

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT PROPOSAL

TITLE:	INTEGRATED FIRE MANAGEMENT IN RURAL COMMUNITIES OF GUATEMALA: ESTABLISHMENT OF PILOT SITES FOR THE IMPLEMENTATION OF SUSTAINABLE INTEGRATED FIRE MANAGEMENT PRACTICES
SERIAL NUMBER:	PD 590/10 Rev.1 (F)
COMMITTEE:	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY:	GOVERNMENT OF GUATEMALA
ORIGINAL LANGUAGE:	SPANISH

SUMMARY

Through the implementation of courses and workshops using a community participatory approach, this project will seek to define appropriate strategies for the protection of (tropical moist, cloud) broadleaved and pine forests against catastrophic fires caused by agricultural and other activities, such as the use of fire for tropical pine forest restoration, regeneration and improvement. IFM planning and implementation processes will be coordinated with the extensive participation of rural communities in four pilot sites, based on the principles of *Integrated Fire Management (IFM)* (Myers, 2006), integrating ecological, socio-economic, policy and technical factors to address the issues of forest fires and the use of fire in Guatemala. The results obtained will be applied to similar communities and ecosystems in tropical areas. The project will be focused on IFM for tropical broadleaved and pine forests to ensure forest protection and appropriate use of fire in forest management and improvement processes. The project will serve as a link between government agencies responsible for forest fire and fire management issues and the communities living within and around selected pilot sites.

EXECUTING AGENCY ASOCIACION VIVAMOS MEJOR – AVM

COLLABORATING AGENCIES NATIONAL FOREST INSTITUTE – INAB

DURATION 36 MONTHS

APPROXIMATE STARTING DATE UPON APPROVAL

BUDGET AND PROPOSED SOURCES OF FINANCE:	Source	Contribution in US\$
	ITTO	517,563
	AVM	174,169
	INAB	107,600
	TOTAL	796,332

SUMMARY

This proposal recognizes the problem of forest fires in Guatemala, which must be addressed in an integrated manner by all stakeholders and decision-makers concerned, both at the government and the civil society and community levels, particularly in rural areas.

Because of the lack of documentation and fire management expertise and the lack of awareness of community needs and expectations, as well as the existence of environmental legislation limiting the use of fire in rural areas, forest fire issues are being addressed by banning the use of fire rather than promoting its responsible, orderly and systematic use.

Tropical forest degradation and reduction in Guatemala has been exacerbated by uncontrolled wildfires and limited regulation of land use activities. Furthermore, the lack of technical assistance, baseline information and field research has resulted in a lack of knowledge on the management of rural production activities involving the use of fire in forestry, agroforestry and silvicultural systems, thus limiting the benefits that may be derived from the responsible use of fire as part of an integrated management plan.

It is in this context that training and capacity-building in integrated fire management planning (IFMP) is being proposed as the pivotal element of the project, on the basis of a concept that has been promoted by international organizations such as FAO and TNC in various Latin American countries. It addresses the need for fire management regulation by government agencies, taking into account the ecological and environmental context and the needs and expectations of the communities living around protected areas and tropical forests.

Four pilot sites have been selected in the country; IFMP efforts have already been started in these sites at the institutional and community levels and now these need to be reinforced so as to promote the internalization of this concept through a process that will lead to changes in policies and regulations related to fire management in protected areas and to forest management in general. This is expected to enhance the benefits of responsible fire use and reduce the damage caused by many uncontrolled wildfires, taking into account the potential effects of climate variability and climate change.

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INTEGRATED FIRE MANAGEMENT IN RURAL COMMUNITIES OF GUATEMALA: ESTABLISHMENT OF PILOT SITES FOR THE IMPLEMENTATION OF SUSTAINABLE INTEGRATED FIRE MANAGEMENT PRACTICES

PROJECT BRIEF

Forest fire issues in Guatemala are currently being addressed through total fire bans in national forest areas. To this end, since 1998, when the phenomenon known as El Niño Southern Oscillation (ENSO) caused extensive droughts at the global level, fire suppression capacities were built throughout the country.

These capacities and responsibilities have been shared by various government agencies, including the National Forest Institute – INAB and the National Council for Protected Areas – CONAP. More recently, technical capacities have also been strengthened through the National System for Forest Fire Prevention and Control – SIPECIF at the national level, in order to organize and plan strategic actions at the national, provincial, municipal and – occasionally – community levels.

An increase in drought frequency and intensity has been forecast for the near future due to global climate change effects, which could alter fire regimes (frequency, intensity, severity and seasonality) in forest areas and thus lead to changes in the composition and structure of fire-sensitive and fire-dependent tropical forest ecosystems (Myers 2006).

The characterization of fire-dependent and fire-sensitive forests, as well as the response of flora and fauna species in general, is still the subject of scientific research in the fire ecology field, and both academics and policy and decision makers in the area of forest management and conservation have insufficient knowledge regarding the benefits of fire for both the ecosystems and the human population.

Even the communities have a lack of knowledge when it comes to the practical use of fire in the management and conservation of forests, although fire is specifically used in silvicultural activities. There is limited documentation available in a region that is now beginning to show increasing interest in the effects and potential benefits of fire in certain types of tropical species and forests for their conservation (Scott 1999; Otterstrom 2004; Myers et al. 2006; Giron and Monzon 2008, in prep.).

Moreover, 35% of forest fires in Guatemala are caused by agricultural burnings, a practice used by a large number of farmers to prepare their crop lands during the dry season before the arrival of the rainy season in mid-year. Thus, climate change effects coupled with the lack of knowledge and ability to develop sustainable fire management practices represent a major threat causing deforestation and tropical forest degradation in the country.

Fire has been used at the community level as an effective low-cost tool in the clearing of agricultural lands, as it is a fast cost-effective method that can also fertilize the land through the accumulation of ashes. However, there are no records of any cost-benefit analysis of the use of fire as an agricultural tool as compared to other silvicultural treatments and of medium and long term effects of these practices on arable lands and neighbouring forests.

Therefore, the main aim of this project is to support the implementation of sustainable integrated fire management practices in 4 pilot sites in rural community areas of Guatemala so as to support the curbing of deforestation and tropical forest degradation in the country, ensure the sustainability of economic and environmental benefits derived from tropical forests for farmers, and define or regulate agricultural and forestry lands based on an integrated management approach.

The project beneficiaries will be the organized communities that are responsible for managing their forest resources, either by themselves or jointly with government agencies such as INAB and CONAP, in the following 4 regions of the country:

- ◊ Corazón del Bosque Ecological Park in the Multiple-Use Reserve of the Atitlán Lake Basin, within the jurisdiction of the Department of Sololá, Central Altiplano Region of Guatemala, administered by the Agricultural and Crafts Association for the development of La Guadalupeana with the support of CONAP and Asociación Vivamos Mejor;

- ◊ San Jerónimo National Forest Farm, Department of Baja Verapaz. A significant site under forest management by INAB in cooperation with several local settler communities.
- ◊ La Enea Ecological Park, within the municipality of Poptún, Department of Petén, administered by a community group known as “La Enea” in cooperation with the municipality of Poptún and CONAP.
- ◊ El Pinalón Community Forest, in the Department of Chiquimula, administered by the Association for the Coordination of Rural Development in the municipality of San Juan Ermita – ACODERJE with the support of INAB.

During the first year of the project, a joint effort of community-based integrated fire management planning (IFMP) is expected to be launched with the participation of previously trained INAB, CONAP and SIPECIF technicians as instructors and facilitators. They will disseminate the acquired knowledge among the communities at the site level to develop community-based IFM plans.

During the second year, the project will support the implementation of IFMPs at the community level through the acquisition of basic equipment as required to develop community-based integrated fire management practices with the assistance of the technicians involved in the first year. Information sharing will also be promoted among participating community members and technicians from the 4 selected sites in order to document the lessons learned during the second and third years of implementation of IFM plans. Expected outcomes of this process include the active participation of 50 – 75% of the target rural communities as well as a comparison of the number of uncontrolled forest fires reported by the third year of the project.

Furthermore, the social, economic, cultural and forest-related impacts of the implementation of new IFM practices at the community level will be documented and disseminated through the establishment of a baseline and evaluation protocol to assess both the impacts on forests (ecological assessment) and the incorporation of new IFM practices by the communities (cultural assessment based on knowledge, attitudes and skills). This will be taken into consideration to develop an official training program for community-based integrated fire management instructors by the end of the project.

Impact indicators of the project will be the inclusion of IFM aspects in the implementation of policies, strategic plans and YPOs of government institutions **by the 3rd year of the project implementation period.** During the same period, it is expected that at least 2 new communities per pilot site (a total of 8 communities) will have launched IFM processes.

During the 3-year implementation period, the project will facilitate community and institutional organization in the area of IFM so as to ensure the sustainability of activities after project completion. It is expected that the organization framework set up with INAB, CONAP and SIPECIF in cooperation with community associations will ensure the continuity of efforts to improve and document IFM practices in the relevant pilot sites.

The sustainability assumptions include the effective assimilation of the community-based IFM concept by both community organizations and government agencies. Six-monthly evaluations will be carried out to assess their positions before and after the launching of the project and information sharing will be promoted between pilot sites to improve the assimilation of concepts by community leaders and institutional authorities.

With regard to development assumptions, INAB, CONAP and SIPECIF should ensure job stability for the technicians trained during the first year of the project so that they can replicate the experience among target communities in each site. In addition, planning tools should be developed in a timely manner so as to achieve the effective implementation of community-based IFM practices.

The operational assumptions relate to good inter-institutional coordination and organization between government agencies and community associations, which will be facilitated through regular meetings for project implementation and assessment throughout the life of the project. To this end, evaluation and community-based IFM promotion committees will be set up for each site.

In view of the above, the Government of Guatemala hereby requests the International Tropical Timber Organization (ITTO) to provide a financial contribution of US\$ 517,563.00 (Five hundred and seventeen thousand, five hundred and sixty-three US dollars) for the implementation of

this project. Approximately 36% of this total will be assigned to personnel costs while 13% will be allocated to cover the cost of capital items. A counterpart contribution of US\$ 174,169.00 (One hundred and seventy-four thousand, one hundred and sixty-nine US dollars) will be provided by Asociación Vivamos Mejor (AVM), while the National Forest Institute (INAB) will provide a counterpart contribution of US\$ 107,600.00 (One hundred and seven thousand, six hundred US dollars) to the proposed project.

LIST OF ABBREVIATIONS AND ACRONYMS

<u>ACODERJE</u>	<u>Asociación para la Coordinación del Desarrollo Rural del municipio de San Juan Ermita (Association for the Coordination of Rural Development in the Municipality of San Juan Ermita)</u>
<u>AGBOCHI</u>	<u>Asociación Guardianes del Bosque de Chiquimula (Forest Rangers Association of Chiquimula)</u>
<u>ARNPG</u>	<u>Asociación de Reservas Naturales Privadas de Guatemala (Private Natural Reserves Association of Guatemala)</u>
<u>ASORECH</u>	<u>Asociación Regional Campesina Chortí (Regional Rural Association of Chortí)</u>
<u>AVM</u>	<u>Asociación Vivamos Mejor (Association for a Better Life)</u>
<u>COCODES</u>	<u>Consejos Comunitarios de Desarrollo (Community Development Councils)</u>
<u>CONANP</u>	<u>Comisión Nacional de Áreas Naturales Protegidas de México (National Commission for Natural Protected Areas of Mexico)</u>
<u>CONAP</u>	<u>Consejo Nacional de Áreas Protegidas (National Council for Protected Areas)</u>
<u>CONRED</u>	<u>Coordinadora Nacional para la Reducción de Desastres (National Coordination Agency for the Reduction of Disasters)</u>
<u>DIGEBOS</u>	<u>Dirección General de Bosques y Vida Silvestre (General Forest and Wildlife Directorate)</u>
<u>DOI</u>	<u>Department of the Interior of the United States of America</u>
<u>ENSO</u>	<u>El Niño Southern Oscillation</u>
<u>FAO</u>	<u>Organization of the United Nations for Food and Agriculture</u>
<u>FDN</u>	<u>Fundación Defensores de la Naturaleza (Foundation for the Protection of Nature)</u>
<u>FYDEP</u>	<u>Fomento y Desarrollo de Petén (Promotion and Development of Peten)</u>
<u>IFM</u>	<u>Integrated Fire Management</u>
<u>IFMP</u>	<u>Integrated Fire Management Plan</u>
<u>INAB</u>	<u>Instituto Nacional de Bosques (National Forest Institute)</u>
<u>ITTA</u>	<u>International Tropical Timber Agreement</u>
<u>ITTO</u>	<u>International Tropical Timber Organization</u>
<u>MAGA</u>	<u>Ministerio de Agricultura, Ganadería y Alimentación (Ministry of Agriculture, Livestock and Food)</u>
<u>MARN</u>	<u>Ministerio de Ambiente y Recursos Naturales (Ministry for the Environment and Natural Resources)</u>
<u>NGO</u>	<u>Non-governmental organization</u>
<u>PAFG</u>	<u>Plan de Acción Forestal para Guatemala (Forestry Action Plan for Guatemala)</u>
<u>PRM</u>	<u>Parque Regional Municipal (Regional Municipal Park)</u>
<u>PROCAFOR</u>	<u>Programa Regional Forestal de Centroamérica (Regional Forest Programme for Central America)</u>
<u>RUMCLA</u>	<u>Reserva de Usos Múltiples de la Cuenca del Lago de Atitlán (Multiple-Use Reserve of the Atitlán Lake Basin)</u>
<u>SEGEPLAN</u>	<u>Secretaría General de Planificación de la Presidencia (General Planning Secretariat of the Presidency)</u>
<u>SIPECIF</u>	<u>Sistema Nacional de Prevención y Control de Incendios Forestales (National System for Forest Fire Prevention and Control)</u>
<u>TNC</u>	<u>The Nature Conservancy</u>
<u>USDA</u>	<u>US Department of Agriculture</u>
<u>USFS</u>	<u>US Forest Service</u>
<u>YPO</u>	<u>Yearly Plan of Operations</u>

LOCATION MAP OF PROJECT AREA (AT THE NATIONAL LEVEL)



PART 1. PROJECT CONTEXT

1.1 Origin

This project proposal stems from the initiative of several institutions to incorporate the concept of integrated fire management into the country's regular practices, on the basis of past experiences, including the following:

- Starting relationships within the framework of the TNC Latin American Fire Management Network, launched in 2002.
- Participation of representatives of two Guatemalan NGOs (Asociación Vivamos Mejor – AVM and Fundación Defensores de la Naturaleza – FDN) in the USFS-funded workshop on IFM held in 2004 in the Dominican Republic.
- Participation of 5 technicians (two from FDN, one from AVM and two from CONAP) in the TNC-funded workshop for the revision of Integrated Fire Management Plans for Biosphere Reserves in Chiapas, Mexico.
- Participation of representatives of INAB and AVM in a course on Prescribed Burnings, held in 2005 in Belize and financed by the US Forest Service (USFS).
- Training workshop for instructors in community-based fire management, organized by the Network and FAO in 2005. Three Guatemalan representatives (from INAB, CONAM and AVM respectively) participated in this workshop.
- Participation of three Guatemalan representatives (from FDN, AVM and TNC-Guatemala respectively) in the TNC-funded workshop on IFM in tropical pine forests, held in Siguatopeque, Honduras, in 2007.
- Participation of a group of Guatemalan representatives (from ASORECH, FDN, AVM, CONAP, INAB, UNIVERSITY OF SAN CARLOS, UNIVERSITY OF THE VALLEY OF GUATEMALA) in a TNC/USFS-funded workshop on IFM for the Central American Pine-Oak Forest Ecoregion, held in Tuxtla Gutiérrez, Chiapas, in 2009.
- Network's support with TNC funding for the training of a technician in courses on prescribed burning, ecological effects of fire, leadership in prescribed burnings and forest fires. These courses were implemented in the USA and South Africa in 2004 and 2008.
- Development of Integrated Fire Management Plan for the South-Eastern Region of the Atitlan Lake Basin, in 2006 with funding from TNC and the US Department of the Interior (DOI) through the KuKulcan Foundation.
- Basic course on prescribed burnings held in 2006 in San Jeronimo, Baja Verapaz, with SIPECIF and TNC funding.
- First regional workshop on prescribed burning held in 2007 in Quetzaltenango with TNC and DOI funding through the KuKulcan Foundation.
- Equipment donated in 2007 by TNC for prescribed burning and fire management and acquisition of additional equipment with DOI funding through the KuKulcan Foundation.
- Development of an IFMP for the National Forest Farm of San Jeronimo Baja Verapaz in 2008, with TNC funding and INAB support. This IFMP included the involvement of six communities located in and around the Farm area.
- Launching of the Evaluation of Fire Status in the Central Altiplano Region of Guatemala, in 2008 with TNC funding and the participation of technicians from AVM, Colegio de la Frontera del Sur, TNC Global Fire Initiative Team, SIPECIF and MARN. The results of the evaluation will be published in 2009.
- Development and approval of an IFMP for the Corazón del Bosque Ecological Park in 2009. This IFMP was validated in cooperation with representatives of two communities and the executive board of the La Guadalupeana Agricultural and Crafts Association.
- Basic course on prescribed burnings held in 2009 in the Forest Heart Eco-Park with TNC and SIPECIF funding.

All of the above initiatives included demonstration and experimental prescribed burning activities to strengthen the implementation of management plans, particularly in San Jeronimo Baja Verapaz and the Multiple-Use Reserve of the Atitlan Lake Basin.

Concrete objectives have been set for each study area, including the use of fire to promote natural regeneration in pine forests, reduction of forest fuel to avoid catastrophic fires, and protection of fire-sensitive ecosystems, by implementing activities such as workshops with the participation of relevant personnel, pre-burned blacklines, and prescribed burnings, among others. The results showed, for example, that in the

areas where these actions were taken, fire tended to promote pine regeneration. Furthermore, burned areas were not affected during the fire season, which led to the evaluation of the positive impact of controlled burnings on forests as compared to uncontrolled fires, which can severely affect adult trees and kill the natural regeneration, in addition to the blacklines established, which protected the fire entry areas. The local communities were familiarized with the various concepts so as to enable them to differentiate beneficial from harmful fire practices. This process has been initiated and it will take some time for it to be assimilated by the local population.

Based on the above experiences, it was necessary to search for new areas to be targeted by this project. It was also necessary to acquire new knowledge on this issue, particularly to identify fire behaviour in the different ecosystems found in the country. Thus, after several meetings with the participation of various stakeholders, it was decided that the project should work with the La ENEA Regional Park in Poptun, Peten, and the Pinalon Forest under management by the ACODERJE Association in San Juan Hermita, Chiquimula. These two areas were selected because from the very beginning, these stakeholders have shown great interest in participating in this process and they regularly use fire in one way or another to burn stubble and grass lands.

1.2 Relevance

1.2.1 Conformity with ITTO's objectives and priorities

The International Tropical Timber Agreement (ITTA), 2006, which succeeded the 1994 Agreement, in its Chapter 1, Article 1, item (r), establishes the objective of encouraging members to recognize the role of forest-dependent indigenous and local communities in achieving sustainable forest management, and cooperating with relevant institutions and processes to this end.

Furthermore, ITTO has established its Guidelines on Fire Management in Tropical Forests, which highlight the importance of strengthening the capacity of and engaging the communities in the protection and management of forests, and recognize that local communities require the use of fire for some of their forest activities.

The project will propose the planning of sustainable integrated fire management practices by engaging the local communities and recognizing that prescribed burning, controlled burnings and the use of black or green lines may be viable options for the management of fires in tropical forests. Other measures proposed by ITTO include community training and extension programs on forest fire fighting and prescribed burnings. The Guidelines also recognize the need to strengthen the communities with the establishment of volunteer fire fighting brigades made up of local community members and forest users. This project is also consistent with ITTO principles regarding public education and training.

In addition, this proposal is consistent with the ITTO Action Plan 2008-2011 in the area of reforestation and forest management, including actions by ITTO and possible actions by members under *expected outcome 5: Tropical forest resource better secured*, particularly action C on the contribution to national and international efforts in the prevention and management of forest fires; *expected outcome 6: Tropical forest resource sustainably managed*, particularly action D on the study of social, economic and environmental costs and benefits of the sustainable management of natural and planted forests; and action G on promoting the development of silvicultural, forest management planning and related skills in public institutions, commercial companies and communities by, *inter alia*, regional training needs analysis and the provision of support to regional centres of expertise.

- International Tropical Timber Agreement – ITTA, 2006. Pp. 4 – 6.
- ITTO Guidelines on Fire Management in Tropical Forests, ITTO Policy Development Series No. 6, 40 pp.
- ITTO Action Plan 2008 – 2011. Pp. 11-13

1.2.2 Relevance to the submitting country's policies

This project proposal is included within the framework of the medium-term strategies proposed as part of the Forest Policy of Guatemala, regarding the need to work in coordination with government agencies (SIPECIF, INAB, CONAP) and with the participation of relevant non-governmental organizations (Asociación Vivamos Mejor – AVM). The results expected in this proposal are considered to address policy guidelines related to: contribution to the strengthening of the Guatemalan System for Protected Areas; protection and conservation

of strategic forest ecosystems; promotion of natural forest management for production purposes; promotion of plantation forestry; and promotion of agroforestry and sylvopastoral systems on lands suitable for forestry.

- Forest Policy of Guatemala. MAGA, PAFG, INAB and CONAP. 1998.
- National Fire Management Policy. SIPECIF. 2005.
- National Forestry Agenda 2003 – 2012.
- Forestry Law and Regulations, Legislative Decree No. 101-96.
- Protected Areas Law and Regulations, Legislative Decree No. 4 – 89.

1.3 Target area

1.3.1 Geographic location

The project includes sites located in four municipalities in different regions of the country (see Map of Project Area). The pilot sites are briefly described in the following table:

Region	Department	Municipality	Pilot sites	Extension (Ha)	Forest Type	Community Beneficiaries of Fire Management	Government Fire Management Authority
North	Petén	Poptún	La Enea Regional Municipal Park	65.7	Tropical broadleaved forests, <i>Pinus caribaea</i> , Savannahs, Lowlands (flood-prone areas) and <i>Pinus caribaea</i> reforestation	La Enea Group and Municipality of Poptún	SIPECIF, CONAP, INAB
Central	Baja Verapaz	San Jerónimo	San Jerónimo National Forest Farm	1,815	Pine and oak forest, <i>Pinus oocarpa</i> , shrubs and grasslands. Reforestation of tropical pine forests	Community Development Councils – COCODES	SIPECIF, INAB
East	Chiquimula	San Juan Ermita	El Pinalón Forest	800	Pine and oak forest, <i>Pinus oocarpa</i> ,	Association for the Coordination of Rural Development in San Juan Ermita – ACODERJE	SIPECIF, INAB
West	Sololá	Santa Lucía Utatlán	Corazón del Bosque Ecological Park	37.5	Pine and oak forest, <i>Pinus hartwegii</i> and <i>P. ayacahuite</i>	Agricultural and Crafts Association for the development of La Guadalupe	SIPECIF, CONAP

These sites were selected on the basis of past experience in the planning and implementation of activities and preliminary evaluations related to fire management dating back to 2006 (Romero 2006; Giron et al 2007; Chavajay and Giron 2008). Furthermore, field visits were carried out to these regions of the country with the technical experts and some of the community organizations from September to December 2008, so as to interview key technical and management personnel from SIPECIF, INAB, CONAP and community organizations, as the basis for the analysis of the project proposal and the identification of pilot sites.

1.3.2 Social, cultural, economic and environmental aspects

1. Corazón del Bosque Ecological Park

The Park comprises mixed pine (*Pinus pseudostrobus*, *P. Ayacahuite*, *P. Maximinoi* and *P. Montezumae*) and oak forests. This Ecological Park has extensive timber infrastructure for eco-tourism and Mayan ceremonial sites and altars which are also considered to be potential fire-risks within the Park. The Park's governing association is made up of 74 members and the majority of its beneficiaries are farmers and craftsmen who benefit from the implementation of production projects. Up to 1995, the main activities of the association were aimed at strengthening the agricultural and cattle-raising activities of its members, the agro-industry project and a community carpentry workshop. In 1995, the Regional Forest Programme for Central America (Programa Regional Forestal de Centroamerica –PROCAFOR) established a cooperation relationship that resulted in the participatory development of the agroforestry - environmental project. (www.corazondelbosque.com).

In 2007 the Park applied to be registered as a Private Natural Reserve with the National Council for Protected Areas (Consejo Nacional de Areas Protegidas –CONAP) and is currently going through the procedures required for official registration. In the meantime, the Corazon del Bosque Ecological Park is a member of the Private Natural Reserves Association of Guatemala (Asociación de Reservas Naturales Privadas de Guatemala –ARNPG), from which it derives benefits such as forest management training, studies and research. Corazon del Bosque is part of several ecological parks found within the Multiple-Use Reserve of the Atitlan Lake Basin (Reserva de Uso Multiple de la Cuenca del Lago Atitlan –RUMCLA), one of the most important protected areas in the altiplano region of Guatemala, as it has a good variety of Central American pine and oak forest ecosystems.

2. San Jerónimo National Forest Farm, Central Range of Chacus. National Forest Institute – INAB

This Farm covers an area of approximately 1,815 hectares, with 1,251 hectares of forest and 206 hectares of shrublands and grasslands, 349 hectares of denuded lands and 9 hectares of lands for other uses (tracks, settlements, etc.).

There are a number of communities settled in the forest farm and its bordering zones, covering areas that are part of the farm itself. These villages are Las Anonas, El Cacao, El Astillero, Sibabaj, El Durazno 1, Los Oajaca, El Coyolito and El Naranjo.

From 2001 to 2007, 47 forest fires were reported in the Forest Farm area, affecting 207.93 hectares. The areas with no forest cover (denuded areas) are used for agricultural activities, residential purposes and other activities carried out by settlers established in these areas. Some of the settlers illegally harvest forest products for commercial purposes to derive an income in addition to their subsistence agricultural activities and the majority of the settlers also work in temporary jobs in urban areas.

The National Forest Farm is located in the Pine-Oak Forest of Central America ecoregion, one of the priority conservation sites in Meso-America (Olson & Dinerstein 1998). In addition, coniferous species such as *Pinus oocarpa*, *Pinus maximinoi*, *Pinus Montezumae* and *Pinus tecunumanii* have been identified in this region, all of which are characteristic of fire-dependent ecosystems (Rodriguez and Fule 2003, Myers 2006). Other species that have been found in this area include: *Liquidambar styraciflua* and *Ostrya virginiana* as shade species; the brush and grassland vegetation is mainly made up of plum blossoms (*Prunus sp.*), common guava (*Psidium guajava*), blackberry (*Rubus sp.*), guanche or nance (*Byrsonima crassifolia*), common bracken (*Pteridium aquilinum*), arrayan or wax myrtle (*Myrica cerifera*), subin, tomatio and suquinay. There are large volumes of combustible dead pine needles on the ground as well as grass and plant waste.

Furthermore, the forest farm is an important water catchment area for the Salinas river watershed, which flows into the Gulf of Mexico. A total of 102 water sources have been identified in the forest farm area, which supply fresh water to the settlers in the farm as well as to the neighboring communities located towards the Salamá valley and San Jerónimo. Pipelines and other infrastructure have been installed in the upper parts of these water sources to ensure water supply in the area.

3. LA ENEA Regional Municipal Park

The Enea Regional Municipal Park (RMP) is located in and registered with the municipality of Poptún, with registration No. 152; page 37 of registration book 152 of Peten. More than 25 years ago it was used by FYDEP as a pilot area for the establishment of forest nurseries and reforestation with pine species and later on it was managed by DIGEBOS. In 2003 it was partially affected by the pine borer (*Dendroctonus* sp) and also by Hurricane Iris. In 2004, the Municipality officially granted the park to a group from the Poptun community (La Enea Group) who proposed a technical management plan for the area and implemented informal monitoring and control activities and fire prevention and control actions in the park. In 2007, the grant to the La Enea Group was duly ratified and the Municipal Council requested CONAP to register the area as a Regional Municipal Park.

According to Thornwaite's climate classification for Guatemala, the area where the La Enea RMP is located has a humid climate and natural forest vegetation characteristics (BB) (MAGA 2001). The area has a mean annual temperature of 22°C and mean annual rainfall of 1,700 mm (MAGA 2001).

According to Simmons *et al.* (1959) the soils are of the "savannah" group and "A" sub-group type (deep, well-drained soils), belonging to the Poptun (PU) series, with limestone residues as the parent material, flat relief, good internal drainage, ranging from coffee colour to reddish colour, moderate drainage, low risk of erosion and low natural fertility. An analysis of the correlation among the series of soils and the FAO classification shows that Poptun soils correspond to Gleyic Cambisols (situating them in the colluvial plain landscape unit) (SEGEPLAN 1992).

The La Enea RMP has a mainly flat topography, with some hilly formations of between 30 to 50 meters in height (characteristic of the area). The area has an altitude of 440 to 500 m.a.s.l. According to the USDA classification, La Enea RMP has a land-use capacity classification of VII, which indicates that it should be preferably used for conservation and protection purposes.

There are two small water sources in La Enea RMP which dry-up in summer. The Ixpasas stream, a permanent waterway that maintains a minimum flow in summer, also runs through the park (situated in the north-eastern-most corner of the park). The La Enea RMP is physio-geographically located in the Machaquila-Yaltutu mountain range.

The La Enea RMP is located in a Very humid Subtropical (hot) life zone (Holdridge 1978). Approximately 21% of the park area is covered by broadleaved forest (15 ha), 42% by pine species reforested 20 years ago (30 ha) and the rest of the park corresponds to natural vegetation areas that are characteristic of the Poptun savannas and flood areas (lowlands).

The following fauna species have been identified in the Park: armadillos (*Dasypus novemcinctus*), rabbits (*Sylvilagus* sp.), raccoons (*Procyon lotor*), squirrels (*Sciurus* sp.), pacas (*Agouti paca*), opossums (*Didelphis marsupialis*), agoutis (*Dasyprocta punctata*), mountain cats (*Urocyon cinereoargenteus*) and wild rats (*Heteromys* sp.) The bird species found in the area include: chachalacas (*Ortalis vetula*), brown jays (*Cyanocorax morio*), golden-fronted woodpeckers (*Centurus aurifrons*), pihás (*Lipaugus unirufus*), red-lored parrots (*Amazona autumnalis*), roadside hawks (*Buteo magnirostris*) and barn owls (*Tyto alba*), among others. Local reptile species include: coral snakes (*Micrurus* spp.), fer-de-lance (*Bothrops asper*), jumping pitvipers (*Bothrops nummifer*), ratsnakes (*Senticolis triaspis*), boa constrictors (*Boa constrictor*), basiliscos (*Basiliscos vittatus*) and iguanas (*Iguana iguana*).

4. El Pinalón Community Forest

The El Pinalón Community Forest is situated to the east of the municipal administrative centre between the Chiquimula municipality – including the villages of Sillón Arriba and in particular the community of Hacienda del Santo, which carry out fire prevention and monitoring activities to arrest the deterioration of the remaining forest through the AGBOCHI Association – and the San Juan Ermita municipality – including the communities of Minas Arriba, Minas Abajo, Linda Vista and Veguitas, which are organized by the ACODERJE Association that has promoted activities aimed at protection against forest fires.

At present, these two associations are protecting an area of approximately 800 ha of remaining forests that are the result of the over-exploitation that occurred when timber was extracted for the construction of the railway. During our visits to these areas we have observed exposed soils that are vulnerable to landslides and to both water and wind erosion.

The forest mass has improved with the actions that have been implemented in the community forest, as a greater number of pine regeneration seedlings have been identified in the area for the San Juan Ermita region. Another important aspect that the communities in the Chiquimula municipality have identified is an increased water flow in the area and they are now motivated and interested in ensuring the conservation of the forest so as to ensure their supply of drinking water as well as water for their agricultural activities.

Training in the appropriate use of fire needs to be strengthened in the San Juan Ermita region, as these communities are not aware of the use of fire as a tool that can contribute to the natural regeneration of the forest.

It is important to recognize that this forest reserve faces a serious problem due to the fact that many community members use fire in their agricultural activities but they have not yet managed to do this in a way that will also benefit the forest.

1.4 Expected outcomes at project completion

The project is based on the strengthening of the technical capacities of the staff of government agencies responsible for and involved in community fire management activities. Therefore, it is expected that there will be a higher level of technical training and follow-up available to the communities that use fire as a management tool on their lands and properties.

Emphasis will be placed on their strategic planning capacity in integrated fire management, as well as on the implementation, documentation and evaluation of fire management plans, through a joint self-learning process between technical personnel and community leaders.

The integration of new knowledge and practices in fire management, such as prescribed burnings and black or green lines, will contribute to the reduction of incidents related to the escape of fire from agricultural burnings that cause uncontrolled forest fires in the proposed pilot sites.

The expected benefits will be evaluated for both fire-sensitive and fire-dependent tropical forests, through the reduction of altered fire regimes, such as too much or too little fire, that have been identified in the planning process. These benefits will be directly linked to the existence or improvement of forest resources and environmental services for the neighbouring communities living near the managed pilot sites. We are convinced that by documenting the lessons learned and outputs achieved through the incorporation of new IFM practices and by assessing the status of the forest before, during and after the project intervention, the organized communities together with the relevant government agencies involved in IFM will incorporate IFM activities into their strategic plans and will not only focus on the total suppression of fires in the different regions. Furthermore, as other communities observe the results of the implementation of these strategic actions, they will approach the project to request support from the relevant government agencies to be trained in the new IFM practices in the regions where pilot sites are located, so as to replicate the project process on their lands (formulation, implementation, evaluation and feedback).

PART 2. RATIONALE AND OBJECTIVES

2.1 Rationale

2.1.1 Institutional set-up and organizational issues

Since the establishment of the National System for Forest Fire Prevention and Control – SIPECIF in 2002, the National Forest Institute and the National Council for Protected Areas have delegated technical field responsibilities to SIPECIF personnel to address forest fire issues at the national level. A number of important inter-institutional coordination efforts have been carried out to date at the national, departmental and municipal levels, to address forest fire issues under a totally fire suppression scheme throughout the national territory. According to forest fire statistics compiled by INAB since 1999 to date, there has been a downward trend in the average number and size of forest fires in the country, depending mainly on the climate conditions of each specific drought season.

However, efforts have been made from 2004 to 2009 by key personnel of INAB, CONAP, SIPECIF and Asociación Vivamos Mejor (AVM – *Association for a Better Life*) with the support of specialized training through the Latin American Fire Management Network of The Nature Conservancy to promote a concept related to *Integrated Fire Management* (Myers 2006) and *Two Faces of Fire* (Pantoja, 2008). This concept is based not only on the suppression of forest fires but also on the technical use of fire at the community level for forest management and conservation purposes. There are pioneer sites in Guatemala, such as the San Jeronimo Forest Farm and Corazon del Bosque Ecological Park, where Integrated Fire Management Plans (IFMP) have been implemented and early strategic actions of prescribed burning and pre-burned “blacklines” have been taken as new fire management practices to reduce forest fuel and improve fire-dependent forest ecosystems, as well as protecting fire-sensitive forest ecosystems. This has been possible thanks to the implementation of technical training workshops under the auspices of TNC, SIPECIF, Asociación Vivamos Mejor (AVM), CONAP and INAB.

The local communities use fire as a tool for the clearing of farm lands and the management of crops, and fires that are allowed to escape from agricultural burnings are one of the main causes of wildfires. Thus, a community-based integrated fire management approach is required so as to promote the managed use of forest and agricultural resources through a participatory planning methodology. It is important to strengthen the technical capacity of government agencies to support and assist community groups in the adequate management of their lands with a view to minimizing deforestation and forest degradation caused by uncontrolled fires and/or inappropriate use of fire, particularly during the drought season.

At present, there are no pilot areas to test community-based IFM planning at an appropriate scale. It is therefore necessary to establish pilot sites to assess the benefits and weaknesses of unsustainable fire use practices to ensure the viability of tropical forests and community livelihoods, taking into account tropical forest conditions and the social, economic and cultural situation of community groups that have influence on or are responsible for the management of forest lands they own or hold. Thus, the project will work with organized community groups with legal ownership or possession of their territories, who will be able to make decisions together with government agencies on the development, implementation and evaluation of community-based IFM plans. These organizations have already been contacted and preliminary consultations have already been held on this project proposal as it will have impacts at the site and regional levels.

Despite the clear efforts made in the area of forest fire prevention and control, in particular, the establishment of SIPECIF (National System for Forest Fire Prevention and Control) as the agency responsible in this field, it is still necessary to ensure inter-institutional coordination and adequate organization between the various bodies within the System by defining institutional roles based on existing conditions and in accordance with their corresponding legal frameworks so as to enhance and strengthen integrated fire management practices and, above all, ensure the communities' direct involvement and appropriation of the process for the benefit of the forest resources to be managed and the environmental services provided by them.

Furthermore, most pilot sites are managed by organized groups that have been legally recognized as associations comprising community members. These associations are under the administration of CONAP and INAB, and these two agencies provide them with the necessary technical assistance for the sustainable management of resources in the area. Similarly, technical assistance is also provided by SIPECIF, MAGA and other government and non-government organizations, and this is expected to help consolidate, update and develop these community associations by providing them with

adequate basic knowledge for the management of their respective areas. More often than not, the aforementioned agencies and organizations do not have plans and work schedules to suit each specific area so their timelines and issues do not necessarily meet the needs of the local communities, and in many cases the issues addressed are irrelevant. Considering this limitation, the site-specific integrated fire management plans (IFMP) to be developed will include a description of the processes to be incorporated and will provide guidance to the relevant institutions in addressing and prioritizing IFM-related issues.

2.1.2 Stakeholder analysis

This project will directly benefit the communities living in the four pilot areas who are organized into Associations, community groups and Community Development Councils – COCODES. The project proposal has been duly submitted to the communities and the feedback received shows that they are very interested in participating in the process. The communities are well aware of the multiple benefits that can be derived from having well defined and planned processes. They will be the main players of each of the actions envisaged in the action plans, which, in one way or another, will be aimed at alleviating the constant problems facing the communities, particularly those related to the supply of drinking water, which is specifically obtained from the forests to be managed as they are the sources of water catchment areas.

The beneficiaries are quite convinced that the project will bring about positive changes to their communities, and the project will be well supported by the organizational structures present in each pilot site, where both men and women participate equally in decision-making processes.

The project beneficiaries will be the men, women and children of the rural communities living in the four pilot sites, who all speak Spanish, although there are groups that belong to the Qeqchí, Kiche and Chortí ethnic groups. Although this represents an important cultural diversity, the social principles and awareness of these communities are clearly in favor of the appropriate management of natural resources.

Details of the primary, secondary and tertiary project stakeholders are shown in the following table:

Project for Sustainable Integrated Fire Management Practices in Rural Communities of Guatemala				
Stakeholder Group	Characteristics	Problems, needs, interests	Potential	Involvement in project
PRIMARY STAKEHOLDERS				
Agricultural and Crafts Association for the development of La Guadalupe – Corazon del Bosque Ecological Park, Municipality of Santa Lucia Utatlan, Department of Solola.	Owners of the site; the association comprises 74 members from the El Novillero and Ciénaga Grande communities.	Deliberately lit and uncontrolled forest fires inside and outside their property; limited experience, training and equipment in IFM; a strong interest in protecting timber infrastructure inside the forest.	Local knowledge about vegetation's response to fire; the community considers them to be experts on this issue.	Primary project beneficiaries
Community Development Councils – Cocodes of the following villages: Las Anonas, El Cacao, El Astillero, Sibabaj, El Durazno I, Los Oajaca, El Coyolito and El Naranjo. National Forest Farm of San Jeronimo, Department of Baja Verapaz	Settled inside the National Farm, they are users of forest resources.	Recognition of title and land rights inside the national farm area; need to implement small-scale crop growing and cattle raising activities and collect firewood for self-consumption.	Local knowledge about vegetation's response to fire; the community considers them to be experts on this issue.	Primary project beneficiaries
Association for the Coordination of Rural Development in San Juan Ermita – ACODERJE. El Pinalón Community Forest, Municipality of San Juan Ermita. Department of Chiquimula	Title holders of community areas in Minas Arriba, Minas Abajo, Linda Vista and Veguitas	Protection of forests as water sources and implementation of forest management and fire management actions aimed at the natural regeneration	Local knowledge about vegetation's response to fire, knowledge about the use of controlled burning, the community considers them to	Primary project beneficiaries

		of the El Pinalon Forest.	be experts on this issue.	
La Enea Community Group –La Enea Regional Municipal Park. Municipality of Poptun, Department of Petén.	Co-administrators of the Park.	Rehabilitation and protection of remaining pine forests that have been degraded by the pine borer.	Local knowledge about vegetation's response to fire; the community considers them to be experts on this issue.	Primary project beneficiaries
Asociación Vivamos Mejor (Association for a Better Life) – NGO	Technical consultants for the formulation of strategic IFM plans and actions at the regional and community levels.	Insufficient financial resources to strengthen IFM at the regional and community levels.	Work experience in IFM activities at the community and site levels. Knowledge about rural development work and sustainable livelihoods.	Will directly participate in the implementation of the Project in target pilot sites.
SECONDARY STAKEHOLDERS				
Cocodes El Novillero and Ciénaga Grande. Santa Lucía Utatlán, Sololá	Communication link with the community.	Activities aimed at community development issues with a certain degree of political interest.	They can promote a favorable or unfavorable opinion about the Project within the community.	Target group for aware-raising on and promotion of Project objective.
National Rural School for the West. Santa Lucía Utatlán, Sololá	Neighboring the area where the project will be implemented.	Fires have been known to have started in their property.	It can be a strategic partner for the dissemination and replication of the Project in their area.	Target group for aware-raising on and promotion of Project objective.
Cocodes of Minas Arriba, Minas Abajo, Linda Vista and Veguitas. San Juan Ermita, Chiquimula.	Communication link with the community.	Activities aimed at community development issues with a certain degree of political interest.	They can promote a favorable or unfavorable opinion about the Project within the community.	Target group for aware-raising on and promotion of Project objective.
National Council for Protected Areas	Administrator of the Regional Protected Area (Multiple Use Reserve of Atitlán Lake Basin and Poptún Forest Reserve)	Limited availability of inputs for IFM activities.	An important partner for Project planning, implementation and evaluation. Will support the Project with qualified technical personnel.	Will cooperate with the Project in the implementation of specific Project activities.
National Forest Institute	Administrator for forest related issues of the San Jeronimo Forest Farm and El Pinalon Community Forest.	Limited availability of inputs for IFM activities.	An important partner for Project planning, implementation and evaluation. Will support the Project with qualified technical personnel.	Will cooperate with the Project in the implementation of specific Project activities.
SIPECIF – CONRED	Governing and coordinating body on forest fire related issues at the national level.	Limited availability of inputs for IFM activities.	An important partner for Project planning, implementation and evaluation. Will support the Project with qualified technical personnel.	Will cooperate with the Project in the implementation of specific Project activities.
The Nature Conservancy	Experience in IFM at the community level throughout Latin America.	Reduced financing to strengthen IFM in Guatemala; a strong interest in promoting IFM issues.	International contacts for professional expert advice on IFM issues.	Collaborating agency. Expert advice on IFM training at the pilot-site level.

TERTIARY STAKEHOLDERS				
Municipality of Santa Lucia Utatlán, Sololá	Administrator of the municipality.	Limited support for issues related to natural resources and IFM	Can become an important partner in the development of local IFM regulations and policies.	Target group for aware-raising on and promotion of Project objective.
Municipality of San Jerónimo, Baja Verapaz.	Administrator of the municipality.	Limited support for issues related to natural resources and IFM	Can become an important partner in the development of local IFM regulations and policies.	Target group for aware-raising on and promotion of Project objective.
Municipality of Poptún, Petén.	Administrator of the municipality, co-administrator of the La Enea RMP	Limited support for issues related to natural resources and IFM	Can become an important partner in the development of local IFM regulations and policies.	Target group for aware-raising on and promotion of Project objective.
Municipality of San Juan Ermita, Chiquimula	Administrator of the municipality.	Limited support for issues related to natural resources and IFM	Can become an important partner in the development of local IFM regulations and policies.	Target group for aware-raising on and promotion of Project objective.
Universities	Generate knowledge and undertake scientific research in the relevant field.	Limited documentation and research on IFM issues.	Can become an important partner, particularly in the evaluation of the project.	Evaluation of costs and benefits of the IFM Project.

2.1.3 Problem analysis

Fire use and management practices are mainly implemented by the rural populations of Guatemala in the different regions of the country. Furthermore, the project area is a melting pot of different indigenous and mestizo cultures, which have historically developed knowledge practices and skills related to forest and soil management. In addition, the production of food and other production needs of the rural communities imply and require the use of fire. However, the government institutions responsible for the regulation of forest and agricultural practices in protected areas and forest management areas have issued rules and legislation that sometimes limit the implementation of fire management practices so as to reduce the damaging effects of forest fires. These rules sometimes clash with community needs and, as a result, the communities implement their activities illegally without abiding by the current standards and legislation.

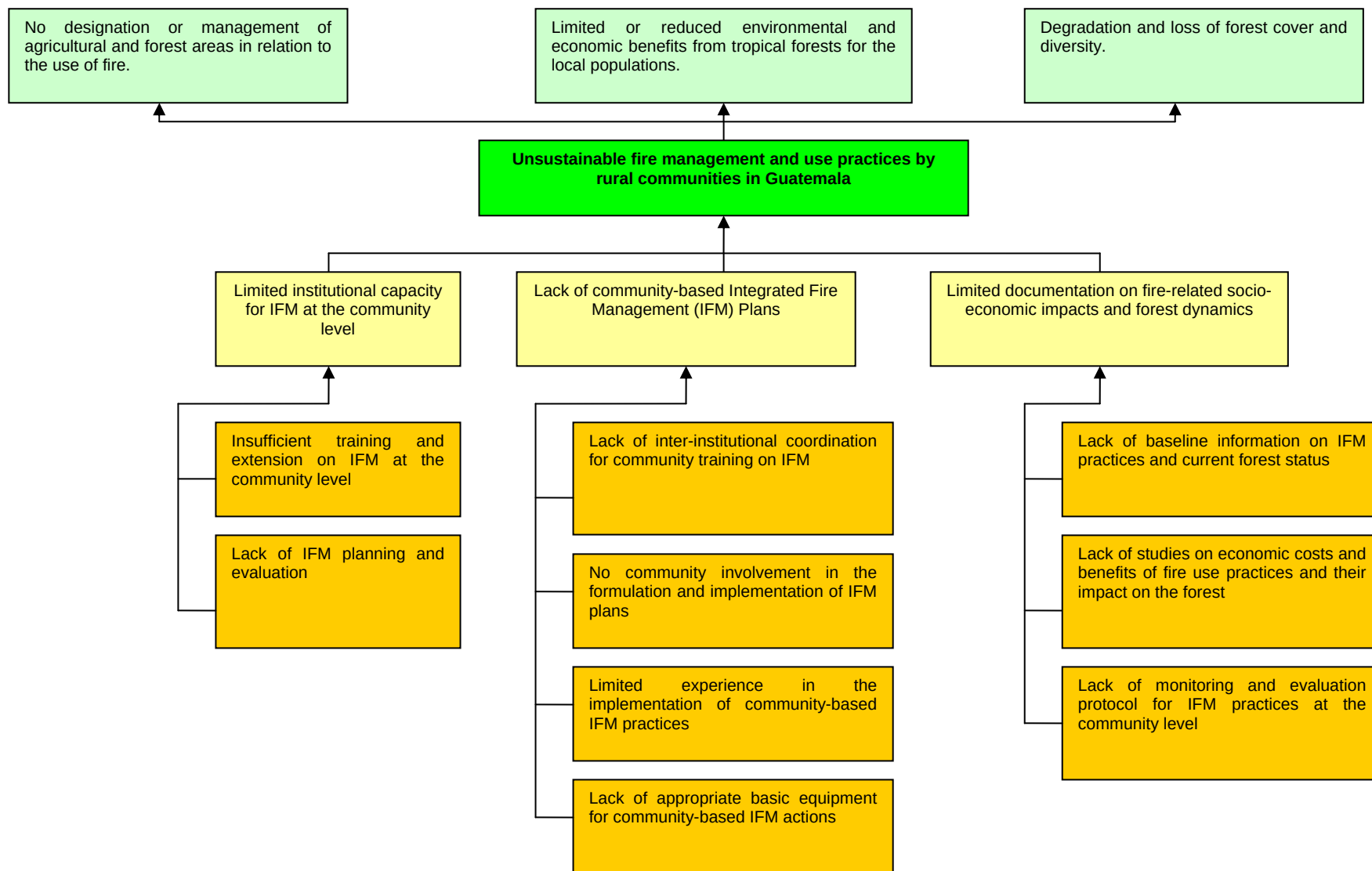
Furthermore, at the community level there is very limited institutional capacity in this field, as a result of the lack of training, planning and evaluation tools for the sharing and exchange of integrated fire management knowledge, practices and skills. The project will attempt to find a solution to the problem of the use or non-use of fire within the environmental, social and cultural context of the communities, through the harmonization of technical and local ideas and practices in order to enhance the benefits and reduce the negative impacts of these practices.

There are but a few examples in the country of integrated fire management planning (IFMP) projects at different levels, which are being evaluated as complementary tools for the management of forests and protected areas. This instrument is being formulated on the basis of the objectives of the management plans for forest and protected areas that are being implemented by INAB and CONAP respectively, in an attempt to harmonize the objectives and interests of the communities that live in and near those areas. In addition, there is a need to implement and evaluate pilot Integrated Fire Management Planning projects with the involvement of rural communities so as to develop implementation and assessment processes for fire use practices that can be sustainable in their areas, after an appropriate analysis of the knowledge, attitudes and skills of the communities taking into account their social, cultural, economic and ecological contexts. This will require the strengthening of inter-institutional coordination in this field through an in-depth analysis of issues in SIPECIF, greater community involvement, better technical support, satisfying training and basic equipment needs and the establishment of baselines for the documentation and research into the

long-term cost - benefit implications of these practices for both the communities and the tropical forests. In this respect, universities and academic institutions will play a very significant role.

It is expected that this will lead to improved forest management practices based on a better community definition of areas for agricultural, cattle-raising and forestry use in relation to fire use practices. Furthermore, this will also help to curb forest degradation as well as the loss of tropical forest cover and diversity. Finally, the project will help to reduce the limitations of communities' access to the benefits that can be generated from the implementation of appropriate fire use practices.

Problem Tree (next page)



2.1.4 Logical Framework Matrix

STRATEGY OF INTERVENTION	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
DEVELOPMENT OBJECTIVE <i>Community-based Integrated Fire Management – IFM contributes to the sustainable management of tropical forests in Guatemala</i>	Impact indicators 1. <u>By the 3rd year of project implementation, the policies, strategic plans and YPOs of government institutions (INAB, CONAP and SIPECIF) include and address IFM issues.</u> 2. <u>By the 3rd year of project implementation, at least 2 new communities per pilot area have developed IFM plans</u>	1. Institutional policy documents, strategic plans and YPOs incorporating IFM practices 2. Record of IFM project requests submitted to government agencies	Sustainability assumptions Institutional authorities (INAB, CONAP and SIPECIF), their technical departments and pilot rural communities are receptive to the IFM concept
SPECIFIC OBJECTIVE <i>Implement sustainable IFM practices in 4 pilot sites in rural community areas of Guatemala</i>	Outcome indicators 1. By the 3rd year of project implementation, 50 – 75% of target rural communities in four pilot sites have incorporated IFM practices in the management of their areas 2. <u>25% reduction in the incidence of forest fires reported in the four pilot sites based on a comparison of figures conducted every year during the implementation of the project</u>	1. Project progress and completion reports 2. Statistical records, maps and reports on forest fires in 4 target pilot sites and neighbouring areas	Development hypotheses INAB, CONAP and SIPECIF ensure job stability for relevant technical staff of government agencies. Timely development of planning tools by INAB, CONAP and SIPECIF in conjunction with target rural communities. Ongoing interest of target rural community leaders for the replication of IFM practices.
OUTPUT 1 Institutional capacity for community-based IFM strengthened	Output indicators 1. Institutionalized training course with technical training curriculum on community-based IFM developed by the first year of project implementation. 2. Monitoring and evaluation protocol for community-based IFM impacts developed by the first year of project implementation.	1. Technical reports on proposed program, materials and presentations, list of participants, course curriculum. 2. Technical report on monitoring and evaluation proposal, list of participants	Implementation assumptions Good inter-institutional coordination and organization between INAB, CONAP and SIPECIF Committed involvement of SIPECIF, INAB and CONAP technicians and community leaders in IFM course Timely disbursement of funds by donors (ITTO, others)

STRATEGY OF INTERVENTION	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
OUTPUT 2 Community-based Integrated Fire Management (IFM) Plans developed and implemented	Output indicators 1. At least 4 community-based IFM plans for pilot sites developed, revised and approved by year 1 of the project 2. At least 50% of strategic actions defined in community-based IFM plans implemented in each site by year 2 and 75% by year 3	1. Project progress reports 2. Project progress and completion reports	Implementation assumptions Ongoing technical assistance provided by SIPECIF, CONAP and INAB Ongoing interest of target rural community leaders for the implementation of IFM plans Timely disbursement of funds by donors (ITTO, others)
OUTPUT 3 Fire-related socio-economic impacts and forest dynamics documented and disseminated	Output indicators 1. Baseline on current status of community-based IFM practices developed within the first four months of year 1 of the project 2. Monitoring and evaluation protocol developed by year 1 and implemented in years 2 and 3 of the project 3. Economic cost-benefit analysis for IFM practices carried out by year 3 of the project 4. IFM experiences systematized and disseminated by year 3 of the project	1. Baseline document 2. Protocol document 3. Study contract and document 4. Systematization and dissemination document, audio-visual material and list of participants	SIPECIF, INAB and CONAP implement community-based IFM plans in coordination with target rural communities

2.2 Objectives

2.2.1 Development objective and impact indicators

Community-based Integrated Fire Management – IFM contributes to the sustainable management of tropical forests in Guatemala.

Impact indicators are:

- ◇ By the **3rd year** of project implementation, the policies, strategic plans and YPOs of government institutions (INAB, CONAP and SIPECIF) include and address IFM issues.
- ◇ By the **3rd year** of project implementation, at least 2 new communities per pilot area have developed IFM plans.

2.2.2 Specific objective and outcome indicators

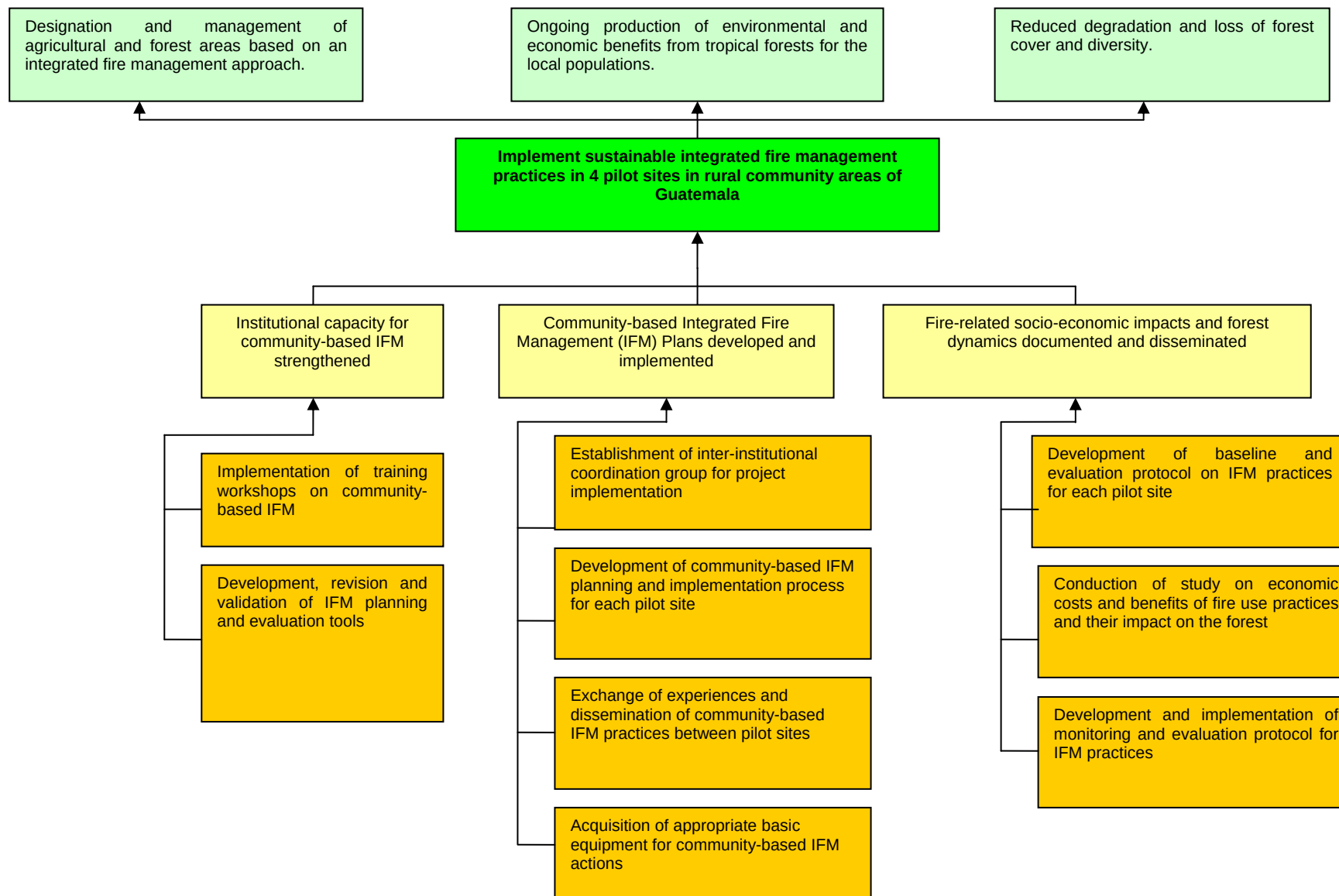
Implement sustainable IFM practices in 4 pilot sites in rural community areas of Guatemala.

Outcome indicators are:

- ◇ By the 3rd year of project implementation, 50 – 75% of target rural communities in four pilot sites have incorporated IFM practices in the management of their areas.
- ◇ **25% reduction in the incidence of forest fires reported in the four pilot sites based on a comparison of figures conducted every year during the implementation of the project.**

Objectives Tree (next page)

Objectives Tree



PART 3. DESCRIPTION OF PROJECT INTERVENTIONS

3.1 Outputs and activities

3.1.1 Outputs

Output 1: Institutional capacity for community-based IFM strengthened.

Indicators:

- ◇ Institutionalized training course with technical training curriculum on community-based IFM developed by the first year of project implementation.
- ◇ Monitoring and evaluation protocol for community-based IFM impacts developed by the first year of project implementation.

Output 2: Community-based Integrated Fire Management (IFM) Plans developed and implemented.

Indicators:

- ◇ At least 4 community-based IFM plans for pilot sites developed, revised and approved by year 1 of the project.
- ◇ At least 50% of strategic actions defined in community-based IFM plans implemented in each site by year 2 and 75% by year 3.

Output 3: Fire-related socio-economic impacts and forest dynamics documented and disseminated

Indicators:

- ◇ Baseline on current status of community-based IFM practices developed within the first four months of year 1 of the project.
- ◇ Monitoring and evaluation protocol developed by year 1 and implemented in years 2 and 3 of the project.
- ◇ Economic cost-benefit analysis for IFM practices carried out by year 3 of the project.
- ◇ IFM experiences systematized and disseminated by year 3 of the project.

3.1.2 Activities

Output 1: Institutional capacity for community-based IFM strengthened.

Activity 1.1: Training course on community-based IFM.

Activity 1.2: Development, revision and validation of IFM planning and evaluation tools.

Output 2: Community-based Integrated Fire Management (IFM) Plans developed and implemented.

Activity 2.1: Establishment of inter-institutional coordination group for project implementation.

Activity 2.2: Development of community-based IFM planning and approval process for each pilot site.

Activity 2.3: Implementation of actions defined in community-based IFM plan for each pilot site.

Activity 2.4: Exchange of experiences in the implementation of community-based IFM practices between pilot sites.

Activity 2.5: Acquisition of appropriate basic equipment for community-based IFM practices.

Activity 2.6: Publication and dissemination of printed and audio-visual materials on community-based IFM experiences.

Output 3: Fire-related socio-economic impacts and forest dynamics documented and disseminated.

Activity 3.1: Development of baseline and evaluation protocol on community-based IFM practices and current forest status for each pilot site.

Activity 3.2: Conduction of study on economic costs and benefits of fire use practices and their impact on the forest.

Activity 3.3: Development and implementation of monitoring and evaluation protocol for IFM practices.

3.2 Implementation approaches and methods

The project is based on a methodology derived from the Food and Agriculture Organization of the United Nations (FAO) on community-based fire management (see <http://www.fire.uni-freiburg.de/Manag/CBFiM.htm>) as well as past initiatives implemented by FAO and The Nature Conservancy in Latin America (<http://www.fao.org/forestry/media/11276/1/0/>). The aim is to train technicians working for relevant government agencies for the implementation of this approach. Thus, the project will work in close cooperation with all stakeholders that have a direct interest in the forest resources of the previously identified pilot sites. These technicians, with the financial assistance of the project, will hold meetings and workshops based on a participatory approach with the involvement of community organizations in charge of the management of forest and agricultural resources in selected pilot sites, so as to motivate interested stakeholders to participate in the development of a consensus-based vision on the use and management of sustainable practices for integrated fire management in their forests.

Community feedback and decisions will be duly taken into account, respecting the communities' decision to participate or not in the project. The project is expected to raise awareness, change perceptions, help analyze problems and identify socio-economic priorities regarding fire management in community territories. The following actions will be promoted to implement this community-based fire management approach (CONAP, 2008):

1. Work team composition

The project will seek the support of managerial and technical personnel of INAB, CONAP and SIPECIF in each of the target pilot sites, as appropriate.

2. Engagement of interested communities

The leaders of community organizations of some of the pilot areas have already been contacted and the project will develop a joint planning proposal in conjunction with these stakeholders based on their own community-based development and forest management perspective.

3. Inter-institutional integration

After reaching agreement with interested communities, a consultative committee will be set up for decision-making in relation to participatory planning, implementation and evaluation of community-based IFM plans to be developed.

4. Local diagnosis

One of the first workshops proposed for the planning process will be a participatory local diagnosis to identify problems as well as social, cultural, economic and ecological conditions in the pilot sites.

5. Local (current and future) vision of the use of fire

Through a participatory workshop, it is proposed to develop a current and future vision on fire management in each target site so as to assess the need to change existing practices or incorporate new practices for community-based integrated fire management.

6. Preparation of community thematic maps

This is an important step in the definition, description and localization of the different land uses which may or may not involve the use of fire in order to manage activities to improve forest conditions without reducing the benefits derived from current practices by the communities.

7. Zoning for fire management

A zoning of authorized and unauthorized fire use areas will be carried out, specifying allowed and not allowed practices by community members.

8. Action plan

The general IFM plan will contain yearly action plans, which will be developed using a participatory approach based on the results of the above step, prioritizing the most critical areas for integrated fire management. The action plan will also contain evaluation mechanisms and specific targets to be achieved in the implementation of community-based IFM.

9. Community training

At least 10 practices will be conducted every year under the Action Plan with the support and technical assistance of INAB, CONAP and SIPECIF technicians. The main participants in this process will be community groups organized for the implementation of community-based integrated fire management.

10. Development and implementation of Prescribed Burning Plans (PBP)

As part of new potential practices for target pilot sites, prescribed burning plans will be developed and implemented as appropriate to achieve the management vision and objectives of organized community groups.

11. Consensus building and reaching of agreements

Consensus must be reached and agreements should be documented and formalized prior to each of the above steps so as to ensure the commitment of government authorities and the project to jointly comply with the agreements established with beneficiary groups.

3.3 Work plan

Outputs /Activities	Responsible Party	Year 1 Quarter				Year 2 Quarter				Year 3 Quarter			
		1	2	3	4	1	2	3	4	1	2	3	4
Output 1: Institutional capacity for community-based IFM strengthened													
<i>Activity 1.1:</i> Training course on community-based IFM	<u>Project Coordinator – Asociación Vivamos Mejor</u>												
<i>Activity 1.2:</i> Development, revision and validation of IFM planning and evaluation tools	<u>Project Coordinator – Asociación Vivamos Mejor</u>												
Output 2: Community-based Integrated Fire Management (IFM) Plans developed and implemented													
<i>Activity 2.1:</i> Establishment of inter-institutional coordination group for project implementation.	Site technicians – facilitated by Project Coordinator and Forester – Vivamos Mejor												
<i>Activity 2.2:</i> Development of community-based IFM planning and approval process for each pilot site	Site technicians – facilitated by Forester – Vivamos Mejor												
<i>Activity 2.3:</i> Implementation of actions defined in community-based IFM plan for each pilot site	Site technicians – facilitated by Forester – Vivamos Mejor												
<i>Activity 2.4:</i> Exchange of experiences in the implementation of community-based IFM practices between pilot sites	<u>Project Coordinator – Asociación Vivamos Mejor</u>												
<i>Activity 2.5:</i> Acquisition of appropriate basic equipment for community-based IFM practices	<u>Project Coordinator – Asociación Vivamos Mejor</u>												
<i>Activity 2.6:</i> Publication and dissemination of printed and audio-visual materials on community-based IFM experiences	<u>Project Coordinator – Asociación Vivamos Mejor</u>												
Output 3: Fire-related socio-economic impacts and forest dynamics documented and disseminated													
<i>Activity 3.1:</i> Development of baseline and evaluation protocol on community-based IFM practices and current forest status for each pilot site	<u>Project Coordinator and Forester – Asociación Vivamos Mejor</u>												
<i>Activity 3.2:</i> Conduction of study on economic costs and benefits of fire use practices and their impact on the forest	<u>Project Coordinator and Forester – Asociación Vivamos Mejor</u>												
<i>Activity 3.3:</i> Development of monitoring and evaluation protocol for IFM practices	<u>Project Coordinator and Forester – Asociación Vivamos Mejor</u>												
<i>Activity 3.4:</i> Implementation of monitoring and evaluation protocol for IFM silvicultural practices	Site technicians – facilitated by Forester – Vivamos Mejor												

3.4 Budget

3.4.1 Master budget

Outputs/ Activities	Description	Budget Component	Quantity			Unit	Unit cost US\$	Total Cost US\$	ITTO			Executing Agency
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
Output 1.	Institutional capacity for community-based IFM strengthened											
Activity 1.1	Training course on community-based IFM											
	One 15-day course / 37 participants	61	1			Participant /day	65	36075	36075			<u>ITTO</u>
	Fuel - 5 vehicles	33	15			Cost/day	40	3000	3000			<u>ITTO</u>
	<u>4 national IFM trainers</u>	21	15			Daily fees	60	3600	3600			<u>ITTO</u>
	International travel	32	2			Air fare	800	1600	1600			<u>ITTO</u>
	1 international consultant - 15 days	13	15			Daily fees	500	7500	7500			<u>ITTO</u>
Activity 1.2	Development, revision and validation of IFM planning and evaluation tools											
	One 3-day workshop / 20 participants	61	1			Participant /day	50	3000	3000			<u>ITTO</u>
	Fuel - 3 vehicles	33	3			Cost/day	50	450	450			<u>ITTO</u>
Output 2.	Community-based Integrated Fire Management (IFM) Plans developed and implemented											
Activity 2.1	Establishment of inter-institutional coordination group for project implementation.											
	<u>General Director - AVM</u>	<u>11</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>Partial salary /month</u>	650	23400	7800	7800	7800	<u>AVM</u>
	<u>Project Coordinator – under contract/ seconded without pay</u>	<u>11.1</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>Salary /month</u>	<u>2333.34</u>	<u>84000</u>	<u>28000</u>	<u>28000</u>	<u>28000</u>	<u>ITTO</u>

Outputs/ Activities	Description	Budget Component	Quantity			Unit	Unit cost US\$	Total Cost US\$	ITTO			Executing Agency
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	Forester – under contract /seconded without pay	11.2	12	12	12	Salary /month	1666.67	60000	20000	20000	20000	ITTO
	Administrative /finance assistant – under contract /seconded without pay	11.3	12	12	12	Salary /month	1000	36000	12000	12000	12000	ITTO
	Project Coordination Office and Training Room	41	12	12	12	Cost /month	1000	36000	12000	12000	12000	AVM
	Computer equipment /Coordinator	44.1	1	1	1	unit	1000	1000	1000			AVM
	Computer equipment /Forester	44.2	1			unit	1200	1200	1200			ITTO
	Telephone, internet & electricity services	53	12	12	12	Cost /month	500	18000	6000	6000	6000	ITTO
	Plotter hp designjet 500	44.3	1	1	1	unit	3500	3500	3500			AVM
	Office materials and supplies	54	12	12	12	Cost /month	250	9000	3000	3000	3000	ITTO
	2 one-day meetings per site (4) /30 participants for establishment of consultative committees	61	8			Participant /day	15	3600	3600			ITTO
	4 sub-regional directors to coordinate and approve project actions	12.1	1	1	1	Man /month	1500	18000	6000	6000	6000	INAB

Outputs/ Activities	Description	Budget Component	Quantity			Unit	Unit cost US\$	Total Cost US\$	ITTO			Executing Agency
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	2 annual meetings in 4 sites to evaluate project progress with steering and consultative committees	61	8	8	8	Meeting	400	9600	3200	3200	3200	<u>ITTO</u>
	Project auditing	62	1	1	1	yearly	7500	22500	7500	7500	7500	AVM/ITTO
	Fuel - 1 vehicle	33	16	16	16	Cost /day	50	2400	800	800	800	<u>ITTO</u>
	Vehicles for transport during project events	43	5	5	5	unit	20,000	100000	100000			<u>ITTO – INAB</u>
Activity 2.2	Development of community-based IFM planning and approval process for each pilot site											
	3 technicians per site (4) to implement local workshops	12.2	24			Salary /day	50	14400	14400			SIPECIF, INAB, CONAP
	6 one-day workshops per site (4) /25 participants	61	24			Participant /day	15	9000	9000			<u>ITTO</u>
	Fuel – 5 vehicles	33	24			Cost /day	50	2400	2400			<u>ITTO</u>
Activity 2.3	Implementation of actions defined in community-based IFM plan for each pilot site											
	1 technician per site for each annual practice	12.2	4	4	4	Salary /day	50	6000	2000	2000	2000	SIPECIF, INAB, CONAP
	10 one-day practices per site (4) per year / 10 participants	61	40	40	40	Participant /day	10	12000	4000	4000	4000	<u>ITTO</u>
	Fuel – 4 vehicles	33	40	40	40	Cost /day	40	4800	1600	1600	1600	<u>ITTO</u>

Outputs/ Activities	Description	Budget Component	Quantity			Unit	Unit cost US\$	Total Cost US\$	ITTO			Executing Agency
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
Activity 2.4	Exchange of experiences in the implementation of community-based IFM practices between pilot sites											
	1 exchange between sites in year 2 and 3 of the project – one 5-day workshop /34 participants	61		1	1	Participant /day	50	17000		8500	8500	<u>ITTO</u>
	Fuel - 5 vehicles	33		1	1	Cost /day	40	1600		800	800	<u>ITTO</u>
	1 international consultant for 5 days	13		1	1	Daily fees	500	5000		2500	2500	<u>ITTO</u>
	International travel	32		2	2	Air fare	800	3200		1600	1600	<u>ITTO</u>
	Training fellowships for IFM technicians	15	2	2	2	Fellowship /year	1250	7500	2500	2500	2500	<u>ITTO</u>
Activity 2.5	Acquisition of appropriate basic equipment for community-based IFM practices											
	Forest equipment for one 10-people brigade per site (4)	44.4	4			Brigade (10 people)	12,000	48,000	48,000			<u>ITTO</u>
	Fuel - 1 vehicle	33	4			Vehicle	100	400	400			<u>ITTO</u>
Activity 2.6	Publication and dissemination of printed and audio-visual materials on community-based IFM experiences											
	Six-month contract for national consultancy	14.1		1		Publicist and social communicator	8,000	8,000		8,000		<u>ITTO</u>
Output 3.	Fire-related socio-economic impacts and forest dynamics documented and disseminated											
Activity 3.1	Development of baseline and evaluation protocol on community-based IFM practices and current forest status for each pilot site											
	Development of baseline and evaluation protocol for IFM practices	11.1 & 11.2	2			Project coordinator and forester						<u>ITTO</u>

Outputs/ Activities	Description	Budget Component	Quantity			Unit	Unit cost US\$	Total Cost US\$	ITTO			Executing Agency
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
Activity 3.2	Conduction of study on economic costs and benefits of fire use practices and their impact on the forest											
	4-month contract for national consultancy	14.2	1			Economist	5,000	5,000			5,000	<u>ITTO</u>
Activity 3.3	Development of monitoring and evaluation protocol for IFM practices											
	Design of monitoring and evaluation system	11.1 y 11.2	2			Project coordinator and forester						<u>ITTO</u>
Activity 3.4	Implementation of monitoring and evaluation protocol for IFM practices											
	3 technicians per site (4) to implement monitoring and evaluation system twice a year	12.2	8	8	8	Salary /day	50	3600	1200	1200	1200	SIPECIF, INAB, CONAP
	1 two-day workshop per site (4) / 15 participants	61	8			Participant /day	25	3000	3000			<u>ITTO</u>
	Fuel - 4 vehicles	33	8			Cost /day	100	800	800			<u>ITTO</u>

3.4.2 Consolidated budget by component

Category	Description	Total (US \$)	Year 1	Year 2	Year 3
10	Personnel				
11	General Director - AVM	23400	7800	7800	7800
11.1	Project Coordinator – under contract/ seconded without pay	84000	28000	28000	28000
11.2	Forester – under contract /seconded without pay	60000	20000	20000	20000
11.3	Administrative /finance assistant – under contract /seconded without pay	36000	12000	12000	12000
12.1	4 Sub-regional directors	18000	6000	6000	6000
12.2	3 Forest technicians per site	24000	17600	3200	3200
13	International Consultant - IFM	12500	7500	2500	2500
14.1	National Consultant - Publicist/Social Communicator	8000		8000	
14.2	National Consultant – Environmental Economics	5000			5000
15	Fellowships and Training	7500	2500	2500	2500
19	Sub-total	278400	101400	90000	87000
20	Sub-contracts				
21	National IFM Trainers	3600	3600		
29	Sub-total	3600	3600		
30	Travel				
32	International travel	4800	1600	1600	1600
33	Fuel – local transport costs	15850	9450	3200	3200
39	Sub-total	20650	11050	4800	4800
40	Capital Items				
41	Project Coordination Office and Training Room	36000	12000	12000	12000
43	5 vehicles for transport	100000	100000		
44.1	Computer equipment - Coordinator	1000	1000		
44.2	Computer equipment – Forester	1200	1200		
44.3	Plotter HP Designjet 500	3500	3500		
44.4	Forest equipment for 4 brigades	48000	48000		
49	Sub-total	189700	165700	12000	12000
50	Consumable Items				
53	Telephone, internet, electricity services	18000	6000	6000	6000
54	Office materials and supplies	9000	3000	3000	3000
59	Sub-total	27000	9000	9000	9000
60	Miscellaneous				
61	Sundry - 1 IFM course, 4 national workshops, 7 workshops per site, 10 practices per site, 4 meetings per site/year – steering and consultative committees	93275	61875	15700	15700
62	Project auditing	22500	7500	7500	7500
63	Contingencies				
69	Sub-total	115775	69375	23200	23200
70	National management costs /Executing agency management costs				
71	AVM Management costs - 15% (of \$635125 – items 11 to 69 above)	95268.75			
79	Sub-total	95269			
80	Project monitoring and administration				
81	ITTO monitoring and review	30000			
82	ITTO mid-term and ex-post evaluations	15000			
	ITTO Sub-total / 11 - 82 (of ITTO budget by component)	479225			
83	ITTO Programme Support costs (8% of items 10 – 82 above)	38338			
89	Sub-total	38338			
100	GRAND TOTAL	796332			

3.4.3 ITTO budget by component

Category	Description	Total (US \$)	Year 1	Year 2	Year 3
10	Personnel				
11.1	Project Coordinator – under contract/ seconded without pay	84000	28000	28000	28000
11.2	Forester – under contract /seconded without pay	60000	20000	20000	20000
11.3	Administrative /finance assistant – under contract /seconded without pay	36000	12000	12000	12000
13	International Consultant - IFM	12500	7500	2500	2500
14.1	National Consultant - Publicist/Social Communicator	8000		8000	
14.2	National Consultant – Environmental Economics	5000			5000
15	Fellowships and Training	7500	2500	2500	2500
19	Sub-total	213000	70000	73000	70000
20	Sub-contracts				
21	National IFM Trainers	3600	3600		
29	Sub-total	3600	3600		
30	Travel				
32	International travel	4800	1600	1600	1600
33	Fuel – local transport costs	15850	9450	3200	3200
39	Sub-total	20650	11050	4800	4800
40	Capital Items				
43	Purchase of vehicle for transport	20000	20000		
44.2	Computer equipment – Forester	1200	1200		
44.4	Forest equipment for 4 brigades	48000	48000		
49	Sub-total	69200	69200	0	0
50	Consumable Items				
53	Telephone, internet, electricity services	18000	6000	6000	6000
54	Office materials and supplies	9000	3000	3000	3000
59	Sub-total	27000	9000	9000	9000
60	Miscellaneous				
61	Sundry - 1 IFM course, 4 national workshops, 7 workshops per site, 10 practices per site, 4 meetings per site/year – steering and consultative committees	93275	61875	15700	15700
62	Project auditing	7500	2500	2500	2500
69	Sub-total	100775	64375	18200	18200
80	Project monitoring and administration				
81	ITTO monitoring and review	30000			
82	ITTO mid-term and ex-post evaluations	15000			
	Sub-total 11 - 82	479225			
83	ITTO Programme Support costs (8% of items 10 – 82 above)	38338			
89	Sub-total	38338			
100	GRAND TOTAL	517563			

3.4.4 Executing agency budget by component

Asociación Vivamos Mejor – AVM

Category	Description	Total (US \$)	Year 1	Year 2	Year 3
10	Personnel				
11	General Director - AVM	23400	7800	7800	7800
19	Subtotal	23400	7800	7800	7800
40	Capital Items				
41	Project Coordination Office and Training Room	36000	12000	12000	12000
44.1	Computer equipment - Coordinator	1000	1000		
44.3	Plotter HP Designjet 500	3500	3500		
49	<u>Sub-total</u>	<u>40500</u>	<u>16500</u>	<u>12000</u>	<u>12000</u>
60	Miscellaneous				
62	Project auditing	15000	5000	5000	5000
69	Sub-total	15000	5000	5000	5000
	<u>SUB-TOTAL /All components</u>	<u>78900</u>			
70	National management costs /Executing agency management costs				
71	AVM Management costs - 15% for project management (of \$635125 – items 11 to 69 above)	<u>95268.75</u>			
79	Sub-total	<u>95269</u>			
	GRAND TOTAL	<u>174169</u>			

Collaborating Agency: National Forest Institute – INAB

Category	Description	Total (US \$)	Year 1	Year 2	Year 3
10	Personnel				
12.1	4 Sub-regional directors	18000	6000	6000	6000
12.2	3 Forest technicians per site	9600	3200	3200	3200
19	Sub-total	27600	9200	9200	9200
40	Capital Items				
43	4 vehicles for transport	80000	80000		
49	Sub-total	80000	80000	0	0
60	Miscellaneous				
	<u>SUB-TOTAL /All components</u>	<u>107600</u>			
	GRAND TOTAL – Counterpart contribution of collaborating agency	<u>107600</u>			

3.5 Assumptions, risks, sustainability

3.5.1 Assumptions and risks

The following assumptions have been identified in relation to the development objective:

- Institutional authorities, technical agencies and communities are receptive to the IFM concept.
- Donors (ITTO and others) ensure the timely disbursement of funds.

In relation to the specific objective:

- Government institutions ensure job stability for relevant technical staff of government agencies.
- Timely development of planning tools by institutions and communities.

In relation to project outputs:

- The communities are interested in participating and will be continuously involved in the development and implementation of IFM plans.
- Government institutions ensure job stability and availability of the technical staff involved in the project.

The most common risks related to the project include the following:

- The public opinion encouraged by environmental groups can be very critical of the use of prescribed burnings even when they are identified as a necessary tool. To ensure these groups understand the actions to be implemented by the project, a dissemination strategy will be applied based on the "Two Faces of Fire" concept.
- There might be changes in the administration of government institutions, particularly the agencies responsible for protected areas. This could lead to adjustments in the personnel involved in the project. Project stability will be ensured by keeping a systematic record of the planning and implementation process, so that if there are any staff changes, the new technicians may be effectively incorporated into the project.
- Effective community involvement could be limited by the specific political situation in each of the communities associated to the pilot sites. To mitigate this risk, the leadership supporting project objectives will be identified (i.e. the most suitable community organization scheme for the formulation and implementation of community-based IFM plans).
- Agreements and consensus need to be reached with several communities settled within the San Jerónimo National Forest Farm and the time required to conclude these agreements could delay the implementation of activities. In order to mitigate this risk, different alternatives will be proposed for the participation of these communities, including respecting their decision if they decide not to be involved in the project.
- Project outcomes could be affected by a large number (in very dry years) or by a small number (in very wet years) of fires. Project impacts will be adequately assessed through fire records and analysis of the meteorological information contained in the baseline to be developed.

3.5.2 Sustainability

From a social point of view, it is expected that the communities will fully embrace the process as the actions recommended in the integrated fire management plan will have been proposed by the communities themselves as the stakeholders who are best aware of the environmental and social conditions of their territory. The planning and implementation process proposed in the project will motivate the communities to see themselves as the key players of the process and thus, they will take ownership of each of the elements that make up an IFM plan, adapting the process to their needs and realizing its cost-benefit significance with respect to their traditional activities. It is expected that the different community groups, local associations and COCODES will ensure the follow-up of project activities even after the conclusion of project implementation and donor support.

From a technical viewpoint, and based on Government Agreement 63-2001, Forestry Law Decree 101-96 and the Law for Protected Areas, Legislative Decree 4-89, it is expected that, in accordance with the commitments contained in these instruments, technical assistance will continue to be provided for the communities of the pilot sites. Furthermore, it is envisaged that throughout its life, the project will ensure the involvement of local and municipal authorities as well as other communities who are directly related to the pilot sites, so as to make them aware of the process and so that they can thus become multiplier agents and advisors in the implementation and achievement of the goals and objectives of IFM plans.

In addition, the express interest of pilot communities to adequately manage their natural resources will ensure that the project will provide viable fire prevention, suppression and rehabilitation alternatives based on an integrated fire management (IFM) system, thus achieving the implementation and improvement of appropriate techniques as part of a system that will be adopted and used as the preferred instrument in all community activities related to the conservation and management of tropical forests in their areas.

In relation to economic aspects, the costliest exercise will be the interlinking required to harmonize the activities of several institutions, the capacity-building activities required to strengthen community technical capacities and the provision of appropriate equipment, which is expected to be achieved through the implementation of this project. It is also expected that the practices to be incorporated into IFM plans, such as prescribed burnings, black lines and other fire prevention, control and suppression activities, will be implemented by the communities themselves even if there is no financial follow-up from the donors. This has been confirmed by the surveys carried out before the incorporation of these pilot sites into the project, as the communities in the selected areas have shown a great interest in their forest resources given their importance particularly as the main source of water supply. Furthermore, the four selected sites have good grassroots organizational structures and some resource administration capacity, which they have developed by managing the income received through activities related to forest protection, tourism and municipal and State contributions, to implement a number of forest management and conservation activities. In addition, many of the practices undertaken at the community level will not be costly to implement, given that the main component for the follow-up of these activities is the interest of the communities to provide local manpower for their implementation, which will not represent a limiting factor in these areas.

PART 4. IMPLEMENTATION ARRANGEMENTS

4.1 Organization structure and stakeholder involvement mechanisms

The association Vivamos Mejor (AVM) has been designated as the executing agency for this project. This Association has been working since 1992 in the field of integrated community development. It is currently focused on the implementation of projects in the areas of health, inter-cultural bilingual education, housing infrastructure, ecotourism, forest management, conservation and risk management.

In the area of conservation, the Association staff have participated in several courses, workshops and exchanges with the Latin American Fire Management Network of The Nature Conservancy (TNC), and AVM has been acting as a local partner in the implementation of strategies related to conservation and improvement of ecosystem viability and reduction of threats such as uncontrolled fires, based on the concept of community-based integrated fire management (http://www.tncfuego.org/conserv_guatemala.htm).

At the national level, TNC, SIPECIF, INAB and CONAP jointly promoted the first basic courses on prescribed burning in the country. These courses took place in the municipality of San Jeronimo, Baja Verapaz, in 2006 and more recently in the Corazon del Bosque Ecological Park in the Multiple-Use Reserve of Atitlan Lake Basin (2009). The aim of these courses was to train about 60 technicians of government agencies such as SIPECIF, INAB and CONAP, as well as municipalities, non-governmental organizations and community groups.

The Conservation Program's staff have been trained as instructors in fire management through their participation in workshops and events of TNC's Latin American Fire Management Network in a number of countries, including Mexico, the Dominican Republic, Spain and Honduras.

Furthermore, the Association Vivamos Mejor is a member of the National Alliance for Central American Pine and Oak Forest Conservation, which has been recognized for its specialization in fire management planning and evaluation. This Alliance has been promoting initiatives and projects for integrated fire management learning, implementation and documentation at the national level, with the coordinated involvement of government institutions, non-government organizations and local communities.

This proposal will receive the support of the National Forest Institute (INAB), which is the agency representing the Government of Guatemala before the International Tropical Timber Organization – ITTO. INAB has a long history of promoting forest development in the country and has a Forest Protection Programme, which has built capacities and expertise in the area of forest fires and is currently focusing on integrated fire management. The Institute has a stable organization structure with managerial and technical personnel at the regional and national levels and is therefore considered to be an important partner in the implementation of this project.

The functions of Asociación Vivamos Mejor as executing agency will include the **recruitment** of a coordinator and other members of the project team **as specified in Annex 2 of this document and in accordance with the relevant ITTO guidelines**; in addition, AVM will provide office and communication facilities to ensure smooth project implementation. The Project Coordinator will be responsible for the administration, scheduling and financial management of the project, and will have the support of a forester and an administrative/finance assistant, who will be recruited for the implementation and monitoring of the activities envisaged in the Work Plan. The curricula vitae of the project coordinator, forester and administrative/finance assistant are included in the annexes.

4.1.2 Project management team

The table below shows the personnel of the executing agency (Asociacion Vivamos Mejor) to be involved in the management of this project:

Full name	Position	Time allocation
Eduardo Secaira Juárez	General Director - AVM	20%
Estuardo René Girón Solórzano	Project Coordinator	100%
Axel Misraim Romero Solares	Forester	100%
Marco Tulio Zúñiga	Administrative /Finance Assistant	50%

Annex 2 details the duties and CVs of the project management team.

4.1.3 Project Steering Committee

The Project Steering Committee will be made up as follows:

- a representative of the Asociacion Vivamos Mejor (as Chair of the Committee)
- an ITTO representative
- a representative of INAB and/or the Forestry Action Plan for Guatemala as forest sector representative and ITTO counterpart
- a representative of the National Council for Protected Areas
- a representative of SIPECIF
- a representative of academic institutions /universities (Research and Education)
- a representative of ASORECH (NGOs)
- the Project Coordinator (as Secretary of the Committee)

4.1.4 Stakeholder involvement mechanisms

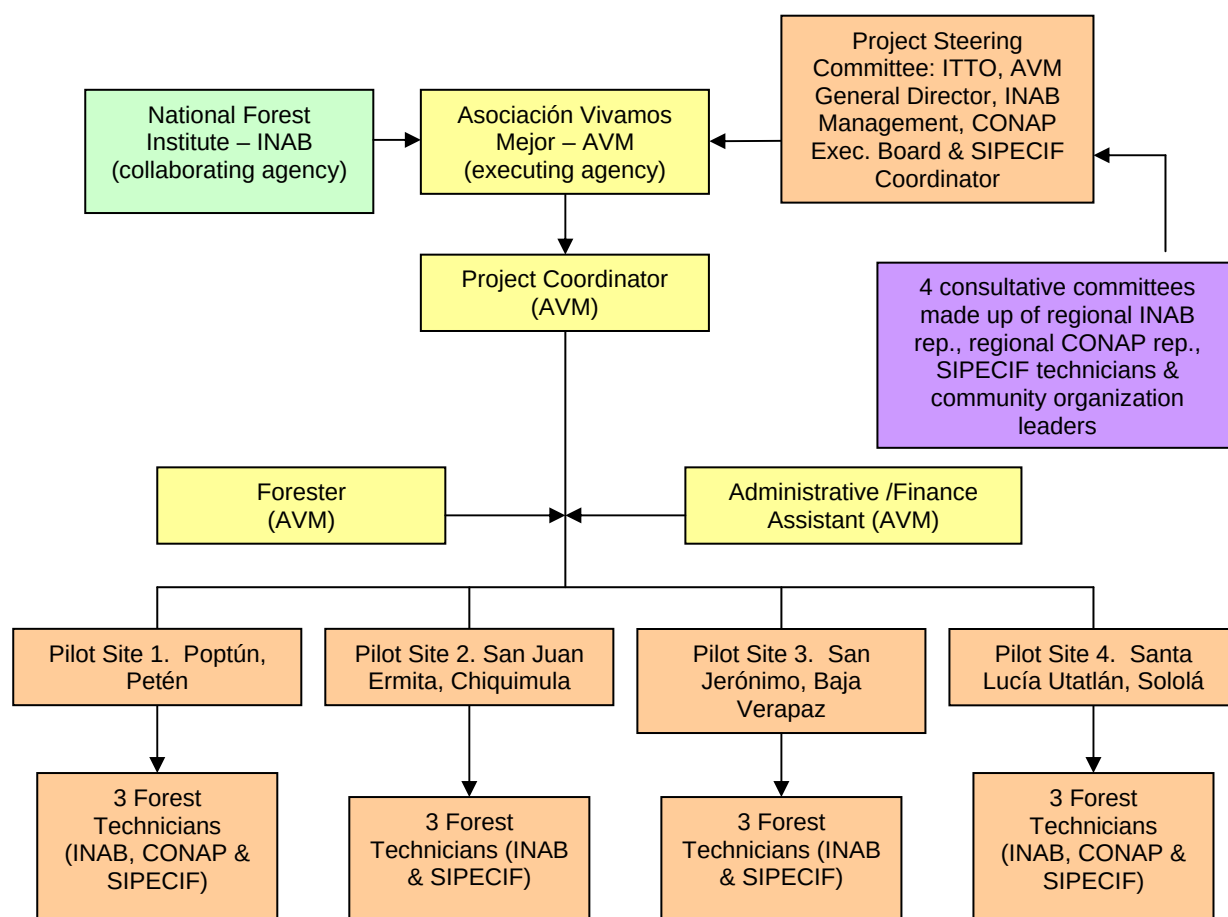
Consultative committees will be set up for each pilot site proposed (*Poptún, San Juan Ermita, San Jerónimo and Santa Lucía Uatlán*). These committees will be made up of sub-regional representatives of INAB, and a representative of CONAP in the case of Poptún, Petén and Santa Lucía Uatlán, Sololá. The committees will also include a sub-regional representative of SIPECIF and representatives of the executive boards of beneficiary associations such as the LA ENEA Community Group, the Association for the Coordination of Rural Development in San Juan Ermita – ACODERJE, the Agricultural and Crafts Association for the Development of La Guadalupe, as well as representatives of Development Community Councils – COCODES within the project area in San Jerónimo. Meetings will be held for the structuring of project consultative committees for each pilot site and at least two annual meetings during project implementation.

Organization structure of the Project: “Integrated Fire Management in Rural Community Areas of Guatemala”

The executing agency, with the support of the collaborating agency, will set up a project steering committee. The membership of this committee will include representatives of ITTO, AVM General Director, INAB management, executive director of CONAP and SIPECIF coordinator. In addition, a limited number of other institutions related to the project may also be invited to participate in this committee. The Project Steering Committee will address and decide on issues related to the project’s impact indicators.

Each pilot site (4) will have a consultative committee, which will be made up of the regional director of INAB and/or CONAP as appropriate, technicians from both institutions and SIPECIF, and representatives of community associations and organizations and community development councils. These committees will address and decide on issues related to the project’s outcome indicators as well as output indicators.

AVM will recruit the project staff in accordance with the guidelines established by ITTO. The project team will be responsible for the operational implementation of the project proposed to ITTO. This team will include a project coordinator, a forest technical assistant /forester and an administrative /finance assistance. This work team will actively participate in the meetings of the steering committee through the project coordinator and in the consultative committees through the coordinator and the forest technical assistant /forester, who will formulate and, in conjunction with the consultative committees, agree on a specific work plan for each pilot site with the involvement of technical staff from CONAP, INAB and SIPECIF as well as the target communities.



4.2 Reporting, review, monitoring and evaluation

As the basis for the project monitoring and control system, in the first four-month period of the project, a baseline diagnosis will be developed for each pilot site (a total of 4 sites), containing key information on existing conditions prior to project intervention.

Indicator 1 for Output 3 will be prioritized so as to support project monitoring in each pilot site. This indicator is as follows:

“Baseline on current status of community-based IFM practices developed within the first four months of year 1 of the project”

This baseline will be developed by the project coordinator with the support of the forester and technicians from collaborating agencies (INAB). Information on key indicators will be collected by forest type and by community for each pilot site.

Yearly schedules and programs for each pilot site will be submitted to the project steering committee and 4 consultative committees so as to support actions to be taken in the implementation of the project. In addition, meeting frequency will be agreed on with each committee, tentatively proposing a meeting every six months to discuss the results of project implementation after the schedule and program of each pilot site have been approved.

FAO formats and protocols will be considered for the collection and analysis of information on current status of knowledge, attitudes and skills of project stakeholders, based on the following table:

DOMAIN STAGES	COGNITIVE (Knowledge or information)	AFFECTIVE (Feelings, attitudes, values)	PSYCHOMOTOR (Motor skills, doing something with hands, feet, body)
Level 1	KNOWLEDGE	RECEIVING	IDENTIFYING
Level 2	COMPREHENSION	RESPONDING	NAMING
Level 3	APPLICATION	VALUING	DESCRIBING
Level 4	ANALYSIS	ORGANIZING & CONCEPTUALIZING	CONSTRUCTING
Level 5	SYNTHESIS	CHARACTERIZING	DESIGNING
Level 6	EVALUATION	INTEGRATION: LEADING TO CHANGES IN BEHAVIOUR	MODIFICATION & ADAPTATION, DEMONSTRATING

Taken from FAO/TNC Workshop: Training Course for Instructors in Community-Based Fire Management. Belize, 2005.

A diagnostic study will be carried out to assess current forest status, including extent, condition and landscape context, using an approach derived from a conservation planning methodology of The Nature Conservancy (<http://www.parksinperil.org/espanol/quehacemos/metodos/pca.html>) for each project site (a total of 4 sites). In addition, specific IFM monitoring and evaluation forms will be developed for each pilot site during the first year of project implementation.

Opinion surveys will be conducted by the end of years 1, 2 and 3 of the project in each target community as another way of obtaining feedback. Population size and sample representativeness will be considered in order to ensure the statistical validity of surveys.

The project coordinator, in conjunction with the AVM General Director, will be responsible for the achievement of targets and incorporation of feedback and opinions collected through project surveys, meetings and workshops, steering committee meetings, consultative committees in each project site, and analysis of community-based opinion surveys.

4.3 Dissemination and mainstreaming of project learning

4.3.1 Dissemination of project results

The dissemination of results will be based on the following strategies:

- ◇ The first strategy will be to facilitate exchanges between technicians and community members involved in the project, who will have an opportunity to disseminate the progress and results of the implementation of integrated fire management (IFM) practices among other community groups and technicians during the second and third years of the project.
- ◇ The second strategy will be led by the project coordinator in cooperation with the forester and with the support of the publicist /social communicator to be hired. Through this consultancy, project experiences and lessons learned in each of the 4 pilot sites will be documented through audio-visual materials (video and/or posters) or other tools/aids recommended by the consultant. The aim is to consolidate basic conditions for the replicability of the project taking into account the social, economic, cultural and ecological context of the 4 target pilot sites. The results will be disseminated through conferences and workshops aimed at different target groups such as decision-makers, executive officers of government and non-government agencies, using the forest management and conservation partnerships already established in the country and throughout the region.

- ◇ The third strategy considered in the project is the participation of key personnel and technical staff from the project's pilot sites in international events through the granting of partial or full fellowships to cover costs as required. The lessons learned in the pilot projects will be disseminated so as to facilitate the exchange of views and criteria to promote the institutionalization of community-based integrated fire management in the country and the region. Fellowships may also be given to promote the participation of prominent community leaders and technicians in specialized training events on fire management.

4.3.2 Mainstreaming of project learning

The lessons learned in this project will facilitate the re-structuring and strengthening of the national policy for forest fire prevention and control and integrated fire management; in particular, they will raise public awareness on the benefits and risks of fire, will promote a change of attitude with regard to the use of fire, and will help define national procedures and forms for prescribed burnings and the management of technical aspects such as smoke as well as social aspects such as community benefits derived from forest management. This will in turn strengthen the current forestry legislation where these procedures are still not clearly defined. The project will also seek to promote the reduction of greenhouse effects and susceptibility of lands to landslides and leaching, thus contributing to the mitigation of climate variability and climate change effects.

Experiences will be mainstreamed so that the rural communities may adopt the best practices in the use of fire in their agricultural activities, including the reduction of firebreaks built down to mineral soil which cause a high level of erosion, to incorporate instead the establishment of pre-burned blacklines, which can be more cost-efficient for the population given the shorter time required and the lower level of damage caused to the environment.

Local media such as the press, radio and cable TV will play a significant role in the dissemination of project results and will be incorporated as tools to promote information, including the voice of the locals as validation of the importance and benefits of the practices to be developed. To this end, regular meetings will be held with the media both to promote the project and to report on progress made in relation to the integrated fire management plans and commitments to be undertaken by the communities and institutions concerned.

Promotion material such as leaflets, brochures, advertisements, banners and specifically calendars will also be used as these have been very successful in past experiences. These materials will contain information related to changes of attitude and the importance of ensuring appropriate fire management.

The exchange of experiences between the different areas will also be promoted. Thus, several fora, field visits and meetings will be implemented to disseminate the progress made and encourage the continuity of activities defined in the action plans. The participation of local stakeholders and committee members in these exchange events will be prioritized.

ANNEX 1. PROFILES OF THE EXECUTING AND COLLABORATING AGENCIES

EXECUTING AGENCY

1) Background

Name: Asociación Vivamos Mejor – AVM (*Association for a Better Life*)

Location: Calle de Los Salpores 0-83 zona 3, Barrio Jucanyá. Panajachel, Sololá. Guatemala, C.A.

Institutional Mission: “By 2013, Vivamos Mejor Guatemala will have been consolidated as an organization that facilitates and contributes to the improvement of the quality of life of the communities in the sub-watersheds and micro-watersheds of the Department of Sololá through integrated sustainable land development models that will be successfully implemented and may thus be extended to other regions of the country” (AVM Strategic Plan, 2009, in prep.).

Fields of expertise:

The Asociación Vivamos Mejor has the following areas and programs of specialization:

Social Management Area, with a health program focused on reproductive and sexual health issues as well as a program on inter-cultural bilingual education and early childhood leadership.

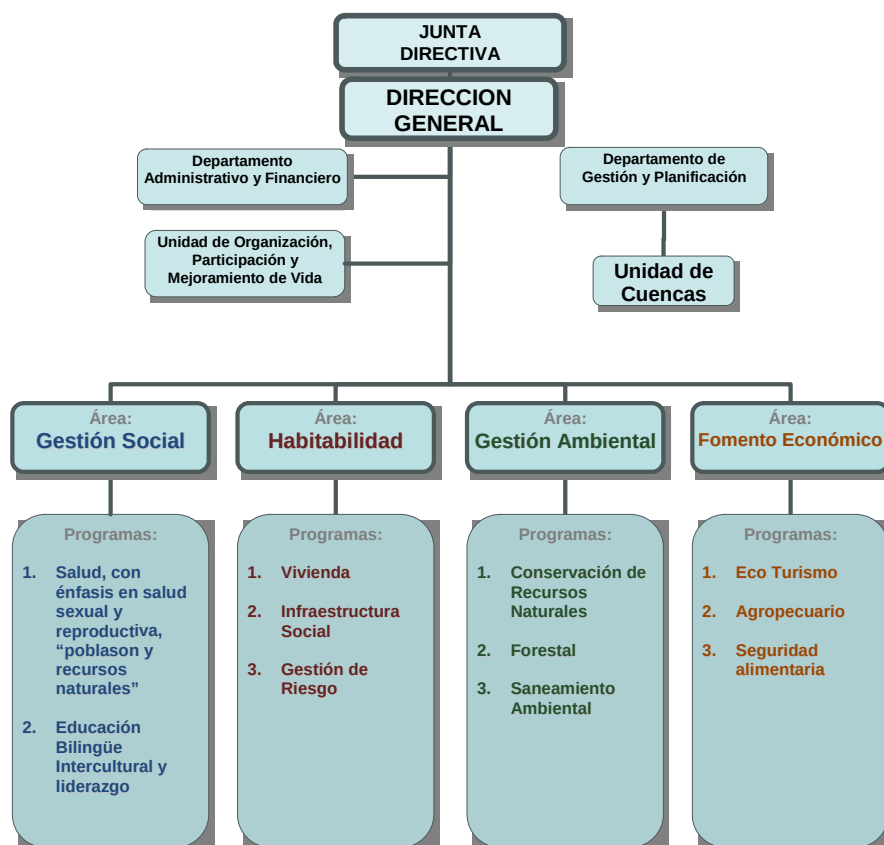
Housing Area, with a social infrastructure and housing program as well as a risk management program.

Environmental Management Area, with a natural resource conservation program, a forestry program and an environmental rehabilitation program.

Economic Development Program, with an ecotourism program and an agricultural and food security program.

Each of the above areas and programs have strategic objectives and specific projects (Strategic Plan for 2009-2013, in prep.).

Organizational chart:



List of the main projects or studies implemented over the last three years

A list of the most relevant projects that are being implemented or have been completed by the executing agency appears below.

Project title	Implementation period	Donor
"Strengthening the Sololá Municipal Regional Parks System and promoting sustainable development in the Ecological Corridor of the Southern Region of the Multiple-Use Reserve of the Atitlán Lake Basin" – Project 005-2008	November 2008 - November 2010	Tropical Forest Conservation Fund – FCA through Conservation Fund for Guatemala – FCG
"Strengthening the management of the Multiple-Use Reserve of Atitlan Lake Basin – RUMCLA" - Agreement No. 5	August 2008 - September 2009	The Nature Conservancy and American Electric Power
"Endangered Parks – Atitlán Volcanoes", Agreement Letter No. 4	June 2007 - June 2008	The Nature Conservancy and American Electric Power
"Development of public use plans for the municipal regional parks of Chuwanimajuyu and Chuiraxamolo and systematization of the experience of development of public use plans and use of the Master Plan as benchmark" – Agreement Letter No. 3	April 2007 – March 2009	The Nature Conservancy
"Reducing the vulnerability to natural disasters through mitigation work in the municipalities of San Marcos La Laguna and Santa Cruz la Laguna" - Agreement No. 06-C01-072	January 2009 - December 2009	Agencia Española de Cooperación Internacional para el Desarrollo – AECID

List of projects and pre-projects submitted to ITTO including current status and funding

No prior proposals have been submitted to ITTO. This is the first proposal submitted to the Organization.

2) Infrastructure (relevant details)

- ◇ Own building with office space – headquarters (Panajachel, Sololá).
- ◇ Meeting and training room – headquarters.
- ◇ 4X4 Pick-up truck
- ◇ Furniture and computer equipment
- ◇ Basic Geographic Information System laboratory – headquarters
- ◇ Fire management equipment and tools for two 10-people brigades
- ◇ Mobile radio-communication equipment (10)

3) Budget

The table below shows the overall budget of the institution for conservation, environmental and development projects over the past 3 years.

Project Title	Budget* (in US\$)	Budget (in Q)
"Strengthening the Sololá Municipal Regional Parks System and promoting sustainable development in the Ecological Corridor of the Southern Region of the Multiple-Use Reserve of the Atitlán Lake Basin" - Project 005-2008	241,023.46	1,952,290.00
"Strengthening the management of the Multiple-Use Reserve of Atitlan Lake Basin – RUMCLA" - Agreement No. 5 TNC	145,135.31	1,175,596.13
"Endangered Parks – Atitlán Volcanoes", Agreement Letter No. 4	189,997.47	1,538,979.50
"Development of public use plans for the municipal regional parks of Chuwanimajuyu and Chuiraxamolo and systematization of the experience of development of public use plans and use of the Master Plan as benchmark" – Agreement Letter No. 3 TNC	26,142.43	211,753.69
"Reducing the vulnerability to natural disasters through mitigation work in the municipalities of San Marcos La Laguna and Santa Cruz la Laguna" - Agreement No. 06-C01-072	180,000.00+	1,458,000.00
Total	782,298.67	6,336,619.32

* At the exchange rate of Q8.1 = US\$ 1.00 current as at September 2009

+ The amount specified in the agreement was 150,000 Euros at the exchange rate of US\$ 1.20 = EUR 1.00

Not all specific projects implemented in the social, housing and economic development areas have been described herein. The total budget for all projects currently being managed by Asociacion Vivamos Mejor amounts to Q. 20,000,000.00 (equivalent to US\$2,469,138.80), including the above projects.

4) Personnel

Qty	Academic background	Specialization
1	BA in Biology – University degree	Biodiversity conservation planning, planning for community-based integrated fire management, ecological monitoring and evaluation. OAS Fellow 2009-2010 for Diploma in Climate Change and Kyoto Protocol
1	Forest Engineer – University degree	Community-based forest management planning, bio-engineering works, risk management
1	Agricultural Engineer – University degree	Community-based forest management strategies, community administration and organization of the management of natural resources
2	Forest Technicians – Intermediary level	Forest management plans, fire management and forest fire fighters training course, prescribed burning

COLLABORATING AGENCY

1) Background

Name: Instituto Nacional de Bosques – INAB (*National Forest Institute*)

Location: 7ª Avenida 12-90 zona 13 Ciudad de Guatemala, Guatemala, C.A.

Institutional mission: "To promote and implement national forest policies and facilitate access to technical assistance, technology and forest services for foresters, municipalities, universities, (national and international) investor groups, and other forest sector stakeholders, through the design and promotion of strategies and actions aimed at generating increased economic, ecological and social development in the country".

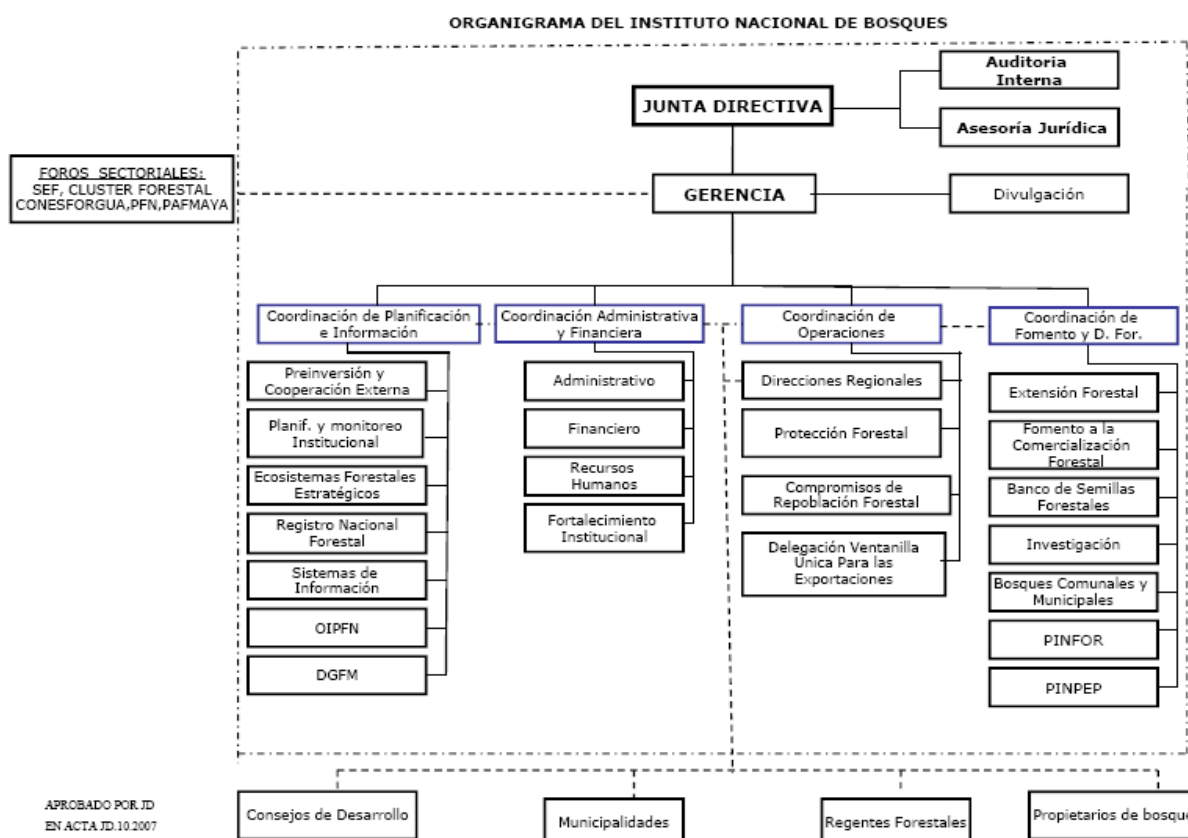
Mandate:

The National Forest Institute has the following functions:

- ✓ Implement forest policies in compliance with the objectives of the Forestry Law – Decree No. 101-96;
- ✓ Promote and encourage forest development in the country through sustainable forest management, reforestation, forest resource based crafts and industry, and watershed protection and development;
- ✓ Promote forest research to address forest development problems through programs implemented by universities and other research institutions;
- ✓ Authorize, refuse, supervise, extend and cancel forest concession and forest product harvesting permits outside protected areas;

- ✓ Develop programs and projects aimed at forest conservation and collaborate with relevant institutions as required;
- ✓ Encourage and strengthen technical and professional career courses in the forestry field;
- ✓ Develop specific institutional rules and regulations in its areas of competence;
- ✓ Any other duties as required in compliance with the Forestry Law and other legal provisions as appropriate.

Organizational chart:



List of projects and pre-projects submitted to ITTO including current status and funding

FORESCOM - completed
 UPE AUTOMATION - completed
 SIFGUA – in progress

2) Infrastructure (relevant details)

- ◇ Own building with office space – headquarters, Guatemala City
- ◇ 9 Regional offices
- ◇ 32 Sub-regional offices
- ◇ 4X4 vehicles
- ◇ Furniture and computer equipment
- ◇ Basic Geographic Information System laboratory – headquarters
- ◇ Fire management equipment and tools

3) Budget:

INAB is a decentralized autonomous institution with equity capital and a varying annual budget assigned by the Central Government. The Institute's budget for the last three years is given below:

YEAR	Budget in US \$*	Budget in Q
2007	8,217,427.77	66,561,165.00
2008	10,561,565.31	85,548,679.00
2009	10,577,039.14	85,674,017.00

* At the exchange rate of Q8.1 = US\$ 1.00 current as at September 2009

4) Personnel

INAB has central/administrative offices at the national level, 9 regional offices and 32 sub-regional offices with a total of 430 employees, including agricultural engineers, forest engineers, agricultural technicians, forest technicians, university technicians, administrative personnel and operational staff.

ANNEX 2. TASKS, RESPONSIBILITIES AND CURRICULA VITAE OF KEY EXPERTS PROVIDED BY THE EXECUTING AGENCY

1. General Director, Asociación Vivamos Mejor – AVM

The main responsibility of the General Director will be to participate in the project steering committee together with the management of the National Forest Institute, the executive director of the National Council for Protected Areas and the coordinator of the National System for Forest Fire Prevention and Control – SIPECIF. It is expected that this project steering committee will meet on a quarterly or six-monthly basis to assess project progress and make strategic decisions on its implementation. The involvement of the AVM General Director will be instrumental in the resolution of organizational issues related to the project at the managerial level based on the observations and recommendations of the steering committee, ITTO or the Project Coordinator.

2. Director of Fires/Forest Protection Programme – INAB

This officer will play a very significant role in the coordination with the collaborating agency and as ITTO's official contact point. The Director is expected to provide technical assistance for the establishment of 4 consultative committees for the project's pilot sites so as to seek feedback and support the process with the involvement of the sub-regional directors and technical staff of INAB. In addition, this officer will support the inter-institutional coordination with CONAP and SIPECIF to secure their participation in these consultative committees.

ANNEX 3. TERMS OF REFERENCE OF PERSONNEL AND CONSULTANTS AND SUB-CONTRACTS FUNDED BY ITTO

1. Project Coordinator

Description of duties:

The main duties and responsibilities of the Project Coordinator (PC) will be the implementation of the project as well as monitoring possible amendments and providing strategic guidance to the approved project in accordance with the guidelines provided by the general management of Asociación Vivamos Mejor – AVM and the International Tropical Timber Organization – ITTO.

Furthermore, the Project Coordinator, in coordination with the collaborating government institutions, such as the National Forest Institute – INAB, will be responsible for the monitoring and evaluation of all activities implemented before, during and after the proposed project. In addition, the Coordinator will be responsible for preparing documents and publications and for hiring national and international consultants according to the relevant terms of reference, as required for the production of project outputs. To this end, the PC will ensure high quality of services and will follow the administrative and financial procedures and regulations stipulated by AVM and ITTO.

Moreover, the Project Coordinator will be in charge of preparing technical reports on project implementation and will document and publish project outputs produced in accordance with AVM and ITTO guidelines.

The PC will supervise the forester and administrative/finance assistant to be recruited as part of the project team for the achievement of the project's specific objectives through the implementation of activities and the production of outputs as described in this project proposal.

Qualifications: University degree in environmental science or related discipline, with at least 5 years proven experience in the implementation of projects related to this field.

Duration of assignment: 36 months.

Monthly salary (seconded without pay): US\$2333.34 or its equivalent in local currency.

2. Forester / Technical Assistant to the Project Coordinator

Description of duties:

The Forester will be part of the staff to be recruited under contract and seconded without pay for the implementation of the project, and will work under the supervision of the Project Coordinator. His/her duties will be field coordination, monitoring and evaluation of activities related to the training of technical staff and community leaders in the project target area.

The responsibilities of the Forester will also include providing professional technical assistance to INAB, CONAP and SIPECIF forest technicians for the implementation of activities and production of outputs as previously specified as project goals.

Qualifications: Forest engineer or degree in a related discipline, with 3 years proven experience in this field.

Duration of assignment: 36 months.

Monthly salary (seconded without pay): US\$1666.67 or its equivalent in local currency.

3. Administrative /Finance Assistant

Description of duties:

The Administrative /Finance Assistant will be in charge of project accounting in accordance with AVM and ITTO administrative and financial procedures. This officer will also support the preparation of quotations for the goods and services required for the implementation of events such as meetings and workshops as required in accordance with ITTO and AVM guidelines.

The Administrative/Finance Assistant will prepare and submit project financial reports as agreed with the donor organization and as requested by the Project Coordinator, and will oversee appropriate

scheduling and mechanisms for the disbursement of funds to ensure ongoing and smooth project implementation.

Qualifications: University degree in business management or related discipline, with 3 years proven experience in this field.

Duration of assignment: 36 months.

Monthly salary (seconded without pay): US\$1000 or its equivalent in local currency.

4. International Consultant in Integrated Fire Management – *Senior Consultant*

Description of duties:

This consultant should have proven experience and track record in integrated fire management at the regional and/or Latin American levels. The duties assigned to this consultant will include providing expert guidance for the design of contents of an Instructors Training Course on Community-Based Fire Management as well as the design of experience-sharing workshops. In addition, the consultant will provide technical assistance before, during and after training events, providing strategic guidance to ensure the achievement of training objectives in the development of Community-Based IFM Plans for pilot sites. The consultant will participate in both events and will provide support to the project during a total of 5 weeks distributed as follows: three weeks in year 1, one week in year 2 and one week in year 3 of the project. However, the consultancy will also include pre- and post-event duties that may be performed off-site or through virtual sessions with the Project Coordinator.

Responsibilities:

This consultant will share responsibility with the Project Coordinator for the design of contents and implementation of Activity 1.1 related to capacity-building in community-based integrated fire management planning with a focus on government technicians working in selected pilot sites. Furthermore, he/she will propose and coordinate the development of the contents of activity 2.4 on sharing of experiences and IFM practices between pilot sites. This will require his/her presence during scheduled events once a year in years 2 and 3 of the project. He/she will also prepare a report on a diagnosis of IFM practices as shown in the exchange of experiences, including technical recommendations to be incorporated into IFM practices in the pilot sites.

Qualifications:

PhD in Fire Ecology or related discipline with proven experience in community-based IFM.

Duration of assignment: 20 days (distribution of days and dates to be determined).

Daily fees: US\$ 500 = US\$ 10,000 for the full assignment.

5. Four Integrated Fire Management Instructors – *National Consultants*

Description of duties:

The organization and implementation of the course for instructors in community-based integrated fire management will require the services of trainers, who will be subcontracted to support the organization, preparation and implementation of lectures and activities to cover course contents and learning goals. In addition, they will support and provide assistance to logistic activities, sharing responsibilities as specified in a work plan to be jointly carried out with the senior international consultant in IFM, with the support of the project coordinator. Initiative and good judgement to make a substantial contribution to the contents and implementation of course will be highly desirable. The contract will cover the 15-day course plus pre-course time for the preparation of materials, tools and necessary equipment.

Responsibilities:

Each trainer will sign a sub-contract specifying the aforementioned duties. They will work under the supervision of the Senior International Consultant in IFM as well as the Project Coordinator. Sub-contracted trainers will support the organization and implementation of activity 1.1 related to the course for instructors in community-based fire management to be implemented in year 1 of the project.

Qualifications:

Forest engineers or equivalent degree in a related discipline and/or technicians in forest fire management with proven experience in training for courses and workshops at the national level.

Duration of assignment: 15 days (distribution of days and dates to be determined).

Daily fees: US\$ 60 = US\$ 3,600 or its equivalent in local currency.

6. Publicist or Social Communicator – *National Consultant*

Description of duties:

A publicist or social communicator will be recruited to compile interview results, video films, photographs and written materials generated during the first and second years of the project. The aim of this activity is to document and promote the best practices in integrated fire management to be derived from the project intervention. Audio-visual materials will be developed for that purpose. A period of 6 months has been considered for the implementation of this consultancy towards the end of the second year and beginning of the third year.

Responsibilities:

The Publicist or Social Communicator will be hired by the Project Coordinator based on the published terms of reference to be specified in due course. This consultant will be directly responsible for the development of audio-visual materials, including a script or outline for effectively conveying the message on best practices for integrated fire management. Furthermore, the consultant will edit the material to the satisfaction of the Project Coordinator and Project Steering Committee. He/she will fully support the implementation of activity 3.2 related to the publication and dissemination of audio-visual materials addressed to a wide audience, seeking to integrate the views of various stakeholders involved, including community leaders, forest and fire management technicians, professionals in the field and government authorities.

Qualifications:

University degree in publicity or social communication with proven prior experience in the development of audio-visual materials.

Duration of assignment: 6 months.

Fees for full assignment: US\$ 8000 or its equivalent in local currency.

7. Environmental Economics Consultant – *National consultant*

Description of duties:

The national environmental economist will support the collection, analysis and synthesis of economic and environmental costs and benefits of the range of forest management systems implemented in the four pilot sites. The aim of this activity is to document and define different scenarios with and without integrated fire management and with and without specific IFM practices to be applied during project implementation. A total period of 4 months has been assigned for this task towards the end of the third year of the project, when the largest possible amount of data will have become available to carry out a contrastive analysis of economic and environmental costs and benefits.

Responsibilities:

The main responsibility of the environmental economist will be to develop a quality synthesis report based on economic and environmental costs and benefits as documented during the 3-year project implementation period. He/she will share responsibility with the Project Coordinator, who will provide information for the production of Output 3 of the project.

Qualifications:

University degree in economics, preferably with a specialization in environmental economics and experience in the implementation of forest management cost/benefit studies.

Duration of assignment: 4 months.

Fees for full assignment: US\$ 5,000 or its equivalent in local currency.

ANNEX 4. RECOMMENDATIONS OF THE 40TH ITTO EXPERT PANEL

We reviewed the contents of a fax dated 13 August 2010, sent by Mr John Leigh, Conservation Officer of the Reforestation and Forest Management Division of ITTO and received by e-mail in the office of Asociación Vivamos Mejor on 8 September 2010. This document, reference number F.10-0198, contains the overall assessment of and proposed amendments to Project PD 590/10 (F): "ESTABLISHMENT OF PILOT SITES FOR THE IMPLEMENTATION OF SUSTAINABLE INTEGRATED FIRE MANAGEMENT PRACTICES IN RURAL COMMUNITY AREAS OF THE REPUBLIC OF GUATEMALA". The general observations and specific recommendations of the 40th Expert Panel were taken into account as shown in the table below.

	Observation /Recommendation of the 40th Expert Panel	Modification made by AVM – INAB
Overall assessment:	Lack of information on:	The description of the various institutions involved in the project was expanded in section 2.1.1 (pages 14 & 15)
	a) the institutional setup and other organizational issues	
	b) problem analysis	A discussion was included, complemented by the problem tree (pages 17 – 19)
	c) stakeholder analysis	A discussion was included describing the importance and characteristics of the involvement of target community stakeholders and their coordination with government agencies (page 15).
	d) coordination among partner institutions	A description was included in section 4.1.4 (page 39) regarding the coordination arrangements among partner institutions and target communities.
	e) long-term sustainability after project completion	A description was included to elaborate on the issue of sustainability – pages 36 & 37, under section 3.5.2 "Sustainability".
Specific recommendations	1. Reassess the impact indicators mentioned in the logical framework so as to be wholly achieved within the project's timeframe of 3 years, and redefine the second outcome indicator in order to be measurable.	The proposed amendments were introduced in the logical framework table (pages 20-21) and in the definition of objectives/indicators (page 22 of this document), where it is noted that impact indicators will be achieved by the 3rd year of the project. In addition, the second outcome indicator was quantified to make it measurable.
	2. Include a project brief, a list of acronyms and a problem analysis, as per the ITTO format. Also provide additional information and /or improve the sections on institutional setup and other organizational issues, the proposed coordination among partner institutions; the stakeholder analysis and the long-term sustainability after project completion. On the other hand, omit the evaluation schedule from section 4.2.	A project brief and summary was included on page 2 of this document. A list of acronyms was included on page 6, while a discussion of the problem analysis was included on pages 16 and 17 of this document. The sections on institutional setup and stakeholder analysis were improved (pages 14 & 15). The coordination among partner institutions is detailed on page 39. The long-term sustainability after project completion is discussed on pages 36-37 (section 3.5.2). Finally, the evaluation schedule was deleted from section 4.2 (page 40).

Specific recommendations	3. Restructure the project budget, so as to conform to the ITTO Guidelines for the Selection and Employment of consultants, Procurements and Payments of Goods and Services (GI Series 16), particularly as regards the selection and employment of project personnel and its exclusion clause. Eliminate the curriculum vitae attached as an annex to the proposal, as these are not required, and replace them with the terms of reference for the key personnel. Further transfer all AVM permanent and temporary staff costs from the ITTO budget to the counterpart AVM budget, or apply the required conditions established in the guidelines.	The guidelines contained in document GI 16 were reviewed and on that basis, the master budget, consolidated budget by component, ITTO budget and AVM budget (pages 28 – 35) were restructured indicating that the project coordinator, forester and administrative/finance assistant will be recruited under contract and seconded without pay, and the amounts requested for the project coordinator and the forester were adjusted. In addition, the partial salary of the Executive Director was eliminated from the ITTO budget and transferred to the counterpart AVM budget. The curricula vitae were eliminated from Annex 2, while the terms of reference for the personnel funded by ITTO were developed and/or improved (Annex 3 – pages 49 – 51).
	4. Adjust the costs for ITTO monitoring and review to US\$10,000 per year, include US\$15,000 for mid-term/ex-post evaluation, and recalculate ITTO's Programme Support Costs so as to conform to the standard of 8% of total ITTO project costs.	The recommended adjustments were made in the consolidated budget by component and ITTO budget by component (pages 33 – 34).
	5. Include an annex that shows the recommendations of the 40 th Expert Panel and the respective modifications in tabular form. Modifications should also be highlighted <u>(bold and underline)</u> in the text.	Shown in Annex 4 (this table – pages 52 – 53). The respective modifications were highlighted throughout the text <u>(bold and underline)</u> .