INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PRE-PROJECT PROPOSAL

TITLE:	IMPROVING FOREST PRODUCT MONITORING AND EFFICIENCY THROUGH THE DEVELOPMENT OF A PROGRAM TO ENHANCE THE PERFORMANCE OF THE PRIMARY FOREST PROCESSING INDUSTRY
SERIAL NUMBER:	TFL-PPD 045/13 Rev.2 (M)
COMMITTEE:	ITTO THEMATIC PROGRAMME ON FOREST LAW ENFORCEMENT, GOVERNANCE AND TRADE (TFLET)
SUBMITTED BY:	GOVERNMENT OF THE REPUBLIC OF GUATEMALA
ORIGINAL LANGUAGE:	SPANISH

SUMMARY

In Guatemala, it is widely recognized that illegal activities in the forest sector lead to significant loss not only for the sector but also for Guatemalan society as a whole. Uncontrolled harvesting of firewood and timber is one of the main causes of the reduction in forest resource volumes. It is estimated that more than 95% of forest product flows in Guatemala (approximately 28.6 out of the 30.7 million m3 harvested in 2006) are extracted out of the control of the government (URL, IARNA, 2009. Integrated Forest Accounting).

This volume comprises 76% of firewood and 24% of timber. It is estimated that out of the 6.87 million m^3 processed by the industry, a total 4.6 million m^3 is not sourced under control and is geared to the domestic market, mainly for primary processing or sawmilling.

Since 1999, there has been a need to carry out research on new processing techniques, processing efficiency and specialized processing procedures. With regard to efficiency levels, current primary sawmilling yield rates depend on the technology used and the main product type, e.g. boards, planks or beams (Zamora & Barrera, 2010).

In order to improve forest industry efficiency, skilled personnel is also needed to develop efficient production lines for existing and innovative products, to conduct studies on yield, timelines and flows, to optimize processing techniques based on optimal wood cutting and feed speeds, and to develop work programs (Zamora & Barrera, 2010).

The pre-project “Improving forest product monitoring and efficiency through the development of a program to enhance the performance of the primary forest processing industry” is hereby proposed in order to contribute to finding a solution to the above problems. The implementation of the pre-project is expected to achieve the following objectives:

- Contribute to improving forest product monitoring and efficiency and enhancing sustainable forest management in Guatemala.
- Provide a standardized methodology to establish primary sawmilling yield levels in the processing of major forest species in Guatemala so as to develop a project proposal aimed at improving primary sawmilling monitoring and control and enhancing processing efficiency and legal marketing of timber.

EXECUTING AGENCY	NATIONAL FOREST INSTITUTE – INAB
DURATION	8 MONTHS
APPROXIMATE STARTING DATE	MARCH 2014

BUDGET AND PROPOSED SOURCES OF FINANCE:	**Source**	**Contribution in US$**
	ITTO	**66,942.40**
	INAB	20,088.00
	TOTAL	**87,030.40**

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ACRONYMS

CATIE	Tropical Agricultural Research and Higher Education Center
CONAP	Consejo Nacional de Áreas Protegidas (*National Council for Protected Areas)*
CONESFORGUA	Consejo Nacional de Estándares de Manejo Forestal Sostenible para Guatemala (*National Council for Sustainable Forest Management Standards in Guatemala)*
FAO	United Nations Organization for Food and Agriculture
GDP	Gross Domestic Product
IARNA	Instituto de Agricultura, Recursos Naturales y Ambiente de la URL (*URL Institute of Agriculture, Natural Resources and the Environment*)
IDB	Inter-American Development Bank
IFA	Integrated Forest Accounting
INAB	Instituto Nacional de Bosques (*National Forest Institute*)
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
MAGA	Ministerio de Agricultura, Ganadería y Alimentación (*Ministry of Agriculture, Livestock and Food*)
MARN	Ministerio de Ambiente y Recursos Naturales (*Ministry of the Environment and Natural Resources)*
NGOs	Non-governmental organizations
PAFG	Plan de Acción Forestal de Guatemala (*Forestry Action Plan for Guatemala)*
PFNG	Programa Forestal Nacional de Guatemala (*National Forestry Programme for Guatemala)*
PINFOR	Programa de Incentivos Forestales (*Forest Incentives Programme)*
PINPEP	Programa de Incentivos para Poseedores de Pequeñas Extensiones de Tierras de Vocación Forestal o Agroforestal (*Incentives Programme for Small Forestry and Agroforestry Landholders)*
RNF	Registro Nacional Forestal (National Forestry Registry)
SEINEF	Sistema Electrónico de Información de Empresas Forestales (*Electronic Information System on Forest Enterprises)*
SIFGUA	Sistema de Información Forestal de Guatemala *(Forest Information System of Guatemala)*
SIGAP	Sistema Guatemalteco de Áreas Protegidas (*Guatemalan System of Protected Areas)*
SMEs	Small and Medium-Sized Enterprises
URL	Universidad Rafael Landívar (*Rafael Landivar University)*

PART 1. PRE-PROJECT CONTEXT

1.1 ORIGIN AND JUSTIFICATION

In addition to being linked in most cases to environmental degradation in the forest, illegal logging leads to a lack of respect for the current legislation and authorities, thus contributing to weak governance in the country. Furthermore, it also promotes unfair competition as illegal operators tend to have an edge in the timber markets over law-abiding operators who adequately manage their forests.

It is widely recognized that illegal activities in the forest sector lead to significant loss not only for the sector but also for Guatemalan society as a whole. Uncontrolled harvesting of firewood and timber is one of the main causes of the reduction in forest resource volumes. It is estimated that more than 95% of forest product flows in Guatemala (approximately 28.6 out of the 30.7 million m^3 harvested in 2006) are extracted out of the control of the government (URL, IARNA, 2009. *Integrated Forest Accounting*).

This volume comprises 76% of firewood and 24% of timber. It is estimated that out of the 6.87 million m^3 processed by the industry, a total 4.6 million m^3 is not sourced under control and is geared to the domestic market, mainly for primary processing or sawmilling.

As the government agency responsible for the forest sector, the National Forest Institute - INAB is empowered by Article 63 of the Forestry Law to monitor forest industries so as to quantify, qualify and verify the legal origin of forest products.

Through its Regional and Sub-Regional Directorates, INAB implements forest monitoring and control activities in compliance with its legal mandate to establish the legal origin of forest products. However, given the extent of the problem, its impact is limited. The lack of financial and human resources substantially limits INAB's capacity to monitor all the forest industries registered in the National Forestry Registry, which amount to a total of 613[1].

In view of this, INAB's Executive Board, in 2004, approved a Strategy Against Illegal Forest Activities, which served as the basis for the operationalization of the Forest Product Transport Regulations, the new Delivery Notes and the Practical Manual for Forest Product Scaling.

In 2006, with the support of the World Bank, INAB carried out a review of its Strategy Against Illegal Forest Activities. As a result of this review, in February 2010, INAB's Executive Board approved the Inter-Institutional Action Plan for Illegal Logging Prevention and Reduction in Guatemala.

Despite the institutional efforts to implement the actions established in the above Strategy, illegal activities are still widespread in the country. It is therefore necessary to secure financial resources to support the implementation of the Strategy through concrete actions such as the following:

- The Forest Information System (SIFGUA) launched through project PD 340/05 Rev.1 (M). The objective of this project was to design, develop and implement a national forest statistical system to collect, process and disseminate information on reforestation, deforestation, forest management, forest harvesting, industrial processing and manufacturing of timber, employment regime and marketing of forest products in domestic and foreign markets.

- Project TFL-PD 24/10 Rev.2 (M) "Strengthening institutional capacities to improve forest law enforcement and governance", which included various actions to improve the means and capacities of institutions to verify and monitor forest management in Guatemala, as well as establishing a forest management monitoring system, strengthening inter-institutional coordination and enhancing the participation of local stakeholders in governance processes.

- Pre-project TFL-PPD 040/13 Rev.2 "Development of a program to strengthen the traceability of legally sourced forest products in Guatemala" was developed with a view to identifying the traceability, flows and main problems related to forest products so as to integrate and coordinate existing monitoring and control systems.

Guatemala has limited information regarding primary sawmilling yield levels in forest industries. Since 1999, there has been a need to carry out research on new processing techniques, processing efficiency and

[1] http://www.sifgua.org.gt/Miembros/Empresasestadistica.aspx

specialized processing procedures. With regard to efficiency levels, current primary sawmilling yield rates depend on the technology used and the main product type, e.g. boards, planks or beams (Zamora & Barrera, 2010)[2].

A yield calculation methodology was developed in 2001 through a FAO project in cooperation with the Ministry of Agriculture, Livestock and Food (MAGA); however, this methodology is not based on a fully metric system, which is the system used nationally in Guatemala. Moreover, this methodology has hardly been used because each industry has carried out its own yield analysis in accordance with its specific needs and without a standard methodology requiring the provision of specific information. The current system does not allow for general data to be obtained from the industries at the national level, and the lack of information has prevented the development of a concrete preliminary work proposal because the actual performance of the country's forest industries is unknown.

It should be pointed out that in 2003, the National Forest Institute (INAB), for the purposes of monitoring and standardization of criteria to determine yield levels, established a set of parameters to calculate recovery rates in roundwood /lumber processing in forest industries according to management agreement No. 42-2003, considering primary sawmilling yield levels ranging from 39% for chainsawing to 60% for the use of bandsaws and secondary saws using coniferous timber as raw material. These standard criteria are applied in the monitoring of sawmills and forest industries and in the processing of licenses for forest product exports.

This requires the development of a methodology to monitor and promote ongoing improvement in the forest industries so as to improve the quality of products and the integrated harvesting of forest resources. Furthermore, past estimations have all been made using different methodologies so there is no unified database to reflect the national situation.

Therefore, a pre-project proposal needs to be developed to provide tools to determine the yield rates of forest industries in Guatemala, which will lead to improved transparency in the supply chains and will at the same time promote transparency among forest industries as they will be able to demonstrate that the timber they produce and market is from legal sources and in authorized volumes, which will in turn help to promote legality and control in the forest sector.

1.2 RELEVANCE

1.2.1 Conformity with ITTO's objectives and priorities

This pre-project is consistent with ITTO policies and actions and in particular with the objectives of the International Tropical Timber Agreement 2006 as described below:

c) Contributing to sustainable development and to poverty alleviation. The project will directly benefit legal forest sector stakeholders.

i) Promoting increased and further processing of tropical timber from sustainable sources in producer member countries, with a view to promoting their industrialization and thereby increasing their employment opportunities and export earnings. The proposal will contribute to promoting investments in the forest sector by reducing unfair competition from illegal activities that have lower production costs than legal activities and by improving forest industry efficiency levels, thus improving the competitiveness of legal companies by reducing market price distortions caused by illegal timber supply and increasing industry profits due to their improved efficiency.

n) Strengthening the capacity of members to improve forest law enforcement and governance, and address illegal logging and related trade in tropical timber. The project will contribute to the verification of the legal origin of forest products produced by sawmills, and will improve the knowledge and capacity to reduce illegal forest activities in the country.

[2] Zamora, R; Barrera, I. 2010. Diagnóstico y Marco de Referencia de la Estrategia y Plan de Acción para el Desarrollo Foresto-Industrial de Guatemala.

The pre-project is consistent with TFLET deliverables as follows:

Specific objective	Outcomes	Outputs	Deliverables	Project Conformity
A. Strengthen forest law compliance and governance through improved national policy and legal frameworks, strengthened enforcement and other institutions, improved data and knowledge, strengthened partnerships and improved cooperation among the private sector, civil society organizations and other stakeholders	Better enforcement of forest laws and regulations through chain of custody and tracking and tracing systems and improved verification and monitoring procedures.	– Improved data and knowledge on illegal logging and trade – Improved verification and monitoring procedures for legal compliance	– Improved forest and trade statistical systems and reporting – Evidence on reduced illegal logging and illegal trade – Increased production of timber and timber products as verified from legal/sustainable sources	The pre-project conforms to these provisions because it will help strengthen governance structures and facilitate the collection of reliable data to strengthen INAB's capacity through SEINEF (Electronic Information System on Forest Enterprises) created by SIFGUA.
B. Improve transparency and effective management of supply chains and increased domestic and international trade in legally produced tropical timber	Increased market opportunities for legally and sustainably produced timber from tropical forests by supporting business-to-business initiatives	– Ensured market access for competitive tropical timber products from legal/ sustainable sources – Increased opportunities in the public sector markets for legally produced tropical timber and timber products	– Increased volumes of traded tropical timber and timber products from legal sources – Increased exports /avoidance loss of sales to markets with limited or no access for illegal timber and timber products	The implementation of forest industry monitoring activities will help to curb uncontrolled forest production resulting from illegal logging. In this context, the development of strategic partnerships with and capacity building for key civil society stakeholders, local governments and government institutions will help establish coordination and monitoring mechanisms to improve forest governance.
	Enhanced capacity of trade associations and civil-society organizations, in particular those representing local groups and workers in the forest sector, to be involved and actively participate in the development and implementation of policies and programmes on tropical forest management and timber trade	– Functioning partnerships established among civil society organizations, the private sector and government agencies in monitoring of timber flows and legal compliance and origin of tropical timber supplies – Capacity building activities undertaken among civil	– Evidence on increased capacity among trade associations and civil society organizations in policy implementation – Number of enterprises committed to codes of conduct	

		society organizations		
C. Improve capacity of community and small and medium-sized enterprises to implement and demonstrate that timber produced and traded comes from legal sources contributing to sustainable livelihoods	Enhanced capacity of forest-dependent and local communities to improve governance and sustainably manage their forests in order to alleviate poverty	– Increased production of tropical timber from legal and sustainable sources – Capacity building activities undertaken in communities	– Number of communities with evidence on improved capacity to effectively control and sustainably manage their forests – Number of partnerships with community forest enterprises	The pre-project conforms to these provisions because it will help promote forest investment and maximize forest sector competitiveness by reducing unfair competition from illegal activities, thus improving the competitiveness of legal enterprises by reducing market price distortions caused by illegal timber supply.
	Enhanced capacity of small and medium-sized enterprises in harvesting, processing and handling timber from legal and sustainably managed sources	– Increased production of tropical timber from legal sources by SMEs	– Number of SMEs with production from legal and sustainably managed sources – Number of SMEs registered as formal operators	

Furthermore, the pre-project will directly contribute to ITTO's TFLET programme as follows:

Specific objectives	Outputs	Output indicators	Target	Project Contribution
A. Strengthen forest law compliance and governance through improved national policy and legal frameworks, strengthened enforcement and other institutions, improved data and knowledge, strengthened partnerships and improved cooperation among the private sector, civil society organizations and other stakeholders	Improved access to forest resources by forest communities and other forest-dependent people Improved data and knowledge on illegal logging and trade	Laws and legal instruments on tenure and user rights established, reviewed or improved Establishment and operation of multi-stakeholder consultation mechanism National Action Plan formulated and under implementation Establishment and strengthening of law enforcement units	5 countries	The pre-project will help strengthen governance structures so as to promote responsible timber trade and will also help strengthen INAB's capacity to monitor and control the supply of forest products by the timber industry.
B. Improve transparency and effective management of supply chains and increased domestic and international	Increased opportunities in the public sector markets for legally produced tropical timber and timber products	Increased volumes of traded tropical timber and timber products from legal and sustainable sources	To be determined 5 countries	The pre-project will help strengthen forest monitoring and control to facilitate verification of the legal origin of timber products.

trade in legally produced tropical timber	Ensured market access for competitive tropical timber products from legal/sustainable sources			
C. Improve capacity of community and small and medium-sized enterprises to implement and demonstrate that timber produced and traded comes from legal sources contributing to sustainable livelihoods	Increased production of tropical timber from legal and sustainable sources (from community forests)	Value and volume of timber produced and traded by forest dependant and local communities	5 communities	The pre-project will help curb uncontrolled forest production originating from illegal logging, which causes the genetic degradation of natural resources because of its selective nature and its negative social impacts, particularly on vulnerable rural communities that depend on forests for their livelihoods. At the same time, the pre-project will strengthen the competitiveness and capacity of SMEs.
	Increased production of tropical timber from legal and sustainable sources by SMEs Capacity building activities undertaken for SMEs Increased number of SMEs operating in the formal sector	Value and volume of timber traded by SMEs Relevant training modules developed and disseminated to SMEs Increased number of registered SMEs	5 SMEs 5 SMEs Percentage increase	

1.2.2 Relevance to the submitting country's policies

This project is consistent with the country's Forest Policy, Environmental Policy, Forestry Law and Protected Areas Law, which are all aimed at promoting the sustainable management of forest resources and ensuring that timber processing activities are carried out within a legal framework.

The overall objective of Guatemala's Forest Policy is to "enhance socioeconomic benefits derived from forest ecosystem goods and services and contribute to land-use planning in rural areas by promoting production management and conservation of natural resources with special emphasis on forests and related resources such as biodiversity, water and soils, increasingly incorporating forest activities to the economic development of the country for the benefit of Guatemalan society as a whole". The policy areas promoted within this framework are:

- Contributing to the strengthening of the Guatemalan System for Protected Areas and to the protection and conservation of strategic forest ecosystems.
- Promoting natural forest production management.
- Promoting plantation forestry.
- Promoting agroforestry and silvopastoral systems in lands suitable for forestry.
- Promoting the expansion and modernization of the primary and secondary processing industrial park.
- Contributing to the search for and use of forest product markets and designs.

This proposal is directly consistent with the following articles of the Forestry Law:

According to Article 6, item (b), one of the main roles of INAB is to promote forest development in the country through the sustainable management of forests.

Article 63 provides for the monitoring of sawmills in order to quantify, qualify and verify the legal origin of forest products.

Article 64 authorizes INAB personnel's access to forest industries and requires them to keep track of their sawnwood production volumes. Furthermore, it stipulates that the total volume of timber available for sale should be equivalent to the volume of authorized logs less the volume of waste generated through processing activities.

Article 88 establishes the National Forestry Registry under INAB's responsibility with the aim of collecting technical and economic statistics in this field. Urban and rural sawmills, carpentry/joinery workshops and other related industries using forest products as raw materials should be noted in this Registry.

In addition, this proposal will directly contribute to the Institutional Action Plan for Illegal Logging Prevention and Reduction in Guatemala, as its overall objective is to "Contribute to the prevention and reduction of illegal logging and to the mitigation of its social, economic and environmental impacts in Guatemala by implementing and strengthening institutional actions".

Moreover, the proposal is also consistent with the project "Strengthening institutional capacities to improve forest law enforcement and governance in Guatemala" and will contribute to the achievement of its objectives as the information to be generated will be critical to improve marketing, governance and the business climate in the country's forest sector.

The project will also constitute a tool to help strengthen the pre-project "Development of a program to strengthen the traceability of legally sourced forest products in Guatemala" and the project "Facilitating Forest-Industry-Market Integration", which were previously submitted to ITTO.

PART 2. JUSTIFICATION OF THE PRE-PROJECT

2.1 OBJECTIVES

2.1.1 Development objective

- Contribute to improving forest product monitoring and efficiency and enhancing sustainable forest management in Guatemala.

2.1.2 Specific objective

- Provide a standardized methodology to establish primary sawmilling yield levels in the processing of major forest species in Guatemala so as to develop a project proposal aimed at improving primary sawmilling monitoring and control and enhancing processing efficiency and legal marketing of timber.

2.2 PRELIMINARY PROBLEM IDENTIFICATION

Uncontrolled harvesting for the consumption of firewood and timber is one of the main causes of decreased forest volumes. National estimates in the Integrated Forest Accounting System, supplemented by data from case studies conducted in selected municipalities, indicate that more than 95% of forest product flows in the country (i.e. 30.7 million m^3) are not subject to any controls from the national forest authorities - the National Forest Institute (INAB) and the National Council for Protected Areas (CONAP).

The increase in uncontrolled forest product trade flows is consistent with: (i) the lack of institutional capacities to control deforestation directly at the forest site; (ii) the lack of effective controls in the transport of forest products; (iii) the lack of an effective system for the issuing of forest product transport permits; (iv) timber harvesting and trade veiled under the misuse of household harvesting permits; and (v) the lack of an effective control system for timber volumes processed by forest industries. All of these factors contribute to increased levels of illegality in forest product flows, directly impact remaining natural forests and undermine any possibility of consolidating legal sustainable forest management units (URL, IARNA. 2009[3]).

Forest industry monitoring is one if the actions that will help arrest illegal forest product trade and to this end, it is necessary to ascertain the average yield of each mill so as to determine if the timber volumes sold are equivalent to the volumes entering the sawmill and reduce any anomalies found in timber flows from the forest to the mill.

Under Article 63 of the Forestry Law, the National Forest Institute - INAB is responsible for the monitoring of forest industries so as to quantify, qualify and verify the legal origin of forest products. In order to fulfill this mandate, INAB issued Management Agreement No. 42-2003, considering primary sawmilling yield levels ranging from 39% for chainsawing to 60% for the use of bandsaws and secondary saws using coniferous timber as raw material. These standards are applied in the monitoring of sawmills and forest industries and in the processing of licenses for forest product exports.

Under the above agreement, any industry affected by the percentages set can request INAB´s local offices to verify their yield rates and processing procedures, indicating the methodology, formulas and samples used in their yield analysis. These actions are only useful for monitoring purposes but a proposal is needed for yield monitoring and for the improvement of yield levels in the forest industry.

Furthermore, yield levels of up to 78% have been reported for some industries using coniferous timber but this value decreases in the harvesting of broadleaved species due to tree physiological factors and harvesting practices used in the field. Yield levels are mostly calculated on the basis of nominal measurements so actual figures are in fact lower than those reported (Zamora & Barrera, 2010). Furthermore, past estimations have all been made using different methodologies so there is no unified database to reflect the national situation.

In order to improve forest industry efficiency, skilled personnel is also needed to develop efficient production lines for existing and innovative products, to conduct studies on yield, timelines and flows, to optimize

[3] URL, IARNA. 2009. *Perfil Ambiental de Guatemala 2008-2009: las señales ambientales críticas y su relación con el desarrollo.*

processing techniques based on optimal wood cutting and feed speeds, and to develop work programs (Zamora & Barrera, 2010).

Since 1999, there has been a need to carry out research on new processing techniques, processing efficiency and specialized processing procedures. With regard to efficiency levels, current primary sawmilling yield rates depend on the technology used and the main product type, e.g. boards, planks or beams (Zamora & Barrera, 2010)[4].

In Guatemala there are various forest industrial clusters geographically distributed according to their access to raw materials. These clusters have developed in a disorderly manner according to existing local conditions and in many cases have shown inefficient growth. Thus, their products, technology, processes and yield rates are more dependent on supply sources than on a specific growth and work strategy. It is therefore necessary to develop a program to improve forest industry yield levels and thus contribute to increasing the competitiveness of the industry in accordance with the local conditions and work strategy of each industrial sector.

The standardization of a methodology to monitor forest industry efficiency and promote ongoing improvement will contribute to enhance product quality and integrated harvesting of forest resources, as well as strengthening INAB's capacity for the monitoring and control of forest industry supply, thus ensuring the quantification, qualification and verification of origin of forest products by integrating standards and procedures for forest industry monitoring.

The four areas of greatest forest industrial potential are: Guatemala, El Progreso, Chimaltenango and El Petén.

[4] Zamora, R; Barrera, I. 2010. Diagnóstico y Marco de Referencia de la Estrategia y Plan de Acción para el Desarrollo Foresto-Industrial de Guatemala.

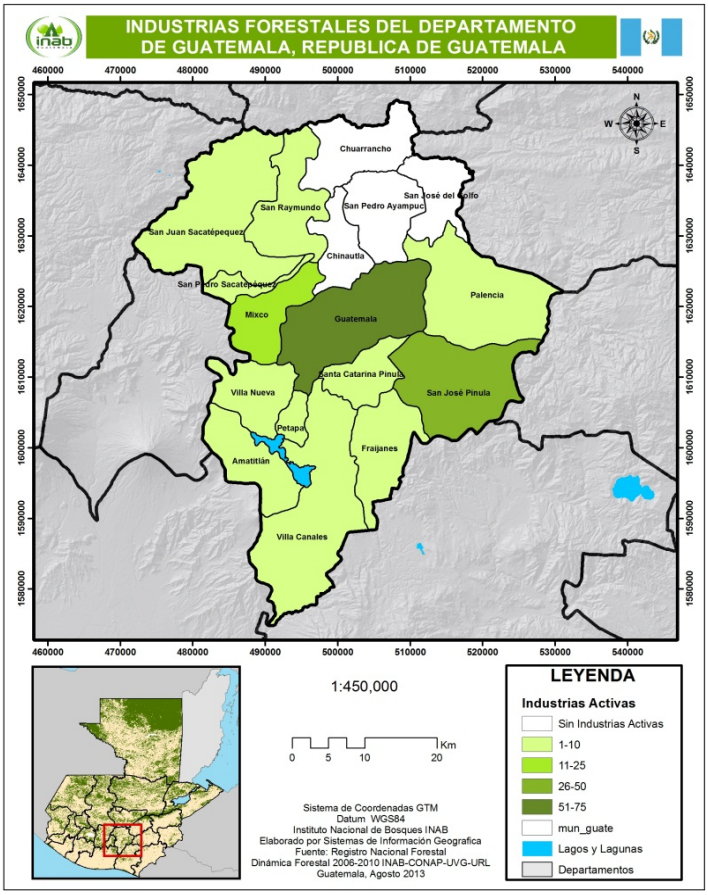

Figure No.1
Map of active industries
in Guatemala

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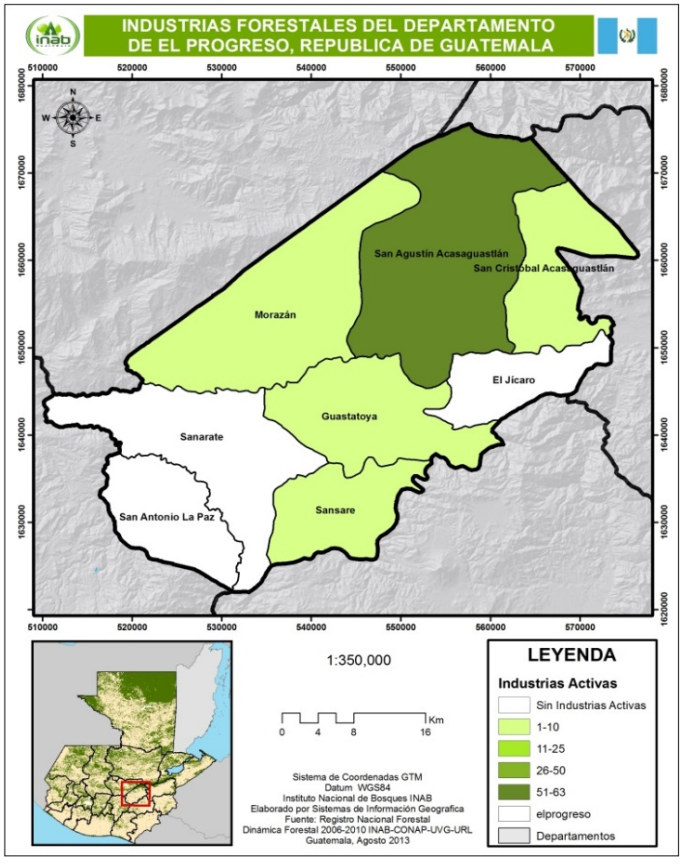
Figure No.2
Map of active industries in El Progreso.



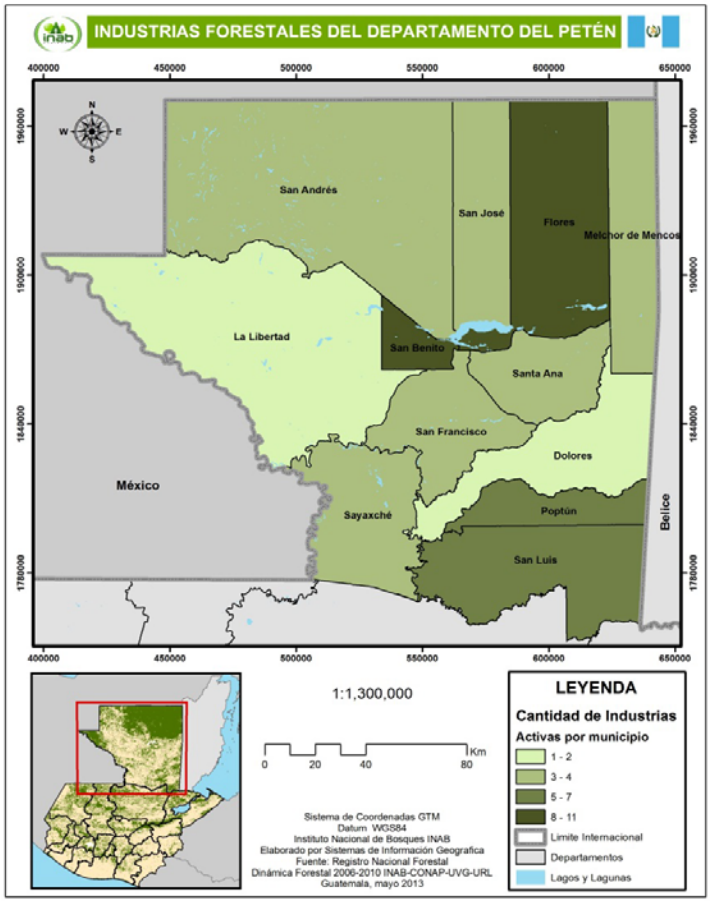


Figure No. 3
Map of active industries in Petén

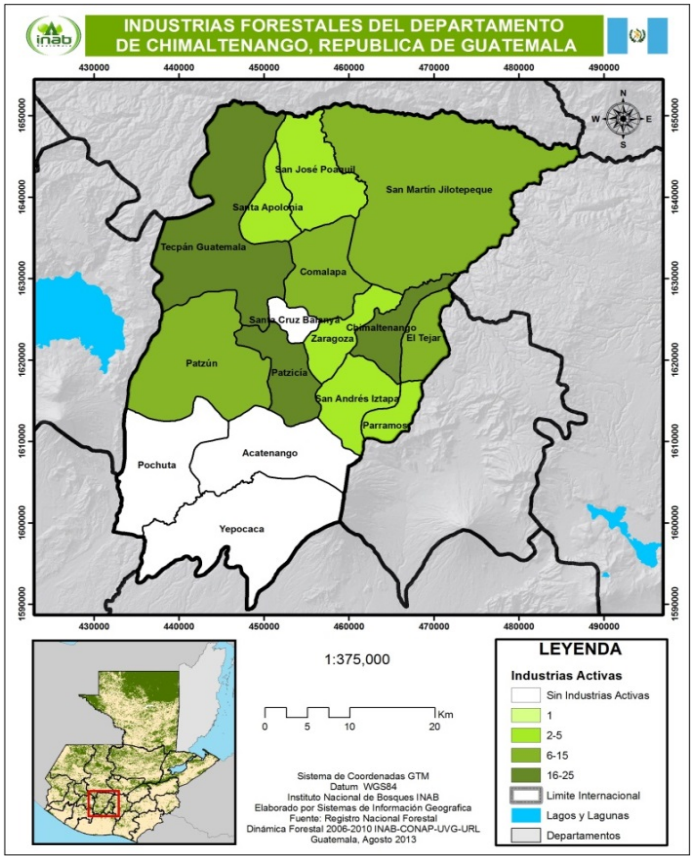


Figure No. 4
Map of active industries in Chimaltenango

PART 3. PRE-PROJECT INTERVENTIONS

3.1 OUTPUTS

Output 1: Development of yield study and technical manual to calculate primary sawmilling yield rates for the forest industry with a view to the standardization of criteria, concepts and a sawmilling yield calculation methodology for forest industries and forest sector stakeholders.

The implementation of a primary sawmilling yield study in priority forest industry regions of Guatemala will provide a standardized methodology to establish yield levels for the processing of major plantation species promoted by INAB in the country. In addition, the development of a technical manual to estimate primary sawmilling yield rates in the forest industry will provide a practical guide with a strong technical and legal component so as to enable forest enterprises to improve the monitoring and efficiency of primary sawmilling operations in the processing of forest products. At the same time, the capacity of INAB technicians to monitor the country's forest industries will be strengthened through a detailed description of auditing procedures as the fundamental basis for sustainable forest management to arrest illegal forest activities.

Output 2: Project proposal to improve forest industry productivity and processing.

The development of a project proposal based on the outcomes of the pre-project is aimed at improving productivity, forest industry efficiency and legal marketing of timber; strengthening INAB's capacity for the monitoring and control of forest industry supply; and ensuring the quantification, qualification and verification of origin of forest products by integrating standards and procedures so as to facilitate the collection of statistical data on forest industry products and production in the country.

3.2 ACTIVITIES, INPUTS AND UNIT COSTS

Output 1: *Implementation of yield study and development of technical manual to calculate primary sawmilling yield rates for the forest industry with a view to the standardization of criteria, concepts and a sawmilling yield calculation methodology for forest industries and forest sector stakeholders.*

1.1 Collection of information on the methodology based on various bibliographic references, including at least the following elements: Definition of each species, identification of samples, identification of timber flows, raw material grading and scaling methods, primary processing/sawmilling concepts, production measurement and recording methodology, estimation of milling coefficient (%), estimation of waste volumes, statistical analysis of collected information, estimation of regression formulas.

1.2 Prioritization of forest industries to implement a yield study based on 4 priority forest industrial clusters (Petén, El Progreso, Chimaltenango, Guatemala).

1.3 Selection of species based on the priority species included in forest incentive programs prioritized in descending order according to their forest cover (pine, teak, melina, white wood (*palo blanco*), cedar, Santa María, mahogany).

1.4 Analysis and interpretation of data and information obtained through the yield study in order to develop a technical manual.

1.5 Development of technical manual for the standardization of a tool to estimate primary sawmilling yield rates in the forest industry.

1.6 Socialization and validation of technical manual through 4 workshops in 4 priority areas (Petén, Chimaltenango, Guatemala and El Progreso) so as to ensure the participation of priority stakeholders (INAB technicians and heads of production of forest enterprises) and disseminate the methodology used.

1.7 Presentation of results obtained to forest sector stakeholders in 4 priority areas (Petén, Chimaltenango, Guatemala and El Progreso).

1.8 National presentation of yield study (objectives, results, lessons learned and consideration of next steps to be taken) to relevant stakeholders and presentation of technical manual to estimate primary sawmilling yield rates.

Output 2: Project proposal to improve primary sawmilling monitoring and control and strengthen forest industry efficiency in the processing and legal marketing of timber.

1. Analysis of the information previously collected under Output 1 and other related studies
2. Development of project proposal
3. Dissemination and validation of proposal with priority stakeholders and beneficiaries
4. Presentation of project proposal

Activity / Inputs	Unit	Qty	Unit cost (US$)	Total
Sub-contract - Development of yield study and technical manual for forest industry primary sawmilling yield calculation	Contract	1	20000	20000
Consultant in project formulation	Man/month	3	2000	6000
Printing of document (Manual on methodology for forest industry primary sawmilling yield calculation)	Document	300	20	6000
DSA and meals	Days/Daily expenses	30	50	1500
Fuel	Monthly cost	8	400	3200
4 Dissemination and validation workshops in 4 priority areas (25 persons, 1 day)	Day/person /event	200	30	3000
4 workshops for presentation of results obtained in 4 priority areas (25 persons, 1 day)	Day/person /event	200	30	3000
National presentation of yield study and technical manual (60 persons, 1 day)	Day/person/event	60	35	2100
Project formulation workshop (30 persons, one day)	Day/person /event	30	30	900
Project validation meeting (25 persons, 1 day)	Day/person /event	25	30	750

3.3 APPROACHES AND METHODS

The following measures will be taken during project implementation to develop this approach:

Strategic partnerships: a series of workshops and meetings will be organized with key stakeholders from civil society, local governments and government institutions, in order to establish coordination and follow-up mechanisms.

The following activities will be implemented to achieve **Output 1**:

- Collection of information on the methodology to be used including the following:
    - Definition of species
    - Identification of samples
    - Identification of timber flows
    - Raw material grading and scaling methods
    - Primary processing/sawmilling concepts
    - Production measurement and recording methodology
    - Estimation of milling coefficient (%)
    - Estimation of waste volumes
    - Statistical analysis of information
    - Estimation of regression formulas

The implementation of activity 1.1 will take into account the following bibliographic references, among others:

Title	Author(s)	Year	Place	Topics covered
Guide to Estimate Roundwood to Sawnwood Conversion Ratios *[Original Spanish title: Guía para el Cálculo del Rendimiento de Madera en Rollo a Madera Aserrada]*	Gómez, Axel and Batres, Dante.	February 2001.	Guatemala	-Installed capacity -Trim allowance -Industrial efficiency -Machine efficiency -Effectiveness -Dressed wood -Clean and dimension timber -Green timber -Dimension green timber -Yield (yield factor, production coefficient) -Debarked solid wood volume -Marketable timber volume.
Sawmilling yield study for mahogany (*Swietenia macrophylla*) in the Forest Management Concession Unit of San Andres Peten – AFISAP *[Original Spanish title: Estudio de Rendimiento del Aserrío de madera de la especie Caoba (Swietenia macrophylla) en la Concesión Forestal unidad de Manejo San Andrés Petén – AFISAP]*	Manzanero, Manuel and Salazar, Adela	November 2003.	Guatemala	- Average sawmilling yield rate (Total yield rate and yield levels for long and short sawn pieces) - Yield rate (%) by diameter class. - Yield based on number of pieces vs board feet by diameter class. - Yield (bf) based on log quality by diameter class. - Yield (bf) based on number of wood cracks by diameter class. - Yield (bf) based on amount of crooked wood by diameter class.
Monitoring sustainable forest harvesting activities in the Uaxactun Management Unit, Mayan Biosphere Reserve, Peten, Guatemala *[Original Spanish title: Monitoreo de actividades de aprovechamiento forestal sostenible, realizado en la Unidad de Manejo Uaxactún, Reserva de la Biosfera Maya, Petén, Guatemala]*	Herrera, Werner	November 2008.	Guatemala	- Sawmilling yield rates - Sawmilling coefficient. - Industrial efficiency - Primary processing - Secondary processing - Industrial sawmilling equipment: Band saw or head saw; log bench; edger; trimmer; grinding chamber. -Sawmilling industry scheme. -Commercial sawnwood measurements (minimum length, thickness and width) -Types of cuts (clear face, clean cut, trim allowance) - Board feet - Hardwood grading

				rules - Characteristics of three forest species (mahogany, cedar, manchiche).
National standing roundwood to sawnwood volume conversion tables by grade according to NHLA's International Hardwood Grading Rules for mahogany *(Swietenia macrophylla* King) *[Original Spanish title: Tablas nacionales de conversión volumétrica de madera en rollo en pie a madera aserrada por calidades según las Reglas Internacionales de Clasificación de Madera –NHLA- de la especie caoba (Swietenia macrophylla King)]*	Martinez, Wyllsson and Trujillo, Josué	September 2011	Guatemala. CATIE/World Bank	- Sawnwood production yield - Sawmilling yield rates - Sawmilling procedures - Hardwood grading rules - Mahogany and timber sector governance - Description of management units -Methodology - Sampling, measurement and assessment of standing timber volume - Sawmilling and timber grading according to NHLA rules - Branch volume assessment

- Target industries will be subsequently prioritized for the collection of data for the implementation of the yield study. At least 2 industries will be selected in each of the 4 forest industry clusters identified by the "Diagnosis and reference framework for a strategy and action plan for forest industrial development in Guatemala", focusing on areas of greatest forest industrial potential.

- Species will be prioritized according to their forest cover as specified in the Forest Incentives Programmes, which include the following data (updated in 2013):

    1. Pine: 37,186.85 ha.
    2. Teak: 17328.71 ha.
    3. Melina: 6431.69 ha.
    4. White wood: 6270.87 ha.
    5. Cedar: 1219.45 ha.
    6. Santa María: 1109.59 ha.
    7. Mahogany: 785.65 ha.

    This is expected to improve the efficiency of the industrial harvesting of these species. Therefore, it is important to have baseline yield rates for the industry at the national level so as to establish indicators for further improvement.

- Analysis and interpretation of data and results so as to develop a technical manual to standardize criteria, concepts and a methodology that may later be used at the national level.

- Development of a technical manual based on the results obtained through the industry yield study in priority areas. This manual will serve as a guide for the standardization of criteria, concepts and a primary sawmilling yield calculation methodology for forest industries. This methodology will be used at the national institutional level by forest sector stakeholders. Furthermore, one of INAB's responsibilities is to support and strengthen the Forest Industry and Trade Directorate through the institution´s general budget.

- Dissemination and validation of the technical manual through 4 workshops in 4 priority areas so that key stakeholders and beneficiaries (INAB technicians and heads of production of forest enterprises) can become aware of and provide feedback and recommendations on the proposed methodology, thus facilitating the consolidation of results.

- National presentation of the technical manual and the results of the yield study (objectives, outcomes, lessons learned and consideration of next steps to be taken) to key stakeholders at the institutional and national levels to ensure the use of the standardized methodology.

The following activities will be implemented to achieve Output 2:

The yield study carried out by the pre-project and the technical manual to be developed will facilitate the formulation of a project proposal aimed at improving forest industry efficiency in Guatemala, as well as improving the monitoring and control of primary sawmilling operations and strengthening the processing and legal marketing of timber. This will be ensured through the following pivotal actions:

1. Institutional strengthening: the development of a web-based methodology will facilitate the validation of yield studies for forest enterprises throughout the country, while the development of a tool for the collection of information on forest industries using the same web-based system will provide indicators and reliable statistics to strengthen the national forest industry.
2. Analysis of the national forest industry: This analysis will be based on the results of yield studies on forest enterprises and the information collected through the web-based tool to be established.
3. Strengthening of technical and administrative skills of forest enterprises in Guatemala: A technical and administrative training program will be developed for the personnel of forest enterprises in the country. This program will be based on the main needs identified in the analysis to improve industrial efficiency.

The continuity of project activities and tools will be under the responsibility of INAB's Forest Industry and Trade Directorate, which will incorporate them into its yearly plans of operation. It should be pointed out that this project is directly consistent with the Five-Year Plan of INAB and the Forest Industry and Trade Directorate.

Project activities include the monitoring of the forest industry and trade information system, which will be incorporated as an element of other information systems already managed by INAB, such as SIFGUA.

3.4 WORK PLAN

Activities	Responsible Party	Schedule (in months)							
		1	2	3	4	5	6	7	8
Output 1									
1.1 Collection of information on the methodology	Subcontractor and Project Coordinator								
1.2 Selection of industries for the collection of data in 4 priority areas	Subcontractor and Project Coordinator								
1.3 Prioritization of species	Subcontractor and Project Coordinator								
1.4 Analysis and interpretation of data and results	Subcontractor and Project Coordinator								
1.5 Development of technical manual	Subcontractor and Project Coordinator								
Dissemination and validation of technical manual in priority areas	Subcontractor and Project Coordinator								
Presentation of yield study and technical manual to estimate primary sawmilling yield rates	Subcontractor and Project Coordinator								
Output 2									
Analysis of the information previously collected under Output 1 and other related studies	Project Formulation Consultant and Project Coordinator								
Development of project proposal to improve primary sawmilling monitoring and control and enhance forest industry efficiency in the processing and legal marketing of timber	Project Formulation Consultant and Project Coordinator								
Dissemination and validation with priority stakeholders and beneficiaries	Project Formulation Consultant and Project Coordinator								
Presentation of project proposal	Project Formulation Consultant and Project Coordinator								

3.5 BUDGET

3.5.1 ITTO Budget

Category	Description	Total
10	***Personnel***	
131	Project Formulation Consultant	6000
19	**Component Total**	**6000**
20	***Sub-contracts***	
21	Sub-contract (Development of yield study and technical manual for forest industry primary sawmilling yield calculation)	20000
23	Printing of document (technical manual)	6000
	Component Total	**26000**
30	***Travel***	
31	Duty travel	1350
39	**Component Total**	**1350**
40	***Capital Items***	
441	Portable computer equipment (Laptop 4G RAM, 500 GB Hard Disk, 2.5 GHZ Processor, including desk and backpack), GPS and audiovisual projector for pre-project coordination)	3000
442	Tape measure	20
4421	Diameter gauge	100
4423	Photographic camera	350
59	**Component Total**	**3470**
50	***Consumable Items***	
51	Fuel	3200
54	Office supplies	500
59	**Component Total**	**3700**
60	***Miscellaneous***	
611	4 Dissemination workshops in priority areas	3000
612	4 Workshops for the presentation of final report in priority areas	3000
613	National presentation of methodology and results of technical study	2100
614	Project formulation workshop	900
615	Presentation of project proposal	750
62	Auditing	2500
63	Miscellaneous	1000
69	**Component Total**	**13250**
	SUB-TOTAL	**53770**
80	***Project Monitoring and Administration***	
81	ITTO monitoring and review	6000
83	ITTO Programme Support Costs (12% of 1-82)	7172.4
	GRAND TOTAL	**66942.4**

3.5.2 Executing Agency Budget

Category	Description	Total
10	***Personnel***	
11	Project Coordinator	9200
19	**Component Total**	**9200**
30	***Travel***	
31	Duty travel	1000
39	**Component Total**	**1000**
40	***Capital Items***	
41	Rental of office space	2400
49	**Component Total**	**2400**
50	***Consumable items***	
53	Utilities	1000
54	Office supplies	1000
59	**Component Total**	**2000**
60	**Miscellaneous**	
61	Sundry support costs	4000
69	**Component Total**	**4000**
	SUB-TOTAL	**18600**
70	***National Management Costs***	
71	Administrative costs (8%)	1488
79	**Component Total**	**1488**
	GRAND TOTAL	**20088**

PART 4. IMPLEMENTATION ARRANGEMENTS

4.1 EXECUTING AGENCY AND ORGANIZATIONAL STRUCTURE

INAB will be the executing agency of this pre-project. INAB is a reputable Guatemalan institution with extensive experience in development projects and as such, it will take on responsibility for pre-project coordination and outcomes. INAB will establish contacts with the relevant interested institutions.

The Forest Industry and Trade Directorate has been set up by INAB to meet the needs and demands of the country´s forest industry and trade development process. Its objective is "To promote the development, upgrading and effective integration of production, industrial processing and marketing of forest products so as to satisfy the demand of national and international markets".

For the implementation of the forest industry and transport monitoring regulations, the Directorate is in charge of the administration of forest product transport documentation submitted by the industry, while INAB's Forest Monitoring Department is responsible for:

- Coordinating and following up the monitoring of forest industries, sawmills and forest product warehouses;
- Developing guidelines for the monitoring of forest industries, sawmills and forest product warehouses;
- Assisting in monitoring activities at the regional level; and
- Supervising compliance with monitoring targets.

The Forest Industry and Trade Directorate operates under the direct responsibility of INAB's Management and its main functions are as follows:

- Coordinate the establishment and operation of the Electronic Information System on Forest Enterprises (SEINEF);
- Coordinate partnerships as required to promote Forest-Industry-Market integration;
- Coordinate the provision of training on industrial innovation, competitiveness and business management.

The Forest Industry and Diversification Department has the following main functions:

- Generate and disseminate information on technologies, yield rates and products of the national industry;
- Generate and disseminate information on potential forest-industry clusters;
- Generate and disseminate information on forest product processing technologies and designs available at the international level.

The Trade Promotion Department has the following main functions:

- Generate and disseminate strategic information on the supply and demand of forest products at the local, regional and national levels;
- Analyze and disseminate information on the international market for forest products and environmental services;
- Identify, prioritize and generate information as required to promote production chains.

INAB's Industry and Trade Directorate attends to the needs of the whole country through 9 Regional Directorates and 33 Sub-regional Directorates of INAB, which are distributed as follows:

No.	Region	Department	No. of sub-regions
I	Metropolitan	Guatemala	Nil
II	Las Verapaces	Alta Verapaz and Baja Verapaz	7
III	Northeast	Chiquimula, El Progreso, Izabal, Zacapa.	4
IV	Southeast	Jutiapa, Jalapa and Santa Rosa	3
V	Central	Chimaltenango and Sacatepéquez	2
VI	West	Quetzaltenango, San Marcos, Sololá and Totonicapán	4
VII	Northwest	Huehuetenango, Quiché	4
VIII	El Petén	Petén	4
IX	South Coast	Escuintla, Retalhuleu	4
TOTAL			33

4.2 PRE-PROJECT MANAGEMENT

The National Council for Sustainable Forest Management Standards in Guatemala (CONESFORGUA) is a non-profit, civil society organization established in 2003 to support forest development in Guatemala by generating and promoting sustainable forest management and forest product processing standards. CONESFORGUA has taken on the responsibility of following up the forest certification process in the country so as to promote good forest management practices in Guatemala.

CONESFORGUA's main objective is "to provide an ongoing discussion forum to address significant topics related to sustainable forest management and forest product processing standards, with representatives of all interested stakeholders of the forestry and related sectors". Furthermore, CONESFORGUA has the following additional objectives:

1. To facilitate enabling conditions for the implementation of a fair, transparent and systematic evaluation process on sustainable forest management and forest product processing in Guatemala.
2. To lead and facilitate a participatory process aimed at the formulation of a proposal on national standards and forest product processing.
3. To raise awareness and promote the objective, significance, uses and benefits of sustainable forest management and forest product processing standards.
4. To submit the sustainable forest management and forest product processing standards adopted at the national level to the relevant bodies for their approval at the international level.
5. To support actions aimed at improving Guatemala's trade relations and economic-financial instruments in the forest sector.

The National Council for Sustainable Forest Management Standards in Guatemala (CONESFORGUA) is a reputable Guatemalan institution that will be in charge of managing and administering the funds provided by ITTO. The pre-project will be implemented within INAB's structure, specifically under the monitoring and control of INAB's Forest Industry and Trade Directorate.

4.3 MONITORING AND REPORTING

Within 8 weeks of project start-up, the Project Coordinator will prepare an inception report for the first meeting of the Project Steering Committee. This report will include the detailed Yearly Plan of Operation (YPO) for the first 8 months. The YPO will be based on activity details as defined in the project proposal. It will include resources needed, assign responsibility for each activity and present the plan for the implementation of activities per month or week.

Every 4 months, INAB will send progress reports to the ITTO Secretariat according to the relevant ITTO requirements. The consultancy reports will also be sent to the ITTO Secretariat. The consultancy reports will also be sent to the ITTO Secretariat. The completion report will be sent to the Secretariat no later than 3 months after project completion. ITTO's monitoring missions will take place according to the Organization's schedule.

ANNEX 1. Profile of the executing agency

A. EXECUTING AGENCY

The project executing agency will be **National Forest Institute – INAB**.

Expertise

The National Forest Institute (INAB), an autonomous, decentralized government agency with legal capacity, equity capital and administrative independence, is the competent coordinating authority responsible for the public agricultural sector in the forestry field as established by the current forest legislation of Guatemala (1996).

INAB is responsible by law for the administration of forests outside protected areas. With its 33 sub-regional offices and 9 regional directorates, the Institute has a functional structure and national coverage. This institutional structure has enabled INAB to implement a large number of actions and programs, in particular, the Forest Incentives Programme – PINFOR, which has achieved the reforestation of 94,000 hectares and the management of 174,000 hectares of natural forests, while continuously promoting the decentralization of the forest administration.

The Institute's main functions are: a) Implement forest policies; b) Promote and encourage forest development in the country through sustainable forest management, reforestation, forest resource based crafts and industry, and watershed protection and development; c) Promote forest research; d) Coordinate the implementation of forest development programmes; and e) Develop programmes and projects aimed at forest conservation.

INAB is a reputable Guatemalan institution with extensive experience in development projects. It has developed different participatory mechanisms at both the national and local levels with the involvement of various stakeholders. These mechanisms include active participation in local fora such as forest policy and consensus-building roundtables, Departmental Development Councils and Community Development Councils, among others.

INAB has expertise in the following areas:

- Incentive-based forest development and promotion.
- Promotion of sustainable forest management.
- Forest protection.
- Administration, regulation and control of the forest sector.
- Forest promotion, training and education.
- Technical and economic forestry information and research.
- Institutional strengthening.
- Improvement of forest production.
- Support to local governments for forest administration.
- Forest extension.
- Forest conservation.
- Geographic information systems.
- National forest inventories.

INAB has 9 Regional Directorates, which are distributed as follows:

No.	Region	Department	No. of sub-regions
I	Metropolitan	Guatemala	Nil
II	Las Verapaces	Alta Verapaz and Baja Verapaz	7
III	Northeast	Chiquimula, El Progreso, Izabal, Zacapa.	4
IV	Southeast	Jutiapa, Jalapa and Santa Rosa	3
V	Central	Chimaltenango and Sacatepéquez	2
VI	West	Quetzaltenango, San Marcos, Sololá and Totonicapán	4
VII	Northwest	Huehuetenango, Quiché	4
VIII	El Petén	Petén	4
IX	South Coast	Escuintla, Retalhuleu	4
TOTAL			**32**

Each of these Regional and Sub-regional Directorates of INAB has offices equipped with furniture, telephone, fax machines and computer equipment. In addition, they have their own budget and vehicles and motorcycles at their disposal. All of these Directorates are staffed with technical, administrative and legal personnel.

Project management

B. COLLABORATING AGENCY

The National Council for Sustainable Forest Management Standards in Guatemala (CONESFORGUA) is a non-profit, civil society organization established in 2003 to support forest development in Guatemala by generating and promoting sustainable forest management and forest product processing standards. CONESFORGUA has taken on the responsibility of following up the forest certification process in the country so as to promote good forest management practices in Guatemala.

Since its inception, it has promoted an information sharing and participation process at all levels, with a view to disseminating knowledge about forest management and certification as well as developing standards for the management of natural forests, forest plantations and non-timber forest products.

CONESFORGUA's main objective is "to provide an ongoing discussion forum to address significant topics related to sustainable forest management and forest product processing standards, with representatives of all interested stakeholders of the forestry and related sectors". Furthermore, CONESFORGUA has the following additional objectives:

1. To facilitate enabling conditions for the implementation of a fair, transparent and systematic evaluation process on sustainable forest management and forest product processing in Guatemala.
2. To lead and facilitate a participatory process aimed at the formulation of a national standards and forest product processing proposal.
3. To raise awareness and promote the objective, significance, uses and benefits of sustainable forest management and forest product processing standards.
4. To submit the sustainable forest management and forest product processing standards adopted at the national level to the relevant bodies for their approval at the international level.
5. To support actions aimed at improving Guatemala's trade relations and economic-financial instruments in the forest sector.

Main activities implemented by the organization since its inception by thematic groups:

1. Administration and development of the organization:
   a. Rules of procedure for the operation of the organization; strategic plan; registry of operational activities; accounting and tax records; monthly meetings of the Executive Board, Annual Assemblies.

2. Formulation and development of standards:
   a. National standards for natural and planted forests based on the generic standards currently used in the country.
   b. National standards for small forests under low management intensity (in progress).
   c. Participation in the discussion on the formulation of a national green seal.

3. Technical assistance for forest management and certification:
   a. Promotion, technical assistance, training.

4. Support and technical assistance for thematic fora under the National Forestry Agenda.
   a. Participation in the Forest Cluster, the Pine-Oak Partnership, the National Forest Programme; also, involvement in forest certification initiatives in the Central American region and Latin America in general.

5. Communication and outreach:
   a. Participation in workshops and in the development of induction guidelines, leaflets and other materials on forest management and certification issues.

Financing, mainly through the formulation and submission of projects and/or technical proposals to:

External/international cooperation:
WWF, FAO, ICCO Holland, DANIDA through NEPENTHES, GTZ, Rainforest Alliance
Internal/national cooperation:
INAB, PRONACOM, Forestry Society (Gremial Forestal), Members

Main achievements:

- The establishment of the organization
- National recognition of the organization in the areas of forest management and certification.
- The development of standards

Main challenges

- Increasing its membership
- Reviewing standards and adapting them to the realities of the country
- Development of technical tools to support forest management and certification
- Self-sustainability

Projects in progress with GFP/PFN

1. Development of a national certification proposal for the harvesting, transport and marketing of forest products.

Development of a national certification proposal: within the framework of the National Legality Promotion Strategy, CONESFORGUA plans to develop and implement an activity, as part of the strategy, aimed at reaching an agreement with relevant stakeholders about the most appropriate mechanisms to reduce illegal forest activities in the country (95% according to IARNA, URL, Environmental Profile of Guatemala, 2009).

2. Development of a self-sustainability plan for the organization:

Development of an institutional strategic plan, linked to the identification of actions that will ensure the self-sustainability of the organization.

The National Council for Sustainable Forest Management Standards in Guatemala (CONESFORGUA) is a reputable Guatemalan institution that will be in charge of managing the funds provided by ITTO.

ANNEX 2. Tasks and responsibilities of key experts provided by the executing agency

A. Project Coordinator (Head of Forest Industry and Diversification Promotion)

- Qualifications: Forest engineer, forester and/or natural resource specialist with a Master's degree in Wood Technology or Forest Economics. A minimum of 3 – 5 years experience in the forest sector of Guatemala. Ability for planning medium and long term projects. Excellent organizational skills. Leadership skills to lead work teams. Ability to work under pressure in an independent manner. Functional command of both spoken and written English. Excellent inter-personal and inter-cultural communication skills.

Duties:

- Planning and coordinating institutional actions as required and integrating sectoral efforts to improve the forest industry.
- Identifying, collecting, analyzing and disseminating information to contribute to the diversification of forest products.
- Proposing the implementation of studies and research to strengthen the forest industry.
- Supporting, through technical inputs, the characterization of production chains, technologies and corresponding financial requirements.
- Supporting the dissemination of regulatory mechanisms and/or standards to regulate the forest industry.
- Generating and disseminating information on the level of technology, yield levels and outputs of the national industry.

ANNEX 3. Tasks and responsibilities of key experts funded by ITTO

TERMS OF REFERENCE

Position:	Project Formulation Expert
Reporting to:	INAB Project Coordinator Head of Forest Industry and Diversification Promotion ITTO Expert
Duration of contract:	3 months

I. BACKGROUND:

II. CONSULTANT'S PROFILE:

Professional specialized in project formulation preferably with more than 10 years experience in the forest sector of Guatemala and knowledge of standards, formats and procedures to develop project proposals to be submitted to international organizations.

III. QUALIFICATIONS:

- Degree in forestry, management of renewable natural resources, biology or related discipline, preferably with a Master's degree or above in the field of forest management.
- Active chartered professional.

IV. EXPERTISE:

- Management of forest and integrated rural development projects.
- Knowledge of the forestry field.
- Preferably familiar with the current forest legislation.
- Extensive experience in the forest industry, estimation of yield levels, production lines, types of sawmills, measurement and grading, forest industry efficiency levels, wood defects, identification of timber flows, estimation of regression formula, calculation of milling coefficient, and estimation of waste volumes.
- Availability in terms of time and schedule to hold work meetings with project staff.
- Ability to work in a team.
- Ability to negotiate with forest sector stakeholders, particularly forest industries.
- Ability to prepare audiovisual presentations in PowerPoint.

V. CONSULTANCY OBJECTIVES:

Develop a project proposal including the following components:

- Institutional strengthening through the development of a web-based methodology to facilitate the validation of yield studies for forest enterprises throughout the country, and the development of a tool for the collection of information on forest industries using the same web-based system to provide indicators and reliable statistics to strengthen the national forest industry.
- Analysis of the national forest industry based on the results of yield studies on forest enterprises and the information collected through the web-based tool to be established.
- Strengthening of technical and administrative skills of forest enterprises in Guatemala through the development of a technical and administrative training program for the personnel of forest enterprises in the country. This program should be based on the main needs identified in the analysis to improve industrial efficiency.

VI. DUTIES:

- Develop a work plan for the implementation of the consultancy in close coordination with the subcontracted company and the project coordinator.
- Draft a project proposal to be submitted to international organizations.
- Hold meetings with the coordinators of INAB's Industry and Trade Directorate.

- Organize and implement consultation and validation workshops to validate the information generated on national forest product yield levels.
- Submit the project proposal to INAB's Executive Board.
- Present the results of the project proposal at a public event.

VII. OUTPUTS:

- Submission of detailed work plan.
- Submission of monthly progress reports on the consultancy.
- Delivery of project document to be submitted to international organizations.
- Development of electronic presentation describing the importance of the project proposal.

VIII. DURATION: The duration of the consultancy contract will be 3 calendar months.

I. <u>SUB-CONTRACT:</u>

Sub-contract for the development of a yield study and a technical manual for forest industry primary sawmilling yield calculation.

The company responsible for developing and drafting the technical manual should meet the following requirements:

- Qualified personnel.
- Extensive experience in forest industry issues, yield calculation, production lines, types of sawmills, measurement and grading, forest industry efficiency levels, wood defects, identification of timber flows, estimation of regression formula, calculation of milling coefficient, and estimation of waste volumes.
- Ability for the identification of species, stakeholder analysis, data collection, log measurement, evaluation and calculations.
- At least one expert in forest industry and diversification.
- Availability in terms of time and schedule to hold work meetings with project staff.
- Ability to work in a team.

I. DUTIES:

- Develop a work plan for the implementation of the sub-contract in close coordination with the Project Coordinator
- Hold meetings with the Coordinator and INAB's Industry and Trade Directorate.
- Develop a work plan for the implementation of the consultancy in close coordination with the subcontracted company.
- Draft a project proposal to be submitted to international organizations.
- Design and implement a methodology to collect data to estimate forest industry yield rates in Guatemala.
- Organize and implement consultation and validation workshops to validate the information generated on national forest product yield levels.
- Submit the results of the study to INAB's Executive Board.
- Present the results of the study and proposals for improvements at a public event.
- Estimate yield rates for at least two forest industries in each priority industrial cluster.

II. OUTPUTS:

- Submission of detailed work plan in coordination with the Project Coordinator.
- Submission of monthly progress reports.
- Development of yield study containing the following: Definition of species (7 prioritized species as specified in Forest Incentives Programmes according to their forest cover – pine, teak, melina, white wood, cedar, Santa María, mahogany), identification of samples, identification of timber flows, log scaling (Smalian Scale), log marking, primary processing/sawmilling, production measurement and recording, estimation of milling coefficient (%), estimation of waste volumes, statistical analysis of information, estimation of regression formula (log-sawnwood) (sawnwood-log).

- Development of technical manual on yield calculation to standardize criteria, concepts and a methodology that may later be used at the national level.
- Delivery of detailed work plan.
- Submission of monthly progress reports on the consultancy.
- Project document to be submitted to international organizations.
- Development of electronic presentation describing significance, objectives, methodology, study results, and proposal for mechanisms to register, monitor and control major forest products.

DURATION OF SUB-CONTRACT: 8 months

ANNEX 4. LETTER OF SUPPORT FROM THE COLLABORATING AGENCY

CONSEJO NACIONAL DE ESTANDARES DE MANEJO FORESTAL SOSTENIBLE PARA GUATEMALA.

Guatemala 23 de agosto de 2013

Dr. Emmanuel Ze-Meka
Director Ejecutivo
Organización Internacional de las Maderas Tropicales

Señores:

En referencia a **"Mejora del Control y la eficiencia de los productos forestales a través de la creación de un programa para mejorar el rendimiento de la industria forestal de transformación primaria"**, manifestamos a través de la presente nuestro interés en apoyar al Instituto Nacional de Bosques (INAB).

Es de alto interés para el Consejo Nacional de Estándares Forestales de Guatemala (CONESFORGUA) mejorar las condiciones de trazabilidad y la legalidad de los productos forestales, provenientes de los bosques de Guatemala. Por tal razón hemos facilitado el acercamiento del equipo de formulación con las identidades del Inab para el impulso de dicha iniciativa.

Por lo tanto reitero nuestro interés y apoyo a este proyecto, ya que esperamos será de gran beneficio para el control y eficiencia de los productos forestales a través de la creación de un programa para mejorar el rendimiento de la industria forestal de transformación primaria.

Atentamente,

Glenda Lee
Presidente Junta Directiva
CONESFORGUA

Oficinas: 7ª Avenida 6-80, zona 13, Ciudad de Guatemala, Guatemala, Centro América
Teléfonos: 2321-4525 Correo Electrónico: ongua@gt.fsc.org / conesforgua@gmail.com

ANNEX 5. RECOMMENDATIONS OF THE ITTO EXPERT PANEL AND CORRESPONDING MODIFICATIONS

Reviewer Comments/Recommendations	Amendment(s) made	Page #
Clarify or eliminate the reference to objective d)	***The reference to objective (d) has been eliminated.***	***Page 5***
It is clear that the pre-project will provide information of yield and efficiency on the primary processing of timber, and that is how the proposal is related to the TP objectives. The other relations are quite vague.	***The explanation on the pre-project relevance to the Thematic Programme has been improved.***	***Pages 6-8***
The objective is quite straight-forward, although CITES is not mentioned as a main reason to develop conversion factors for species like mahogany and cedar in a country like Guatemala. The specific objective could be improved by also including a reference to a standardization of the methodology to determine the yield of production of timber.	***The pre-project specific objective has been improved.***	***Page 10***
The elements of the problem identification are there, but a more concise and logic writing can significantly improve it, so any reader can understand the lack of information of timber yield within a few paragraphs.	***The drafting of the preliminary problem identification has been improved.***	***Pages 10 - 11***
The contents of both Output 1 (yield study) and 2. Project proposal should be further described in detail.	***A brief description has been included on the outputs to be produced by the pre-project.***	***Page 14***
Studies on log/timber conversion factors, yield and efficiency have been carried in many countries and for many different species and products. Background information should be provided on these, as the proposal should build on these, not reinvent the wheel. Activities should also be more specific as to what species and products it will cover.	***The description of pre-project activities, including species selection, has been improved.***	***Pages 14 - 15***
Clearly define the methodology, the tree species and the timber products to be studied under output 1. Clarify how these conversion factors/yield studies will be used to improve forest industry productivity and processing via the implementation of a follow-up project. Last but not least, what are the objectives, target beneficiaries and outputs to be expected from the proposed workshops /meetings /presentation?	***The description of the methodology to be used for the yield study, tree species selection and timber products to be studied has been improved. In addition, an explanation has been included on the implementation of a project based on pre-project results and on the objectives, target beneficiaries and outputs to be expected from the proposed workshops.***	***Pages 16 - 17***
The work plan should be modified based on the recommendations for outputs and activities. I also wonder if translation of the methodology to a Mayan language will be required?	***The work plan has been modified on the basis of the recommendations on outputs and activities.***	***Page 18***

The budget should be modified based on the recommendations for outputs and activities. All consultants should be sub-contracted, one for the yield study and one for the formulation of their proposal. These consultants should provide their own equipment, so the ITTO budget for capital items can be eliminated. Auditing cost should be listed under the correct component (under 60).	***The budget has been modified based on the recommendations on outputs and activities; the cost of computer equipment has been reduced as it will be used only for the coordination of the pre-project.*** ***Auditing costs have been listed under the correct component.***	***Page 19***
Better explain the organizational structure of the Directorate of Forest Industries and Trade (including regional offices) and CONESFORGUA. More details are required, i.e. how does this forest industry PPD fit within the structure of INAB? What department of INAB has direct competence over log/timber conversion factors, its applicability and control?	***A brief explanation has been included on the organizational structure of INAB's Industry and Trade Directorate.***	***Page 21***
Same as above.	***Information on CONESFORGUA has been included in the proposal.***	***Page 22***
The ToR for the subcontract needs to be modified according to the recommendations under output and activities. The ToR are too vague. More details are required as regards the components of the yield study, species, products, etc.	***The ToRs have been amended according to the recommendations made.***	***Pages 27 - 29***
In the above section (section 3.2, Output 1, Activity 1.1) could you please provide detailed information (e.g. title, year, author) and specify explicitly which studies/information will be considered in the desk review.	***A table has been included to show the bibliographic references that will be used as a guide for the development of the methodology to be followed.***	***Pages 16 - 17***