

# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

## ITTO

### PRE-PROJECT PROPOSAL

<b>TITLE:</b>	GENETIC IMPROVEMENT OF TROPICAL FOREST SPECIES
<b>SERIAL NUMBER:</b>	PPD 75/03 Rev.1 (F)
<b>COMMITTEE:</b>	REFORESTATION AND FOREST MANAGEMENT
<b>SUBMITTED BY:</b>	GOVERNMENT OF GUATEMALA
<b>ORIGINAL LANGUAGE:</b>	SPANISH

#### SUMMARY

This proposal addresses the need to formulate a genetic improvement program including activities aimed at the production and marketing of forest seeds for the future production of high-quality timber, based on the identification of 10 broadleaved forest species, taking into account the priorities of the forest incentive program of the National Forest Institute - PINFOR, industrial requirements in terms of species, and the potential to meet national and international demand.

The selection of species will be based on the species prioritisation included in the forest incentive program of the National Forest Institute, taking into account their potential for processing and marketing both at the national and international levels.

The potential demand for certified broadleaved forest seeds has been fully identified by the Forest Seed Bank of the National Forest Institute; however, the genetic material currently used does not guarantee the competitiveness of future production as there is no forest genetic improvement programme in place.

**EXECUTING AGENCY:** NATIONAL FOREST INSTITUTE – INAB

**COOPERATING GOVERNMENTS:** --

**DURATION:** 5 MONTHS

**APPROXIMATE STARTING DATE:** UPON APPROVAL

<b>BUDGET AND PROPOSED SOURCES OF FINANCE:</b>	<b>Source</b>	<b>Contribution in US\$</b>
	<b>ITTO</b>	<b>51,300</b>
	Government of Guatemala	9,300
	<b>TOTAL</b>	<b>60,600</b>



## **PART I: CONTEXT**

### **1. ORIGIN**

The need to develop a Forest Genetic Improvement Program was identified in a proposal submitted by the National Forest Research System of the National Forest Institute in 1998, which emphasised the need for research development in the area of conservation and improvement of forest genetic resources in the country.

The main objective of this proposal is to develop a strategy to improve and ensure the genetic quality of selected broadleaved forest species through research geared to the generation of information so as to facilitate the availability of improved genetic material for the establishment of high-quality plantations and thus guarantee the future supply of raw material.

### **2. SECTORAL POLICIES**

The Guatemalan forest policy can be divided into the following components: a) contribution to the Guatemalan system of protected areas and protection and conservation of strategic forest ecosystems; b) promotion of natural forest management for production purposes; c) promotion of plantation forestry; d) promotion of agroforestry and sylvopastoral systems on forestry-apt lands; e) promotion of the expansion and updating of primary and secondary processing industry; and f) contribution to the search for and use of markets and forest product designs.

Thus, the proposed project is part of a long-term strategic vision based on the potential of forest genetic improvement to achieve the economic and ecological re-valuation and the conservation and development of broadleaved tropical forests in Guatemala.

### **3. PROGRAMMES AND OPERATIONAL ACTIVITIES**

Several institutions and private sector forest owners will participate in the work of this pre-project so as to ensure the necessary flow of information and access to potential areas for identification.

The main institutions to be considered are:

**National Forest Institute – INAB.** Institution responsible for the sustainable management of forests in the Republic of Guatemala, with the exception of protected areas. It has the following departments, sections and projects:

- **Forest Development Department:** Sustainable forest management development. Support for forest production improvement and forest conservation.
- **Forest Seed Bank Project – BANSEFOR:** Responsible for the collection, processing and distribution of forest seeds, as well as the identification of seed stands, with a view to ensuring the supply and marketing of forest seeds.
- **Forest Research Programme:** Responsible for the follow-up and monitoring of activities related to the implementation of institutional research.

**Universities throughout the country:** Responsible for providing academic training in the area of forest genetic improvement and owners of the necessary equipment for the establishment of research programmes.

**Private sector:** Owners of broadleaved tropical forest areas and beneficiaries of the forest incentive program established by the Forestry Law, who are responsible for the processing and marketing of forest products.

## **PART II: THE PRE-PROJECT**

### **1. PRE-PROJECT OBJECTIVES**

#### **1.1 Development objective**

Define basic guidelines and strategies to ensure the continuous short, medium and long term supply of high-quality genetic material to meet the requirements of afforestation and reforestation programmes with broadleaved tropical species of high commercial value as well as raw material for long-term industry supply.

#### **1.2 Specific objectives**

- Objective No. 1

Implement a baseline study including the specific information required on the genetic improvement of selected forest species so as to ensure the production and reproduction of quality germ plasm and thus guarantee its future supply as well as the supply of adequate material for industrial processing.

- Objective No. 2

Formulate a project containing a strategy for the implementation of actions aimed at the development of a forest genetic improvement methodology, including identification, selection, processing, marketing, establishment and management, as well as the training of the necessary human resources for its implementation and development.

### **2. JUSTIFICATION**

The high rate of deforestation and the degradation of forest vegetation in Guatemala is mainly the result of the expansion of the agricultural frontier, changes in land use through the implementation of activities other than those supported by its land use capacity, the harvesting of fuel-wood for energy purposes at levels that exceed the natural regeneration capacity and reforestation levels of forests, the limited implementation of forest management plans and the forest fires caused by human actions. All of these factors have contributed to a great extent to the genetic degradation of forest resources. More protection and reforestation programs will have to be implemented in order to revert this situation and guarantee the sustainable development of the remaining resources. The implementation of these programs will require an increased production of high quality forest seeds or other types of high quality genetic materials, so as to guarantee the survival and development of established plantations, based on the production capacity of raw materials aimed at ensuring a steady supply to the forest industry.

The majority of national nurseries do not currently have certified seeds. The available seeds are of unknown origin and therefore the quality of the plants they will produce is also unknown. Similarly, the quality of the germ plasm provided by overseas forest nurseries is also unknown. In the medium and long terms, this could lead to a shortage in timber supply due to the low production of forest plantations established using such materials, and this in turn could lead to the collapse of the timber processing industry or could force the industry to harvest timber from existing natural forests, thus endangering their conservation.

#### **2.1 Problem to be addressed**

##### **2.1.1 A lack of programs and guidelines to guarantee the continuous supply of high genetic quality germ plasm**

One of the main reasons for the failure or low productivity of forest plantations has been the use of inappropriate germ plasm. In order to ensure a sustainable and rapid development of the

forest sector in the country, it is essential to include the genetic quality factor as a vital element for the growing of trees.

The tax incentives that were in place until 1996 and the reforestation incentives that have been applied from 1997 to date have resulted in a significant increase of the planted forest area in the country. It is expected that this planted area will increase over the years. This makes it even more important to ensure the utilization of better genetic quality planting material of important species for the Guatemalan forest industry. It should be pointed out that the Reforestation Incentives Program –PINFOR has resulted in the establishment of more forest plantations in this period than in the last 20 years. Thus, the forest sector is gradually turning into a foreign exchange generating industry that is not only producing the required volumes, but is also starting to be concerned with the quality of exported products, which to a great extent is determined by the quality of the raw materials used.

If the present situation is maintained, the genetic base of natural populations will continue to decrease to a point where it will be irrecoverable. Furthermore, low quality germ plasm will continue to be used, which will result in low production plantations.

## **2.2 Reasons for the pre-project**

There is an enormous potential for forest genetic improvement. Many countries that now have extensive and successful genetic improvement programs have understood this fact and have acted accordingly. For example, Australia, Brazil, Chile, Colombia, the United States and New Zealand, just to mention a few, all have programs that have led to shorter rotation periods and therefore, shorter periods of economic returns for their investments. Furthermore, these programs have produced much higher volumes of timber than had previously been produced. For this reason, the implementation of a Genetic Improvement Program will contribute to the conservation of the national germ plasm resources.

## **2.3 Target Beneficiaries**

This pre-project will be the basis for the implementation of a forest genetic improvement program and will benefit the following groups:

- a) The rural communities. Rural communities will have access to good quality germ plasm for the establishment of present and future forest plantations. Furthermore, they will directly benefit from the employment generated by the implementation of the program.
- b) Individual forest producers or forest companies. Forest producers will be able to establish forest plantations using improved genetic material in the short, medium and long terms, thus ensuring the production of better quality products.
- c) The forest industry sector. Companies that use and process timber will ensure better returns by using better quality raw materials.
- d) Professionals and Technicians. The staff that will participate in the genetic improvement program will receive ongoing training.
- e) The country as a whole. The implementation of this program will provide both ecological and economic benefits to the country, as it will increase the forest cover and will also ensure the conservation of local germ plasm. The management of these forest stands will in turn generate foreign exchange earnings.

## **2.4 Other relevant aspects**

It is a well-known fact that, due to its geographic position, Guatemala has an enormous wealth of forest resources. However, the lack of an established forest culture is resulting in the accelerated deterioration of tropical forests, in particular broadleaved forests, mainly due to shifting agricultural practices, the expansion of the agricultural frontier and the limited application of forest management plans for technically sound forest utilisation.

The country is currently faced with the problem that the majority of forest nurseries do not obtain seeds from the institutions or companies that specialise in providing this service. Thus, the origin of the seeds is unknown and consequently the phenotype characteristics of the trees they produce are also unknown. This has created uncertainty in relation to the quality of new forest plantations established using these materials.

### **3. OUTPUTS**

#### **Specific Objective 1**

Formulate a technical and economic feasibility study for the establishment of a genetic improvement programme in the country.

#### **Output 1.1**

Document on baseline study containing specific information required for the establishment of a forest genetic improvement programme for selected species, with special emphasis on its technical and economic pre-feasibility to ensure its implementation and sustainability.

#### **Specific Objective No. 2**

Develop a project proposal containing a marketing strategy for the implementation of a certified seed programme.

#### **Output 2.1**

Document on feasibility study for the implementation of a strategy aimed at the marketing of improved and certified genetic material both at the national and international levels.

### **4. ACTIVITIES**

#### **Output 1.1**

Document on baseline study containing specific information required for the establishment of a forest genetic improvement programme for selected species, with special emphasis on its technical and economic pre-feasibility to ensure its implementation and sustainability.

#### **Activities**

- 1.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including the formulation of a proposal for the establishment of a forest genetic improvement programme focusing on its technical and economic pre-feasibility.
- 1.1.2 Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations.
- 1.1.3 Work meetings with forest sector stakeholders to discuss the benefits of the establishment of a genetic improvement programme as well as discussion of preliminary results.
- 1.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations.

- 1.1.5 Dissemination of results through the final presentation of the work carried out.
- 1.1.6 Submission of final report in printed and electronic versions, addressing the technical and economic pre-feasibility of establishing a forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme.

### **Output 2.1**

Document on feasibility study for the implementation of a strategy aimed at the marketing of improved and certified genetic material both at the national and international levels.

### **Activities**

- 2.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including a proposal for the implementation of a strategy aimed at the marketing of improved and certified forest genetic material.
- 2.1.2 Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations.
- 2.1.3 Work meetings with forest sector stakeholders to discuss the marketing of certified seeds through the establishment of a genetic improvement programme as well as discussion of preliminary results.
- 2.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations.
- 2.1.5 Dissemination of results through the final presentation of the work carried out.
- 2.1.6 Submission of final report in printed and electronic versions, containing a marketing strategy based on the implementation of a certified seed programme within the forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme.

## 5. WORK PLAN

Outputs/Activities	Responsible Party	Months				
		1	2	3	4	5
<b>Output 1.1</b>						
Document on baseline study containing specific information required for the establishment of a forest genetic improvement programme for selected species, with special emphasis on its technical and economic pre-feasibility to ensure its implementation and sustainability						
<b>Activities</b>						
1.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including the formulation of a proposal for the establishment of a forest genetic improvement programme focusing on its technical and economic pre-feasibility	Subcontract					
1.1.2 Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations	Consultant					
1.1.3 Work meetings with forest sector stakeholders to discuss the benefits of the establishment of a genetic improvement programme as well as discussion of preliminary results	Consultant					
1.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations	Consultant					
1.1.5 Dissemination of results through the final presentation of the work carried out	Consultant					
1.1.6 Submission of final report in printed and electronic versions, addressing the technical and economic pre-feasibility of establishing a forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme	Consultant					
<b>Output 2.1</b>						
Document on feasibility study for the implementation of a strategy aimed at the marketing of improved and certified genetic material both at the national and international levels						
<b>Activities</b>						
2.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including a proposal for the implementation of a strategy aimed at the marketing of improved and certified forest genetic material	Subcontract					
2.1.2 Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations	Consultant					
2.1.3 Work meetings with forest sector stakeholders to discuss the marketing of certified seeds through the establishment of a genetic improvement programme as well as discussion of preliminary results	Consultant					
2.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations	Consultant					
2.1.5 Dissemination of results through the final presentation of the work carried out.	Consultant					
2.1.6 Submission of final report in printed and electronic versions, containing a marketing strategy based on the implementation of a certified seed programme within the forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme	Consultant					



**6. BUDGET**

**6.1 BUDGET BY ACTIVITY (US\$)**

Outputs/activities + non-activity based expenses	10 Project personnel	20 Subcontracts	30 Duty Travel	40 Capital Items	50 Consumable Items	60 Miscellaneous	BUDGET COMPONENTS	
							Month	GRAND TOTAL
Project components								
<b>Output 1.1</b>								
Document on baseline study containing specific information required for the establishment of a forest genetic improvement programme for selected species, with special emphasis on its technical and economic pre-feasibility to ensure its implementation and sustainability								
<b>Activities</b>								
1.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including the formulation of a proposal for the establishment of a forest genetic improvement programme focusing on its technical and economic pre-feasibility	12,500	3,500	8,000					24,000
1.1.2 Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations			1,000					1,000
1.1.3 Work meetings with forest sector stakeholders to discuss the benefits of the establishment of a genetic improvement programme as well as discussion of preliminary results								
1.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations								
1.1.5 Dissemination of results through the final presentation of the work carried out								
1.1.6 Submission of final report in printed and electronic versions, addressing the technical and economic pre-feasibility of establishing a forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme								

Outputs/activities + non-activity based expenses	BUDGET COMPONENTS							GRAND TOTAL
	10 Project personnel	20 Subcontracts	30 Duty Travel	40 Capital Items	50 Consumable Items	60 Miscellaneous	Month	
<b>Output 2.1</b>								
Document on feasibility study for the implementation of a strategy aimed at the marketing of improved and certified genetic material both at the national and international levels								
<b>Activities</b>								
2.1.1 Recruitment of international consultant and counterpart national consultant for the implementation of study, including a proposal for the implementation of a strategy aimed at the marketing of improved and certified forest genetic material	12,500	3,500						16,000
2.1.2. Visits to forest sector stakeholders concerned with the genetic material demand for its marketing at the national and international levels or for the establishment of forest plantations			1,000					1,000
2.1.3 Work meetings with forest sector stakeholders to discuss the marketing of certified seeds through the establishment of a genetic improvement programme as well as discussion of preliminary results								
2.1.4 Incorporation of feedback and information gathered on the basis of forest sector stakeholders' recommendations								
2.1.5 Dissemination of results through the final presentation of the work carried out								
2.1.6 Submission of final report in printed and electronic versions, containing a marketing strategy based on the implementation of a certified seed programme within the forest genetic improvement programme, including a cost/benefit analysis of the proposed scheme								
<b>Subtotal 2</b>	<b>25,000</b>	<b>7,000</b>	<b>10,000</b>					<b>42,000</b>
Non-activity based activities								
(1) Fuel and utilities					800			800
(2) Office supplies					500			500
(3) Auditing (ITTO monitoring and evaluation costs)						3,000		3,000
<b>TOTAL</b>	<b>25,000</b>	<b>7,000</b>	<b>10,000</b>		<b>1,300</b>	<b>3,000</b>		<b>46,300</b>

## 6.2 CONSOLIDATED YEARLY BUDGET IN US\$

<b>Budget Components</b>	<b>ITTO</b>	<b>INAB In kind</b>	<b>TOTAL</b>
<b>Project personnel</b>			
1 International Consultant – 5 months/year	25,000		25,000
1 National Expert		7,000	7,000
<b>Component Total</b>	<b>25,000</b>	<b>7,000</b>	<b>32,000</b>
<b>Subcontracts</b>			
Baseline study on genetic improvement			
Study on demand			
<b>Component Total</b>			
<b>Duty Travel</b>			
Visits	2,000		2,000
International travel	8,000		8,000
<b>Component Total</b>	<b>10,000</b>		<b>10,000</b>
<b>Capital Items</b>			
Premises		2,000	2,000
<b>Component Total</b>		<b>2,000</b>	<b>2,000</b>
<b>Consumable Items</b>			
Fuel and utilities		800	800
Office supplies		500	500
<b>Component Total</b>		<b>1,300</b>	<b>1,300</b>
<b>Miscellaneous</b>			
Auditing (ITTO monitoring and evaluation)	3,000		3,000
<b>Component Total</b>	<b>3,000</b>		<b>3,000</b>
<b>SUBTOTAL</b>	<b>38,000</b>	<b>10,300</b>	<b>48,300</b>
<b>ITTO Administration, monitoring &amp; evaluation</b>			
Programme Support Costs – 6% of subtotal	2,280		
<b>Component Total</b>	<b>2,280</b>		
<b>GRAND TOTAL</b>	<b>40,280</b>	<b>10,300</b>	<b>50,580</b>

## **PART III: THE TROPICAL TIMBER FRAMEWORK**

### **1. COMPLIANCE WITH ITTA 1994 OBJECTIVES**

This pre-project is consistent with the objectives of the International Tropical Timber Agreement, 1994, particularly the following:

**c. To contribute to the process of sustainable development.** This pre-project is expected to facilitate the formulation of a project proposal that will define an option for the conservation of tropical forest genetic resources as the basis for any improvement program is the availability of genetic variability.

**f. To promote and support research and development with a view to improving forest management and efficiency of wood utilization as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests.** By establishing research on forest genetic improvement, it will be possible to achieve the establishment of plantations using well-adapted species and provenances, increase forest yield levels in terms of timber and non-timber products, and guarantee the provision of environmental services, the management of forests, productivity and improved timber quality.

**j. To encourage members to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interests of local communities dependent on forest resources.** The sustainable use of forest resources will necessarily lead to the conservation and utilisation of forests as a development strategy, and the forest genetic improvement programme will lead to the establishment of quality plantations under management.

**l. To encourage members to develop national policies aimed at sustainable utilization and conservation of timber producing forests and their genetic resources and at maintaining the ecological balance in the regions concerned, in the context of tropical timber trade.** There is a need to increase the area of plantations in most countries so as to meet the production and protection and environmental requirements, which could be achieved by ensuring that the plantations are from quality genetic material.

### **2. COMPLIANCE WITH ITTO ACTION PLAN**

The project on forest genetic improvement should be consistent with the following ITTO objectives and priorities as defined by the Council in 1991 and 1995:

- **Economic Information and Market Intelligence**

**Goal 2:**

Develop and implement research and development projects covering marketing trials, marketing methods and opportunities, particularly for lesser-used species.

Undertake regular studies of the competitiveness of tropical timber and tropical timber products compared with non-tropical timber and non-timber substitutes.

- **Reforestation and Forest Management**

**Goal 1:**

Assess the current and potential productivity of major tropical forest types, taking into account the need to promote future growth and effective regeneration.

Promote the conservation, rehabilitation and sustainable management of threatened forest ecosystems, *inter alia* mangroves, in collaboration with relevant organizations.

**Goal 2:**

Improve the productive capacity of natural forests, where appropriate, through intensified silvicultural practices, better utilisation of lesser-used species, the promotion of non-timber forest products, guided natural regeneration, enrichment planting and reforestation.

Implement research and development activities in the management of secondary tropical forests, restoration of degraded tropical forests and rehabilitation of degraded forest land, taking into consideration ITTO guidelines.

## ANNEX A

### PROFILE OF THE EXECUTING AGENCY

#### ➤ **Nature and mission of the executing agency**

The National Forest Institute (INAB), an autonomous, decentralised 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.

Its main functions are: 1) Implement forest policies; 2) Promote and encourage forest development in the country through sustainable forest management; 3) Foster forest research; 4) Coordinate the implementation of forest development programmes; 5) Develop programmes and projects aimed at forest conservation.

Mission statement: *“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”.*

#### ➤ **Areas of expertise of the executing agency:**

- 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

#### ➤ **Main projects implemented by the executing agency and donor agencies:**

- Development of Mangrove Areas. Dutch Cooperation.
- Development of the area of influence of the Laguna Lachuá National Park, Government of the Netherlands.
- Sustainable management of natural resources in Petén, GTZ, German Government.
- Sustainable management of coniferous forests in Guatemala, FINNIDA, Finnish Agency for International Cooperation.
- Jupilingo Las Cebollas. SOCODEVI, Canadian International Cooperation Agency.
- Agroforestry Production Development. UNDP.

#### ➤ **Projects and pre-projects submitted to ITTO:**

- CONFLAT. II Latin American Forestry Congress
- Industrial and commercial development of lesser-known broadleaved timber species on a sustainable basis in Guatemala

## ANNEX B

### TERMS OF REFERENCE FOR KEY STAFF

#### 1. International Consultant

##### A. Qualifications

- Forest Engineer with a Master's or PhD degree in Forest Genetics
- A minimum of 5 years experience in forest genetic improvement
- Leadership skills for the coordination of international cooperation projects

##### B. Duties

- Define the technical and administrative aspects of the pre-project operational structure
- Carry out the necessary visits, both in the field and to industries, as required for the implementation of work
- Coordinate with the country's forest sector stakeholders the activities related to the presentation of results
- Submit final studies on the technical and economic feasibility of the implementation of a genetic improvement programme and marketing strategy for the conduction of the certified seed programme.

#### 2. National Consultant

##### A. Qualifications

- Forest or Agricultural Engineer specialised in Renewable Natural Resources
- A minimum of 5 years experience in the forestry field
- Leadership skills for the conduction of consultancies

##### B. Duties

- Assist the international consultant in the formulation of the project
- Monitoring, collection and processing of field data
- Analysis of field data
- Participate in the preparation of terms of reference as required for the recruitment of support staff

#### 3. Subcontracts for special studies

##### ➤ National Forestry Experts

In order to carry out the work related to the baseline study on forest genetic improvement and on potential demand for improved genetic material at the national and international levels, it will be necessary to recruit two national experts for a period of two months.

## ANNEX

### AMENDMENTS TO PRE-PROJECT DOCUMENT ON TROPICAL FOREST GENETIC IMPROVEMENT SUBMITTED BY THE GOVERNMENT OF GUATEMALA IN RESPONSE TO THE RECOMMENDATIONS OF THE XXV EXPERT PANEL FOR THE TECHNICAL APPRAISAL OF PROJECT PROPOSALS

1. The objectives were modified based on the implementation of a technical and economic feasibility study for the establishment of a genetic improvement programme.
2. A marketing strategy has been considered through the implementation of a certified seed programme based on the potential demand for genetic material.
3. The proposed work focuses solely on the funding of the pre-project on forest genetic improvement and certified seed marketing based on market potential.
4. The budget was reduced; this reduction, however, was not significant because the original proposal had already been budgeted based on minimum values.
5. Subcontracts for the international consultant and the counterpart national consultant were included for each activity, dividing salary costs between the two assignments.
6. A provision was included in the budget for ITTO monitoring and evaluation costs.
7. The terms of reference of both the international and the national consultant were modified, outlining the specific duties related to the presentation of the final work.