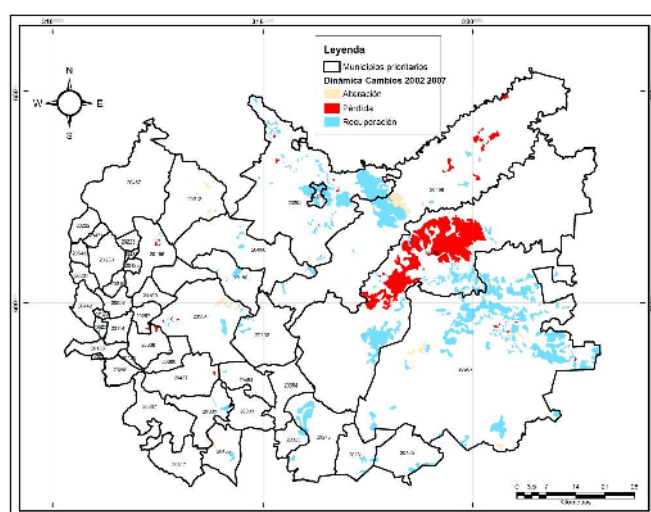
Figure 2: Alteration, loss or recovery. Change dynamics of forest areas in Campeche



Source: CONAFOR

Figure 3: Alteration, loss or recovery. Change dynamics of forest areas in Chiapas

Source: CONAFOR

Figure 4: Alteration, loss or recovery. Change dynamics of forest areas in Oaxaca

Source: CONAFOR

32. Direct deforestation and degradation sources are inter-related (changes in soil use, housing development, fires, pests)¹⁰. INEGI reports that in Chiapas 33% of the land is used for agricultural purposes (Table 5). Deciduous and cloud forests¹¹ have strongly suffered from agricultural expansion. Deforestation in areas of evergreen forests accelerated in the 90's, especially in Chiapas, and to a lesser degree in Campeche, resulting in areas with fragmented jungles¹² around areas of continuous jungle.

¹⁰ The *ejido* population of Campeche indicated that carbon elaboration strongly contributes to these processes; however, there is no official data that confirms this.

¹¹ This classification does not coincide with INEGI's. INFyS itself uses a third classification, talking about humid and dry jungles.

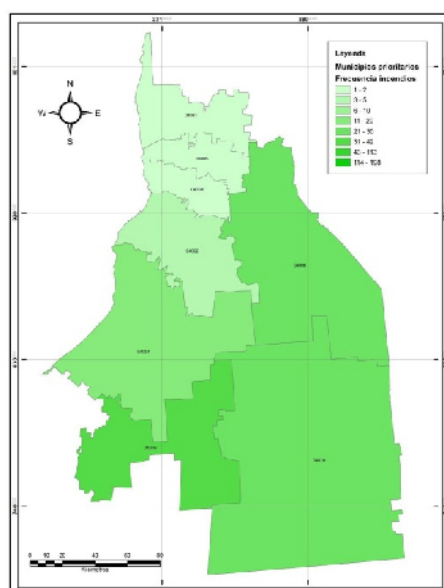
¹² Animated map on vegetation changes, presentation by SEMARNAT 2010

Table 5: Distribution of land uses in the Project States

LAND USE	CAMPECHE		CHIAPAS		OAXACA	
	HA	%	HA	%	HA	%
Agriculture	62.54	1.1	1,167,415	15.8	1,356,076	14.2
Pasture	388.34	6.8	1,250,907	16.9	788.66	8.3
Forest	0.00	0.0	2,148,634	29.1	3,711,567	38.9
Jungle	4,744,232	83.4	2,553,535		3,534,190	37.1
High-medium rise	4,298,835		2,247,111		2,672,917	
Low-rise	445.40		306.42		861.27	
Mangrove	256.43	4.5	129.30	1.8	0.00	0.0
Bulrush	185.93	3.3	0.00	0.0	0.00	0.0
Popal	0.00	0.0	33.25	0.5	0.00	0.0
Other	48.33	0.9	105.66	1.4	145.91	1.5
Total	5,685,800	100	7,388,700	100	9,536,400	100

Source: INEGI (2010)¹³

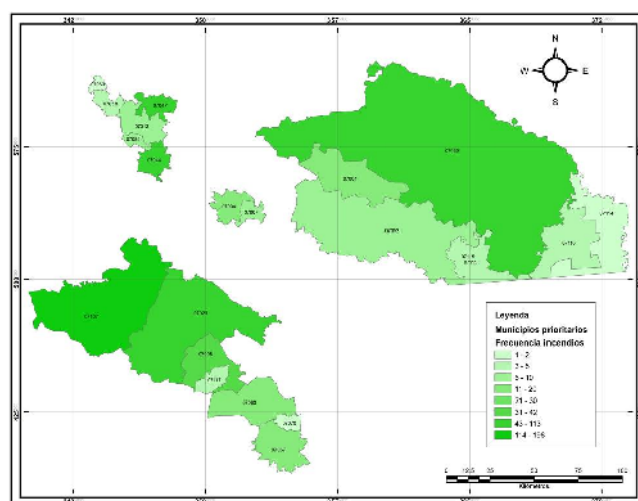
33. In addition to agricultural activities, forest fires are a direct and important source of deforestation and degradation. An annual average of 8,444 forest fires was registered from 1998 to 2007, affecting 272,718 ha per year. This translates into 32 ha affected per fire (CONAFOR, 2007a). Figures 5 to 7 show the frequency of forest fires registered by community in Project States during the last five years. Their causes are almost exclusively anthropogenic and almost half (40%) is due to agricultural activities¹⁴. If we only consider Project communities, 5 to 6 times more forest fires occurred in Chiapas during this period than in Campeche or Oaxaca (720 in Chiapas versus 122 and 151 in Campeche and Oaxaca, respectively).

Figure 5: Map on frequency of forest fires by community in Campeche

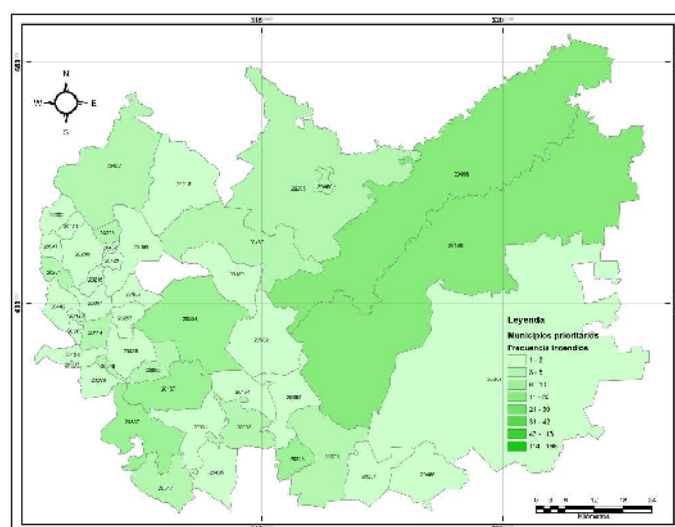
Source: Data from MIS CONAFOR, 2010

¹³ <http://www.inegi.org.mx/inegi/default.aspx?s=geo>

¹⁴ http://app1.semarnat.gob.mx/dgeia/informe_04/02_vegetacion/cap2_3.html

Figure 6: Map on frequency of forest fires by community in Chiapas

Source: Data from MIS CONAFOR, 2010

Figure 7: Map on frequency of forest fires by community in Oaxaca

Source: Data from MIS CONAFOR, 2010

2. Degradation

34. Although forest degradation is also important as a source of emissions, it is more difficult to quantify through current techniques that use remote sensing. These techniques were mainly developed to detect changes in vegetation-covered areas, but are still explored to reliably measure changes in carbon density. This might be the reason why the estimated extension of altered areas is low. For now, degradation can be approximated based on timber logging data or from the harvesting of other forest products. CONAFOR's Forestry and Geomatic Inventory management is rehearsing new methods to link together optical properties of remote images (NDVI – "Normalized Difference Vegetation Index") with structural variables of the ecosystems. These methods will offer the possibility of determining and monitoring the magnitude of forest degradation, using satellite tools; however, these procedures are still being tested.

35. Along with uncontrolled extraction, particularly firewood, uncontrolled logging is a source of degradation, especially in jungles. It is estimated that, nationwide, the annual volume of unauthorized land use is from 3 to 5 mm³ (SEMARNAT, 2007). Legal land use, but inadequately applied, also contributes to degradation. To have an approved FMP does not guarantee the efficient application of

its content, since the forest's integrity after management will depend on the institutional capacity and technical knowledge of land users.

36. Underlying causes of forest deforestation and degradation are numerous, and include the lack of institutional capacity and of technical knowledge of land users. Added to this are the high costs of forest management and industrialization, in addition to low opportunity costs posed by forests in relation to agricultural products. The difference between the three States in the value of forest products per ha in 2004 shows an opposite trend to the deforestation rate: the highest rate (>4 percent, in Chiapas) matches the lowest value per hectare (12 pesos) and the lowest rate (in Oaxaca, 0.4%) matches the highest value of forest products (48 pesos/ha). This could be a reflection of the existence of organizational structures and culture focused on forest management. Protected areas can reduce deforestation rates. For example, the greatest portion of the still existing jungle in Chiapas is located in the Montes Azules protected area of the Lacandona Jungle. Outside of this area, the forest is heavily fragmented^{15, 16}.

37. In addition to the underlying causes outlined above, poverty, the development model and culture, also contribute to deforestation and degradation, although this relationship is not so clear (Angelsen and Kaimowitz 1999). Forest-dependent indigenous groups can be very poor, have very low development indexes, but can implement a sustainable forest use because of their culture. For example, in Oaxaca and Chiapas, communities with the lowest human development index are located in forest areas and in the Lacandona Jungle, where a larger percentage of indigenous people is also found¹⁷; however, the largest deforestation rate is not necessarily found in these States. On the other side, migrants from other areas in the same situation may be the main causers of deforestation and degradation. In fact, 94% of Project communities in Chiapas and Campeche show a "high" or "very high" marginality index. This coincides with the "high" or "very high" risk of deforestation in these same States (Data SIG CONAFOR, extracted by CATIE).

38. Pests are a third cause of deforestation and degradation, especially in pine forests. According to CONAFOR's Institutional Program for 2007-2012, the sensitive area is 10 M ha nationwide, although less than 1% is affected annually (70,000 ha in 2006). The concern is the increase of affected areas (probably worsened by climate change) and the apparent local incapacity to fight different pests at the same time or in coordination with neighboring communities. Technical recommendations have not been implemented due to administrative and legal barriers¹⁸. Table 6 shows the occurrence of pests in the three States during 1990, 1995, 2000 and 2005. These data are more or less indicative for the last two decades, with higher occurrence of bark beetles in forests and borers in the jungle. A high incidence of pests is noted in 2005. It has not been possible to verify if this is a trend or an exception¹⁹.

Table 6: Percentage of areas diagnosed with a significant pest presence

STATE	YEAR	DIAGNOSED AREA (HA)	PERCENTAGE OF THE AREA				
			BORERS	DEFOLIA-TORS	BARK BEETLES	MISTLE-TOE	OTHER
CAMPECHE	1990	61.4	0.09	0.02			
	1995	SIN INF					
	2000	1,502,000					
	2005	3.5	3.57				
CHIAPAS	1990	11 342			4.82	2.47	
	1995	8.35			15.9		
	2000	252.65			0.04		
	2005	7 287	0.41	5.21	61.48	1.78	
OAXACA	1990	18 045			32.03		
	1995	672			0.2		
	2000	463,413		0.03	0.14		
	2005	13,187		3.09	83.67	9.69	3.69

Source: Based on an evaluation report of INFyS, available in: <http://www.cnf.gob.mx/infys>.

¹⁵ Environmental Atlas of North America: <http://www.cec.org/atlas/sp.html>

¹⁶ http://app1.semarnat.gob.mx/dgeia/informe_04/02_vegetacion/cap2_3.html

¹⁷ Encyclopedia of Mexican Communities: <http://www.inafed.gob.mx> UNDP (2008)

¹⁸ Land ordinance report, Altamirano, Chiapas

¹⁹ The Land Ordinance Report of the Altamirano Ejido may be an indication that pests have become a more serious and continuous problem than in the past, at least in some ejidos. The Altamirano report also notes the emergence of several pests at the same time, complicating containment measures.

C. Greenhouse Gas (GHG) emissions from land use, land use change and forestry sectors

39. Mexico is a country that has extensive areas of bio-diverse forests that store high contents of carbon. Historical data show that, although to a lesser extent, deforestation still occurs with the resulting emission of GHG. Forest degradation also plays an important role in GHG emission, but its magnitude has not yet been determined. It is estimated that, worldwide, between 14 and 20% of GHG emissions come from land use and changes in land use. Similar quantifications have not been made for Project communities, but Mexico's Fourth Communication to the United Nations Framework Convention on Climate Change-UNFCCC, points out that 10% of national GHG emissions are generated in the forestry sector (México 2009).

40. Emission patterns from land use in the three States are similar to those nationwide. The study prepared by Castillo et al. (2007), carried out in a 2.7 M ha area of Chiapas between 1975-1996, showed that the State's deforestation rate was 2.3%, the most affected being the high-rise forests and tropical jungles. This deforestation resulted in an emission of 4 million MgC/year, or 14.6 million MgCO₂/year. Population density, distance to roads, land tenure (more in private lands than in community lands), as well as physical conditions of the land, were among the factors that contributed to deforestation.

41. It is expected that detailed information on GHG emissions in the three States will be prepared shortly. The Government of Chiapas opened a Climate Change Office in the Environment Sub-Secretariat of the Ministry of Environment and Housing (SEMAVI), with a budget of over one million pesos. The office coordinates with Conservation International; it has resources from the British Government and is moving forward in the elaboration of the Climate Change Action Program for the State of Chiapas²⁰.

D. Potential for carbon storage and removal

42. There is an important potential for carbon sequestration in vegetation and soils. These areas are found throughout the country and include forests, forest plantations, agro-forestry systems and protected areas, in temperate, cloud and tropical forests (Masera et al. 2001). Mexico's potential to store carbon in its landscape ranges between 80 and 310 MgC/ha, depending on the class of cover (Table 7).

43. The south of Mexico has a high potential to retain carbon in the biomass of both its agricultural and forestry ecosystems (de Jong et al. 1997). Ecosystems that store more carbon per unit area are forests and forest plantations, followed by agro-forestry systems. According to data from INFyS, forestry ecosystems in the three States range in carbon density between 41 and 60 MgC/ha. These existences vary according to the type of forest and land use activities that are carried out (Ladera Project 2000, Etchevers et al. 2001, Brown et al. 2000, Roncal-García et al. 2008, Castillo et al. 2007, de Jong 2001). As expected, high and medium-rise jungles have larger carbon densities than forests and low-rise jungles. In general, carbon density values from INFyS are lower than the averages used by IPCC (IPCC 2003). This difference may be due to an over-estimate of IPCC data, or correspond to forest degradation. The second hypothesis becomes stronger if low basal areas and high tree densities are considered (Table 3 above).

²⁰ http://saladeprensa.semarnat.gob.mx/index.php?option=com_content&view=article&id=823:en-chiapas-primer-oficina-de-cambio-climatico-en-el-pais&catid=96:cop-16&Itemid=169

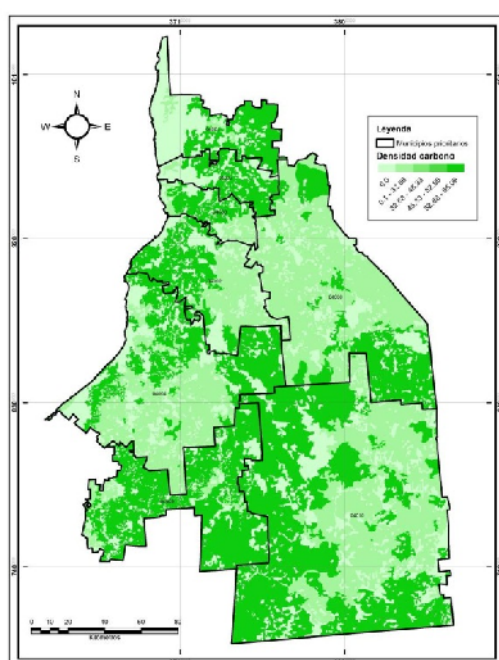
Table 7: Carbon density by type of land use and cover classes in Mexico

LAND USE/TYPE OF COVER	TOTAL CARBON (MgC ha ⁻¹)	CARBON IN VEGETATION (MgC ha ⁻¹)	CARBON IN SOILS (MgC ha ⁻¹)
Without forest management			
Temperate coniferous	257	118	120
Temperate broad leaf	236	105	126
Tropical evergreen	305	186	115
Tropical Deciduous	154	54	100
Semi-arid forests	80	19	60
Degraded forests	122	42	81
Plantations			
Long rotation	191	78	108
Short rotation	154	42	96
Restoration plantations	180	89	84
Plantations for bio-energy	281	42	96
With forest management			
Temperate coniferous	234	118	120
Tropical evergreen	309	180	115
Temperate protected areas	240	134	123
Tropical evergreen	305	223	115
Tropical Deciduous	154	64	100
Wetlands	282	223	115
Semi-arid forests	97	49	60
Other uses			
Agriculture	89	9	81
Pastures	95	16	81
Agro-forestry	159	63	97

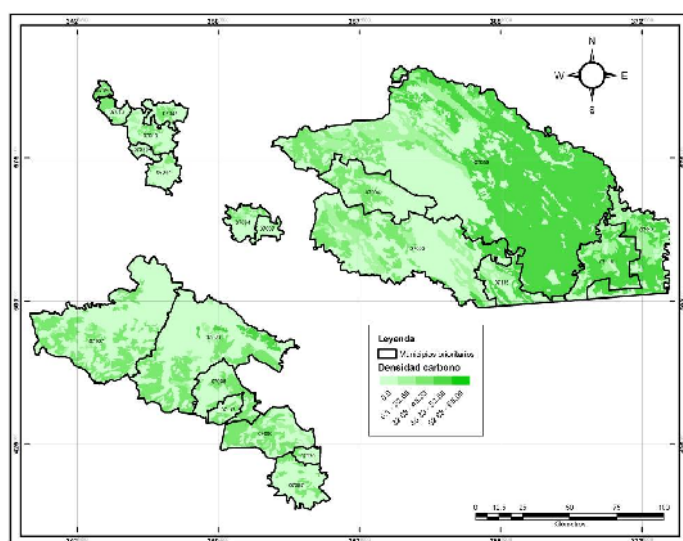
Note: Total carbon, in this case, does not correspond to the sum of carbon in vegetation and in soils, since it also includes carbon in decomposition components, forest products and the substitution of fossil fuels where appropriate.

Source: Masera et al. (2001).

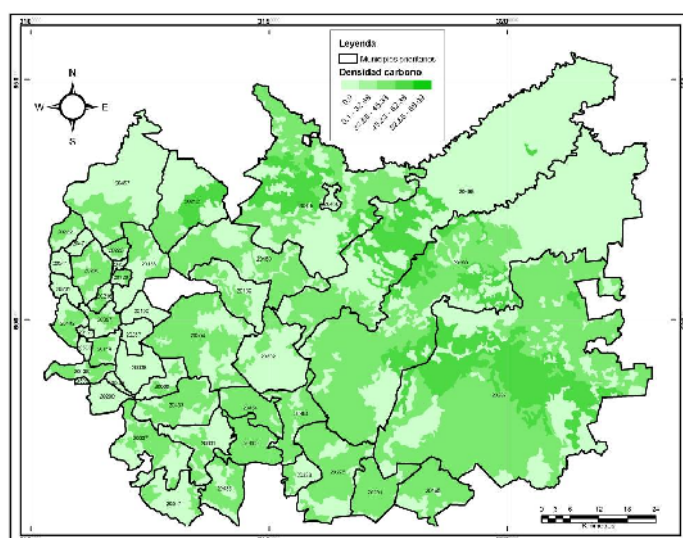
44. Spatially, the distribution of carbon densities in vegetation is consistent with the distribution of vegetation cover. In Campeche, areas with higher carbon densities are found in the central-south and northern region (Figure 8). In Chiapas, highest densities are found in the northern communities, coinciding with the presence of high-rise evergreen jungles (Figure 9). In Oaxaca, carbon densities are intermediate and are distributed in communities of the project (Figure 10).

Figure 8: Carbon density (MgC/ha) in communities of interest in the State of Campeche

Source: CATIE. Based on INFyS data provided by CONAFOR

Figure 9: Carbon density (MgC/ha) in communities of interest in the State of Chiapas

Source: CATIE. Based on INFyS data provided by CONAFOR

Figure 10: Carbon density (MgC/ha) in communities of interest in the State of Oaxaca

Source: CATIE. Based on INFyS data provided by CONAFOR

45. Sustainable forest management, secondary forest regeneration, forest plantations and agroforestry systems play an important role in removing carbon at a regional or landscape level, in or out of protected areas²¹. Worldwide, however, there are still information gaps to determine the potential of carbon sequestration in different land uses. This is accentuated locally. Mexico is not the exception, although Masera (1995) generated nationwide information based on the development of scenarios, creating values that provide general insight on the annual potential of carbon sequestration, according to mitigation options (Table 8).

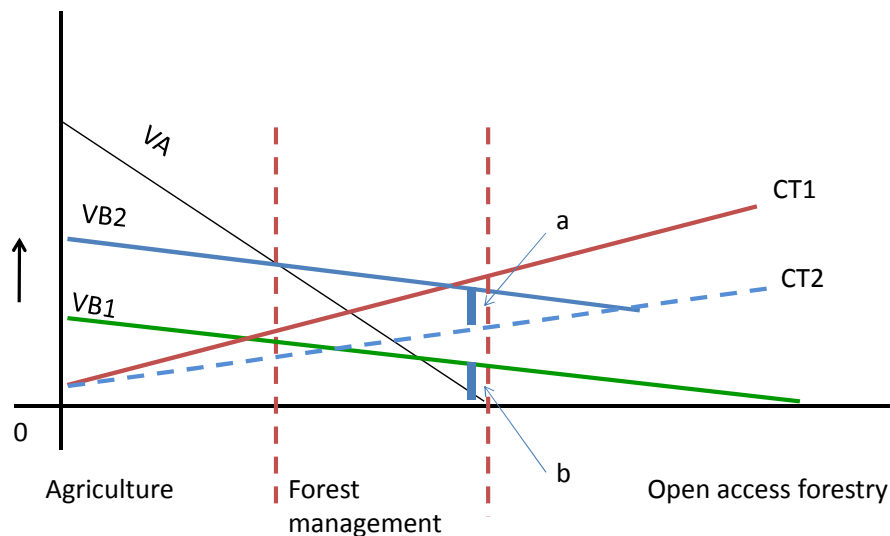
46. For the project we decided to analyze only carbon of the above ground vegetation biomass, calculated using volume estimates per vegetation type from the national forest inventory, applying biomass and carbon conversion equations as produced by Chave et al. 2005 (general) or Ben H.J. de

²¹ Removal and containment are related, but are different elements of a same process. First, a forest "removes" CO₂ from the atmosphere through photosynthesis and "stores" it in organic matter that is synthesized. Once this matter is formed, it is considered that the forest "holds" (or has "sequestered") X or Y quantity of carbon. Namely, "removal" or "sequestration" is the process; "storage" is the net magnitude of the resulting sequestration of the process at the end of a period.

Jong, M. Olguín and F. Rojas without date (species specific). We did not estimate carbon losses from the other four recognized carbon pools for several reasons. First, the current REDD+ negotiations suggest using only above ground biomass carbon pools for emission estimates (Pritchard 2009). Second, there is a lack of scale-appropriate data for underground vegetation (roots), litter and dead wood. For soil carbon, estimates of current stock can be made, but literature from Central and South America and Asia is contradictory as for whether this stock will increase, decrease or stay the same after deforestation (Desjardins et al 2004, Huth T 2010, Yonekura et al 2010). Other studies suggest that CO₂ emissions from soils do occur, but that these are more related to temperature and precipitation (Raich and Potter 1995) soil structure (Desjardins et al 2004) or other chemical and physical soil characteristics (Rastogi et al 2002) than to soil carbon stocks and, on a global scale, may actually decrease after land use change, (Raich and Potter 1995).

47. Thus we estimate CO₂ emission reductions and sequestration for the five year project period and for a twenty year lifespan (table 8), assuming that activities initiated during the project will remain until the end of the twenty years, but no further investments will be made to initiate new emission reduction or sequestration activities. Table 9 gives the emission reduction and sequestration data per line of action proposed. It shows that currently avoiding deforestation is by far the best option to reduce emissions in all states, although PSA schemes are expected to equally well contribute to avoid emissions from degradation in Campeche. Plantations are relatively more important in Oaxaca. It should be noted here that avoiding deforestation needs to consider both increasing income of forest owners and users as well as reducing their transaction costs of managing the forest (Fig 11, after Louman et al 2011). This is proposed to be achieved by improving planning, increasing employment and income in other activities (monitoring in PSA areas, tree planting, improved crop cultivation with trees, fire prevention and protection, SFM) and facilitating access to markets and services, addressing thus some of the underlying causes for deforestation, rather than paying for the opportunity costs of leaving the forests intact. It is expected that the former is a more sustainable approach.

Figure 11: Relation between the net value of forest use and the transaction costs of responsible forest use



Relation between increasing the net value of forest use (from VB1 to VB2) and reduce transaction costs of responsible forest use (from CT1 to CT2) in the area attractive for forest management; where the net value of forest management (VB2-CT2, bar a) is greater than the net value of agriculture (VA) and that of open access forestry (VB1, bar b)). VA is net value of agriculture per ha; BV1 is net value of open access forest; BV2 is gross value of forest management (gross since it does not include transaction costs); CT1 are transaction costs to go from VB1 to VB2; CT2 transaction costs after government measures to promote forest management (training, planning support, land tenure security, access to subsidies, etc). (after Louman et al. 2011).

Table 8: Estimated carbon stock in forests and plantations (tCO₂eq) in reference and alternative scenarios

	actual	sin proyecto		con proyecto		reducción de emisiones	
	2010	2015	2030	2015	2030	2015	2030
Campeche	490.027.542	477.541.069	452.765.177	486.530.489	503.318.724	8.989.420	50.553.547
Chiapas	253.565.830	229.409.989	181.504.411	239.565.870	232.005.917	10.155.882	50.501.506
Oaxaca	65.389.400	61.091.326	52.591.182	62.813.027	61.567.619	1.721.701	8.976.437
Total						20.867.003	110.031.490

Table 9: Emission reduction and capture (tCO₂eq) for each action line during the project period (5 and 20 years)

State	Sequestration (reforestation)	Recovery (PES)	Avoided deforestation	Reduced degradation	Total (CO ₂ eq)
Period: 5 years (project lifetime)					
Campeche	145 696	3 991 687	4 564 839	286 198	8 988 420
Chiapas	405 506	134 788	8 859 003	756 585	10 155 882
Oaxaca	130 525	17 948	1 572 732	496	1 721 701
Total (CO₂eq)	681 727	4 144 423	14 996 574	1 043 279	20 866 003
Total (ha)	102 639	455 763	83 348	319 760	
CO₂eq/ha	7	9	180	3	
Period: 20 years					
Campeche	387 898	24 344 232	23 497 365	2 324 050	50 553 545
Chiapas	1 226 862	1 415 071	45 591 455	2 268 117	50 501 505
Oaxaca	424 629	130 823	8 093 817	327 167	8 976 436
Total (CO₂eq)	2 039 389	25 890 126	77 182 637	4 919 334	110 031 486
Total (ha)	102 639	711 786	428 966	376 938	
CO₂eq/ha	20	36	180	13	

48. Total emission reduction or compensation is estimated to be 20.8 million tCO₂eq during the five year timespan of the project, reaching up to a total of 110 million tCO₂eq over a twenty year period. After 5 years, approximately 72% of these emissions are due to avoided deforestation, 4.8% to improved forest management, while sequestration will be due to PES (payment for environmental services, 19.6%) and reforestation (3.3%). For twenty years this distribution changes slightly to 70%, 4.4%, 23.5% and 1.8% respectively. It is expected that after year twenty no further emission reductions from avoided deforestation will be achieved in relation to the business as usual activities, because the project area will have reached the government's goal of 0 deforestation. These estimates will be adjusted when more detailed carbon stock will become available from local project monitoring activities.

Notes on estimations made

49. For the **reference scenario**, the basis of the “emissions through deforestation calculation” is the change in carbon stock, combining area changes of vegetation types estimated from maps provided by CONAFOR (vegetation maps, time series from 2002 to 2007), with IPCC data of carbon stock per vegetation type, or, where such data was available, converting biomass data from the national Forest Inventory to carbon stock using conversion factors of 0.5 for dry biomass and 0.5 for carbon content of dry biomass. “Emissions through degradation” are estimated using a 4% annual loss of carbon in harvested areas, based on our own experiences regarding damage by conventional harvesting of approximately 4-7 m³/ha, using cutting cycles of 20 years (common in Latin America). We assumed that not-formally harvested areas (areas without registered management plans) in practice have been and are being degraded by non-authorized logging and therefore applied the same degradation rate. For our figures of carbon sequestration we used Masera's 1995 original data for plantations and secondary forest for the five years of the project, while for total potential sequestration we used half of

the total carbon stock at the end of the rotation length as an average stock for the reforested areas. Although the Mexican government has a 0 deforestation policy for the year 2030, it is not expected that this will have an effect in the more remote areas where the project proposes to work before 2020, due to finance and human resource restrictions of the government without the project. After that a deforestation reduction of 10% per year is considered.

50. For the **project scenario**, we assumed a 10% reduction in annual deforestation rate for the first five years, followed by a reduction to 0 deforestation in accordance with the 0 deforestation rate policy of the Mexican government. We also assumed a reduction in forest degradation in forest management areas of 35% of the expected degradation in non-managed timber harvesting areas (Bamaca 2002,). For growth in recovering forest areas we used the rates of sequestration of 1.8 tC/ha for pine and 3,6 tC/ha for broadleaf forests respectively, assuming that recovery takes place only in the areas identified as high priority areas by the PES programs of CONAFOR in the communities that will take part in the project. Of these we assume that every year 20% is recovered. At the same time we assume that in these communities (or ejidos) 13% of the non-forested areas will be reforested during the duration of the project, planting every year more or less 20% of that area (i.e. 20,000 ha/yr), assuming an annual growth of 1,23 t/ha/yr during the first five years of growth (conservative estimate based on Masera, 1995).

Table 10: Carbon sequestration by mitigation option in Mexico

OPTION	ANNUAL CARBON SEQUESTRATION (MgC/ha/year)		NET CARBON SEQUESTRATION (MgC/ha) 35 YEAR PERIOD	
	LOW	HIGH	LOW	HIGH
Avoided Emissions				
Coniferous	1.43	2.46	50	86
Broad leaf	0.94	1.97	33	69
Evergreen	3.23	4.94	113	173
Deciduous	1.63	2.49	57	87
Forests under management				
Temperate commercial	2.8	3.83	98	134
Evergreen commercial	4.23	4.23	148	148
Carbon sequestration				
Coniferous	2.14	2.26	75	79
Broad leaf	1	1.89	35	66
Evergreen	3.66	4.29	128	150
Deciduous	1.49	2.34	52	82
Pulp plantations				
Pine	2.77	2.89	97	101
Eucalyptus	1.91	2.03	67	71
Agro-forestry				
Shaded coffee	1.23	1.94	43	68
Secondary forest	1.4	2.11	49	74

Source: Calculation adapted from Masera 1995

51. Monitoring actions will help these communities to prioritize actions to achieve better mitigation results. It is estimated that the Project's incremental value will be over US\$15 million/year at the end of the Project (see Annex 4), taking into consideration the value of the forest in terms of Payment for Environmental Services, and that the following governance and operational aspects will be strengthened: (i) territorial planning; (ii) local arrangements for the distribution of benefits (governance and fund management); and (iii) the operation of the monitoring system.

E. Institutional context, policies and regulations

52. Mexico forms part of several multilateral environmental agreements, for example, UNFCCC, the Convention on Biological Diversity and the United Nations Convention to Combat Desertification and Drought (UNCCD). The country has played an active role in the formulation of climate change mitigation and adaptation policies. During the first years of the XXI century, Mexico declared in the framework Convention that its actions in the forestry sector are priorities for its Government, since in 2002 this sector was the second largest generator of CO₂ in the country (14%). This is also reflected in the Mexican Government's efforts to prepare the country for REDD+.

53. Mexico has defined a National Climate Change Strategy (ENCC) and a Special Climate Change Program (PECC). Both initiatives highlight actions in the forestry sector to mitigate climate change as priority. PECC, in particular, points out that improved management and reforestation actions will give greater resistance to forestry ecosystems to face this environmental phenomenon. Also, the 2007-2012 National Development Plan specifically considers actions to address climate change impacts: national objectives Nos. 8 (environmental sustainability) and 10 (greenhouse gas emissions), and axle 4, specifically 4.1 (climate change).

54. **REDD+.** In Mexico, overview on REDD+ focuses on strengthening and study thoroughly national efforts aimed at reducing deforestation and forest degradation in net terms, preserving biodiversity and promoting sustainable rural development, as well as efforts that contribute to stabilizing concentrations of greenhouse gases.

55. This vision lays the foundation for REDD+ derived opportunities to contribute to the achievement of the short and long-term emission reduction objectives reflected in the S, as well as those derived from programs and strategies of the forestry and agricultural sectors. It seeks to strengthen the effective governance in forest lands, respecting social property rights and promoting community forest management. The REDD+ Vision highlights three main pretensions, based on the 2009-2012 PECC and the Strategic Forestry Program-2025 (SFP): (i) In 2020, Mexico will have zero net emissions associated to change in land uses and will increase the quality of carbon stocks; (ii) the national rate of forestry degradation in Mexico will be significantly reduced by that year, with respect to the reference level; and (iii) finally, for this same year, the country will have maintained the biodiversity of its territory, strengthened the social capital of rural communities and promoted its economic development (SEMARNAT/CONAFOR, 2010).

56. The document of Mexico's Vision for REDD+ was presented by President Calderón at COP 16 in Cancun last December. An important landmark of this presentation is that the Ministry of Agriculture endorsed the document, and it was also ratified by the Inter-ministerial Commission for Sustainable Rural Development (CIDRS, in Spanish). The goal for 2011 and 2012 is to develop the National REDD+ Strategy through a participatory process, involving relevant stakeholders, including those in the Consultative Technical Committee for REDD+. This process will be conducted along the lines set in the Vision. Several REDD+ priority regions are planned to design and test REDD programs and institutional arrangements at sub-national levels and to advance methods on MRV at a multi-scale level.

57. **REDD readiness process.** As part of this overall process, the country, through CONAFOR, has prepared a Readiness Preparation Proposal (R-PP), to be funded by FCPF. The R-PP will prepare the country for financing mechanisms related to emission reductions, including (a) the definition of a reference level for emissions; (b) the identification of adequate actions to establish the REDD+ framework; and (c) the development of a monitoring system and a national carbon accounting system. The R-PP has been assessed by the FCPF, and the Readiness Preparation Grant funding (US\$ 3.6 m) authorized. The final R-PP was issued in May and activities are starting in July 2011.

58. **Forestry policy.** The Mexican forestry policy is articulated in CONAFOR's Institutional Program for 2007-2012 (IFP), derived from SFP. The IFP provides forestry policies included in SEMARNAT's Environmental and Natural Resources Sector Program, as well as in the National Development Plan, which include: (a) contributing to the protection and conservation of national resources (b) increasing production, productivity and competitiveness in the forestry sector; (c) restoring degraded forestry ecosystems; (d) promoting the participation of forest producers; (e) strengthening education processes, training, awareness and technological transfer; (f) promoting inter-sectoral and inter-institutional cooperation; and (g) implementing and consolidating forestry and planning policies.

59. Institutional governance in the forestry sector is formed by a group of agencies at the federal, state, municipal and local levels, as well as by educational and research institutions, community groups, private sector and civil society entities. At the federal level, SEMARNAT supervises the forestry sector, and is responsible for the implementation and compliance of the LGDFS, the LGEEPA and other related regulations.

60. CONAFOR is a SEMARNAT decentralized entity created in April 2001 to promote forestry development, production, conservation restoration, as well the design and development of plans and

programs to implement forestry policies. ProÁrbol is the main institutional program for CONAFOR's operation. For almost 15 years, the Government orchestrated the Community Forest Development Program (PROCYMAF) with funding from the World Bank; since 2008 the program is executed in 12 Mexican States with resources from taxes²². PROCIMAF will be crucial to implement the current Project, given its success in SFM strengthening and promotion in ejidos and communities (methodologies, operational process, work strategy with ejidos/communities, etc.). Other important areas for CONAFOR will be the Environmental Services Management, as well as the Indigenous Communities Biodiversity Conservation Project in the States of Guerrero, Michoacan and Oaxaca (COINBIO), financed by the GEF and focused on community land use planning, mainly for conservation. The Regional Forest Management Units (UMAFORES) and Regional Forester Associations (ARS) will play an important role at the regional level.

61. Main elements of the environmental legal framework in the country are: the General Law on Sustainable Forestry Development (LGDFS, by its Spanish acronym) that regulates and promotes conservation, protection restoration, production, planning, management and use of national forest ecosystems, and the General Law on Ecological Balance and Environmental Protection (LGEEPA, by its Spanish acronym), which defines federal, state and local responsibilities for environmental planning, administration, management and monitoring, i.e., establishes measures to reduce ecological impacts in forest management.

62. **Climate Change Policy.** Only recently, a Climate Change Act has been introduced in the Senate of the Republic; this law provides for the establishment of a Federal Inter-Governmental Commission, as well as a National System for Climate Change. Attention to the subject is currently included within a set of general laws and agreements, highlighting law applicable in the environmental and energy sectors²³.

F. IFAD's experience in Mexico

63. IFAD has worked with Mexico's rural poor for the last 30 years, identifying challenges that justify a closer relationship between the Government and the Fund. During this period, IFAD granted Mexico seven loans for a total of US\$152.4 million. It has also provided grants to the Government for a total of US\$13 million. Operations include productive initiatives to support rural communities, with emphasis on indigenous communities, women participation in social and productive activities, and environmental sustainability. The three axes of IFAD to contribute to poverty reduction in the country are the following: (i) to improve income and employment levels in rural communities, especially for the indigenous population and landless farmers, taking into consideration the sustainable management of natural resources and adverse effects of climate change; (ii) to increase the capacity of communities and their baseline organizations to promote local development; and (iii) to promote the active participation of women in social and economic activities and in decision-making²⁴.

G. Analysis of additionality, permanence and leakage

64. The analysis of additionality, permanence and leakage, and the design of compensatory activities will be carried out at the time of territorial planning, using specific tools developed to estimate consequences of various land uses on the carbon flow. The Project will facilitate participation of local actors in this planning and will promote agreements on land use in *ejidos* and communities, in order to manage leakage.

65. Additionality will be a way of ensuring Project transparency; thus it prioritizes systematization of its execution, including, among other things, operational documents, information from secondary literature, photographs, spatial data, maps, interviews, market studies, law analyses and agreements or contracts.

²² Campeche, Chiapas, Chihuahua, Mexico State, Durango, Guerrero, Jalisco, Michoacan, Oaxaca, Puebla, Quintana Roo and Veracruz.

²³ The Constitution of the United States of Mexico clearly establishes the role of the State and of society on natural resources (Articles 4, 25, 27, 73, and 115); included in its principles are the preservation of natural resources that are susceptible to appropriation, prevention and control of pollution affecting human health, care of the environment from its productive use by the government and social and private sectors.

²⁴ Results-based Country Strategic Opportunities Programme (COSOP), prepared in 2007.

66. At the state level (Chiapas, Campeche and Oaxaca), the incidence of forest fires is a major threat against the permanence of avoided emissions or of carbon stocks. Therefore, adequate fire management will be an important component in Project implementation, including the creation and maintenance of fire-fighting community brigades, establishment of fireproof breaches around reforestation areas, and proper fuel management.

67. In order to give value to GHG emissions due to gas leaks, the Project will consider the following:

- Agents (private enterprises, government entities, individuals or others) that could cause GHG emissions outside the Project area and that are influenced by the activities of its implementation.
- Activities to be displaced outside Project area boundaries (livestock, agriculture, firewood collection, deforestation or forest degradation).
- Areas and location of activities displaced from the Project area (this can be based on interviews during Project execution).
- GHG emissions due to gas leaks.

68. It is important to note that in the context of many *ejidos* and communities, leaks can be controlled through land-use planning, internal regulations on land use and an internal monitoring mechanism.

69. For more inputs on these issues, please see Working Paper 4 (Proposals for implementing REDD+ measures).

III. PROJECT STRATEGY AND DESCRIPTION

A. Project strategy

70. As mentioned before, the current GEF project will complement the FIDA-Sur with climate change mitigation activities (carbon sequestration and reduction of GHG emissions by land use, changes in land use and forestry), contributing to the overall strategy. It will also support agricultural units (*ejidos*/communities) in priority communities of Campeche, Oaxaca, and Chiapas.

71. In order to make efficient use of project resources (financial, material and human) and increase its impact, emphasis will be placed in the 25 communities that have the greatest and more immediate threats for forest resources and resulting emissions (fires, pests, changes in land use). This coincides with eligible areas for other CONAFOR projects (for example, PES, plantations and reforestation, the *Gerencia de Silvicultura Comunitaria*). Actions to be implemented will respond to conditions of each applicant, on the basis of land-use planning processes.

72. The following aspects will be crucial for its implementation: (i) that *ejidos*/communities have their own community land-use plan (OTC, by its Spanish acronym); (ii) the creation and training of community technical teams to monitor carbon sequestration; and (iii) the permanent support by Project operators. The FIDA-Sur Project will grant financial support to achieve them. To this end, Terms of Reference used by GSC for OTC will be complemented with criteria related to carbon sequestration and emission reduction. For example: (a) definition of sustainable forest management measures and recovery of tree cover in current degraded areas, in order to increase carbon stocks; and (b) forest/jungle inventories including composition and structure of existing resources, in terms of timber products, non-timber products, energy and carbon²⁵

73. Given the collective character of forest land in the country, (Agriculture Act, Article 59), the Project seeks for its benefits to have also a collective impact. In this sense, it promotes agreements for this purpose within agricultural units, a permanent information scheme and constant dialogue between CONAFOR and units supported by this entity. It will also promote medium-term agreements between CONAFOR and Ejidos/Communities, in order to achieve its objectives and for beneficiaries to consolidate the community development process.

74. The operational strategy is the same as the one for the FIDA-SUR project, that consists of six phases: (i) Promotion and dissemination; (ii) Dialogue with agriculture authorities²⁶; (iii) Technical assistance; (iv) Participative diagnosis; (v) Formulation and Implementation of Local Development Plans; and (vi) Monitoring of Local Plans. Finally, the Operational Manual will also be the same as the one for the FIDA-Sur, up-dated with specific procedures for the implementation of climate change mitigation actions, and for the use of GEF economic resources.

B. Description

75. **Main purpose.** The GEF project shares the **main purpose** of FIDA-Sur: To contribute to improve living conditions of poor and extremely poor people living in forest areas of the States of Campeche, Chiapas and Oaxaca, through the development of sustainable and environmentally sound productive activities. It will also help to improve CONAFOR's expenditure efficiency and effectiveness, facilitating access of beneficiaries to public resources.

76. **Project objective.** In turn, GEF resources will complement the FIDA-Sur project, and will be used specifically to mitigate climate change in the agricultural units selected in these States, strengthening the SFM and creating local capacities, including the reduction of emissions by deforestation and the increase of carbon sequestration potential through the financing of innovative and relevant initiatives for the most vulnerable population, particularly the indigenous peoples, the dissemination of information and local participation in carbon sequestration monitoring.

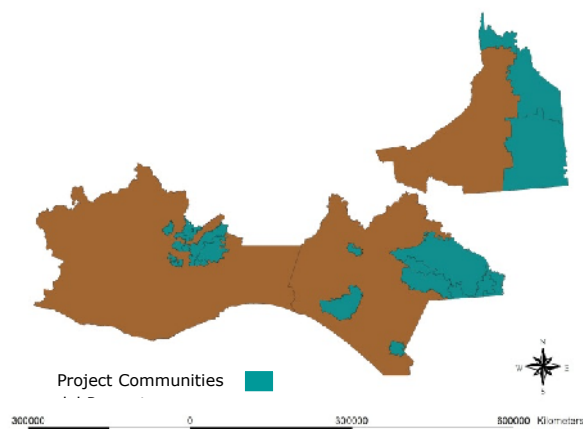
77. **Project area.** The GEF project will focus on 25 of the 106 FIDA-Sur project communities. These communities have a combined area of 4.8 M ha and were chosen taking into consideration the

²⁵ For results to be compatible and synergistic, systematic inventories will be made with plots that are compatible with national forest inventory conglomerates. Those will be permanent plots for monitoring.

²⁶ The *FIDA-Sur Project*, in addition to supporting agriculture units, aims at creating groups of interest inside these units.

following criteria: (i) eligible for the associated FIDA-Sur Project; (ii) deforestation risk; (iii) highest marginality rates; (iv) accelerated trends in natural resource changes; (v) eligible areas for PSA; (vi) change in land use; (vii) priority areas for plantations; (viii) presence of fires; (ix) legal land property; (x) inclusion in UMAFOR's regional study; and (xi) with protected areas:

Figure 12: Focalization of the Project. Municipalities under Consideration



Source: CONAFOR

Table 11: Municipalities where the Project will be executed

NO.	STATE	AREA (ha)	LOCATIONS
	<u>Campeche</u>	<u>2 230 772</u>	<u>313</u>
1	Kalakmul	23 443	159
2	Kalkini	1 411 657	51
3	Holpechen	795 672	103
	<u>Chiapas</u>	<u>1 978 162</u>	<u>3 382</u>
4	Altamirano	95 212	149
5	Benemérito de las Américas	107 302	58
6	Bochil	38 003	69
7	Las Margaritas	301 391	398
8	Maravilla Tenejapa	64 739	46
9	Marqués de Comilla	94 266	27
10	Motozintla	60 403	351
11	Ocosingo	944 678	1 094
12	Villa Corzo	272 168	1 190
	<u>Oaxaca</u>	<u>562 520</u>	<u>347</u>
13	San Juan Cotzocón	143 666	105
14	San Juan Lalana	68 110	56
15	San Juan Mazatlán	166 907	37
16	San Lucas Camotlán	10 198	4
17	San Miguel Quetzaltepec	20 772	17
18	San Pedro y San Pablo Ayutla	14 553	31
19	Santa María Tepantlali	8 597	15
20	Santiago Camotlán	32 455	11
21	Santiago Choápam	28 261	14
22	Santiago Ixcuintepec	12 177	6
23	Santiago Zacatepec	17 562	8
24	Santo Domingo Tepuxtepec	11 154	23
25	Totontepec Villa de Morelos	28 108	20

Source: Prepared by Author with INEGI data

78. **Target population.** 678,435 people live in the 25 municipalities (50.3% are women), of which 83.4% are indigenous peoples²⁷ (566,069 people). 92. The project will focus on the population living in poverty and extreme poverty in the States of Campeche, Chiapas and Oaxaca.

Table 12: Potential beneficiary population

STATE	POPULATION			
	TOTAL	MEN	WOMEN	INDIGENOUS PEOPLES
Campeche	108,351	54,525	53,826	96,383
Chiapas	480,411	239,245	241,166	387,174
Oaxaca	89,673	43,461	46,212	82,512
TOTAL	678,435	337,231	341,204	566,069

Source: Prepared by author with INEGI data

79. **Components.** Planned actions are aligned and complement those included in the three components of the FIDA-Sur Project:

Component 1. *Strengthening of organizational, planning, local management and climate change mitigation capacities* (US\$ 1,349,700 or 27% of GEF funds).

The component has the objective of consolidating the organizational and local management capacities of the beneficiaries to establish the basis for their own development, including those related to the monitoring of carbon sequestration. It includes:

- (i) Formulation of community development plans which can identify economic development potentialities and define strategies for the sustainable use of natural resources
- (ii) Strengthening of Organizations
 - Integration of legal documents of *ejidos* and communities and elaboration of normative instruments (Statutes/ norms and regulations)
 - Strengthening the management capacities of community authorities (planning, business management, business plans)
 - Organizational strengthening and conflict resolution facilitation
- (iii) Training of Communities and Ejidos
 - Strengthening of agroforestry, productive and commercial businesses
 - Management of their organizations
 - Citizen's rights
 - Gender
 - Environmental management
 - Formation of community-based technicians in natural resources management
 - Experience exchange (regional workshops/ events, exchange visits)
- (iv) Development of Local Technical Service Supply
 - Scholarships
 - Agreements with universities
 - Training of service providers

The GEF funds will fund the activities directed to the development of local actors' capacities to: i) raise awareness for mitigation of climate change impacts; ii) employ relevant monitoring techniques and tools to measure carbon sequestration (satellite geo-positioning systems, aerial photographs and other electronic display techniques, together with training in periodic measuring systems of carbon stocks at field level); and iii) improve management of their natural resources (agro-forestry management practices, monitoring and supervision activities, and report preparation and dissemination).

Actions to be carried out under this component are:

²⁷ Indigenous-speaking population over 5 years old. National Institute of Statistics, Geography and Informatics (INEGI)

- (v) Dissemination and training activities;
- (vi) Data collection;
- (vii) Definition of working methods and tools;
- (viii) awareness-raising;
- (ix) elaboration of agro-forestry resources management guidelines; and
- (x) monitoring and reporting.

Component 2. *Forestry projects and initiatives for carbon sequestration* (US\$ 3,359,300 or 67.2% of GEF funds)

This component will increase the potential of carbon sequestration in the Project area through the financing of forestry and agro-forestry activities. Pilot projects will prove innovative forest management experiences to maximize carbon sequestration and better use natural resources, generating lessons that contribute to their scaling-up.

The component will contribute to: (i) identifying areas with potential for carbon sequestration; (ii) investing in selected sites, and (iii) guaranteeing protection and survival of the forest cover and the maintenance of carbon sequestration in the long term, through the development and adoption of better forest management techniques. Activities include:

(i) Implementation of 75 pilot projects that start with incorporating mitigation aspects in land use planning and will be oriented at:

- the use of SFM activities to reach at least 300,000 ha of forests;
- reforestation of at least 100,000 ha, using (agro) forestry species adapted to local conditions (30% agroforestry, 70% forestry plantations);
- actions for the sustainable management of production and the processing of agro-forestry products.

These activities will complement those of FIDA-Sur directed to promote forestry businesses, from inception to implementation. It does consider: (i) forestry-related activities (timber-related: production, processing and commercialization; non-timber related: wild life and forest resources); (ii) other agroforestry businesses linked to the management and conservation of forestry resources; and (iii) other activities such as rural tourism and nature-based tourism. The focus will be on:

(ii) Formulation of the sustainable business plans of productive organizations, families and/ or economic interest groups, which are consistent with community development plans and incorporate climate change mitigation actions. Technical assistance and market development support for non-traditional agricultural and forestry products (e.g., cacao, coffee, flowers and fruits). Training and business association, and facilitation of access to rural financial services.

(iii) Investment activities, including access to physical assets and technical assistance:

- Tools and small machinery for artisanal production (textiles, handicrafts, gastronomy)
- Production and transformation equipment for timber and non-timber products (productive initiatives of the beneficiaries)
- Managerial technical assistance in support of the business plans of: working groups, committees, social enterprises, associations, etc.
- Seed capital for family micro-projects and of small producer groups
- Establishment of plantations that may generate income from PES schemes in favor of the target groups
- Establishment of demonstration plots and other production modules
- Rehabilitation and maintenance of natural resources
- Technical assistance, training and promotion of strategic alliances

(iv) Formation and consolidation community-centred alliances, i.e., between producers; between communities; between communities and private entities; etc.

Component 3. Project Management (US\$ 291,000 or 5.8% of GEF funds).

This component will support all aspects of project implementation and administration, including strategic planning and programming; results-based monitoring and evaluation; training and updating of project staff; project promotion, and knowledge management. It will also assist CONAFOR in improving its capacity to systematize monitoring, carry out analysis and disseminate carbon sequestration, in order to contribute to the achievement of PECC's objectives.

Actions to be carried out under this component are:

- (i) Knowledge management
- (ii) Operation of a monitoring and follow-up system by results
- (iii) Project dissemination
- (iv) Strength of promoters
- (v) Information gathering, recording and analysis

C. Expected environmental benefits

80. It is expected that the project will directly contribute to the following environmental benefits:

A. Climate change mitigation

81. **Reduction of GHG emissions from reduce emissions from undesirable land-use change.** The project foresees direct benefits regarding mitigation of climate change effects, through the reduction of changes in land use. It will avoid emissions through the generation of subsistence alternatives, the improvement of forest management and the use of improved production techniques. It expects to avoid deforestation in 83,000 ha due to forest management diversification and planting of 20,000 ha of new plantations each year. By the end of the Project, it is estimated that a total of 16 million tons of CO₂ will not be emitted and another 4.8 million tons will be captured through forest restoration and reforestation practices. By 2030 this will have increased to a total of approximately 82 million tons avoided emissions of CO₂ and 28 million tons of CO₂ sequestered.

82. **Increase in carbon sequestration through rehabilitation of ecosystems and degraded land.** The Project will promote: (i) the rehabilitation and the reduction of degradation in ecosystems it will be involved in, and (ii) the regulated management of marginal forest lands. Production, planting and maintenance of seedlings for an area of 20,000 ha/year is foreseen, as well as encouraging low impact forest management techniques in the communities. Land management and its direct impact on degraded lands will be strengthened by the participative process of developing 75 OTC in ejidos and communities of the 25 selected municipalities, including diagnoses, maps and internal rules. These OTC will also be strengthened by including the determination of carbon stocks in various land uses, facilitating the selection of management activities that enhance carbon sequestration and storage in forest biomass.

83. It will also increase carbon sequestration through pilot projects that will maintain and/or increase carbon stocks. For example, the establishment of 100,000 ha of forest plantations with native or naturalized species, well adapted to the planting sites, is anticipated. The objective of these plantations is primarily land rehabilitation and reduction of ecosystem degradation, not commercial forestry or tree farming systems. Final species choices will depend upon final site selection and agreements between CONAFOR and local communities. Native species will be favored when possible. Also, degradation of forest resources has been reduced in 319,000 ha through the implementation of sustainable forest management practices and conservation measures supported by PSA.

84. **Improvement of capacities and methodologies for monitoring and reporting accurately on GHG emissions.** The project will strengthen methodologies, local capacity and infrastructure to monitor carbon sequestration for use in investment planning and management operations. Other benefits come from the implementation of income-generating projects like the promotion of value chains for non-timber products, which will contribute to environmental improvement and to reduce poverty in beneficiaries. It will contribute to raise awareness in local residents and improve their ability to increase their involvement in carbon monitoring and in managing alternatives to increase their

income. To participate in this task, at least five local development agencies are expected to receive training. Furthermore, specific training courses in carbon management and monitoring will have been provided to the 24 community technicians, in accordance with internationally accepted good practice requirements.

85. In order to strengthen the conservation of forests and jungles in the long run, it will assist owners to improve their integrated management, contributing to change the cost-benefit ratio brought about by forest conversion, enabling forest maintenance for carbon sequestration and emission reduction to become an option eligible for PES. This, coupled with proper management of community forest enterprises, will boost investments in the management of carbon sequestration practices, making investments not only fundable, but also desirable and profitable, providing greater incentives to owners for the conservation of their forest resources.

86. The project will assist *ejidos* and communities in the establishment of baseline data on forest cover and biomass, control systems, the distribution of benefits and agreements on the management capacity needed to obtain access to PES mechanisms. This added income flow will be especially important for agricultural units with low potential for income generating activities to invest in improvements to forest management practices.

87. Preliminary analyses identified the strategic importance of selected municipalities to reflect geographic and ecological factors and the cultural differences that result in degradation trends, which will enable the project to contribute to the use of alternative mechanisms for strengthening the municipalities so that they can be taken into account for REDD activities.

88. The project will assist in testing elements that could optimize the needs and care of local populations and the Government for the development of Mexico's REDD+ National Strategy, to expand the experience of onsite activities, and using as much as possible national methodologies.

B. Biodiversity conservation

89. One of the indirect associated benefits is that it will contribute to biodiversity conservation by using sustainable forest management actions. Reducing degradation or forest logging involves keeping their functional integrity, thus facilitating seed dispersal processes and natural regeneration. Collateral damage due to the extraction of forest materials can be controlled through the use of reduced impact land-use techniques, promoting regeneration rates and avoiding species' structural and richness erosion. Complementarily, the establishment of 22 million seedlings of native (mainly *Cedrela* and *Swietenia*) and naturalized (*Pinus* spp, for example) species to achieve the recovery of forest cover gives the opportunity to increase connectivity of isolated forests, offering new transit habitat to fauna and thus promoting the stability of their population.

C. Adaptation to climate change

90. Indirectly, the project will also contribute to increase climate change adaptation through management improvement actions in the territories. Training activities will raise awareness in people regarding climate change and its effects. Learning and implementation of actions beyond their demonstrative level will be strengthened, through the exchange of experiences between communities. The increase in the resilience of ecosystems, by reducing degradation and illegal logging and through biodiversity conservation, will allow them to deal with the effects of floods, droughts, fires and pests with less damage (or to recover more quickly). The selection of local and naturalized species for planting in degraded areas increases the possibility of survival to possible future climatic conditions.

91. Table 13 below summarizes the environmental benefits of the Project (see Annex 4 for complete data on indicators, baselines, and measurement methods and procedures):

Table 13: Expected environmental benefits

Environmental Benefits	Key Indicators
A. Climate Change Mitigation	
Reduction of GHG emissions from reduce emissions from undesirable land-use change	Tons of CO ₂ e not emitted or sequestered. Deforestation rate. Level of forest degradation.
Carbon sequestration through sustainable forest management and rehabilitation of ecosystems and degraded land	Forest carbon density. Hectares of forests and jungles under conservation and rehabilitation Hectares of forest plantations established.
Improvement of capacities and methodologies for monitoring and reporting accurately on GHG emissions	Number of government support applications submitted and, subsequently approved by communities. Number of business initiatives that are generated. Number of OTCs prepared. Number of local people trained in measurement techniques and carbon monitoring. Number of management plans incorporating improved forest management techniques approved according to existing legislation and technical regulations.
B. Biodiversity Conservation (indirect)	Number of tree species found in inventories. Hectares of forest cover and their spatial distribution in the Project area.
C. Climate Change Adaptation (indirect)	Resilience of livelihoods of local populations.

D. Incremental reasoning

92. **Baseline scenario.** The Mexican Government has mobilized significant amounts of resources to promote development and reduce poverty in the rural sector. In fact, since the end of the 1990's, community forestry has been part of this strategy. However, these supports have not taken into consideration carbon sequestration, GHG reduction, and/or the adaptation of the local population to climate change impacts.

93. Although the national deforestation rate decreased from 0.5 a 0.2% between 1990 and 2010, this rate is still high in Project states – up to 4.8% in Chiapas. Excessive logging, poor management of forest resources and the difficulty in accessing Government support, are widespread in the Project's action area. These elements threaten the diversity of jungles and forests that contribute to national timber production, provide goods to the local population, and govern the provision of global environmental services such as maintenance of diversity and carbon sequestration. Furthermore, Community Land-Use Plans for ejidos and communities do not consider issues related to carbon sequestration, so there are no mechanisms or incentives to explicitly consider mitigation measures to climate change.

94. **Alternative scenario.** The Project has been designed to fill those gaps by including climate change considerations into the rural development programs, and by complementing CONAFOR's work in this topic.

95. Considering forest management and community forestry conditions in the country, the Project will contribute to implement the national REDD+ strategy and to reach the PECC's emission mitigation goal of 260.4 mtCO₂ for the 2008-2012 period, of which 46.2% correspond to the reduction of emissions in the forest sector (120.36 MtCO₂). During its 5-year implementation period, the Project aims at preparing communities for the mitigation of up to 20.8 million tCO₂eq, including monitoring actions. Therefore, the activities proposed in this Project have the potential to contribute to 7.2% of the reduction in the forest by 2012.

96. GEF's contribution will: (i) ensure that forest activities generate measurable benefits for carbon sequestration and emission reduction; (ii) identify investment mechanisms in carbon sequestration actions; (iii) ensure that stakeholders have technical capacity and tools to identify, prioritize, invest and monitor SFM activities; and (iv) integrate, at the local level, a carbon sequestration monitoring and evaluation system.

97. The Project will contribute to improve the use of forest ecosystems in an area of, at least, 50,000 ha. It will help the conservation of forests and jungles that are critical to mitigate the impact of climate change, and will generate lessons for the REDD+ national initiative, especially in topics related to the voluntary market, monitoring, reporting, verification, managed forests, certification and degradation dynamics.

98. Additionally, the Project will strengthen national and local capacities to identify, prioritize and support sequestration, and prevent the GHG emission related to community forestry activities, while working directly with communities to build capacity in the application of technical instruments to find income alternatives. It will also produce validated information on carbon sequestration in various areas with different soil uses, through systematization and dissemination actions of Component No. 3.

99. Potentially, it expects to generate income through PES schemes from the third year of operations, for over US\$15 million/year at the end of the Project, provided it meets its objectives in terms of (i) territorial planning; (ii) local arrangements for the distribution of benefits (governance and fund management) and operation of its monitoring system.

100. Finally, the Project will contribute with a range of local benefits: the development of social capital, technical and management capacity, job creation, increase in household income, local infrastructure improvement. Additional information on this topic is found in Annex 4.

101. The positive results and expected environmental benefits would not be achieved without GEF support, as neither the Government, nor IFAD, are planning to invest or cofinance implementation of these activities, especially those related to monitoring, reporting and organization for climate change mitigation. The alliance with the GEF allows a more productive and synergetic work, with both environmental and social results.

E. Alignment with national policies

102. The Project will promote activities that will facilitate the formulation and later local implementation of the national REDD+ strategy, following the recently announced REDD+ vision considering local and national causes of deforestation and degradation. It will also facilitate the implementation of the LGDFS²⁸, and seek to articulate locally policies and activities outside the forestry sector. Land use planning, awareness-raising processes and regulations, will form the basis to implement integrated proposals for forest resource management and its ecosystem services, emphasizing carbon sequestration and storage²⁹.

103. CONAFOR is currently channeling financing to ejidos/communities with a weak follow-up, except for PROCYMAF, whose operational staff act (*promotores*) as intermediaries between ejidos/communities and the Program. Quality of technical field services and CONAFOR's supervision are relevant elements of CONAFOR's assistance. The Project will contribute to the specialization of technical services on the subject, form groups of community technicians to take ownership of the process, and provide training and knowledge to CONAFOR's operational staff to carry out monitoring effectively.

104. The Project will support the ENCC and PECC, which will designate priority climate change mitigation actions in the forestry sector. In particular, the PECC establishes that SFM initiatives and reforestation strengthen forest ecosystems, making them more resilient to environmental change. It will also contribute to achieve national objectives 8 (environmental sustainability) and 10 (GHG emission reduction). Finally, the Project will contribute to achieving the objectives of part of the 2007-2012 National Development Plan, component 4, 4.1 on climate change.

²⁸ Promoted by the FMS, the development of environmental goods and services, decentralization of capacities and management actions and the development of forestry producer organizations (Merino et al 2008).

²⁹ Mexico submitted its REDD+ (RPP) preparation proposal to the World Bank's Forest Carbon Partnership Facility (FCPF)²⁹. Comments to the proposal point out some of the issues that hinder the implementation of the forestry policy at the local level: its national approach, not State-specific (i.e., deforestation causes) and much less by community; the lack of connection between biophysical and socioeconomic information; strong sectorization and few actions outside the forests to reduce deforestation and degradation; and a strategy with little relationship to direct and underlying causes of deforestation and degradation, and with a fund transfer approach to actors, not discussing necessary actions to achieve emission reduction.

105. The Project is aligned with the priorities of environmental institutions in Mexico. SEMARNAT, for example, through CONAFOR, promotes sustainable forest management and payment for environmental services, incorporating payment for carbon sequestration. Also, it will support priorities established in CONAFOR's 2007-2012 IFP, for the conservation and sustainable use of forest resources. The strategy considers the implementation of pilot experiences within REDD's framework at the local level (ejidos/communities) to generate lessons that would help build a national strategy as of 2012.

106. For mitigation proposals to be economically feasible, it will be necessary to take into account sustainability criteria in the selection of implementation options, and to carry out a participative analysis on how they contribute to reducing vulnerability of ejidos/communities to climate change. IUCN, IISD, SEI-US and Inter-cooperation developed a tool to support local decision-making that links climate-related risks and population livelihoods, which can help define appropriate adaptation strategies with broad social support. This tool³⁰, adapted to the Project, will be included in the Operational Manual.

107. Finally, the Project will facilitate the incorporation of climate change-oriented aspects in local territorial planning. It will support planning, and training of forest communitarian technicians to implement a monitoring, reporting and verification plan of carbon stocks at the ejido or community level, and the exchange of experiences between communities and/or ejidos. It will be important to build on GSC or Plan Vivo territorial planning experiences³¹, extending carbon accounting to all land uses.

Contribution to Mexico's mitigation priorities

108. Considering forest management and community forestry conditions in the country, the GEF project will be linked to GT-REDD, since PECC has an emission mitigation goal of 260.4 mtCO₂ for the 2008-2012 period, of which 46.2% correspond to the reduction of emissions in the forest sector (120.36 MtCO₂). As mentioned above, the activities proposed in this project have the potential to contribute to 7.2% of this reduction by 2012.

109. SFM incorporation is crucial in the REDD+ scheme as a strategic axe of forest policy, given its effectiveness in reducing deforestation rates, as well as to achieve greater carbon sequestration, economic development and social capital strengthening, which would give the program a real sustainability over time. The project is designed to achieve 0% deforestation rates by 2020 in communities that otherwise would have been difficult to align with the 0% deforestation statement of the national government.

F. Alignment with GEF priorities

110. The proposed Project is aligned with the overall priorities of the GEF-4 both regarding climate change mitigation (reducing emissions), as well as the sustainable management of forests.

111. Regarding mitigation, the Project will directly support priorities of the Climate Change Focal Area, specifically the implementation of Strategic Objective 7b, *to reduce GHG emissions from land use, land use change, and forestry*. The Project responds to Strategic Program 6 (*Management of Land Use, Land-Use Change and Forestry – LULUCF- as a Means to Protect Carbon Stocks and Reduce GHG Emissions*), by helping identify and implement promotion policies and practices of carbon sequestration and reducing GHG emissions from the forestry sector set in place by the Mexican Government, promoting local capacities and carrying out sustainable investments in forest sites of the three States.

112. The Project is aligned with the recommendations of GEF's Strategic Framework for Sustainable Forest Management, since it will promote the sustainable management of forest resources in the three

³⁰ Crystal Tool, available at http://www.iisd.org/security/es/resilience/climate_phase2.asp

³¹ *Plan Vivo* is a system created to design and operate projects for Payment of Environmental Services (PSA, by its Spanish acronym) in developing countries. Main participants in the *Plan Vivo* projects are small-size farmers and communities that depend on forests. They design viable plans to work and organize their land (live plans), which combine traditional use with additional and improved activities, thus fostering the creation, restoration and protection of natural forests and agro-forestry. Once the projects comply with the minimum bases of the *Plan Vivo* System and can sell their carbon credits, these are financed through proceeds from the sale of *Plan Vivo* Certificates.

States of southern Mexico, as a way to contribute to the reduction of GHG emissions derived from CUTF and to improve carbon sequestration in those areas. Project interventions are also compliant with recommendations for use of GEF financing, and they do not intend to promote establishment of commercial or industrial timber plantations, nor to create carbon credits for future carbon trading.

G. Alignment with IFAD priorities

113. IFAD Strategic Framework for 2007-2010 gives priority to the sustainable use of natural resources as an effective tool to fight poverty. To consolidate both aspects and complement the Guidelines for the Evaluation of Environmental and Social Impact, IFAD carried out the following actions in 2010: (i) it created the Environmental and Climate Change Division; and (ii) approved its Climate Change Strategy (CCS), which prioritizes mitigation measures that may have co-benefits for small-size farmers, either through financial mechanisms or through rewards and payments for environmental services. The Executive Board of IFAD has just approved its Environmental and Natural Resources management Policy (ENRMP) (May 2011). The present proposal is fully consistent, and aligned with, these two new IFAD reference documents (CCS and ENRMP).

114. IFAD's support to climate change mitigation is focused on priorities related to the rural sector (agricultural, forestry and livestock). The Fund has considerable experience in four specific areas: (i) improvement of agricultural technology, (ii) sustainable management of natural resources by baseline organizations and local communities, (iii) diversification of livelihoods, and (iv) prevention and mitigation of disasters caused by natural factors. Given that agriculture has been identified as a priority sector in most national Communications to the UNFCCC, IFAD can play a crucial role in climate change mitigation, improving soil use and reducing land use changes. IFAD also promotes greater participation of the local population.

115. IFAD's priority and its cooperation with the GEF is to focus on strengthening existing linkages between poverty reduction, sustainable management and climate change. Most IFAD-supported projects are aimed at the poorest groups in rural ecologically-fragile and marginal areas, both of which have a higher risk of climate change impacts. For this, IFAD is starting to incorporate in its programs, in an integrated manner, both adaptation and mitigation priorities in order to reduce climate change risks and consequences for the most vulnerable groups.

H. Integration with FIDA-Sur

116. The GEF project will complement the FIDA-Sur project with climate change mitigation activities (carbon sequestration and reduction of GHG emissions by land use, changes in land use and forestry). The project will seek direct benefits regarding mitigation of climate change, through the improvement of land and forest use.

117. Both interventions, FIDA-Sur and the GEF proposal, form an integrated project with a common intervention strategy that will thus be executed in a complementary manner, with shared management, using the same Operations Manual and to be supervised jointly by IFAD. Section IV below provides full details on the implementation arrangements.

I. Coordination and complementarity with other activities

118. As part of CONAFOR's offer to achieve a sustainable forest management, the Project is aligned with its Institutional Forestry Program for 2007-2012 and with SEMARNAT's environmental care policy and strategy. Therefore, it will maintain close coordination and information sharing internally in CONAFOR and with SEMARNAT. It will also liaise closely with other participating institutions nationwide (National Ecology Institute) and at the State level (Campeche: Rural Development Secretariat and Environment and Sustainable Land Use Secretariat; Chiapas: Environment, Housing and Natural History Secretariat and Sustainable Forestry Commission; and Oaxaca: State Institute of Ecology and Rural Development Secretariat).

119. The Project will promote partnerships between these sector institutions and other institutions with territorial presence, such as the Ministry of Agriculture, Rural Development, Fisheries and Food; the Ministry of Social Development; the Land Reform Secretariat; and the National Commission for the Development of Indigenous Peoples.

120. Moreover, considering international agreements involving Climate Change and recent results of the COP 16 held in Cancun, Mexico, the country has formulated a National REDD+ Vision (*Mexico's REDD+ Vision. Towards a National Strategy*) as a basis for its REDD+ strategy to be developed and aimed at coordinating all related management activities involving an important number of Government agencies (Ministry of Social Development, Ministry of Energy, Ministry of Administrative and Expenditure Development, Ministry of the Interior, Ministry of Health, Ministry of Transportation & Communications, Ministry of Finance, Ministry of Agriculture, Rural Development, Fisheries and Food, Ministry of Foreign Affairs, Tourism Secretariat and the National Institute of Geography & Statistics).

121. This strategy will facilitate the harmonization of institutional interventions, and will promote a common vision to facilitate implementation and complement actions, mobilize financial and technical resources and, above all, increase the effectiveness of interventions to potentially duplicate and/or upscale Project actions.

122. The development of the national REDD+ Strategy is also an incentive for international financing institutions, such as the World Bank, Inter-American Development Bank, GEF and IFAD, among others, as well as national and international civil associations concerned with topics such as environmental change, biodiversity, environmental services, sustainable management of natural resources and social development, to show interest in contributing with technical and financial resources to consolidate Project objectives.

123. Considering that IFAD is a key partner oriented to the reduction of rural poverty and the achievement of food security in developing countries, who currently is promoting the development of small-scale irrigation, land management, agricultural research and training, agricultural trade and rural microenterprise financing, this is an excellent way to promote the inclusion of relevant actions to adapt and mitigate climate change impacts in the geographic areas and vulnerable populations of these countries. The results and lessons articulated in the Project will be critical to export this experience to other countries.

124. For its part, the Project opens a wide field of action for the GEF in the Mexican forestry sector and, nationwide, to contribute to Government's efforts in its national strategy on climate change, especially considering two COP 16 agreements (i) the creation of a Green Fund; and, (ii) the adoption of mechanisms to reduce emissions caused by deforestation and soil degradation, with direct economic resources to forestry and indigenous communities, for the preservation of their forests and jungles.

125. In addition, the Project will add value and become strengthened from the coordination with other GEF projects on climate change and on biodiversity conservation³². For example, GEF supports for climate change are the following:

- GEF-ID/12: Thermal and solar power plant, executed by the Federal Electricity Commission and Independent Electricity Producers, aimed at demonstrating and encouraging duplication of power generation technology in Mexico, through Integrated Solar and Combined-Cycle Systems, to help reduce global GHG emissions. Implementation period: 2006-2011;
- GEF-ID/1900: Large-Scale Renewable Energy Project, executed by the Ministry of Energy, in order to accelerate commercialization of renewable energy applications to reduce GHG and other emissions while responding to the growing demand for energy and to the process of diversification in energy generation. Implementation period: 2006-2014.
- GEF-ID/2611: Integrated energy services for small rural areas of Mexico, executed by the Ministry of Energy in the States of Oaxaca, Chiapas, Guerrero and Veracruz, to increase access, especially of indigenous peoples, to integrated energy-efficient and sustainable services in rural areas of Mexico. (approved in 2008).

³² Some of the supports regarding biodiversity are: (i) Environmental Services Project (GEF-ID:2443) executed by CONAFOR; (II); Sacred Orchids of Chiapas. Conservation of cultural and religious values (GEF-ID: 2896), executed by Pronatura Chiapas, A.C.; and (iii) Regional Project to build capacity for compliance of the Cartagena Protocol on bio-technology security (GEF-ID:2689), executed in Brazil, Colombia, Costa Rica, Mexico and Peru.

- GEF-D/3142: PV cells project, by the Federal Electricity Commission. It aims at establishing basic conditions to facilitate the inclusion of photovoltaic systems in the market. Implementation period: 2007-2011.

- GEF-D/3537: Rural Development in Mexico, by the Ministry of Agriculture, Rural Development, Fisheries and Food/Shared-Risk Trust, aimed at promoting the adoption by agro-industries of CO₂ emission-reduction technologies. (Endorsed in 2009).

- GEF-ID/3159: Adaptation to climate change effects in coastal wetlands. Its objective is to promote adaptation of coastal wetlands of the Gulf of Mexico to climate change, through the application of measures that provide information on the costs and benefits of alternative approaches to reduce vulnerability. It will also evaluate the global impact of climate change on national water resource planning, including the identification of response options. The Ministry of Environment and Natural Resources and the National Ecology Institute are in charge of this activity. (Endorsed in 2009).

- GEF-ID/4116: Efficient Lighting and Appliances Project, by the Ministry of Energy, the Industrial Development Bank and the National Works and Service Bank, to promote an efficient energy use in Mexico and mitigate climate change by increasing the use of power-efficient technologies. (Endorsed in 2010. Implementation period: 2010-2015).

- GEF-ID/4229: Fifth national communication to the United Nations Framework Convention on Climate Change, by the Ministry of Environment and Natural Resources/National Ecology Institute, to assist the Government of Mexico in strengthening its capacity to design public policies, including mitigation and adaptation measures, and assess the environmental, social and economic impacts of their enforcement. Approved by the Council in 2010.

126. The formulation of the current Project has been carried out in close coordination with the FIDA-Sur Project, since they are fully complementary and will be implemented through a common Operational Manual in order for their operations to jointly contribute to the same general objectives.

127. Additional to the environmental benefits, the joint performance will enable: (1) the development of a local operational platform of actions to monitor carbon and mitigate the impacts of climate change; (2) complement the forestry sector's care policy promoted by CONAFOR; (3) the promotion of an inclusive model in marginal rural areas with vulnerable populations; (4) the development of mechanisms to include carbon sequestration practices in forestry and agro-forestry activities; and (5) supporting knowledge management and carbon supervision.

J. Social participation

128. Social participation in Project implementation will be assured by: (i) operating a permanent dissemination program; (ii) conducting regional seminars regularly; (iii) strengthening the organization of community beneficiaries through training in management, organization and SFM aspects; strengthening planning, use and industrialization of forest products; and (iv) above all, working directly with producers, many of whom belong to indigenous peoples.

129. These aspects will be aligned with the care model for ejidos and communities institutionalized by CONAFOR and implemented by PROCYMAF for over a decade, which has been considered as one of the most relevant factors for the achievement of results. Participation of regional promoters (people originating from ejidos/communities), permanent regional participation spaces³³, and strengthening of community-decision entities, stand out in the model (Rodriguez, 2007).

130. The Project will promote the creation of specialized technical teams with members of beneficiary communities, to gather data on forest carbon. It is expected that at least six specialized technical

³³ It is an element that contributes to a pattern of transparent monitoring for the operation of projects in the field, that has the following characteristics:

- a) Promotes the participation of commissioners in office legitimately supported by their general assemblies;
- b) Operates from a Council of Commissioners composed of presidents.
- c) Is a non-political space (no majors involved, and promotion of a political party is not sought).
- d) It is based on the habits and customs system.
- e) Practical arrangements are generated for all participants.
- f) It encourages a regional and horizontal integration among participants.

teams will be created (two per State), who will assess which sites will be defined as the 75 pilot areas assisted by the Project. Each technical team will include 4 people, for a total of 24 technicians trained as part of the Project. It must be pointed out that this training will be additional to the training program for forestry community technicians operated by CONAFOR and which will be supported by the FIDA-Sur Project.

131. Local technical (meaning community-based) teams will be responsible for field measurements and, in coordination with GSC promoters, will prepare the first report filter. The data will then be uploaded to the system implemented by CONAFOR in State management agencies and sent to the Community Forestry Management to prepare the report for the Information and Monitoring System that will be used.

K. Gender approach

132. The role and social inter-relations of men and women within the economic and social and cultural contexts of agricultural units where the Project will operate must be emphasized, particularly at the women organizations level and by the social benefits that they will provide to the agricultural and household units. Although in most cases women do not have land rights, activities of the community, women organizations and women groups such as home gardens, nurseries, craft projects related to forestry, etc., will be supported by the Project, in order to promote women's empowerment and gender equality.

133. The Project recognizes that, in general, women are still marginalized in decisions related to the use and development of natural resources and, thus, from the benefits derived thereof, and it includes gender mainstreaming as part of the Project's global strategy besides being a reference point to help improve gender equity in the forestry sub-sector as a result of its intervention.

134. Therefore, its gender strategy defines specific actions to incorporate this approach in all Project aspects (Main Text, Project Approach) and will be included in the Manual for Operations. For example, to strengthen the GSC, the Project recommends the hiring of a gender expert as part of the group of technicians; one of the technicians at the State level could also be a woman and/or have experience in gender.

135. The project will promote this approach in the case of productive activities and its inclusion in business plans. They will maintain close coordination with institutions that have this approach. The project will consider specific actions of training in the skills of women, but also for other members of the localities and groups so that they raise in this regard. Were defined, from discussions with various officials - men and women-, the PROCYMAF operators, and suppliers of technical services, men and women, some criteria to recognize the role and performance of women in the project, on charges of driving activities, and in the coordination or direction.

136. This Project includes training actions not only for women, but also for other community and group members, in order to raise their awareness on this issue. Some of the indicators that have been defined to address this issue are: i) prioritization of women needs and interests; ii) women's contribution to the community, group, business, office, etc.; iii) respect for women's decisions; iv) obstacles to operate the concept; v) modification of unequal relationships; vi) extent and active participation of women in decision-making; vii) percentage of women in community offices, initiatives, groups, etc.; viii) Percentage of improvement in the social and economic situation of women.

137. In order to achieve the above, the Project will support: i) the establishment of extension and training programs for women; ii) training for operational technical staff in order to sensitize them to the needs and specific problems of women and to improve their ability to implement appropriate plans and projects; iii) activities to increase the number of women who offer technical services; and iv) efforts to identify and eliminate restrictions that limit the participation of women in training programs related to supported activities.

138. To ensure that gender mainstreaming capacities are institutionalized, the Project will provide training to those responsible for carrying out operational and monitoring activities. Training will be mainly oriented to linkages between gender and forest management topics, biodiversity conservation, certification, carbon sequestration, REDD+ activities, distribution of benefits, and incorporation of

gender targets in field work. The Project will encourage communities to carry out participatory assessments in topics involving women, such as the division of labor in forest planning, management, processing, joint activities of men and women in the community, as well as issues on climate change and impact on community life and forests, and the distribution of forest benefits.

L. Targeting

139. The project approach on targeting is based on these principles:

- Promote the inclusion of young people and women in conditions of equity and acquiring capabilities to develop economic activities, particularly in the implementation of plans of specific training to encourage women and young people and develop innovative economic initiatives.
- Form community technicians with management, organization and planning capacity to define and implement the local development plan to promote the development of the beneficiaries.
- The promotion of the project includes visit to the beneficiary communities to present and disseminate the purpose of the project, its objectives and organizational arrangements, including the representatives of all groups of intended beneficiaries, especially women, and young. The project will prepare materials and appropriate messages to disseminate its purpose through mass media such as radio, newspapers, television and the Internet. When the situation warrants it disclosure it will be in the indigenous languages.

IV. IMPLEMENTATION AND INSTITUTIONAL ARRANGEMENTS

140. **Executing agency.** CONAFOR will be the executing agency, through the General Production and Productivity Coordination (CGPP) and its Community Forest Management Office (GSC), which has extensive experience in managing programs financed by international agencies (World Bank, IFAD, GEF, USAID, the Ford Foundation, WWF, CIFOR, etc.) and in the work with ejidos and communities in the forests.

141. CGPP, through GSC, will have the responsibility of executing the combined FIDA-Sur project in coordination with other CONAFOR operational areas, as well as establishing links with national institutions present in the intervention area and those linked to climate change in the country. It will also be IFAD's counterpart. Project operations in the States will be carried out through CONAFOR's State agencies.

142. The functions of the operating team, detailed in the Manual of Operations, are, among other, the following:

- (i) integrate and consolidate State programmes
- (ii) prepare annually the Annual Work Programme and Budget (AWP&B), and
- (iii) monitor its implementation.

143. **Project staff and operating team.** The FIDA-Sur Project will hire a team of specialists to operate the Project (see Annex 2A). Given the particularity of climate change activities included in this proposal, it will hire an additional specialist in each State (three in total), to complement GSC operational teams in the States where the Project will be implemented. The suggested profile for the specialists to be hired is included in Annex 7; it also recommends criteria for the GSC operational team, in order to achieve Project objectives. The Grant Agreement for GEF resources should agree on: (i) the profile of professionals to be hired; (ii) keeping the task force with appropriate functions, structure and staff, satisfactory for IFAD and GEF; and (iii) the need for a flow of timely information on any changes to the structure agreed between GoM and IFAD/GEF.

144. **Manual of Operations.** Whereas the use of GEF resources will follow the guidelines established for the FIDA-Sur Project, only one Operational Manual will be used in order to maintain Project comprehensiveness. This Manual will specify the use of the various funding sources. Thus, actions and specific roles of the operating team will be included in FIDA-Sur's Operational Manual, the first version of which was approved by IFAD during relevant loan negotiations; only the clauses related to activities assisted by GEF will be incorporated into the Manual.

145. **Coordination intra-CONAFOR.** GSC, through the operational team, will implement the Project in close coordination with other CONAFOR areas; for example, the Community Forest Development Program (PROCYMAF) and the Community Program for Biodiversity Conservation (COINBIO) are worth mentioning. These programs have placed the Commission in a prominent place for community management of forest resources, both at the national and international levels. They provide experiences, information and useful knowledge of project management in the sector and with groups of indigenous populations.

146. **Coordination with other institutions.** Coordination will also be carried out with other projects and institutions (governmental and non-governmental), that work with ejidos/communities, such as (i) Project: 3637 GEF Agency Project ID: 4015, "Transforming management of community production forests that are rich in biodiversity, through the creation of national capacities for the use of market-based instruments", recently formalized between Mexico and GEF, and which operates in Chihuahua, Durango, Jalisco, Michoacán, Oaxaca, Guerrero, Campeche and Quintana Roo; (ii) a recently-formalized project with GEF: "Incorporating Ecosystem and Biodiversity Systems in the Chiapas Micro-basin Scale", to be implemented by Conservation International in coordination with the Sustainable Forest Commission of the State of Chiapas (COFOSECH), the National Commission of Protected Natural Areas (CONANP), and the Environment, Housing and Natural History Secretariat of Chiapas.

147. **Climate Change Inter-secretarial Commission (CICC).** To implement the PECC, the Government created the Climate Change Inter-secretarial Commission (CICC)³⁴ for the coordination of activities carried out by Federal Public Administration offices and entities on the formulation and implementation of national policies for prevention and mitigation of GHG emissions, adaptation to climate change effects and, in general, to promote the development of climate change programs and strategies related to the compliance of commitments made by Mexico in the Framework Convention on Climate Change.

148. One of CICC's responsibilities is to create inter-secretarial work teams, such as the Mexican Committee for Emission Reduction and GHG Sequestration Projects (COMEGEI)³⁵ and the Consultative Council on Climate Change (C4)³⁶. In addition, work teams (GT, by its Spanish acronym) have been created to address CC policies: Mitigation Policies (GT-MITIG); Reduction of Emissions due to Deforestation and Forest Degradation (GT-REDD); Adaptation Policies (GT-ADAPT); Monitoring of the compliance of actions and goals by PECC (GT-PECC); International Policies (GT-INT); GT-COMEGEI; and Working Table with the Private Sector (MT-PRIV).

149. **Ejidos and communities.** The main partners of the Project are the ejidos/communities; therefore the Project will particularly consider the dynamics of their organization, uses and customs, as well as decisions arising from these units.

150. **Other stakeholders.** In recent years, the organization of national forest producers has had greater momentum. In addition to local organization, the Government has moved towards regional organization through the integration of UMAFORES, that constitute the national territorial unit for the planning and use of forest resources (LGDFS, Article 112). The ARS have been created from this regional structure; ARS group organized producers in several regions of the country and represent a valuable institutional asset for the implementation of the national forestry policy. This type of community organization stands out in Oaxaca, one of the States where the Project will be implemented.

³⁴ The CICC is formed by SEMARNAT, SAGARPA, SCT, SEDESOL, SE, SENER, SRE, and SHCP

³⁵ Article 29 of the Internal Regulations of the Inter-secretarial Climate Change Commission.

³⁶ Article 35 of the Internal Regulations of the Inter-secretarial Climate Change Commission.

V. MONITORING AND SUPERVISION

A. Monitoring of carbon stocks

151. Carbon monitoring is crucial to show progress in the reduction of GHG emissions or in carbon sequestration. It will complement the monitoring of other issues, such as the compliance of project activities. This monitoring will have six components: (for a better description of the process that will be followed, see Working Paper 4):

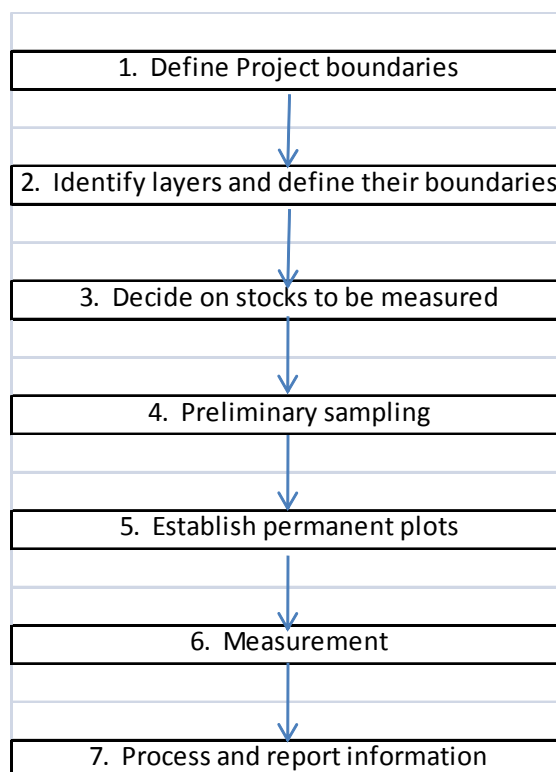
- i. To identify the Project area and possible leakage areas.
- ii. To estimate the amount of carbon currently present in the various components (land use) of the landscape, to determine action areas and those that will require monitoring in the field. As a first approach, IPCC references can be used.
- iii. To project carbon streams at the management unit level and according to the proposed land use (with and without the project; this is often based on information from past deforestation or derived from a deforestation risk factor; there is software, such as CO₂Fix³⁷, suitable to make these projections, depending on the quantity of information available at the beginning of the Project).
- iv. To periodically measure changes in carbon stocks, in terms of area or density. Permanent Measuring Plots (PPM, for its Spanish acronym) are currently used, but higher-resolution remote sensing with additional bands or radar images or LIDAR, may be used once enough field data are collected and allow for calibration of remote sensing tools.
- v. To periodically analyze progress from the baseline, the projected flow and commitments for carbon reduction or sequestration.
- vi. To integrate in the management plan, results and their implications for natural resources management.

152. The Project will promote local carbon monitoring from community forest inventories. It will group and analyze monitoring results at the Federal and State levels. In other words, monitoring will also be standardized and, in addition to complying with local needs, will be preferably compatible and complementary to INFyS.

153. The methodology for community forest inventories will include seven steps (Figure 15). Details of the operation of this methodology are presented in Annex 8.

³⁷ Program developed by Alterra and several partners in the Netherlands. UNAM, Ecosur and CATIE participated from Latin America in the last version of the model (3.1). Available free of charge in <http://www.efi.fi/projects/casfor/>.

Figure 11: Community Forest Inventories as part of a SFM carbon stock system in selected municipalities of Campeche, Chiapas and Oaxaca



154. See Working Paper 4 for details on the **carbon monitoring methodology**.

B. IFAD Project Supervision

1. Information System

155. For the FIDA-Sur Project, CONAFOR will: a) establish and maintain an adequate information management system, in accordance with the Guide to monitoring and evaluation of IFAD projects; b) collect data and other relevant information (including information requested by IFAD) to monitor the Project and verify the achievement of its goals; and c) retain this information during Project execution and, at least, during the following ten (10) years; when requested, it shall make it available to IFAD (General Conditions, Section 8.02).

2. Progress reports

156. CONAFOR will submit to IFAD bi-annual progress reports, containing at least: (i) the Project's quantitative and qualitative progress and the achievement of its objectives; (ii) problems encountered during the period under review; (iii) measures adopted or proposed to solve the problems and (iv) the proposed work program and progress expected in the next reporting period.

3. Direct supervision

157. IFAD will carry out two supervision missions per year, in accordance with the provisions issued by IFAD's Board of Directors in September, 2008.

4. *Mid-term review*

158. IFAD will conduct a Mid-term review mission no later than half way of the implementation period. This review will analyze achievement of Project objectives, constraints and challenges encountered and recommend the necessary reorientation to achieve such objectives and to eliminate those constraints and challenges.

159. CONAFOR will make sure that recommendations from the mid-term review are implemented to IFAD's satisfaction, within the period specified for that purpose.

5. *Final Project Report*

160. Upon completion of the Project, CONAFOR will submit a report to IFAD on Project execution, including: (i) Project costs and benefits; (ii) achievement of its objectives; (iii) compliance by CONAFOR, Project parties and IFAD of their respective obligations; and (iv) lessons learned from implementation.

VI. COSTS AND FINANCING

161. **Project costs and financing.** The total cost of the combined FIDA-Sur Project is US 18,498,693 dollars, including contributions from beneficiaries. The GEF will contribute with US 5,000,000 dollars (27 % of total project cost). IFAD will contribute with US 5,000,000 dollars through a loan (27 % of total investment); CONAFOR will contribute with US 7,039,358 dollars (38 %), and the beneficiaries, US 1,459,335 dollars (8 % of the overall investment) (table 14).

Table 14: Total costs and financial sources (in US\$ million)

México				
Desarrollo Comunitario Forestal en los Estados del Sur, (Campeche, Chiapas y Oaxaca)				
Financing Plan				
(US\$)				
	Divisa	Local	Total	Porcentaje
Gobierno de México	-	7 039 358	7 039 358	38.1
FIDA	16 932	4 983 068	5 000 000	27.0
GEF	120 350	4 879 650	5 000 000	27.0
Beneficiarios del Proyecto	-	1 459 335	1 459 335	7.9
Total	137 282	18 361 411	18 498 693	100.0

162. **Project costs by component and financier.** The combined FIDA-Sur project will be organized into three components. Costs by component are as follows: (a) Strengthening of organizational, planning, local management and climate change mitigation capacities will cost US\$ 8,618,054 (or 50.6 % of total project cost); (b) Forestry projects and initiatives for carbon sequestration will cost US\$ 6,998,902 (41 % of total costs), and (c) Project Management, a total of US\$ 1,422,400 or 8.3 % of total project cost) (table 15).

Table 15: Costs by component and financial sources (in US\$ million)

Mexico							
MITIGATING CLIMATE CHANGE THROUGH SUSTAINABLE FOREST MANAGEMENT AND CAPACITY BUILDING IN THE SOUTHERN STATES							
Components by Financiers							
(US\$)							
Component	Gobierno Mexico		IFAD		GEF		Total
	Amount	%	Amount	%	Amount	%	Amount %
1. Strengthening of organizational, planning, local management and climate change mitigation capacities	4 588 765	53.25%	2 679 588	31.09%	1 349 700	15.66%	8 618 054 50.58%
2. Forestry projects and initiatives for carbon sequestration	1 691 526	24.17%	1 948 077	27.83%	3 359 300	48.00%	6 998 903 41.07%
3. Project Management	759 065	53.37%	372 335	26.18%	291 000	20.46%	1 422 400 8.35%
Total Project Costs	7 039 356	41.31%	5 000 000	29.34%	5 000 000	29.34%	17 039 356 100.00%

163. GEF project will contribute to the three components as follows: (a) Activities under component for *Strengthening of organizational, planning, local management and climate change mitigation capacities* will absorb US\$ 1,349,700 from GEF resources (or 27% of total GEF grant); (b) *Forestry projects and initiatives for carbon sequestration* will cost US\$ 3,359,300 (67.2% of GEF grant), and (c) *Project Management* will cost US\$ 291,000 (only 5.8% of total GEF grant resources).

164. **Flow of funds.** The flow of funds is described in Annex 5.

VII. SUSTAINABILITY AND RISKS

A. Sustainability

165. It is expected that the proposed project will avoid or capture up to 20.8 million tons of CO₂ in its five years of implementation, and will consolidate the REDD+ national strategy. It will also propose elements to scale-up attention to marginal populations, promoting their sustainable development.

166. Institutional development, technical support and training are intended to develop the institutional, organizational and human resource skills needed to increase carbon sequestration after project completion. Future and sustainable costs after Project completion will depend on CONAFOR's financial capacity.

167. The combined FIDA-Sur project's main purpose is to help reduce poverty in selected areas and make a positive impact on carbon sequestration, GHG reduction and the conservation of forests and jungles. In addition, the Project will help improve the economic efficiency of forestry.

B. Risks

168. The following risks were identified for the project:

Risks	Level	Mitigation Strategy
<i>Adjustments in CONAFOR, Project management and coordination.</i> CONAFOR presents adjustments that include changes in its structure, priorities, policies and field operations.	Low	Constant communication with CONAFOR authorities has been maintained during Project preparation to learn how these changes evolve. The operational mechanism will be detailed in the Operational Manual to be approved by IFAD.
<i>Project financing and budgetary allocation.</i> Insufficient budgetary allocation to projects has had a negative impact on the disbursement of IFAD resources.	Medium	The following actions will be agreed with CONAFOR: (i) to monitor and analyze the Project's annual Budget; and (ii) annual budgetary allocations needed to implement the Project according to its design.
<i>Lag in the implementation of the FIDA-Sur Project.</i> Project operations are delayed for any reason.	Low	IFAD and the Executor have worked on a coordination strategy during Project preparation, in order to anticipate any issues that could jeopardize Project operations as planned. The <i>FIDA-Sur</i> Operational Manual will incorporate mechanisms to operate both projects.
<i>Strategy to include the poorest and most vulnerable beneficiaries.</i> The Project's targeting strategy does not include the most distant beneficiaries or those having less access, currently excluded from CONAFOR's benefits, and with greater environmental degradation.	Low	The <i>FIDA-Sur Project</i> is planning to hire promoters who, in addition to promote this Project, would help facilitate the participation of all potential beneficiaries in climate change actions. A specific profile for hiring promoters will be defined, so as to cover both projects efficiently. Training activities for promoters are also included.
<i>Community structure and form of Government are not taken into account.</i> The Project seeks to complement CONAFOR's support to <i>ejidos</i> /communities by focusing on families and individuals. This requires a clear and effective strategy in order not to contravene local practices and customs.	Low	The <i>FIDA-Sur Project</i> includes a strategy to work at the family and group levels. It considers elements to strengthen agricultural units and implement participatory development. Promoters' approach to communities, for example, will always be made from agricultural or municipal authorities.
<i>Gender inequity in project activities:</i> Gender equity issues are not being promoted as planned for access to natural resources and in support of the Project.	Low	The Project will adopt a strategy that includes raising awareness of men and women in the topic. It also provides the integration of women into decision-making processes and greater access to both natural resources and to Project resources.
<i>Lack of adequate markets for products promoted by the Project.</i> Products that are promoted, especially non-timber or agro-forestry products are not located in the market.	Medium	The identification of economic opportunities in local plans will be based on market analysis and access to value chains, together with the analysis of local production potential for a specific product.
<i>Insufficient organizational and administrative local capacity.</i> Local capacities are inadequate to reduce and mitigate environmental impacts	Low	The <i>FIDA-Sur Project</i> will provide training to beneficiaries in topics related to organization, better management practices and agro-forestry techniques, for

caused by the use of forests and agricultural resources, especially the conversion process of forest land to agricultural use.		the sustainable valorization of environmental goods and services in the ecosystems. It will also strengthen the internal organization (families, groups and communities) for the achievement of their objectives
<i>Environmental degradation.</i> Forestry and agro-forestry activities supported by the Project degrade ecosystems where the Project is implemented.	Low	The <i>FIDA-Sur Project</i> will carry out activities to improve local technical capacity, organization, technical aspects, decision-making and sustainability of production systems. It will also establish a monitoring system to identify, in a timely manner, negative environmental impacts, so that immediate corrective actions are taken.
<i>Climate Change affects Project results.</i> Projected changes in temperature and the hydrological cycle will lead to more fires.	Medium	<p>Activities of the proposed Project aim at restoring the functioning of forest ecosystems, including the creation and maintenance of fire-fighting community brigades, establishment of fireproof breaches around reforestation areas, and proper fuel management. It also includes measures to detect climate risk at the local level.</p> <p>The project will also carry out participative analysis on the options and pilots being promoted, assessing how they will contribute to reducing vulnerability of ejidos/communities to climate change. The project will use screening tools to support local decision-making that links climate-related risks and population livelihoods, which can help define appropriate adaptation strategies with broad social support. This tool, adapted to the Project, will be included in the Operational Manual.</p>

VIII. INNOVATION, LEARNING AND KNOWLEDGE MANAGEMENT

169. **Innovation and replicability.** The GEF project will be highly innovative. The project is also designed to ensure replication of its experiences. Because of the importance of extending this scheme, experiences will be replicated from community to community and from one State to another. A focus on the development of technical tools and training in CONAFOR will ensure its ability to replicate successful experiences. It will also assist GEF and IFAD in acquiring elements to replicate in other countries.

170. **Knowledge generation, management and dissemination.** The project will identify experiences and knowledge generated in impact studies and will disseminate them through written, audiovisual, electronic materials, etc. This will guarantee wide dissemination of these experiences and knowledge.

171. It has an approach that encourages climate change adaptation, especially in the most vulnerable population, thus making practical, technical and scientific knowledge that contribute to this effort visible. To deal with this phenomenon, the Project will also create learning and action spaces to provide complementary inputs to public policies. It will also implement a strategy that recognizes local perception/knowledge of the topic (experiences, values, practices and local regulations) complementing them with knowledge and innovative technologies.

172. This strategy will facilitate the flow of knowledge and information and will contribute to empowerment and ownership of such knowledge and innovations among actors, coordinating efforts and developing the social capital needed to strengthen the adaptation processes of this population, reinforcing local planning and management.

173. It will promote the creation of local knowledge management and action networks aimed at linking and connecting actors to facilitate the flow of information and knowledge, and to create a space for socialization, knowledge generation and sharing on climate change.

174. Finally, it will analyze how actors articulate around their roles (research, local knowledge, regulations, etc) and levels of confidence to determine potential leaders in order to identify strategic partners for the sustainability of the networks in the future.

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ANNEXES

ANNEX 1
LOGICAL FRAMEWORK

ANNEX 1

LOGICAL FRAMEWORK

MITIGATING CLIMATE CHANGE THROUGH SUSTAINABLE FOREST MANAGEMENT AND CAPACITY BUILDING IN THE SOUTHERN STATES OF MEXICO (CAMPECHE, CHIAPAS AND OAXACA)

Hierarchy of objectives	Performance indicators ³⁸	Monitoring and Sources of Verification	Risks and Assumptions
<p>Main Purpose In the Project area, to contribute to improve living conditions of poor and extremely poor people living in forest areas of the States of Campeche, Chiapas and Oaxaca, through sustainable management of forest resources, with a focus on environmental sustainability and economic profitability.</p> <p>Project Objective To mitigate climate change in the agricultural units selected in the project area, strengthening the SFM and creating local capacities, including the reduction of emissions by deforestation and the increase of carbon sequestration potential through the financing of innovative and relevant initiatives for the most vulnerable population, particularly the indigenous peoples, the dissemination of information and local participation in carbon sequestration monitoring.</p>	<ul style="list-style-type: none"> <i>The percentage of the population with less than a dollar per day is reduced by 50% in 2014 (ODM)</i> <i>20% reduction of child malnutrition in beneficiary families, by sex</i> <i>50% of beneficiary families have increased their productive assets</i> <i>25% of local plans are managed by women, with an annual sales increase of 10%.</i> <i>45% of local plans have generated economic activities that have been operating for over three years, of which at least 30% are managed by “avecindados” and others.</i> <i>40% of groups assisted by the Project have women in senior positions.</i> <i>At least 75% of the 18 000 beneficiary families have access to Project services.</i> 4.8 million tons of CO₂eq sequestered. 16 million tons of CO₂eq avoided. Plans have contributed to strengthen internal organization and increase the assembly system by 50% in beneficiary ejidos and communities. 	<ul style="list-style-type: none"> RIMS: initial, mid-term and final surveys Project baseline. Mid-term and final review Project monitoring and evaluation reports Review and analysis of official statistics Minutes of ejido/community meetings Baseline of land use types and carbon density per area unit. Mid-term review Carbon monitoring system 	<ul style="list-style-type: none"> Legislation and regulations related to climate change are improved/strengthened Project execution in accordance with its design. The international context is not conducive enough to the development of mitigation projects. <p><u>Assumptions</u></p> <ul style="list-style-type: none"> The national economic, political and social situation is stable There are no major negative changes of promoted products in the markets The Government continues the vision of forestry development, highlighting the role of community forestry. Changes in the Federal Government’s administration do not affect Project support.

³⁸ Indicators in italic will be obtained through the associated FIDA Sur

<p>COMPONENT 1 – Strengthening of organizational, planning, local management and climate change mitigation capacities</p> <p>Outcomes</p> <p>2.1. Enhance the capacities of the target population, for better access to public resources and greater integration into markets, and to generate local capacities to address climate change impacts;</p> <p>2.2. Strengthening of local capacities to monitor carbon capture (local/community level)</p>	<ul style="list-style-type: none"> • 5,000 groups (10% led by women and at least 30% by “avecindados” and others) have formulated local plans • Through their plans (1 500), 30% of groups (10% led by women) have strengthened their technical, organizational and managerial capacities for greater integration into markets. • 200 community technicians trained, 10% are women • 10 service providers (Associations, NGOs, universities, etc.) with improved capabilities in business development oriented to serve the rural poor. • 55 communities generating reports on carbon sequestration and GHG reduction. • Carbon monitoring results are used as an input to strengthen the OTCs. • At least 500,000 ha covered within existing OTCs have carbon estimates for all land uses. • At least 6 brigades trained, including 4 community technicians, each of them to implement mitigation actions and monitoring (OTC focuses on carbon, nurseries and plantations, sustainable forest management, carbon monitoring, mechanisms to market access of products and services, etc.). 	<ul style="list-style-type: none"> • Project baseline • Project monitoring and evaluation reports • Studies on the local economic activity • Mid-term and final review • Participatory monitoring to complement impact surveys • Reports on carbon emissions and sale/purchase contracts. • Minutes of Ejido/Community meetings • CONAFOR’s web page • OTC documents and materials • Ejido/Community regulations • Supervision missions 	<ul style="list-style-type: none"> • Community structures and local forms of governance are not adequately considered • Supply of technical services not adequate with demand • There are difficulties in the flow of information on carbon stocks between the local and national levels <p><u>Assumptions</u></p> <ul style="list-style-type: none"> • Gender equity is still being promoted • Environmentally sustainable economic activities are encouraged • CONAFOR allocates sufficient budgetary resources to implement the FIDA-Sur Project. • Promotion and intervention model of the FIDA-Sur Project operating. • Local capacities strengthened and local arrangements consolidated. • Training and equipment-related actions have been carried out in a timely manner. • Communities are interested in the Project. • Local capacity strengthened
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<p>COMPONENT 2 – Forestry projects and initiatives for carbon sequestration</p> <p>Outcomes</p> <p>2.1. Improve opportunities for income and employment generation of poor families, through the financing of viable and sustainable economic activities, including specific activities to mitigate climate change;</p> <p>2.2. Increase in carbon capture potential through (a) pilot forestry/agroforestry projects in marginalized localities; and (b) diversification of ways of increasing carbon capture potential through cost-effective forestry/agroforestry activities in marginalized forest zones</p>	<ul style="list-style-type: none"> • <i>25% of the business plans (1 250) (10% managed by women) are eligible for accessing public funds to finance goods and services, in order to undertake viable and sustainable economic activities (forestry, PFMN, agroforestry, PSA, etc.)</i> • <i>10% annual increase, from the second year onwards, in volumes and values of products generated by economic activities (per product)</i> • <i>1 250 plans managed by women show a 10% annual increase in their sales value</i> • Of the 1 250 plans, 70% are managed by communities, 15% by “<i>avecindados</i>”; 15% by others. • With the Project, at least 22 million seedlings of native and naturalized species are produced in established community nurseries. • Deforestation avoided by diversifying forest use in 83,000 ha of the Project area. • 25% of carbon stock loss has been avoided by degradation in 319,000 ha of the Project area. • 50% reduction in wildfire incidence in the Project area (about 1500 hectares). 	<ul style="list-style-type: none"> • Project baseline • Project monitoring and evaluation reports • Studies on the local economic activity • Mid-term and final reviews • Participatory monitoring to complement impact surveys • Prefeasibility and feasibility analyses of designed plans • Supervision missions-evidence in the field of hectares reforested with vegetative materials produced locally. • Inventories in permanent plots that measure degradation and growth. • Satellite and aerial images; INFyS, state forest inventories. • Project reports, mid-term review. • Fire management courses • Training and equipping of voluntary brigades. 	<ul style="list-style-type: none"> • Work is not carried out properly with community structures and local forms of governance • Supply of technical services not adequate with demand • INFyS is not up-dated. • Climatic variability escalates <p><u>Assumptions</u></p> <ul style="list-style-type: none"> • Environmentally sustainable economic activities are encouraged • Gender equity is still being promoted • There is community demand for this type of investments. • SFM proposed alternatives allow for the reduction of pressure on the forest • The Project has sufficient budgetary resources.
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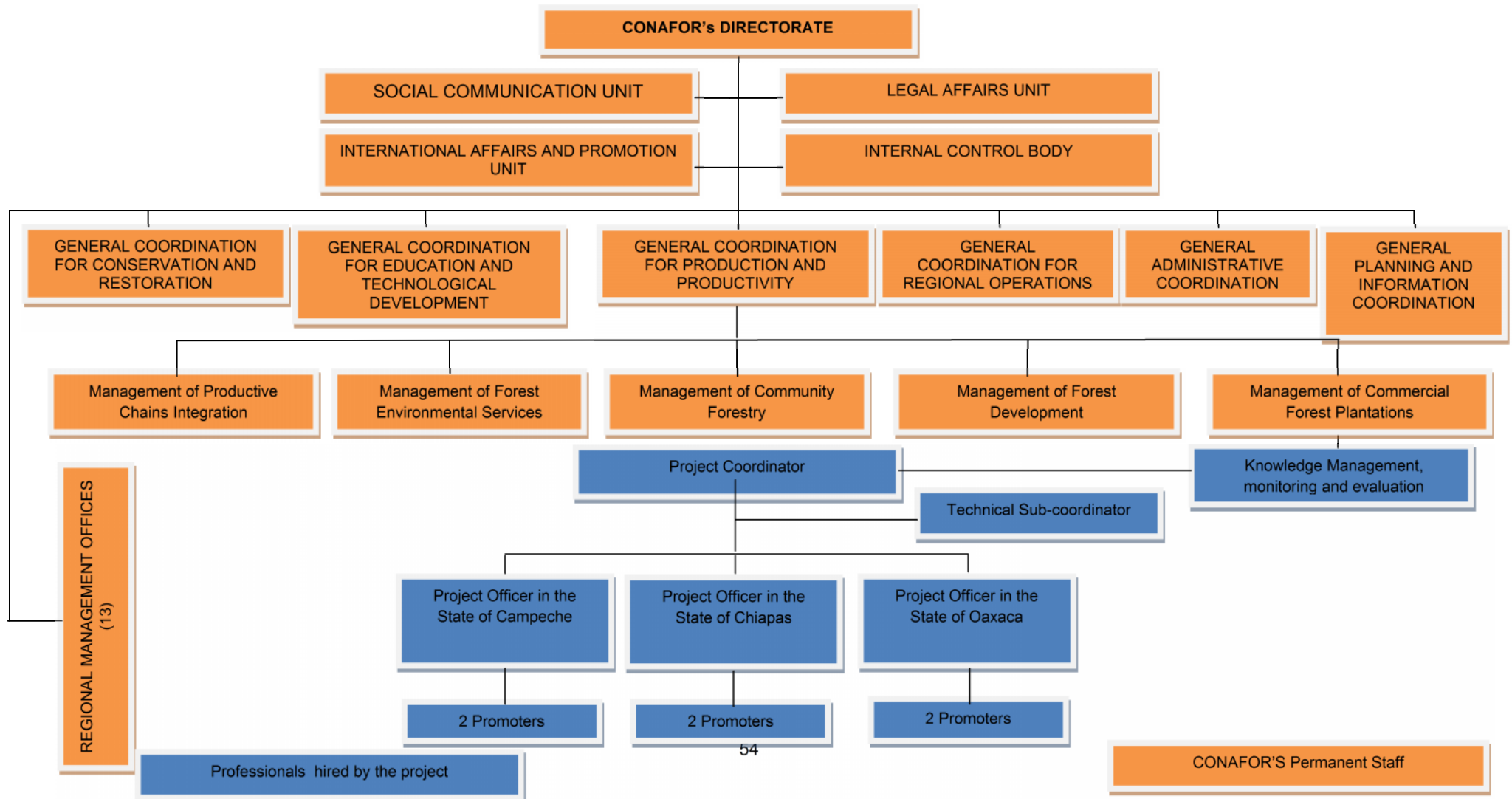
<p>COMPONENT 3 – Project management</p> <p>Outcome.</p> <p>3.1. Strengthen the capacity of the units responsible for the implementation and administration of the project at national and local level;</p> <p>3.2. Generate methodologies to facilitate access of poor families to CONAFOR programs, and systematize experiences of Project achievements in economic, social and environmental issues.</p>	<ul style="list-style-type: none"> • <i>Ejidos and communities, and other beneficiaries, have increased applications of assistance requests to CONAFOR by 50%</i> • <i>CONAFOR's budget for ejidos and communities with highest levels of marginalization is increased annually by 10%</i> • <i>By the end of the Project, 50 experiences on the development of poor populations have been systematized and disseminated</i> • <i>Methodologies generated by the project help replicate and extend CONAFOR's strategy addressed to the poorest population.</i> • Local monitoring system evaluated and adapted in at least 7 projects in other regions of the country • Methodologies generated by the Project help replicate and expand CONAFOR's strategy for addressing the poorest population. • 40% of participating communities consolidate linkages between various actors for carbon trading 	<ul style="list-style-type: none"> • Publications and communication materials • Review and analysis of the access of the poorest population to CONAFOR programs (ProÁrbol) • CONAFOR's annual report • Information on forums, meetings and other dissemination and experience- exchange actions. • Partnerships signed • Project reports • Project dissemination mechanisms • CONAFOR's website, field visits • Aide-Memoires of Supervision Missions. 	<ul style="list-style-type: none"> • The price per ton of carbon is not conducive to strengthening value chains • Changes in the Federal Government's administration affect Project support. • Community structures and local forms of governance are not adequately considered <p><u>Assumptions</u></p> <ul style="list-style-type: none"> • Changes in the Federal Government's administration do not affect Project support. • Institutional priority does not change during Project implementation. • Sufficient budgetary resources. • UGP staff is trained and dedicated exclusively to the project • There is openness and interest on the part of authorities in exploring institutional options. • The National REDD+ initiative is consolidated • Gender equity is still being promoted
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ANNEX 2
ORGANIZATIONAL CHARTS

ANNEX 2A

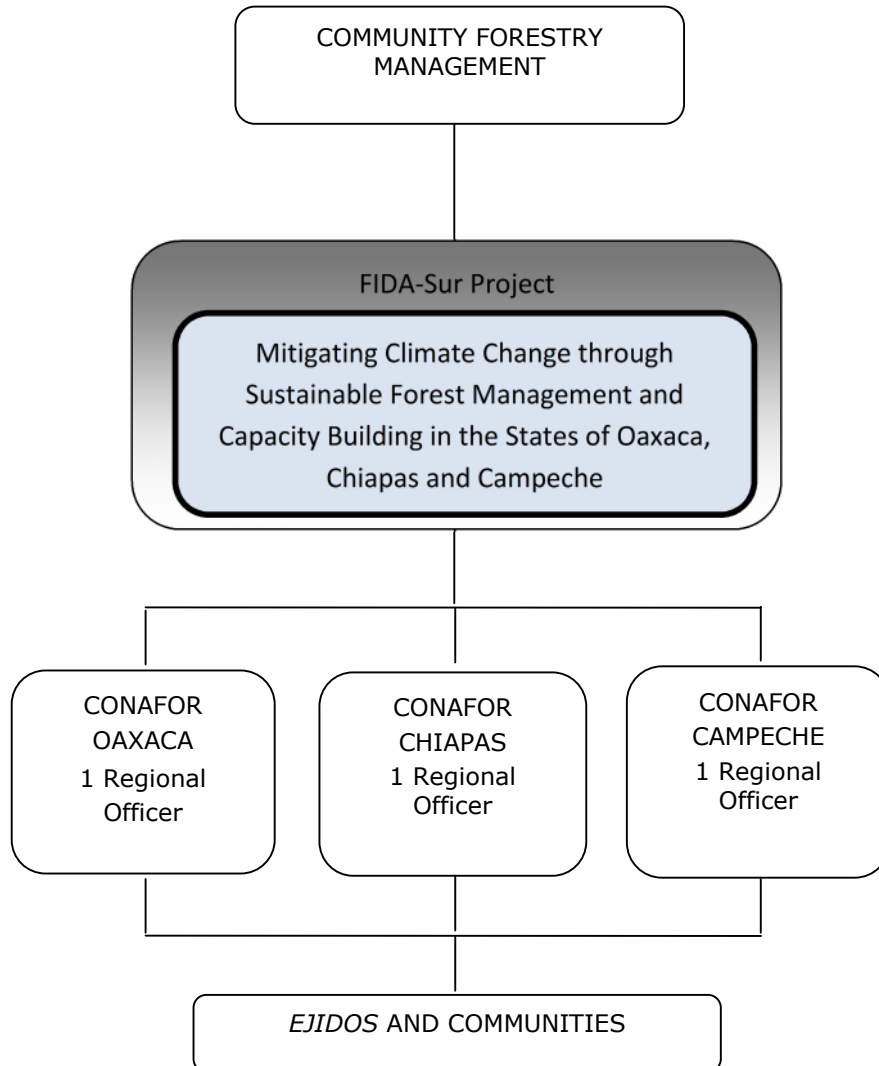
COMMUNITY FORESTRY DEVELOPMENT PROJECT IN THE SOUTHERN STATES OF CAMPECHE, CHIAPAS and OAXACA and MITIGATING CLIMATE CHANGE THROUGH SUSTAINABLE FOREST MANAGEMENT AND CAPACITY BUILDING IN THE SOUTHERN STATES OF MEXICO (CAMPECHE, CHIAPAS AND OAXACA)

Project Location in CONAFOR's Structure



ANNEX 2B

ORGANIZATIONAL CHART FOR CLIMATE CHANGE ACTIVITIES



ANNEX 3
COST TABLES

ANNEX 3

PROJECT COST TABLES

Table 1. Project Components by Financier
(In US Dollars)

Mexico
MITIGATING CLIMATE CHANGE THROUGH SUSTAINABLE FOREST MANAGEMENT AND CAPACITY BUILDING IN THE SOUTHERN STATES
Components by Financiers
(US\$)

Component	Gobierno Mexico		IFAD		GEF		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
1. Strengthening of organizational, planning, local management and climate change mitigation capacities	4 588 765	53.25%	2 679 588	31.09%	1 349 700	15.66%	8 618 054	50.58%
2. Forestry projects and initiatives for carbon sequestration	1 691 526	24.17%	1 948 077	27.83%	3 359 300	48.00%	6 998 903	41.07%
3. Project Management	759 065	53.37%	372 335	26.18%	291 000	20.46%	1 422 400	8.35%
Total Project Costs	7 039 356	41.31%	5 000 000	29.34%	5 000 000	29.34%	17 039 356	100.00%

**Table 2. Expenditure Accounts by Financiers
(in US Dollars)**

México
PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO
Expenditure Accounts by Financiers
(US\$)

	Gobierno de México		FIDA		FMAM		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs								
A. Vehículos y Equipos	79 500	46.0	23 400	13.5	70 000	40.5	172 900	0.9
B. Capacitación								
Cursos y Talleres	983 040	59.1	530 318	31.9	-	-	1 513 358	9.0
Promoción y Divulgación	33 128	65.0	17 872	35.0	-	-	51 000	0.3
Subtotal Capacitación	1 016 168	59.3	548 190	32.0	-	-	1 564 358	9.3
C. Convenios y Contratos de Servicios								
Asistencia Técnica Especializada	3 607 728	64.2	1 658 408	29.5	-	-	5 266 136	30.3
Estudios y Auditorías	124 111	69.0	55 889	31.0	-	-	180 000	1.0
Subtotal Convenios y Contratos de Servicios	3 731 839	64.4	1 714 297	29.6	-	-	5 446 136	31.3
D. Negocios y Fortalecimiento de Capacidades								
Apoyo Formulación y Seguimiento Planes Locales	616 560	41.0	750 690	49.9	-	-	1 367 250	8.1
Inversión y Asistencia Técnica Planes Locales	1 527 190	36.8	1 859 423	44.8	-	-	3 386 612	22.4
Subtotal Negocios y Fortalecimiento de Capacidades	2 143 750	37.9	2 610 112	46.2	-	-	4 753 862	30.5
E. Inversiones	-	-	-	-	2 865 450	97.6	2 865 450	15.9
F. Asistencia Técnica	-	-	-	-	1 843 550	100.0	1 843 550	10.0
Total Investment Costs	6 971 256	38.5	4 896 000	27.0	4 779 000	26.4	16 646 256	97.9
II. Recurrent Costs								
A. Gastos de Operación	68 100	39.6	104 000	60.4	-	-	172 100	0.9
B. Gestión del Proyecto (FMAM)	-	-	-	-	221 000	100.0	221 000	1.2
Total Recurrent Costs	68 100	17.3	104 000	26.5	221 000	56.2	393 100	2.1
Total PROJECT COSTS	7 039 356	38.0	5 000 000	27.0	5 000 000	27.0	17 039 356	100.0

**Table 3. Expense Category for Component 1, GEF contribution
(in US Dollars)**

México
PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO
Table 7. Fortalecimiento de las Capacidades Locales para Monitorear la Captura de CO2
Detailed Costs

Expenditures by Financiers (US\$)						
FMAM						
	2010	2011	2012	2013	2014	Total
I. Investment Costs						
A. Monitoreo y evaluación						
1. Asistencia técnica del componente						
Técnico en mitigación de cambio climático	20 800	20 800	20 800	20 800	20 800	104 000
Auditorías técnicas	6 000	6 000	6 000	6 000	6 000	30 000
Subtotal Asistencia técnica del componente	26 800	26 800	26 800	26 800	26 800	134 000
2. Línea Base, Eval. Medio Término, y de Fin de Proyecto						
	20 000	-	20 000	-	20 000	60 000
3. Equipamiento para estimación de CO2 en campo						
Equipos de campo /a	15 000	-	-	-	-	15 000
Global Positioning Systems (GPS) /b	7 200	-	-	-	-	7 200
Estación de monitoreo boscoso /c	21 000	-	-	-	-	21 000
Visor beam	5 000	-	-	-	-	5 000
Subtotal Equipamiento para estimación de CO2 en campo	48 200	-	-	-	-	48 200
4. Mediciones periódicas de CO2						
Viáticos	2 700	-	2 700	-	2 700	8 100
Seguros	300	300	-	-	-	600
Análisis de laboratorio de suelos	15 000	15 000	-	-	-	30 000
Análisis de laboratorio de biomasa	30 000	30 000	-	-	-	60 000
Subtotal Mediciones periódicas de CO2	48 000	45 300	2 700	-	2 700	98 700
5. Personal de Monitoreo de CO2						
	-	32 000	-	-	16 000	48 000
Subtotal Monitoreo y evaluación	143 000	104 100	49 500	26 800	65 500	388 900
B. Ordenamiento Territorial Comunitario						
Formulación del ordenamiento territorial comunitario /d	150 000	-	-	-	-	150 000
Implementación del ordenamiento territorial comunitario /e	-	300 000	-	-	-	300 000
Inventarios forestales /f	67 200	-	67 200	-	67 200	201 600
Evaluaciones rurales participativas	-	16 000	16 000	16 000	-	48 000
Subtotal Ordenamiento Territorial Comunitario	217 200	316 000	83 200	16 000	67 200	699 600
C. Fortalecimiento de las Capacidades de las Organizaciones Locales						
Capacitación a promotores estatales	9 000	-	-	-	-	9 000
Capacitación técnicos comunitarios forestales /g	11 100	11 100	11 100	11 100	-	44 400
Capacitaciones a jóvenes y mujeres /h	14 800	14 800	14 800	-	-	44 400
Capacitaciones a beneficiarios en general /i	14 800	14 800	14 800	-	-	44 400
Intercambios de experiencias para técnicos comunitarios forestales	-	12 000	12 000	12 000	-	36 000
Becas técnicos comunitarios /j	-	15 000	15 000	15 000	-	45 000
Subtotal Fortalecimiento de las Capacidades de las Organizaciones Locales	49 700	67 700	67 700	38 100	-	223 200
D. Equipamiento para Monitoreo y Secuestro de CO2 y Biodiversidad						
Equipamiento técnicos comunitarios forestales /k	8 000	-	-	-	-	8 000
Subproyectos de infraestructura mínima para monitoreo CO2 /l	-	7 500	7 500	7 500	7 500	30 000
Subtotal Equipamiento para Monitoreo y Secuestro de CO2 y Biodiversidad	8 000	7 500	7 500	7 500	7 500	38 000
Total	417 900	495 300	207 900	88 400	140 200	1 349 700

**Table 4. Expense Category for Component 2, GEF contribution
(in US Dollars)**

<p>México</p> <p>PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO</p> <p>Table 8. Inversiones Forestales para el Incremento de la Captura de CO2</p> <p>Detailed Costs</p> <p>Expenditures by Financiers (US\$)</p>						
FMAM						
	2010	2011	2012	2013	2014	Total
I. Investment Costs						
A. Subproyectos de Reducción de Emisiones						
Subproyectos de cocinas ahorradoras de leña	-	67 500	78 750	78 750	-	225 000
Subproyectos de hornos ahorradores de leña /a	-	22 500	22 500	11 250	-	56 250
Subtotal Subproyectos de Reducción de Emisiones	-	90 000	101 250	90 000	-	281 250
B. Subproyectos Agroforestales						
Estudios de factibilidad de subproyectos agroforestales	8 784	15 217	3 050	-	-	27 050
Subproyectos agroforestales de cacao	-	32 000	32 000	32 000	32 000	128 000
Subproyectos agroforestales de café	-	24 000	24 000	24 000	-	72 000
Otros subproyectos agroforestales	-	32 000	32 000	32 000	32 000	128 000
Subtotal Subproyectos Agroforestales	8 784	103 217	91 050	88 000	64 000	355 050
C. Subproyectos Productivos no Maderables						
Estudios de factibilidad sobre productos no maderables	25 000	-	-	-	-	25 000
Subproyectos de apicultura	-	18 000	18 000	-	-	36 000
Subproyectos de ecoturismo	-	36 000	36 000	36 000	36 000	144 000
Subtotal Subproyectos Productivos no Maderables	25 000	54 000	54 000	36 000	36 000	205 000
D. Recursos económicos para inversiones						
Estudios de factibilidad de subproyectos de bosque y selva	7 000	7 000	7 000	7 000	-	28 000
Inversiones	800 000	400 000	300 000	310 000	-	1 810 000
Incentivos para técnicos comunitarios	100 000	100 000	100 000	100 000	100 000	500 000
Subproyectos de manejo de bosque y selva	45 000	45 000	45 000	45 000	-	180 000
Subtotal Recursos económicos para inversiones	952 000	552 000	452 000	462 000	100 000	2 518 000
Total	985 784	799 217	698 300	676 000	200 000	3 359 300

**Table 5. Expense Category for Component 3, GEF contribution
(in US Dollars)**

<p>México PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO Table 10. Gestión del Proyecto GEF Detailed Costs</p>						
	FMAM					
	2010	2011	2012	2013	2014	Total
I. Investment Costs						
A. Equipos y Vehículos						
Pick-up 4*4 (GOM)	-	-	-	-	-	-
Pick-up 4*4 (FMAM)	25 000	-	-	-	-	25 000
Computadoras portátiles	14 000	14 000	-	-	-	28 000
Computadoras estacionarias	4 500	-	-	-	-	4 500
Impresoras laser	-	2 500	1 000	-	-	3 500
Material de escritorio	1 800	1 800	1 800	1 800	1 800	9 000
Total Investment Costs	45 300	18 300	2 800	1 800	1 800	70 000
II. Recurrent Costs						
A. Personal de gestión del proyecto						
Coordinador del proyecto mitigación del cambio climático	26 000	26 000	26 000	26 000	26 000	130 000
Administrador de proyecto mitigación de cambio climático	18 200	18 200	18 200	18 200	18 200	91 000
Total Recurrent Costs	44 200	44 200	44 200	44 200	44 200	221 000
Total	89 500	62 500	47 000	46 000	46 000	291 000

**Table 6. Expense Category for Component 1, contribution from IFAD and the Government of Mexico
(in US Dollars)**

México PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO Table 1. Capacidades para la Organización, Planeación, Gestión Local y Cambio Climático																			
Detailed Costs (US\$)																			
Unit	Totals Including Contingencies						Expenditures by Financiers												
							Gobierno de México					FIDA							
	2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total	
I. Investment Costs																			
A. Equipos y Vehículos																			
Equipo de proyección	unidad	4 500	-	-	-	-	4 500	726	-	-	-	-	726	3 774	-	-	-	-	3 774
Mobiliario de oficina	unidad	-	3 000	-	-	-	3 000	-	484	-	-	-	484	-	2 516	-	-	-	2 516
Subtotal Equipos y Vehículos		4 500	3 000	-	-	-	7 500	726	484	-	-	-	1 210	3 774	2 516	-	-	-	6 290
B. Capacitación																			
1. Cursos y Talleres																			
Talleres y cursos de capacitación técnica	eventos	108 090	108 090	108 090	108 090	108 090	540 450	70 213	70 213	70 213	70 213	70 213	351 063	37 877	37 877	37 877	37 877	37 877	189 387
Programa de técnicos comunitarios	eventos	46 152	23 076	23 076	23 076	23 076	138 456	29 979	14 990	14 990	14 990	14 990	89 938	16 173	8 086	8 086	8 086	8 086	48 518
Talleres y cursos para fortalecimiento de asesores técnicos	eventos	7 206	7 206	7 206	7 206	7 206	36 030	4 681	4 681	4 681	4 681	4 681	23 404	2 525	2 525	2 525	2 525	2 525	12 626
Talleres para fomentar el establecimiento de bases organizativas de negociación	eventos	38 432	38 432	38 432	38 432	38 432	192 160	24 964	24 964	24 964	24 964	24 964	124 822	13 468	13 468	13 468	13 468	67 338	
Talleres para el manejo de residuos (p.e. leña,) y subproductos del aprov. forestal (p.e. recolección d	eventos	19 216	16 814	16 814	16 814	16 814	86 472	12 482	10 922	10 922	10 922	10 922	56 170	6 734	5 892	5 892	5 892	30 302	
Encuentros entre comunidades, ejidos, grupos de interés	eventos	48 560	48 560	48 560	48 560	48 560	242 800	31 543	31 543	31 543	31 543	31 543	157 717	17 017	17 017	17 017	17 017	85 083	
Subtotal Cursos y Talleres		267 656	242 178	242 178	242 178	242 178	1 236 368	173 863	157 313	157 313	157 313	157 313	803 114	93 793	84 865	84 865	84 865	84 865	433 254
2. Aporte Productores Cursos y Talleres	monto	26 766	24 218	24 218	24 218	24 218	123 637	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Capacitación		294 422	266 396	266 396	266 396	266 396	1 360 005	173 863	157 313	157 313	157 313	157 313	803 114	93 793	84 865	84 865	84 865	84 865	433 254
C. Contratos y Convenios																			
1. Asistencia técnica especializada																			
Elaboración de estatutos y reglamentos	contrato	39 200	39 200	39 200	39 200	39 200	196 000	27 029	27 029	27 029	27 029	27 029	135 143	12 171	12 171	12 171	12 171	12 171	60 857
Estudios de asistencia técnica especializada	contrato	90 000	90 000	90 000	90 000	90 000	450 000	62 055	62 055	62 055	62 055	62 055	310 276	27 945	27 945	27 945	27 945	27 945	139 724
Evaluaciones Rurales Participativas	contrato	54 961	54 961	54 961	54 961	54 961	274 805	37 896	37 896	37 896	37 896	37 896	189 479	17 065	17 065	17 065	17 065	85 326	
Elaboración de planes de desarrollo comunitario	contrato	153 846	153 846	153 846	153 846	153 846	769 231	106 077	106 077	106 077	106 077	106 077	530 387	47 769	47 769	47 769	47 769	238 844	
Ordenamiento Territorial Comunitario (FIDA)	contrato	873 207	4 856	-	-	-	878 062	154 953	862	-	-	-	155 815	718 253	3 994	-	-	-	722 247
Ordenamiento Territorial Comunitario (GOM)	contrato	212 977	240 616	271 841	307 118	340 485	1 373 038	212 977	240 616	271 841	307 118	340 485	1 373 038	-	-	-	-	-	-
Subtotal Asistencia técnica especializada		1 424 191	583 479	609 848	645 126	678 493	3 941 136	600 987	474 534	504 898	540 175	573 542	2 694 137	823 204	108 944	104 950	104 950	104 950	1 246 999
2. Aporte Productores AT especializada	monto	135 801	54 204	53 801	53 801	53 427	351 033	-	-	-	-	-	-	-	-	-	-	-	-
3. Asistencia técnica para la promoción del proyecto (promotores)	meses	132 000	129 000	129 000	129 000	129 000	648 000	91 014	88 946	88 946	88 946	88 946	446 798	40 986	40 054	40 054	40 054	40 054	201 202
Subtotal Contratos y Convenios		1 691 992	766 683	792 649	827 926	860 919	4 940 169	692 002	563 480	593 844	629 121	662 488	3 140 935	864 189	148 998	145 004	145 004	145 004	1 448 201
D. Negocios y Fortalecimiento de Capacidades																			
1. Planes de Negocios																			
Elaboración de planes de negocios	Contrato	135 000	135 000	135 000	135 000	135 000	675 000	60 878	60 878	60 878	60 878	60 878	304 391	74 122	74 122	74 122	74 122	74 122	370 609
Ejecución planes de negocios	Contrato	138 450	138 450	138 450	138 450	138 450	692 250	62 434	62 434	62 434	62 434	62 434	312 170	76 016	76 016	76 016	76 016	76 016	380 080
Subtotal Planes de Negocios		273 450	273 450	273 450	273 450	273 450	1 367 250	123 312	123 312	123 312	123 312	123 312	616 560	150 138	150 138	150 138	150 138	150 138	750 690
2. Aporte Productores Planes de Negocios	monto	27 345	27 345	27 345	27 345	27 345	136 725	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Negocios y Fortalecimiento de Capacidades		300 795	300 795	300 795	300 795	300 795	1 503 975	123 312	123 312	123 312	123 312	123 312	616 560	150 138	150 138	150 138	150 138	150 138	750 690
Total Investment Costs		2 291 708	1 336 874	1 359 840	1 395 117	1 428 110	7 811 649	989 902	844 589	874 469	909 746	943 113	4 561 818	1 111 895	386 518	380 008	380 008	380 008	2 638 435
II. Recurrent Costs																			
A. Gastos de Operación																			
Combustibles y lubricantes vehículo	USD/año	4 000	8 000	4 000	4 000	4 000	24 000	1 583	3 166	1 583	1 583	1 583	9 497	2 417	4 834	2 417	2 417	2 417	14 503
Mantenimiento vehículo	USD/año	1 500	3 000	1 500	1 500	1 500	9 000	594	1 187	594	594	594	3 561	906	1 813	906	906	906	5 439
Seguro vehículo	USD/año	3 000	6 000	3 000	3 000	3 000	18 000	1 187	2 374	1 187	1 187	1 187	7 123	1 813	3 626	1 813	1 813	1 813	10 877
Papelera de oficina	USD/año	750	1 500	750	750	750	4 500	297	594	297	297	297	1 781	453	906	453	453	453	2 719
Viajeros a otros estados	días	100	200	100	100	100	600	40	79	40	40	40	237	60	121	60	60	60	363
Viajes al exterior	monto	2 000	4 000	2 000	2 000	2 000	12 000	791	1 583	791	791	791	4 748	1 209	2 417	1 209	1 209	1 209	7 252
Total Recurrent Costs		11 350	22 700	11 350	11 350	11 350	68 100	4 491	8 982	4 491	4 491	4 491	26 947	6 859	13 718	6 859	6 859	6 859	41 153
Total		2 303 058	1 359 574	1 371 190	1 406 467	1 439 460	7 879 749	994 393	853 571	878 960	914 237	947 604	4 588 765	1 118 754	400 235	386 866	386 866	386 866	2 679 588

**Table 7. Expense Category for Component 2, contribution from IFAD and the Government of Mexico
(in US Dollars)**

México																							
PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO																							
Table 2. Proyectos y Negocios Forestales																							
Detailed Costs																							
(US\$)																							
Expenditures by Financiers																							
Totals Including Contingencies							Gobierno de México													FIDA			
Unit	2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total					
I. Investment Costs																							
A. Negocios y fortalecimiento de capacidades																							
1. Inversión y asistencia técnica planes locales																							
Ejecución de proyecto de inversión	unidad	307 600	307 600	307 600	307 600	1 538 000	138 712	138 712	138 712	138 712	138 712	693 560	168 888	168 888	168 888	168 888	168 888	844 440					
Ejecución de proyecto de inversión	unidad	318 966	342 537	367 850	395 034	1 848 612	143 837	154 467	165 882	178 140	191 304	833 630	175 128	188 070	201 968	216 894	232 922	1 014 982					
Subtotal Inversión y asistencia técnica planes locales		626 566	650 137	675 450	702 634	3 386 612	282 549	293 179	304 594	316 852	330 016	1 527 190	344 016	356 958	370 856	385 782	401 810	1 859 423					
2. Aporte product inversiones y at																							
Aporte Productores ejecución Proy inv	monto	111 488	129 185	149 692	173 453	200 987	764 805	-	-	-	-	-	-	-	-	-	-	-					
Subtotal Negocios y fortalecimiento de capacidades		738 054	779 322	825 142	876 087	932 813	4 151 417	282 549	293 179	304 594	316 852	330 016	1 527 190	344 016	356 958	370 856	385 782	401 810	1 859 423				
B. Capacitación																							
1. Cursos																							
Cursos sobre negocios forestales y rurales	cursos	36 030	36 030	36 030	36 030	180 150	23 404	23 404	23 404	23 404	23 404	117 021	12 626	12 626	12 626	12 626	12 626	63 129					
Encuentros entre empresas forestales y rurales	cursos	12 140	24 280	12 140	12 140	12 140	72 840	7 886	15 772	7 886	7 886	47 315	4 254	8 508	4 254	4 254	4 254	25 525					
Subtotal Cursos		48 170	60 310	48 170	48 170	48 170	252 990	31 290	39 176	31 290	31 290	164 336	16 880	21 134	16 880	16 880	16 880	88 654					
2. Aporte productores cursos																							
	monto	4 817	6 031	4 817	4 817	25 299	-	-	-	-	-	-	-	-	-	-	-	-					
Subtotal Capacitación		52 987	66 341	52 987	52 987	52 987	278 289	31 290	39 176	31 290	31 290	164 336	16 880	21 134	16 880	16 880	16 880	88 654					
Total		791 041	845 663	878 129	929 074	985 800	4 429 706	313 839	332 355	335 884	348 142	361 306	1 691 526	360 896	378 092	387 736	402 662	418 690	1 948 077				

**Table 8. Expense Category for Component 3, contribution from IFAD and the Government of Mexico
(in US Dollars)**

		México											PROYECTO DE MITIGACIÓN DEL CAMBIO CLIMÁTICO										
		Table 3. Fortalecimiento Institucional y Administración											Detailed Costs										
		(US\$)											Expenditures by Financiers										
		Totals Including Contingencies					Gobierno de México					FIDA											
Unit		2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total	2010	2011	2012	2013	2014	Total				
I. Investment Costs																							
A. Equipos y Vehículos																							
1. Equipos Proyecto																							
Pick-up 4*4 (GOM)	unidad	75000					75000	75000					75000										
Computadoras de escritorio	unidad	1 500	-	-	-	-	1 500	242	-	-	-	-	242	1 258	-	-	-	-	1 258				
Computadoras portátiles	unidad	2 000	-	-	-	-	2 000	323	-	-	-	-	323	1 677	-	-	-	-	1 677				
Servidor para el sistema de E&S	unidad	4 000	-	-	-	-	4 000	645	-	-	-	-	645	3 355	-	-	-	-	3 355				
Impresoras laser	unidad	2 000	-	-	-	-	2 000	323	-	-	-	-	323	1 677	-	-	-	-	1 677				
Escaner	unidad	600	-	-	-	-	600	97	-	-	-	-	97	503	-	-	-	-	503				
Cañón de proyección	unidad	1 500	-	-	-	-	1 500	242	-	-	-	-	242	1 258	-	-	-	-	1 258				
Equipo de campo	unidad	2 000	-	-	-	-	2 000	323	-	-	-	-	323	1 677	-	-	-	-	1 677				
Mobiliarios de oficina	unidad	6 000	-	-	-	-	6 000	968	-	-	-	-	968	5 032	-	-	-	-	5 032				
Teléfonos	unidad	800	-	-	-	-	800	129	-	-	-	-	129	671	-	-	-	-	671				
Subtotal Equipos Proyecto		95 400	-	-	-	-	95 400	78 290	-	-	-	-	78 290	17 110	-	-	-	-	17 110				
B. Capacitación																							
1. Promoción y Divulgación																							
Seminarios de lanzamiento del Proyecto	eventos	9 000	-	-	-	-	9 000	5 846	-	-	-	-	5 846	3 154	-	-	-	-	3 154				
Revistas de divulgación del Proyecto	eventos	-	3 000	3 000	3 000	3 000	12 000	-	1 949	1 949	1 949	1 949	7 795	-	1 051	1 051	1 051	1 051	4 205				
Página Web del Proyecto	eventos	9 000	9 000	-	-	-	18 000	5 846	5 846	-	-	-	11 692	3 154	3 154	-	-	-	6 308				
Memoria de labores	eventos	2 000	2 000	2 000	2 000	4 000	12 000	1 299	1 299	1 299	1 299	2 598	7 795	701	701	701	701	1 402	4 205				
Subtotal Promoción y Divulgación		20 000	14 000	5 000	5 000	7 000	51 000	12 992	9 094	3 248	3 248	4 547	33 128	7 008	4 906	1 752	1 752	2 453	17 872				
2. Cursos y Talleres																							
Capacitación a los operadores del Proyecto oficinas y campo	eventos	6 000	3 000	3 000	3 000	3 000	18 000	3 897	1 949	1 949	1 949	1 949	11 692	2 103	1 051	1 051	1 051	1 051	6 308				
Taller de terminación del Proyecto	eventos	-	-	-	-	6 000	6 000	-	-	-	-	-	3 897	3 897	-	-	-	-	2 103				
Subtotal Cursos y Talleres		6 000	3 000	3 000	3 000	9 000	24 000	3 897	1 949	1 949	1 949	5 846	15 590	2 103	1 051	1 051	1 051	3 154	8 410				
Subtotal Capacitación		26 000	17 000	8 000	8 000	16 000	75 000	16 889	11 043	5 197	5 197	10 393	48 718	9 111	5 957	2 803	2 803	5 607	26 282				
C. Convenios y contratos																							
1. Asistencia Técnica Especializada																							
Diseño del sistema de SyE, incluido módulo de cambio climático	contrato	15 000	-	-	-	-	15 000	10 343	-	-	-	-	10 343	4 657	-	-	-	-	4 657				
Desarrollo de software de SyE	contrato	10 000	-	-	-	-	10 000	6 895	-	-	-	-	6 895	3 105	-	-	-	-	3 105				
Sistematización de experiencias	contrato	-	10 000	10 000	10 000	10 000	40 000	-	6 895	6 895	6 895	6 895	27 580	-	3 105	3 105	3 105	3 105	12 420				
Subtotal Asistencia Técnica Especializada		25 000	10 000	10 000	10 000	10 000	65 000	17 238	6 895	6 895	6 895	6 895	44 818	7 762	3 105	3 105	3 105	3 105	20 182				
2. Contratos apoyo coordinación proyecto																							
Coordinador del Proyecto a Nivel Central	meses	50 400	50 400	50 400	50 400	50 400	252 000	34 751	34 751	34 751	34 751	34 751	173 755	15 649	15 649	15 649	15 649	15 649	78 245				
Subcoordinador del Proyecto	meses	36 000	36 000	36 000	36 000	36 000	180 000	24 822	24 822	24 822	24 822	24 822	124 111	11 178	11 178	11 178	11 178	11 178	55 889				
Responsable de seguimiento y evaluación de Proyecto	meses	36 000	36 000	36 000	36 000	36 000	180 000	24 822	24 822	24 822	24 822	24 822	124 111	11 178	11 178	11 178	11 178	11 178	55 889				
Subtotal Contratos apoyo coordinación proyecto		122 400	122 400	122 400	122 400	122 400	612 000	84 395	84 395	84 395	84 395	84 395	421 976	38 005	38 005	38 005	38 005	38 005	190 024				
3. Estudios y auditorías																							
Estudio de base	contrato	25 000	-	-	-	-	25 000	17 238	-	-	-	-	17 238	7 762	-	-	-	-	7 762				
Encuesta RIMS	contrato	20 000	-	20 000	-	-	40 000	13 790	-	13 790	-	-	27 580	6 210	-	6 210	-	-	12 420				
Evaluación de medio término	contrato	-	-	20 000	-	-	20 000	-	-	13 790	-	-	13 790	-	-	6 210	-	-	6 210				
Evaluación final del Proyecto	contrato	-	-	-	-	20 000	20 000	-	-	-	-	13 790	13 790	-	-	-	-	-	6 210				
Auditorías externas anuales del Proyecto	contrato	15 000	15 000	15 000	15 000	15 000	75 000	10 343	10 343	10 343	10 343	10 343	51 713	4 657	4 657	4 657	4 657	4 657	23 287				
Subtotal Estudios y auditorías		60 000	15 000	55 000	15 000	35 000	180 000	41 370	10 343	37 923	10 343	24 133	124 111	18 630	4 657	17 077	4 657	10 887	55 889				
Subtotal Convenios y contratos		207 400	147 400	187 400	147 400	167 400	857 000	143 003	101 633	129 213	101 633	115 423	590 904	64 397	45 767	58 187	45 767	51 977	266 096				
Total Investment Costs		328 800	164 400	195 400	155 400	183 400	1 027 400	238 182	112 675	134 409	106 829	125 816	717 912	90 618	51 725	60 991	48 571	57 584	309 488				
II. Recurrent Costs																							
A. Gastos Operativos																							
Servicio telefónico convencional	USD/edo/año	3 600	3 600	3 600	3 600	3 600	18 000	1 425	1 425	1 425	1 425	1 425	7 123	2 175	2 175	2 175	2 175	2 175	10 877				
Papelaría de oficina	USD/año	3 600	3 600	3 600	3 600	3 600	18 000	1 425	1 425	1 425	1 425	1 425	7 123	2 175	2 175	2 175	2 175	2 175	10 877				
Viajes a otros estados	das	12 000	12 000	12 000	12 000	12 000	60 000	4 748	4 748	4 748	4 748	4 748	23 742	7 252	7 252	7 252	7 252	7 252	36 258				
Viajes al exterior	viadas	2 000	2 000	2 000	2 000	-	8 000	791	791	791	791	-	3 166	1 209	1 209	1 209	1 209	-	4 834				
Total Recurrent Costs		21 200	21 200	21 200	21 200	19 200	104 000	8 389	8 389	8 389	8 389	7 597	41 153	12 811	12 811	12 811	12 811	11 603	62 847				
Total		350 000	185 600	216 600	176 600	202 600	1 131 400	246 571	121 064	142 798	115 218	133 413	759 065	103 429	64 536	73 802	61 382	69 187	372 335				

ANNEX 4
INCREMENTAL REASONING

ANNEX 4

INCREMENTAL RATIONALE OF THE PROJECT AND ANALYSIS OF INCREMENTAL COSTS (Baseline scenario and alternatives)

I. Analysis of GEF's incremental contribution

175. Recent weather events have evidenced the need to invest in climate change adaptation and mitigation in the southern states of Mexico. The Mexican Government has reaffirmed its commitment both in its baseline budget and in the FIDA-Sur Project, aimed at responding to this need.

176. Although the national deforestation rate decreased from 0.5 a 0.2% between 1990 and 2010, this rate is still high in Project states – up to 4.8% en Chiapas. Excessive logging, poor management of forest resources and the difficulty in accessing Government support, are widespread in the Project's action area. These elements threaten the diversity of jungles and forests that contribute to national timber production, provide goods to the local population, and govern the provision of global environmental services such as maintenance of diversity and carbon sequestration. Furthermore, Community Land-Use Plans for *ejidos* and communities do not consider issues related to carbon sequestration, so there are no mechanisms or incentives to explicitly consider mitigation measures to climate change.

177. In addition to the baseline for improving forest management, production techniques and ways to seek income-generating alternatives in some of the most marginalized areas of the country, Project intervention estimates that a total of 18 million tons of CO₂ will be captured or not issued by the end of Project implementation. The integration of different scales of carbon monitoring (local to national) will improve information on carbon flux and, together with the consideration of Project activities as a pilot for implementation of the REDD+ policy at the national and international levels, includes global benefits that justify the incremental cost of the Project as well as the request of GEF funds under this initiative.

II. Incremental costs

178. As mentioned in the main text, total Project cost will amount to US\$ 18,498,693 million, of which IFAD and the Mexican Government will contribute with US\$ 12,039,358 million and beneficiaries with US\$ 1,459,335 million, all covering the baseline costs (US\$ 13,498,693 million). Meanwhile, GEF contributes with the incremental cost of global benefits estimated at US\$5 million. The incremental cost amounts are shown in the following table:

Summary Table of Baseline Cost and Incremental Cost (in US\$ Million)

Component	Baseline Cost	Incremental Cost	TOTAL
<i>Strengthening of organizational, planning, local management and climate change mitigation capacities</i>	7 941 337	1 349 700	9 291 037
<i>Forestry projects and initiatives for carbon sequestration</i>	4 500 956	3 284 300	7 785 257
<i>Project Management</i>	1 056 400	366 000	1 422 400
TOTAL	13,498,693	5,000,000	8,498,693

179. Globally, Project actions allow for the capture of 2 million tons of CO₂eq and can avoid 16 million tons of CO₂eq. Additional benefits of the overall profit for each of the three components is mentioned below:

COMPONENT I. STRENGTHENING OF ORGANIZATIONAL, PLANNING, LOCAL MANAGEMENT AND CLIMATE CHANGE MITIGATION CAPACITIES

180. The incremental cost with global benefits is estimated at US\$1 349 700, or 14.5% of the total cost of this activity. It will particularly focus in strengthening the capacity of local actors to implement climate change mitigation measures through sustainable forest management techniques, recovery or restoration of degraded soils, and the establishment of additional forest cover, through plantations and agro-forestry systems. In parallel, this investment will create and develop community-level capacities to use relevant monitoring techniques and tools for measuring carbon sequestration (satellite geo-positioning systems, aerial photographs and other electronic visualization techniques to differentiate land uses, together with training in the field on periodic carbon stock measurement systems; all these embedded into an integrated computer system within CONAFOR's data structure). It will also include training in the use of tools to integrate carbon information in conventional land-use planning tools. This capacity building is crucial for achieving emission reduction benefits.

181. The remaining 85.5% of the component cost is financed by the Government of Mexico (50.2%), the FIDA-Sur Project (28.8%) and the beneficiaries (6.5%), and will be used to improve managerial capabilities of their natural resources (agro-forestry management practices, monitoring and supervision activities, report preparation and dissemination).

182. FIDA-Sur Project activities finance part of the baseline costs and aim at the consolidation of beneficiary organizations and local management capacity building (preparation of land-use and community development plans, strengthening of producer organizations, conflict identification and solution, environmental management consolidation, agro-forestry techniques, sustainable forestry, etc).

183. Actions included in Component 1 of the FIDA-Sur Project are: (i) training activities; (ii) data collection; (iii) definition of work methodologies and tools; (iv) awareness-raising activities; (v) elaboration of agro-forestry resources management guidelines; and (vi) monitoring and reporting.

184. The main benefits expected from the component are the following: (i) At least 500,000 ha included in existing OTCs have carbon estimates for all land uses; (ii) at least 6 brigades with four community technicians trained to implement and monitor mitigation (OTC focused on carbon, nurseries, plantations, sustainable forest management, carbon monitoring, mechanisms for access to markets of products and services, etc); (iii) carbon monitoring results are used as input to strengthen OTCs; (iv) 55 communities generate reports on carbon sequestration and GHG reduction.

COMPONENT II. FORESTRY PROJECTS AND INITIATIVES FOR CARBON SEQUESTRATION

185. The incremental cost with global benefits is estimated at US\$ 3 284 300, or 44.2% of the total cost of the activity. Baseline costs account for the remaining 57.8%. This activity represents the largest percentage of distribution of Project resources by all financing sources. The global benefit justifying the incremental cost is the innovative nature with which integration of different conservation systems and the increase of forest cover is sought, in order to achieve a common goal: the reduction of emissions and carbon sequestration; meanwhile integrating communities having greater mitigation potential and high poverty levels into systems that encourage carbon sequestration, previously inaccessible to them, due to their lack of capacity for preparing proposals and for meeting admission standards for these systems.

186. The Mexican Government will cover 21.7% of the cost of the component, estimated at US\$1,691,526million, the FIDA-Sur Project will cover 25% and beneficiaries will contribute with 11.1% of the component cost. These investments will allow access to innovative forestry and agro-forestry activities to increase population income and potentiate carbon sequestration or avoid carbon stock losses. By implementing these activities in the Project area, carbon sequestration will be maximized and the use of natural resources will be enhanced by generating lessons that contribute to their up-scaling at the local level, consistent with the National Climate Change Strategy and the Special Climate Change Program (PECC), as well as the country's REDD's vision and strategy (under preparation).

187. The component will contribute to: (i) the identification of potential areas for carbon sequestration; (ii) investments in selected areas because of their potential contribution to mitigation and to increasing local income, and (iii) ensure protection and survival of the forest cover and the maintenance of global services of carbon sequestration in the long term, through better access to funds that enable the development and adoption of better forest management and conservation techniques.

188. In order to strengthen conservation of forests and jungles in the long term, this component will assist owners in improving their integrated management. This will contribute to change the cost-benefit ratio brought about by forest conversion, making forest maintenance a viable option for capture and reduction of emissions. This, coupled with proper management of community forest enterprises (EFC), will boost investments in maintenance management practices and biodiversity promotion, making investments not only bankable, but also desirable and cost-efficient, providing greater incentives for owners to conserve their forest resources.

189. Forests can be managed for production and protection. Conservation and land use are possible in the context of good forest management, by creating financial incentives that may potentiate the carbon storage value of forestry in Mexico. The Project will contribute to strengthen the capacity of ejidos/communities for establishing baseline data on forest cover and associated carbon stocks, control systems, distribution of benefits and agreements on the management skills needed to perform REDD+ carbon credit transactions in the voluntary market. This aggregated flow of income will be particularly important for ejidos/communities with low potential income-generating activities to invest in improvements of forest management practices.

190. Activities under this component include: (i) preparation of incentive applications for the conservation of specific ecosystem services (carbon, water, biodiversity) and implementation of programs; (ii) improvement of timber exploitation, together with (i) reducing damage, waste and deforestation in a total of 400,000 ha; (iii) reforestation in, at least, 100,000 ha, using native agro-forestry species and adapted to local conditions; and (iv) actions for sustainable production and processing of agro-forestry products.

191. **The main benefits expected from the component are:** (i) deforestation avoided through forest use diversification in 83,000 ha of the Project area; (ii) a 25% loss of carbon stock due to degradation has been avoided in 319,000 ha. of the Project area; (iii) community nurseries are established producing, at least, 22 million seedlings, and (iv) a 50% decrease in the incidence of forest fires in the Project area.

COMPONENT III. PROJECT MANAGEMENT

192. The incremental cost with global benefits is estimated at US\$366 000, or 25.7% of the total cost of the activity. This component accounts for only 7.7% of the total cost of the Project, and seeks to strengthen CONAFOR for the systematic monitoring, analysis and dissemination of carbon sequestration to help achieve PECC's objectives.

193. The Government of Mexico is very interested in strengthening its management skills related to the implementation of climate change mitigation actions; this is why it will bear 48.1% of the cost of this component, and cover the remaining 51.9% with resources from the FIDA-Sur loan. However, the innovative aspect of creating a global mechanism to monitor carbon changes and the dissemination of experiences generated, account for the overall benefit that justifies the incremental cost. Under this component, the Project will generate validated information about international discourse on alternative approaches for carbon sequestration and monitoring in different land uses.

194. The Project will help prove the elements that can optimize the needs and care of local populations and of the Government, for the development of Mexico's national strategy for REDD+. The Project would then extend the experience of local activities to other areas using, to the extent possible, national methodologies strengthened during Project implementation with the assistance of GEF funds. The global benefit is to offer an experience of an integrated, multi-scale carbon stock monitoring system, so that it can be adapted and enforced under other circumstances.

195. Actions under consideration are: (i) information collecting, recording and analysis; (ii) definition of operational mechanisms; (iii) dissemination of experiences of the pilot projects; and (iv) operation of a carbon monitoring system.

196. Carbon monitoring has six components (for an additional description of the process to be followed, see Working Paper 4):

- (i) To identify the Project area and possible leakage areas;
- (ii) To estimate how much carbon is currently present in the various components (land use) in the landscape, to determine areas of action and those that will require monitoring in the field;
- (iii) To project carbon fluxes at the management unit level and according to the proposed land use (with and without the Project; often based on information from past deforestation or derived from a deforestation risk factor; there is software, such as CO2Fix39, suitable for making these projections, depending on the amount of information available at the beginning of the Project);
- (iv) Periodic measurements in changes of carbon stock in terms of area (usually with remote sensing) or density (carbon per unit area). Permanent Sample Plots (PPM) are currently used, but higher resolution remote sensing and additional bands, or radar images, or Lidiar, may be used. It includes a preliminary sampling, the establishment of PPM and regular field measurements and remote sensing;
- (v) Periodic analysis of progress on the point of departure, projected flow and reduction or sequestration commitments; and
- (vi) Integration of results and their implications for natural resource management in the communities' territorial land-use plan.

197. The Project aims at bringing together and analyzing the results at the State level. However, it is innovative because the computer system for tracking carbon implemented as part of the Project could be used to integrate results nationwide. This adds to the challenge, since monitoring not only has to meet local needs, but also must be standardized and, preferably, must be compatible and complementary to CONAFOR's INFyS (National Forestry and Soils Inventory) – one of the tools that will be used to monitor REDD+ nationwide.

198. The stratification criteria, selecting the number of permanent sample plots and measurement techniques, will follow the principles of good practices suggested by the IPCC and extended by other international standards (GOF-C-GOLD, for example) and complemented with locally generated information to, at least, reach "Tier 2" information.

199. Main benefits expected from the component are: (i) 40% of participating communities strengthen linkages with various actors for carbon trading; (ii) the local monitoring system is evaluated and adapted to, at least, 7 projects in other regions of the country; (iii) 10 FIDA-Sur / FIDA-GEF joint supervision missions are carried out; (iv) at least 10 experiences are systematized and disseminated; (v) at least X regional forums, meetings and other dissemination and experience exchange actions are carried out; and (vi) the methodologies generated by the Project help replicate and broaden CONAFOR's strategy to take care of the poorest population.

III. Global benefits complemented with national and local benefits

200. The Government of Mexico has mobilized significant amounts of financial resources to support development and reduce poverty in the rural sector. It is estimated that the Community Forestry Management, will continue with this tendency by co-financing the Project. However, the application of traditional supports has barely considered biodiversity and water resources without taking into account who would be the potential beneficiaries of supports. In other words, without additional support specifically targeted at populations who are traditionally excluded from Government investments, the generation of new investments to increase carbon sequestration potential and its co-benefits, such as biodiversity conservation and the regulation of water services will not be possible. The Project is designed to strengthen community areas that have previously been ignored or little cared for, incorporating aspects to increase human capital (training, exchange of experiences, participative rural evaluations, technical assistance, etc.) and promote gender perspective, key issues for local

³⁹ Program developed by Alterra and several partners in The Netherlands. UNAM, Ecosur and CATIE participated from Latin America in the last version of the model (3.1). Available free of charge in <http://www.efi.fi/projects/casfor/>.

populations to create alternative ways to improve their standard of living and the conservation of their natural resources. This complements CONAFOR's work to achieve its goals.

201. GEF contributions can be grouped as follows: (i) to help ensure that sustainable forest management (SFM) generates tangible and measurable benefits for carbon sequestration and reduction of emissions, through the application of technical tools and the development of training activities; (ii) to increase new investment mechanisms and prioritize carbon sequestration activities as well as investments in this area; (iii) to ensure that stakeholders have the technical capacity and tools to identify, prioritize, invest and monitor SFM activities; and (iv) to integrate locally (but with possible national implementation), a carbon sequestration monitoring and evaluation system to measure the direct impact of Project support, and other indirect impacts, such as changes in biodiversity and other important indicators.

202. The Project will contribute to improve the performance of forest ecosystems in an area of, at least, 500,000 ha. It will also provide inputs for global debate on the way to manage and implement REDD+ projects locally, and the integration of monitoring systems from the local to the national level. Finally, during its 5-year implementation period, the Project aims at preparing communities for the mitigation of up to 20.8 million tCO₂eq, including monitoring actions. For this, however, other Project benefits must be achieved in parallel: (i) territorial planning; and (ii) local arrangements for the distribution of benefits (governance and resource management). By analyzing the two elements (monitoring system operating and arrangements consolidated, and local capacity increased), conditions to access PES mechanisms will be met until the third year; therefore, a potential incremental value of the Project is to prepare communities so that by the end of the Project they can access the PES schemes with over 3 million tCO₂eq/year.

203. The Project will help fill a gap that is present in many countries. It will provide alternatives to Government and NGO efforts to increase carbon sequestration and mitigate climate change impacts that until now have focused almost exclusively in establishing protected areas. It will also help strengthen national capacities to identify, prioritize and improve carbon sequestration and reduce GHG emissions.

204. The Project focuses on expanding SFM to help preserve forests and jungles, both crucial in the mitigation of climate change impacts. It will generate lessons for the national REDD+ initiative, specifically on issues related to the incorporation of carbon in land use planning, monitoring, managed forests and the interaction between different systems of incentives to achieve a common goal: the reduction of emissions and/or the increase in carbon sequestration.

205. Several additional benefits will be generated locally by the Project, including: the development of social and human capital, technical and management capacities, job creation, increased household incomes, the improvement of local infrastructure, all of which results in an atmosphere of social peace that, in turn, contributes to reduce emigration. Furthermore, greater benefits for community development will be generated, such as: food, shelter, water, fuel, etc. Environmental benefits are described in the following table:

Table: Expected environmental benefits

Environmental Benefit	Key Indicator	Situation before the Project	Situation at the end of the Project	Measurement Methodology	Procedure for monitoring
Direct Benefits					
A. Mitigation of climate change					
Reduction of GHG emissions from reduce emissions from undesirable land-use change	Tons of CO ₂ e not emitted or sequestered. Deforestation rate. Level of forest degradation.	Deforestation (which can reach 5% annually) and forest degradation would continue in the three participating States if no external intervention occurs.	By the end of the project, 16 million tons of CO ₂ e have not been emitted. 4.8 million tons of CO ₂ e have been sequestered. Deforestation avoided in 83,000 ha through forest management actions. Persistence of project intervention effects will allow a total of 110 million tCO ₂ e not emitted over a 20 year period	Determination of a baseline and subsequent sequential inventories of carbon stocks.	Baseline reports. Carbon inventory reports. Analysis of satellite images and field validation. Reports on management plans.
Carbon sequestration through sustainable forest management and rehabilitation of ecosystems and degraded land	Forest carbon density. Hectares of forests and jungles under conservation and rehabilitation	Carbon in jungles amount to 20-60% of the expected value.	Conservation and rehabilitation activities associated with sustainable management promote recovery of up to 4.8 million tons of CO ₂ e.	Carbon inventories	Reports on carbon inventories.
	Hectares of forest plantations established.	272,718 ha are burnt every year in Project States.	New forest plantations have been established in 100,000 ha of degraded soils or soils affected by fires while 319,000 ha of forests .	Measurement of planted areas and forest cover and/or carbon density.	Seedling production and plantation establishment records. Remote sensing images. Reports on carbon inventories
Improvement of capacities and methodologies for monitoring and reporting accurately on GHG emissions	Number of government support applications submitted and, subsequently approved by communities. Number of business initiatives that are generated.	Lack of ongoing and relevant technical assistance limits possibilities of communities to access government supports.	Government supports and markets for forest products and carbon have been granted in 380,000 ha.	Follow-up to government support applications and to the number of established business initiatives.	Government support applications presented by communities. Number of carbon value chains and of other non-timber forest products established.
	Number of OTCs prepared.	Local populations do not have the means to plan the sustainable use of their territories.	75 communities have prepared their OTCs and they are being implemented.	Follow-up of participative and inclusive workshops for the preparation of OTCs in the 75 communities of influence.	Meetings of <i>ejido</i> assemblies. OTC documents. Implementation reports.
	Number of local people trained in measurement techniques and carbon monitoring.	Local people do not have the ability to carry out carbon stock measurements.	At least 24 local people have received training in stock measurement and carbon monitoring in the field.	Regular monitoring and professional development of community forest technicians	Records of training provided. Presence of 6 brigades with 4 community foresters each working in the field. Reports on carbon inventories. Experiences documented and

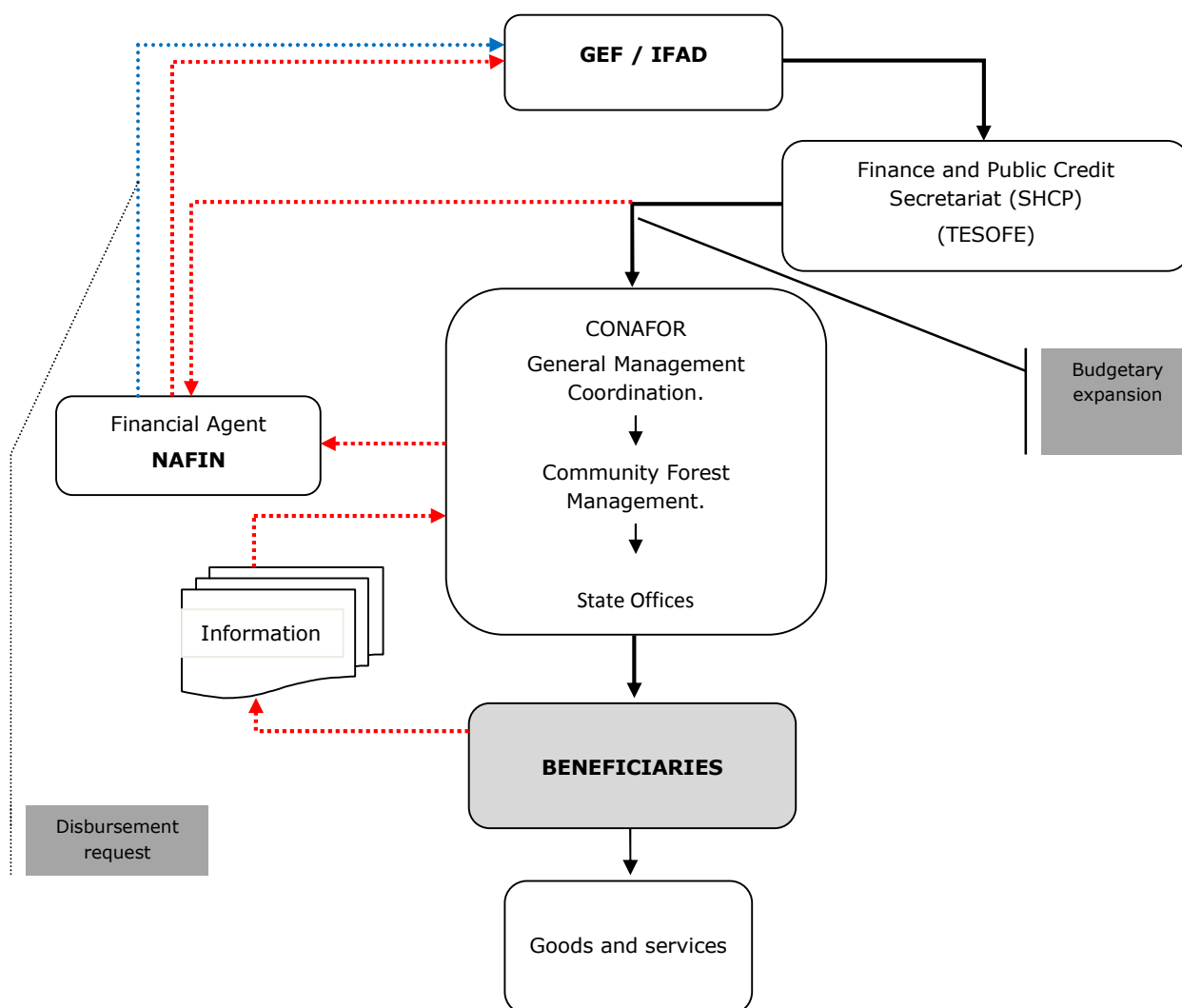
					disseminated through workshops and publications.
	Number of management plans incorporating improved forest management techniques approved according to existing legislation and technical regulations.	Forest exploitation is carried out in a traditional manner.	Low-impact forest management techniques have been encouraged in the 75 communities.	Evaluation of management plans submitted and approved.	Sustainable forest management plans approved by competent authorities.
Indirect Benefits					
B. Biodiversity Conservation	Number of tree species found in inventories. Hectares of forest cover and their spatial distribution in the Project area.	The unplanned extraction of forest goods leads to a loss of its structure and function.	Degradation of forest resources has been reduced (reduction of 25% of carbon stocks in 319,000 ha), through the implementation of sustainable forest management practices. 83,000 ha less deforestation. Forest cover outside the forest areas and connectivity between isolated forest patches have increased.	Monitoring of the persistence of forest species through forest management inventories. Monitoring of changes in the forest cover through MIS tools. Connectivity analysis between patches of forests and jungles.	Reports on management plans. Remote sensing images.
C. Adaptation to climate change	Resilience of livelihoods of local populations.	Due to degradation, communities using forest resources, and forest resources themselves, are vulnerable to climate change impacts.	Forest communities have increased their resilience to climate change.	Livelihoods analysis	Evaluations of the Project's impact.

ANNEX 5

FLOW OF FUNDS

ANNEX 5

OPERATIONAL DIAGRAM AND FLOW OF FUNDS



ANNEX 6

PROCUREMENT PLAN

ANNEX 6

PROCUREMENT PLAN (18 MONTHS)

YEAR: First 18 months

N o	Request			Description of activities	Estimated Contract Amount (US\$)	Delivery date of goods and/or products	Deadline for contract execution (in calendar days)	Invitation Form								Categories							Contract implementation	
	Date	Resp.	Quantity					Invitation/ Publication Date	Last date for receipt	Duration (calendar days)	CD	CM	CIP	LPMV	LPN	LI		Equipment and vehicles		Agreements and service contracts		Salaries	Operational expenses	Other
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	#	#	#	#	#	#	#	28	29
1	15/02/11	GSC	1	GEF Project Coordinator	20,000	17/4/11	60 days	15/2/11	12/03/11			x					X						19/03/11	17/04/11
2	15/02/11	GSC	1	GEF Project Manager	48,000	17/4/11	60 days	15/2/11	12/03/11					X			X						19/03/11	17/04/11
3	15/02/11	GSC	1	GEF Climate Change Technician	25,500	17/4/11	60 days	15/2/11	12/03/11			x					x						19/03/11	17/04/11
4	15/02/11	GSC	1	Office supplies	5,000	17/4/11	60 days	15/2/11	12/03/11			x					x						19/03/11	15/04/11
5	15/02/11	GSC	4	Vehicles	100,000	17/4/11	60 days	15/2/11	12/03/11			x					x						19/03/11	17/04/11
6	15/02/11	GSC	1	Baseline study	20,000	15/4/11	60 days	15/2/11	12/03/11			x					x						19/03/11	17/04/11
7	15/02/11	GSC	2	Feasibility studies	16,000	17/4/11	60 days	15/2/11	12/03/11			x					x						19/03/11	17/04/11

Name and signature of Project Manager: _____

Approval date: _____

Description of acronyms

CD	Direct purchase
CM	Small purchases
CIP	International Price comparison
LPN	National Public Bidding
LI	International Bidding
CPMV	Lesser value public purchase
UEP	Project Executing Unit

ANNEX 7

GUIDELINES FOR TERMS OF REFERENCE

ANNEX 7

GUIDELINES TO BE INCLUDED IN THE TERMS OF REFERENCE OF THE OPERATIONAL TEAM

206. Some of the elements to be considered in the Terms of Reference of the Project's operational team in Community Forestry Management are the following. Full TOR will be included in the Operational Manual of the FIDA-Sur Project and will be submitted by CONAFOR to IFAD for its no-objection prior to recruitment. TOR must include a performance evaluation scheme based on relevant results:

A. Promoters hired by the Project

207. The Project has budgeted resources to hire three people (one per State), who will carry out promotion activities in their areas of influence, particularly activities to achieve carbon sequestration and GHG emission reduction objectives. The profile of these promoters will be similar to the profile of the GSC team of promoters, adding aspects such as:

a) Profile:

- Preferably with knowledge of collection activities and systematic data analyses at the local level;
- Ease of communication with local populations, particularly with indigenous peoples;

b) Activities to be carried out:

- To promote the elaboration of the OTC with a vision of carbon sequestration;
- To serve as liaison between GSC at the State level and *ejidos*/communities for the flow of information, and obtain inventory data to support the development and execution of territorial land uses;
- To provide technical assistance to *ejidos* and/or communities in the design and implementation of sustainable forest management activities, and in the design and execution of carbon inventories;
- To contribute in the training of community technicians to carry out carbon monitoring actions;
- To supervise data collection and ensure integrity and adherence to measurement standards, and report it to the regional GSC;
- To plan carbon stock inventories and the monitoring of information generated by them;
- To contribute to the maintenance of field measurement tools and instruments for the inventory;
- To perform second tier analysis actions of information gathered;
- To exchange views with community technicians related to information gathered, its analysis and results;
- To be responsible for handling geographic information related to changes in land uses due to sustainable forest management activities implemented by the Project;
- To facilitate social strengthening processes in communities and actively participate in the experience systematization process; and
- To monitor OTC and community initiatives developed under the Project, and monitor changes in land use associated with sustainable forest management measures implemented in Project *ejidos* and communities.

B. Functions to be strengthened in the GSC

- Formulation and analysis of inventories with emphasis on carbon quantification;
- Management of geographic information systems to plan and execute carbon inventories;
- Monitoring of land use changes associated to sustainable forest management measures implemented in Project *ejidos* and communities;
- Design and operating of a computer module to integrate carbon monitoring data into a centralized data base in CONAFOR;
- Preparation of reports based on information from inventories;
- Evaluation of investment projects including actions to inventory and increase carbon sequestration, and reduce GHG emissions.
- Systematization of experiences on these issues.

C. Community Forest Technicians for carbon monitoring

- a) Tasks:
- To measure and monitor carbon stocks.
 - To identify sampling sites.
 - To establish permanent sample plots.
 - To carry out periodic measurements in plots.
 - To report to promoters on information gathered.
 - To exchange views with other technicians and promoters, and disseminate information within *ejidos*/communities benefited by the Project.

ANNEX 8

CARBON MONITORING AND EVALUATION

ANNEX 8

CARBON MONITORING AND EVALUATION

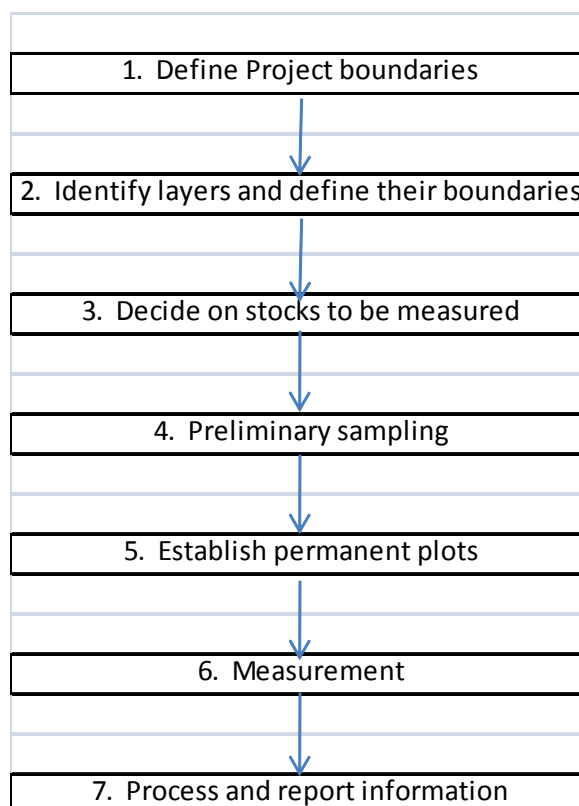
208. Carbon monitoring is crucial to show progress in the reduction of GHG emissions or in carbon sequestration. It will complement the monitoring of other issues, such as the compliance of project activities. This monitoring will have six components (for a more complete description of the process that will be followed please see Working Paper 4):

- i. To identify the Project area and possible leakage areas.
- ii. To estimate the amount of carbon currently present in the various components (land use) of the landscape, to determine action areas and those that will require monitoring in the field. As a first approach, IPCC references can be used.
- iii. To Project carbon streams at the management unit level and according to the proposed land use (with and without the project; this is often based on information from past deforestation or derived from a deforestation risk factor; there is software, such as CO2Fix , suitable to make these projections, depending on the quantity of information available at the beginning of the Project).
- iv. To periodically measure changes in carbon stocks, in terms of area or density. Permanent Measuring Plots (PPM, for its Spanish acronym) are currently used, but higher-resolution remote sensing with additional bands or radar images or LIDAR, may be used.
- v. To periodically analyze progress from the baseline, the projected flow and commitments for carbon reduction or sequestration.
- vi. To integrate in the management plan, results and their implications for natural resources management.

209. The Project will promote local carbon monitoring from community forest inventories. It will group and analyze monitoring results at the Federal and State levels. In other words, monitoring will also be standardized and, in addition to complying with local needs, will be preferably compatible and complementary to INFyS.

210. The methodology for community forest inventories will include seven steps (Figure 1). Details of the operation of this methodology are presented in Working Paper 4.

Figure 1: Community Forest Inventories as part of a SFM carbon stock system in selected municipalities of Campeche, Chiapas and Oaxaca



211. The definition of Project limits and layers to be monitored (Step 1) requires a participative process of ejidos and communities. OTC38 is a good input to define the Project and identify criteria for monitoring. If not available, results from carbon stock inventories could partially feed the development of the OTC. Stratification criteria, selection of the number of permanent sampling plots and measurement techniques will follow the principles of good practices suggested by IPCC and extended by other international standards (GOFC-GOLD, for example).

212. Five carbon compartments will be considered (aboveground biomass, underground biomass, leaf litter, dead wood and soil) and stocks to be measured during the life of the Project will be selected (Step 2). Stocks that can decrease or baseline stocks that could increase must be measured and monitored. Those that are not expected to change significantly during project execution (leaf litter or necromass, for example), could be excluded from measurements.

213. During the preliminary sampling, six to ten temporary measuring plots per layer will be established, with the dual aim of training local people in the measurement methodology and of obtaining a variance estimate to calculate the required number of permanent plots (Step 3). The preliminary sampling is important to refine with detailed data the baseline of the Project areas. This preliminary sampling will also be useful in deciding which compartments are to be measured. For example, if trees with a diameter at breast height (dbh measured at a height of 1.30 m) 5 cm account for the majority of carbon stocks in an ecosystem, and form the compartment that will contribute the most to carbon sequestration or to avoid emissions, it would be reasonable to consider them as the main measurement component. This contrasts with temperate ecosystems, where dead wood can be an important component of biomass and carbon stocks in a forest. Initially, and to calculate the Project's baseline, all carbon existences will be measured. This detailed measurement will be repeated every five years.

214. Field manual recommendations detailing how to carry out these operations according to principles of good practices (for example, UNFCCC 2010), will be followed to establish and measure permanent plots (Step 5). Where possible, permanent sample plots (PSPs) should be located in a manner consistent with INFyS' sampling grid. An adequate resolution grid will be defined to accommodate local-scale studies. In general, circular plots are an efficient way of collecting information, but are difficult to implement in some dense forest conditions. Square or rectangular plots are better in these cases. The location of the plots will be done randomly in the Project areas, from a square grid overlaid with a MIS. Nested plots will be used to collect data from the various components of an ecosystem. The possibility of inventories carried out as part of the Project to complement INFyS' data or from State Forest Inventories under implementation, must be considered. Specifically, it is suggested that the size of the national sampling grid used by INFyS be reduced to match the scale and local patterns of land use. Basic INFyS information (tree size, growth rate, population density) will be also collected as part of the Project.

215. The last two steps will be repeated regularly. The project will carry out annual measurements, helping to detect and correct errors and omissions promptly, without having to wait for the verification period. It is suggested that measurements be made annually on a subset of plots (10-25% depending on total number) and not only every five years, in order to match verification and payment periods of carbon sequestration certificates. These re-measurement will help keep interest in the project, providing at the same time working practice to those carrying out measurements, and will ensure an up-dated information flow in all project levels. Annual measurements will help keep interest in the Project, will provide working practice to those carrying out measurements, and will ensure an up-dated information flow in all Project levels. It will also help detect and correct errors and omissions promptly, without having to wait for the verification period.

Organizational structure and information flows

216. Ejidos and communities will be primarily responsible for data collecting. Project promoters will be the link between communities and CONAFOR (See WP 4).

217. Training of Community Forest Technicians (TFC) will be an essential element in Project operations. These people will be appointed by the Ejido/Community General Assembly to learn basic technical tasks for forest inventories and perform the necessary carbon sequestration measurements in their communities. The use of dasometric manuals consistent with IPCC's principles of good practices (for example: Brown 1997, MacDicken 1997, Tito et al. 2009) will be developed and promoted. Methods to be used should be agreed upon, locally adapted and standardized for implementing in the three Project States. GSC regional promoters hired with FIDA-Sur Project resources, will be responsible for monitoring the collection of information, and will contribute to ensure that training provided to beneficiaries is of good quality and done in a timely manner. Mexico has successfully implemented the concept of Farmer Field Schools and other similar practices to train rural people in farming practices. CONAFOR, through PROCYMAF, has experience in TFC training; therefore, only processes used so far must be consolidated with elements relevant to the characteristics of beneficiaries and topics that meet Project needs. If necessary, CONAFOR staff would access international training opportunities in carbon quantification and monitoring methods⁴⁰.

218. Teams of two to four TFC will be created; they will measure carbon stocks in their ejidos/communities. Previous experiences suggest that, under optimal conditions of access, weather and equipment operation, four people can gather information from, at least, one plot per day. The work of a TFC team during a year will depend on the area where the Project is implemented, sampling stratification and access conditions. Each TFC team will have a leader responsible for data collecting, who will ensure that all required field information is collected in full and in a timely manner, and who will be the main custodian of the information until it is delivered to the intermediate level of the Project.

219. GSC promoters will assist ejidos and communities in the design and execution of the preliminary inventory and in permanent plots to collect field information, check its consistency and report to GSC or other entity designated by CONAFOR, as well as provide maintenance to measurement tools and equipment. Promoters will keep in touch regularly with TFC teams to answer questions, provide assistance, make adjustments or corrections to inventories and collect data. A

⁴⁰ http://www.catie.ac.cr/BancoMedios/Documentos%20PDF/capac_2010_monitoreo.pdf (Last visit 12/07/2010)

back-up of the field data will be kept by the TFC team leader. GSC will review the consistency and integrity of field data, information will be entered into a data base, and preliminary calculations of carbon stocks in ejidos/communities will be made.

220. Local allometric equations published in scientific literature or coming from ECOSUR researchers from INFyS data will be used⁴¹. However, for species that do not have specific allometric equations, generic reliable equations will be used, (Chave et al 2005) or those compiled and/or developed by ECOSUR for CONAFOR. The use of specific allometric equations for one-place species is highly advantageous since it increases the accuracy of estimates. Therefore, one could consider developing additional equations as part of the Project. An efficient strategy is to develop allometric equations per growth type (for example, lianas, palm trees, conifers, broad-leaved), or by ecologic groups (shade-intolerant and sciophilous, etc.). Changes in inventories (due to growth or emissions by degradation) will be calculated as the difference between two consecutive measurements.

⁴¹ Ben H.J. de Jong, M. Olguín and F. Rojas. El Colegio de la Frontera Sur, Unidad Villahermosa Carretera Villahermosa-Reforma Km 15.5 s/n Ranchería Guineo 2ª sección CP 86280 Villahermosa, Tabasco.