

# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

## ITTO

### PROJECT DOCUMENT

TITLE	STRENGTHENING OF THE AIMEX SEED LABORATORY AND NURSERY
SERIAL NUMBER	PD 434/06 Rev.1 (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF BRAZIL
ORIGINAL LANGUAGE	ENGLISH

#### SUMMARY

The project proposed aims to improve the seed laboratory and the nursery of AIMEX (Pará State Timber Exporting Industries Association).

The AIMEX laboratory and nursery was established in 1997 and it is considered as the most active initiative in the promotion of forest plantations in the Amazon region. Small investments are needed to increase its production capacity. This will enable a significant increase in the impact of this initiative to the region and will intensify forest plantation activities, thus creating jobs and ensuring future supply to the timber industry.

EXECUTING AGENCY                      AIMEX (Pará State Timber Exporting Industries Association) in cooperation with EMBRAPA

COOPERATING GOVERNMENTS                      ---

DURATION                                      12 MONTHS

APPROXIMATE STARTING DATE                      TO BE DETERMINED

BUDGET AND PROPOSED SOURCES OF FINANCE	Source	Contribution in US\$	Local Currency Equivalent
	ITTO	396,201	
	Implementing Agency	62,500	
	TOTAL	458,701	

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## **PART I: CONTEXT**

### **1. ORIGIN**

This project is in accordance with the findings of the Pre-Project PPD 3/92- Rev. I (F) – Integrated Forest Project for the Production of Seedlings in Pará State – Feasibility Study, financed by ITTO and implemented by SINDIMAD.

The pre-project analyzed the feasibility of seedling production to support large-scale forest plantations in four selected regions within Pará State. The final report submitted to ITTO in 1996 points out that in all regions there is a large deficit in the supply of seeds and seedlings, and this is one of the main constraints to the development of forest plantations in the region.

The mentioned pre-project conducted by SINDIMAD also identified that the basic technology for seed collection and processing, and seedlings production and plantation establishment is available, but there is a need improve the existing structure and training the local communities in selecting trees, collecting seeds, processing and sending to the AIMEX laboratory, besides learning how to produce seedlings. This would, on a long run, generate additional revenue to local communities and on a broader sense, support the effort for the sustainability of tropical forest of the region.

The pre-project also identified that some important initiatives are on implementation. Among the relevant initiatives identified is the structure established by AIMEX (Pará State Timber Exporting Industries Association) for seed processing and seedling production located in Pará. The existing structure makes up a good basis to support the establishment of forest plantations but there is a need of external support to maximize the benefits.

The AIMEX seed processing laboratory and nursery was established in 1997 based on an initiative by the private sector. Most of the financial resources needed to establish and to operate the existing structure have been made available by AIMEX member companies. External support has been also received from the Ministry of Environment, from Pará State Environment Secretariat and also from the Japan Ecological Foundation. The total investment already made in the existing structure amounts to approximately US\$ 600,000.00.

The findings and the recommendations of Pre Project PPD 3/92 Rev.1 (F), were presented in the project justification, and the existing structure of AIMEX seed processing laboratory and the nursery forms a good basis to successfully implement the project as it involves a technical cooperation provided by EMBRAPA, a national research organization, as a good example of cooperation between the private and the public sector.

### **2. FOREST SECTOR POLICIES**

This project proposal is consistent with the national policies and regulations for the forestry and timber industry. The national policy establishes linkages between forest industries and their raw material supply. The law focuses basically on sustainable production and requires the implementation of appropriate forest management plans or establishment of plantations, depending on the conditions of operations and source of raw material.

The project is also consistent with Law 7.754 of 14th April 1989, related to the recuperation of degraded areas, and Decree nr. 2.972 of February 26th, 1999, which establishes the National Forest Program Directorate.

### **3. PROGRAMS AND OPERATIONAL ACTIVITIES**

The Project shall provide an important contribution to IBAMA's sectorial work aimed to ensure that timber processing operations must be based on sustainable sources, and that degraded areas need to be recovered.

Pará State's program to create new jobs and improve life conditions of local populations shall also benefit from the project. Seed collecting will be a permanent source of employment and income generation in the region.

Furthermore, the project is also in line with the main elements of the National Forest Program (PNF) announced by the Brazilian Government in 2000 (Decree 3420). The program considers that plantations have an important role to play in the future supply of timber for the industry, and has set a target to establish 630 thousand hectares of forest plantations per year, considering as a priority small and medium size land owners and the involvement of local communities, which reinforces the substantial need of seeds and seedlings for achieving that goal.



## PART II: THE PROJECT

### 1. PROJECT OBJECTIVES

#### 1.1. Development objective

To contribute to social-economic development of the Amazon region through the sustainable supply and production of tropical timber.

#### 1.2. Specific Objective

To strengthen and improve the existing structure for seed collection, processing and storage, and for the production of seedlings in Pará State.

### 2. PROJECT JUSTIFICATION

#### 2.1. Problems to be addressed

The model adopted in the past for occupation of the Amazon through large incentivized projects and subsidized credits brought about vast deforestation for the introduction of cattle ranching. Many of such projects failed and the deforested land became unproductive, most of it being degraded, and were abandoned. These clearings have caused negative effects such as:

- Reduced stocks of potentially productive native forests;
- Biodiversity reduction;
- It has affected traditional populations by prejudicing their economic subsistence activities, thus resulting in cultural disintegration;
- Affected water availability and damaged soil.

Just to have a picture of the size of this area in the Amazon, in the State of Pará alone, according to a survey by the State's Science, Technology and Environment Secretariat (SECTAM), there are 9.37 million hectares that if reforested will provide jobs and income to rural communities, thus preventing these people from migrating to large urban centers, will make up the future stocks of forest raw material, and will reduce the pressure on the native forests of neighboring regions. The result of the volumetric increment from planted areas in Pará points to a minimum gain of 20 m<sup>3</sup>/hectare/year, against 1 m<sup>3</sup>/hectare/year for native forests; therefore, for every reforested hectare 20 hectares of native forests shall be preserved.

With the introduction of Brazil's Environment Ministry Normative Rule 01, of September 5<sup>th</sup> of 1996, addressing forest reposition, those companies that log over 600 m<sup>3</sup> of logs a year have no longer been allowed to pay the charges for forest reposition by means of payment of the forest fund. They must plant in the field. In addition to this, society is demanding, and the forest sector awareness is growing into, the adoption of reforestation as a continuous and alternative source of sustained raw material. An updated field survey indicates that there are 120 thousand hectares that have been reforested in Pará, with predominance of eucalyptus for cellulose production, as well as extensive plantations of native species such as Paricá (*Schizolobium amazonicum*), Suruaúma (*Ceiba pentandra*), Mahogany (*Swietenia macrophylla*) and others for the production of mechanically processed timber by the timber sector.

Conversion of extensive spoiled and degraded areas into profitable forests via reforestation stops at the availability of seeds and seedlings of forest species both in quantity and in quality that can withstand a large-scale forest repopulation program. Through a great effort to fill in this gap, AIMEX opened the Center for Technological Diffusion, where the seed and seedling laboratory is located. The Laboratory is an unprecedented partnership involving the production sector, the Federal Government through the Ministry of Environment's Legal Amazon Bureau, the State Government through its Science, Technology and Environment Secretariat, and scientific institutions through EMBRAPA Amazônia Oriental. It is worth stressing that the Seed Laboratory is part of the North Seeds Network and the Southern Amazon Seeds Network, both included in the project for Structuring the Network for Stimulation to the Supply of Native Forest Species Seeds of the National Fund for the Environment.

In the implementation of the project proposed AIMEX will be taken into consideration the finding and lessons learned from the Pre Project PPD 3/92- Rev. 1 (F), that analyzed the technical, economical, social and environmental feasibility of the implementation of an integrated plan for the production of seedlings in Pará State. Also the experience gained with the already existing seed collection and nursery structure, in operation since 1997, will be taken into consideration.

Pre-project PPD 3/92 - Rev 1 (F) was implemented by SINDIMAD, a syndicate organization. Arrangements have already been made in order to ensure that AIMEX a industry exporting organization, will be working in close cooperation with SINDIMAD in the implementation of this project, as both organizations are worried about deforestation in the Amazon.

The pre project covered out four select locations of Pará. The main findings of the pre-project form the basis for this project proposal. Among the relevant findings are:

- There are extensive land areas, degraded by inappropriate land use, available for forest plantation establishment;
- Degraded land tenure system is adequate for the establishment of forest plantations. The land tenure system under the Brazilian law are mostly private, especially in areas with intensive human activities, where the degraded land is located;
- All four locations considered by the pre project have a significant deficit in the seeds and seedlings, and this has been a major constraint in the development of forest plantations in the region;
- Lack of knowledge and technical assistance are also strong limitations;
- Some initiatives have already been taken by public sector, private industry and local communities. It was found that these initiatives need to be supported by a program of seed and seedling facilities.

The northeastern and southeastern regions of Pará State, Figure 1, comprise the largest deforested areas and that is where the structure for collecting seeds is necessary.

AIMEX's seed and seedling laboratory is strategically located in the city of Benevides, 25 km away from Belém. This location allows for selling seeds and seedlings for the main target region, shown in Figure 1, it has easy access through the several federal, state and municipal roads. Its location will facilitate seed transportation considering a regional good infrastructure regarding roads and the communities will be trained to collect and store seeds for a few days which will not impact the collected seed viability according to AIMEX's experience. So, no sub-regional seed storage will be needed. Necessities includes a small tractor with implements, a pick-up truck and complementary equipments.

The communities in the region are eager to learn how select the best trees (mother trees) in their properties, collect, processing and sending seeds to AIMEX laboratory besides learning how to produce seedlings for reforestation, with EMBRAPA cooperation.

The main reasons to consider South Belém region for the implementation of the proposed project are the following:

- South of Belém covers an area of around 90,000 km<sup>2</sup>. This area has been serious affected by human activities, and it is estimated that 48% has been converted to other uses, mostly now highly degraded and available for forest plantations;
- Timber industry is concentrated in this region and thus local support would be facilitated, contributing for the sustainability of the project;
- As identified by the Pre Project PPD 3/92 Rev1 (F) this region has the most important demand perspectives for seeds and seedlings. Calculations made point out that the present deficit of seedlings in south and northeast regions of Para State could be over 10 million per year, representing a significant market that would also contribute to ensure the sustainability of the presently proposed project;
- AIMEX seed laboratory and nursery is located in Benevides and the existing structure can effectively contribute to the implementation of a future land rehabilitation program.

Since AIMEX's forest seed and seedling laboratory inauguration, the demand for seeds and seedlings of forest species has increased and the current structure can no longer meet such a demand. It needs facilities improvements to increase its seed storage and seedling production to attend the region needs and a guarantee of native forest trees seed supply.

Based upon the research available, AIMEX has prioritized those forest species with better forestry results and high market value, since the main objective is establishing crops for timber production. The main species of seeds and seedlings being produced are: Paricá (*Schizolobium amazonicum*), Andiroba (*Carapa guianensis*), Mogno (*Swietenia macrophylla*), Jatobá (*Hymenaea courbaril*), Ipê (*Tabebuia spp.*), Freijó (*Cordia goeldiana*), Favas (*Parkia spp.*), and Sumaúma (*Ceiba pentandra*). As it is difficult to predict native tropical trees seed production per species as it changes according to climate (seed year), no quantity targets per species is possible.

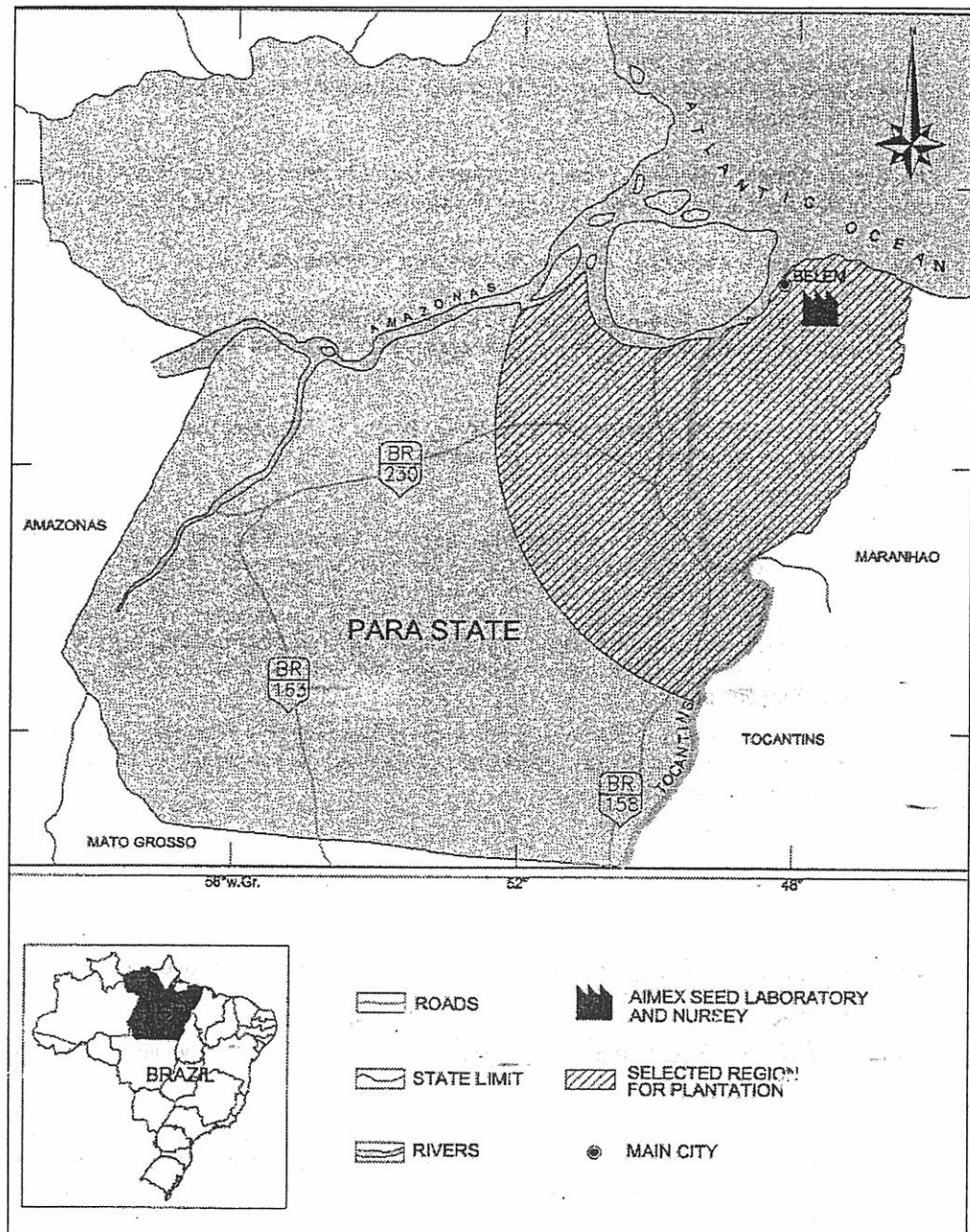


Figure 1 – Localization of the area identified for reforestation in Pará with seeds and seedlings to be produced in AIMEX's Laboratory.

It is important to point out that the growing timber industry in the Amazon and the consequent increase in the demand for raw material from sustained forests lead to the necessity of diversification of the supply of forest raw material by means of reforesting those large spoiled and degraded areas. AIMEX's Forest Seed and Seedling Laboratory is a landmark in the process of forest promotion in the region, since it was the first to provide silviculturists with native forest seeds and seedlings. The seeds, which are processed and stored properly, have been well-preserved "*ex situ*", thus ensuring good germination power and consequent seedling production and this will allow for forest reposition to be better programmed, since the silviculturists will be able to acquire seeds of native species out of that species season. This will provide for improved variation of forest species, thus allowing for large-scale reforestation in spoiled and degraded areas with native species of the Amazonian flora as an alternative to the timber sector regarding sustained forest raw material.

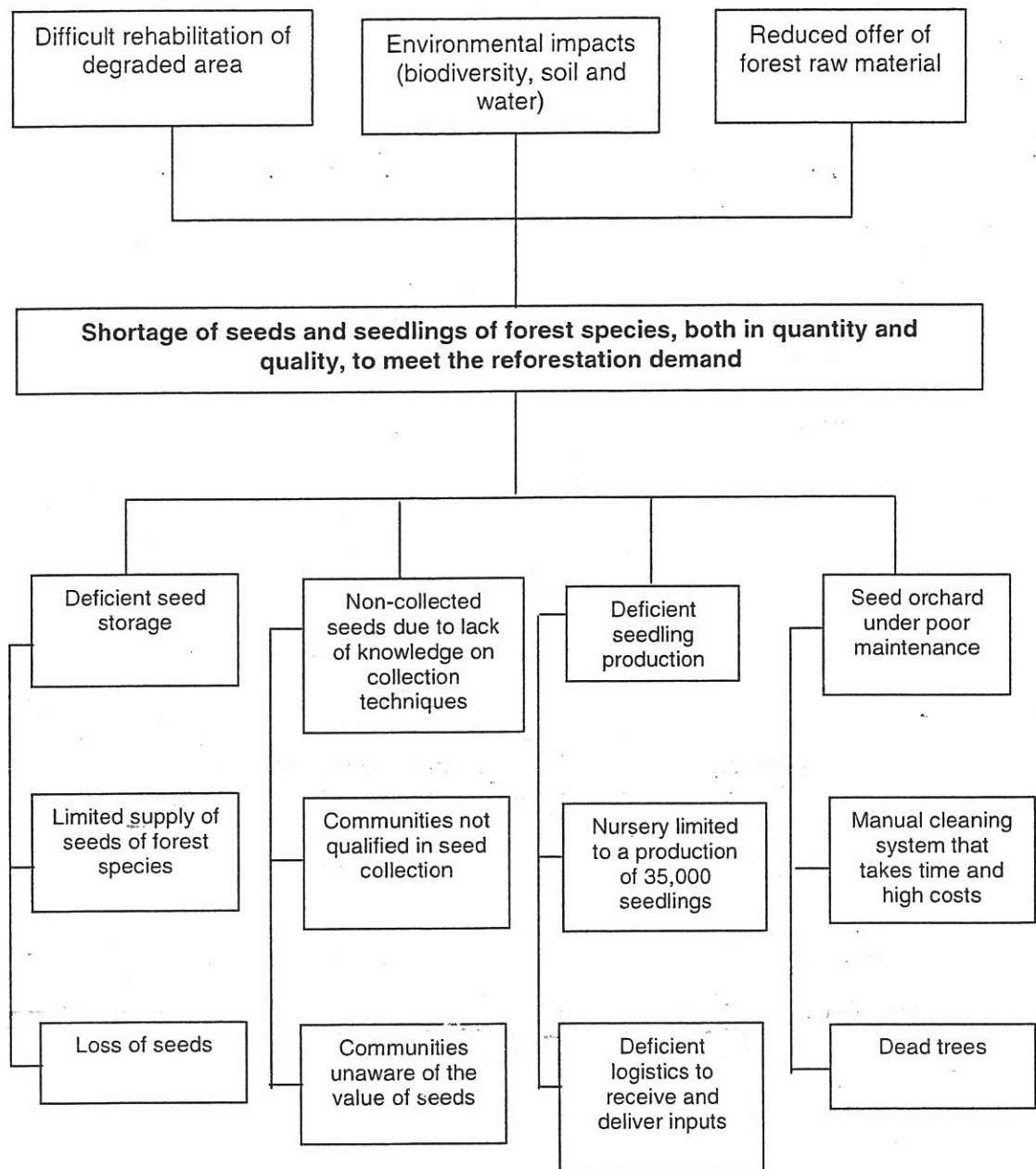


Figure 1: The Problem Tree

## 2.2. Intended situation after project completion

The result that is expected is maintaining a permanent stock of forest seeds and seedlings, allowing for individuals and corporations willing to invest in reforestation to be able to rely on a place to purchase quality forest seeds bearing a high germination power in order to ensure seedling formation and production. The seeds will also be used for seedling production at the laboratory itself so as to meet small demands in areas where installing a forest nursery is not warranted. In addition to supplying seeds and seedlings, the Laboratory will also provide for students of Forestry and Technical Forestry courses to take training courses in the field of seeds and seedling production. The laboratory facilities will be improved by proper maintenance and in buying of some equipments.

The project will also benefit the communities that will be trained in selecting native trees, seed collection, processing and will have a guarantee of purchase by AIMEX's laboratory of the seeds collected.

Other long-term benefits are expected from the project such as:

- Environmental benefits from the recuperation of degraded areas; recomposition of legal reserve and permanent preservation areas;
- Employment generation in the field resulting from the formation of planted forests for timber production, thus reducing the pressure over native forests;
- A multiplying effect of the social and environmental benefits to other communities;
- Increased cooperation among industries, the government and the communities;
- The results of the research on reforestation to be shared among rural producers, companies, communities and the government.

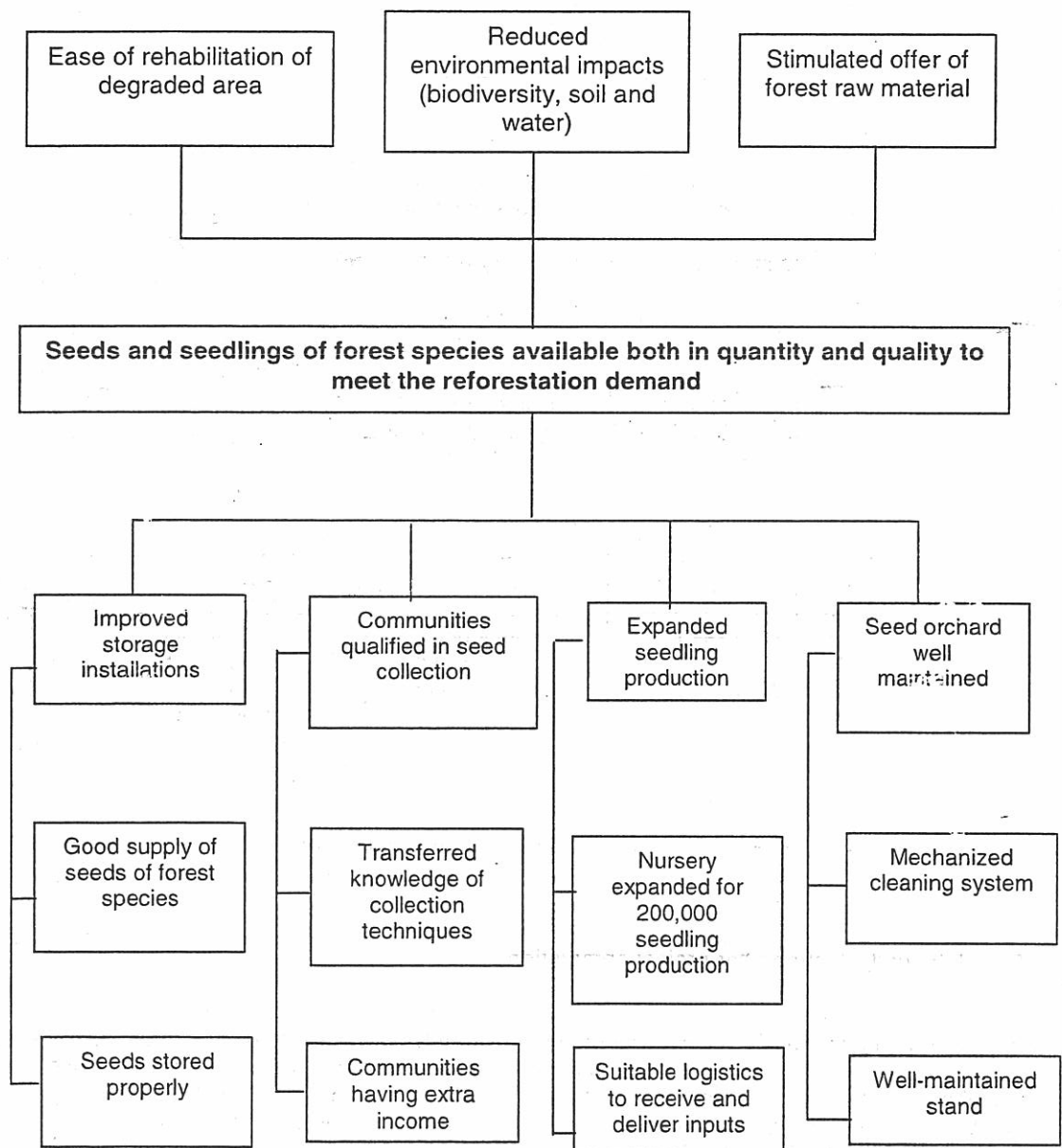


Figure 2: The Objective Tree



### **2.3. Project strategy**

Brazil has created strategic policies and structures for the recuperation of degraded areas aiming at future sustained timber production.

Studies conducted by IBAMA, INPA and EMBRAPA have shown that in the Amazon there are extensive areas of degraded soil. Pará State, according to the Science, Technology and Environment Secretariat (SECTAM), has 9.37 million hectares of degraded areas that can be reforested, helping to recuperate water sources and soils, in addition to forming future stocks of timber for sustained production, thus meeting the demand by local industries.

This project is a good alternative to mitigate the impacts in degraded areas and will allow for the involvement of local communities in the seed collection process and subsequent sale of the seeds, thus earning extra income, and both producers and timber industries will have seeds and seedlings available at AIMEX's laboratory to conduct reforestation of degraded areas. The pre-project, PPD 3/92 VER. 1 (F), pointed to a deficiency in forest seeds and seedlings to supply a big demand due to lack of knowledge on forestry and on seed collecting and seedling production.

AIMEX's seed and seedling laboratory has an infrastructure for the seed beneficiation and storage and seedling production. Improvements are required in order to meet a big reforestation demand.

### **2.4. Target beneficiaries**

The main beneficiaries from the project are as follows:

- Rural producers and timber industries, which will count on a place that provides a continuing supply of forest seeds and seedlings;
- Timber industries, for they will have forest raw material from a seedling nursery;
- Research institutions that shall apply the existing knowledge and acquire new experience from reforestation of native species;
- The local community, who will be gradually involved in new economic activities by collecting and selling seeds;
- Technical level students who shall be trained at the laboratory;
- The environment, since degraded areas will be recovered with vegetation through reforestation.

### **2.5. Technical and scientific aspects**

Implementation of this project towards seed collection, beneficiation and storage as well as seedling production would be made easier by AIMEX's existing infra-structure (seed laboratory and nursery for seedling production), and by the experience acquired throughout the 9 years of operations of the existing infrastructure; this fact reduces time, effort and the need of high financial investments in infrastructure.

The technical agreement between AIMEX and EMBRAPA – Amazônia Oriental, an official tropical forest research institution, as well as contracting trainees from the forestry technical course from JK Technical School and from the Technical School of Castanhal city, will be important in the execution of the project. The seed collection procedures are those established by EMBRAPA, and other Amazon research organizations.

Field works, especially those related with community native plus trees selection, seed collection and nursery training, and expansion of AIMEX nursery area, shall be carried out under the guidance of the consultants to be hired. They will be responsible for selecting the mother trees with EMBRAPA's support.

The experience obtained with this project as formerly pointed out may be used to spread forest seed and seedling production to other regions in Pará, identified in the pre-project PPD 3/92 Ver. 1 (F), as well as to other states of the Amazon region.

## **2.6. Economic aspects**

The native forest resources in Amazonia are very important for both economic and social development of its populations and must be used according to forest management practices. However, there are many deforested areas in the Amazon region, specifically in Pará State, with a great reforestation potential. The reforestation of such areas shall be an alternative to raw material to supply the timber industries, since there are fast-growing native species, like Paricá (*Shizolobium amazonicum*), that shall produce logs as from the seventh year.

Availability of seeds and seedlings in quantity and quality is a difficulty to be overcome in order to conduct reforestation of degraded areas. This project shall make available a greater quantity of seeds, which will be collected by the community, processed and stored at the laboratory, and of the seedlings that shall be produced at AIMEX's nursery for reforestation increment. Increase in employment rate in the countryside shall be immediate and in the medium and long run the reforestation shall produce timber for the logging companies with gains for local populations and for the environment.

## **2.7. Environmental aspects**

By means of seed collection the sustained use of the forest by local communities will be ensured. The reforestation of debushed areas will allow for the recomposition of soil, biodiversity, legal reserves and permanent preservation areas, and, in the future, it will cause a reduction of the pressure over native forests, in addition to contributing to the reduction of the greenhouse effect via carbon sequestration.

## **2.8. Social aspects**

Involvement of local communities who shall receive training on seed collection, and shall subsequently earn extra income from selling these seeds; of students of the forestry technical course, who shall be trained at the laboratory; the rural producers, and the logging industry, which will purchase the seeds and seedlings to carry out the reforestation of debushed areas, is of utmost importance for the project in the social viewpoint.

In the short term, local populations shall benefit from employment generation through reforestation in the region, which shall keep the man in the land and prevent rural depopulation and consequent aggravation of urban social problems.

## **2.9. Risks**

The project's minimum risk can be low seed collection if a natural drop in seed production capacity of any tree species in any seed supply area takes place. The outcome would be a lower amount of seeds and seedlings available for reforestation should this rare phenomenon occur. This risk can be minimized by importing seeds from communities trained by EMBRAPA in other regions. The Pará State now is in charge of the forest administration what guarantees that all information regarding forest policy and reforestation projects will be available.

# **3. OUTPUT**

## **3.1. Specific Objective**

Strengthening and improving the existing facilities for collection, processing and storage of seeds, and for seedling production in Pará, which will be made available for rural producers and companies with an interest in conducting reforestation in degraded areas in Pará.

### **Output 1: Laboratory re-structured to meet the demand for seeds and seedlings**

The laboratory will have its current equipment in good keeping and some new equipment shall be purchased.

### **Output 2: Community organization trained in seed collection**

Three communities shall be trained to select mother trees, collect seeds and produce seedlings for the recuperation of degraded areas, according to EMBRAPA's scientific procedures .

### **Output 3: Seedling production effectiveness**

Nursery expansion for a production of 200,000 seedlings

### **Output 4: Seedling orchard in good keeping.**

Seedling orchard in good keeping and providing future production of seedlings of good origin.

#### 4. ACTIVITIES AND INPUTS

##### 4.1 SPECIFIC OBJECTIVE

ACTIVITY	INPUTS
<b>Output 1. Laboratory re-structured to meet the demand for seeds and seedlings</b>	
<b>Related to Output 1.</b>	ITTO - 1mm Forest Engineer; 1 mm Consultant
1.1. To define best technical solution / prepare laboratory improvement project.	AIMEX - 1mm Project Coordinator; 1mm Secretary Office facilities
1.2. To procure goods and services required to implement the optimal technical solution defined, involving buying some equipments.	ITTO - 1mm Forest Engineer. Laboratory equipments. AIMEX - 1mm Project Coordinator; 1mm Secretary Office facilities
1.3. To implement the solution (project).	ITTO - 1 mm Forest Engineer AIMEX - 1mm Project Coordinator; 1mm Secretary Office facilities
<b>Output 2. Community organization trained in seed collection</b>	
<b>Related to Output 2</b>	ITTO - 1mm Forest Engineer; 2 mm Consultant; 2 mm Trainees
2.1. To conduct surveys with communities to identify specific necessities and training sites. This will require a car rental and fuel for AIMEX has no transport available.	Travel Expenses; Car rental AIMEX - 1mm Project Coordinator; 2mm Secretary Office facilities
2.2. Purchase of materials and consumable goods.	ITTO - 1mm Forest Engineer; Material / Consumable goods; Laboratory maintenance AIMEX - 1mm Project Coordinator; 2 mm Secretary Office facilities
2.3. Seed collection training program implemented. Car rental and fuel will be necessary as AIMEX has no transport facilities.	ITTO - 2 mm Forest Engineer; 2 mm Consultant; 2 mm Trainees Travel Expenses; Collecting seed contracts; Printing expenses; Car rental AIMEX - 1mm Project Coordinator; 2 mm Secretary Office facilities
2.4. To process and store the seeds collected by communities.	ITTO - 1mm Forest Engineer; 4 Trainees Travel Expenses AIMEX - 1mm Project Coordinator; 1 mm Secretary Office facilities
2.5. Permanent collection of seeds from selected species.	ITTO - AIMEX - 1mm Project Coordinator; 1mm Secretary Office facilities
<b>Output 3. Seedling production effectiveness</b>	
<b>Related to Output 3</b>	ITTO - 1mm Forest Engineer; 10 Nursery Workers
3.1. Nursery expanded for a production of 200,000 seedlings. It includes the construction of a green house.	Nursery Improvement Contract AIMEX - 1mm Project Coordinator; 2mm Secretary Office facilities
3.2. Suitable logistics for receiving and delivering seedlings, which includes acquisition of a pick-up truck for seed and seedlings transportation.	ITTO - 1mm Forest Engineer; 6 Nursery Workers 1 Pick-up truck AIMEX - 1mm Project Coordinator; 2mm Secretary Office facilities
<b>Output 4. Seedling orchard in good keeping</b>	
<b>Related to Output 4</b>	ITTO - 1mm Forest Engineer; 2 Nursery Workers
4.1. Mechanized cleaning system. A small tractor with implements is necessary.	1 agriculture tractor AIMEX - 1mm Project Coordinator; 1 mm Secretary Office facilities.
4.2. Well-maintained stand.	ITTO - 1mm Forest Engineer; 6 Nursery Workers AIMEX - 1mm Project Coordinator; 1 mm Secretary Office facilities



## 5. LOGICAL FRAMEWORK STRUCTURE

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<b>DEVELOPMENT ELEMENTS</b> To add to the production of tropical wood by rehabilitating degraded forest lands.	Expansion of reforested area by 250 ha Environmental impacts (biodiversity, soil and water) reduced by 250 ha. Increase in forest raw material supply in 7 years by 5,000 m <sup>3</sup>	Environmental license report by the State's environmental agency. IBAMA Report IBAMA Report	Reforestation projects approved by official environmental agency.
<b>SPECIFIC OBJECTIVE 1</b> To strengthen and improve the existing structure for seed collection, processing and storage, and for the production of seedlings in Pará State.	The laboratory and the nursery have been improved to meet the regional demand for 250,000 seedlings and 10 tons of seeds.	Constructions and new equipment are available, and its capacity has been expanded.	Funds are available.
<b>OUTPUT 1.</b> Laboratory re-structured to meet the demand for seeds and seedlings.	Maintenance and new equipment is available	Project report	Funds are made available for improvements
<b>OUTPUT 2.</b> Community organization trained in seed collection.	Three communities trained.	Field report	Funds are made available for the activities
<b>OUTPUT 3.</b> Production of seedlings from selected timber species increased.	Seed lines production of selected species have been increased and at least 200,000 seedlings have been produced	Internal records on seedling production List of seedlings available	Seed collection has been successful
<b>OUTPUT 4.</b> Seedling orchard in conditions to meet future demands.	5 Hectares of seed orchard implemented	Project reports	Funds are made available for the activities

## 6. WORK PLAN

PROJECT OUTPUTS AND ACTIVITIES	RESPONSIBLE PARTY	MONTH											
		1	2	3	4	5	6	7	8	9	10	11	12
<b>OUTPUT 1.1 Laboratory re-structured to meet the demand for seeds and seedlings</b>													
<b>Activity 1.1.</b> To define best technical solution / prepare laboratory improvement project.	Proj. Coord. Forest Eng. / Consultant												
<b>Activity 1.2.</b> To procure goods and services required to implement the optimal technical solution defined.	Proj. Coord. Forest Eng.												
<b>Activity 1.3.</b> To implement the solution (project)	Proj. Coord./Forest Eng.												
<b>OUTPUT 2 Community organizations trained in seed collection.</b>													
<b>Activity 2.1.</b> To conduct surveys with communities to identify specific necessities and training sites.	Proj. Coord. Forest Eng. / Consultant / Trainees												
<b>Activity 2.2.</b> Purchase of materials and consumable goods	Proj. Coord.												
<b>Activity 2.3.</b> Seed collection training program implemented.	Proj. Coord. Forest Eng. / Consultant. / Trainees												
<b>Activity 2.4.</b> To process and store the seeds collected by communities.	Proj. Coord. Forest Eng. / Trainees												
<b>Activity 2.5.</b> Permanent collection of seeds from selected species.	Proj. Coord.												
<b>OUTPUT 3. Seedling production effectiveness.</b>													
<b>Activity 3.1.</b> Nursery expanded for a production of 200,000 seedlings.	Proj. Coord. Prof. Forest. / Nursery workers												
<b>Activity 3.2.</b> Suitable logistics for receiving and delivering seedlings.	Proj. Coord. Prof. Forest. / Nursery workers												
<b>OUTPUT 4. Seed orchard in good keeping.</b>													
<b>Activity 4.1.</b> Mechanized cleaning system.	Proj. Coord. Prof. Forest. / Nursery workers												
<b>Activity 4.2.</b> Well-maintained stand.	Proj. Coord. Prof. Forest. / Nursery workers.												

## 7. BUDGET

### a) PROJECT BUDGET BY SOURCE (US\$)

BUDGET COMPONENT	TOTAL	ITTO	AIMEX
<b>10. PROJECT PERSONNEL</b>			
11. Project Coordinator (12 x 4000)	48,000		48,000
12. Forestry / Nursery Consultant (5 x 5000)	36,000	36,000	
13. Professional Forest Engineer (12 x 3000)	25,000	25,000	
14. Secretary (17 x 500)	8,500		8,500
15. Laboratory Worker (24 x 300)	7,200	7,200	
16. Trainees (8 x 250)	2,000	2,000	
<b>19. Component Total</b>	<b>126,700</b>	<b>70,200</b>	<b>56,500</b>
<b>20. SUB-CONTRACTS</b>			
21. Seed Collection Subcontract	15,000	15,000	
22. Printing / Mailing Subcontract	6,000	6,000	
<b>29. Component Total</b>	<b>21,000</b>	<b>21,000</b>	
<b>30. TRAVEL EXPENSES</b>			
31. Air Tickets (15 x 800)	12,000	12,000	
32. Daily Allowances (200 x 50)	10,000	10,000	
33. Car Rental / Fuel (2 months)	10,000	10,000	
<b>39. Component Total</b>	<b>32,000</b>	<b>32,000</b>	
<b>40. CAPITAL ITEMS</b>			
41. Agriculture Tractor + Accessories	15,000	15,000	
42. Pickup truck	20,000	20,000	
43. Laboratory equipment	5,000	5,000	
44. Construction (Nursery improvement)	60,000	60,000	
<b>49. Component Total</b>	<b>100,000</b>	<b>100,000</b>	
<b>50. CONSUMABLE ITEMS</b>			
51. Nursery Consumables	4,000	4,000	
<b>59. Component Total</b>	<b>4,000</b>	<b>4,000</b>	
<b>60. MISCELLANEOUS</b>			
61. Materials / Bank Expenses / Insurance / etc	5,000	5,000	
62. ABC Monitoring	5,000	5,000	
<b>69. Component Total</b>	<b>10,000</b>	<b>10,000</b>	
<b>70. MANAGEMENT COSTS OF EXECUTING AGENCY</b>			
71. Office facilities	6,000		6,000
<b>79. Component Total</b>	<b>6,000</b>		<b>6,000</b>
<b>SUBTOTAL 1</b>	<b>299,700</b>	<b>237,200</b>	<b>62,500</b>
<b>80. ITTO MONITORING EVALUATION AND ADMINISTRATION</b>			
81. Monitoring and Evaluation	15,000	15,000	
82. Ex-post Evaluation	15,000	15,000	
83. Program support Costs 8%	21,376	21,376	
84. Reimbursement of Pre-project Cost	107,625	107,625	
<b>89. Component Total/SUBTOTAL 2</b>	<b>159,001</b>	<b>159,001</b>	
<b>GRAND TOTAL</b>	<b>458,701</b>	<b>396,201</b>	<b>62,500</b>

b) Project Budget by Year.

BUDGET COMPONENT	TOTAL	YEAR 1
<b>10. PROJECT PERSONNEL</b>		
11. Project Coordinator (12 x 4000)	48,000	48,000
12. Forestry / Nursery Consultant (5 x 5000)	36,000	36,000
13. Professional Forest Engineer (12 x 3000)	25,000	25,000
14. Secretary (17 x 500)	8,500	8,500
15. Laboratory Worker (24 x 300)	7,200	7,200
16. Trainees (8 x 250)	2,000	2,000
<b>19. Component Total</b>	<b>126,700</b>	<b>126,700</b>
<b>20. SUB-CONTRACTS</b>		
21. Seed Collection Subcontract	15,000	15,000
22. Printing / Mailing Subcontract	6,000	6,000
<b>29. Component Total</b>	<b>21,000</b>	<b>21,000</b>
<b>30. TRAVEL EXPENSES</b>		
31. Air Tickets (15 x 800)	12,000	12,000
32. Daily Allowances (200 x 50)	10,000	10,000
33. Car Rental / Fuel (2 months)	10,000	10,000
<b>39. Component Total</b>	<b>32,000</b>	<b>32,000</b>
<b>40. CAPITAL ITEMS</b>		
41. Agriculture Tractor + Accessories	15,000	15,000
42. Pickup truck	20,000	20,000
43. Laboratory equipment	5,000	5,000
44. Construction (Nursery improvement)	60,000	60,000
<b>49. Component Total</b>	<b>100,000</b>	<b>100,000</b>
<b>50. CONSUMABLE ITEMS</b>		
51. Nursery Improvements	4,000	4,000
<b>59. Component Total</b>	<b>4,000</b>	<b>4,000</b>
<b>60. MISCELLANEOUS</b>		
61. Materials / Bank Expenses / Insurance / etc	5,000	5,000
62. ABC Monitoring	5,000	5,000
<b>69. Component Total</b>	<b>10,000</b>	<b>10,000</b>
<b>70. MANAGEMENT COSTS OF EXECUTING AGENCY</b>		
71. Office facilities	6,000	6,000
<b>79. Component Total</b>	<b>6,000</b>	<b>6,000</b>
<b>SUBTOTAL 1</b>	<b>299,700</b>	<b>299,700</b>
<b>80. ITTO MONITORING EVALUATION AND ADMINISTRATION</b>		
81. Monitoring and Evaluation	15,000	15,000
82. Ex-post Evaluation	15,000	15,000
83. Program support Costs 8%	21,376	21,376
84. Reimbursement of Pre-project Cost	107,625	107,625
<b>89. Component Total/SUBTOTAL 2</b>	<b>159,001</b>	<b>159,001</b>
<b>GRAND TOTAL</b>	<b>458,701</b>	<b>458,701</b>

### **PART III: OPERATIONAL ARRANGEMENTS**

#### **1. Management structure**

Implementation of this project shall be under AIMEX responsibility. The project implementation will be under a project coordinator to be pointed out by AIMEX.

The project coordinator will be responsible for the execution of the project and shall have a regular administrative support from AIMEX regular staff. The project will also count on the availability of all existing facilities, including the laboratory and the nursery. Other consultants and personnel that may be required for implementing the activities shall be contracted through the funds of the project.

The Project's coordinator shall report directly to AIMEX President. Regular reports on the project's activities shall be issued by the Project Coordinator to AIMEX Council Members.

In attendance to ITTO requirement, a steering committee shall be established for the project, the members of which shall be ABC/MRE, MMA, EMBRAPA and AIMEX representatives.

#### **2. Monitoring and Evaluation**

The project shall be evaluated and monitored according to the Guidelines determined by the International Tropical Timber Organization (ITTO). The Brazilian Cooperation Agency (ABC) shall also evaluate the project pursuant to the Brazilian technical cooperation guidelines.

#### **3. Future operation and maintenance**

AIMEX's laboratory and nursery are operating. The project shall reinforce the seed collection and seedling production structure and its economic sustainability shall be maintained in the long run with funds from the sales of seeds and seedlings in the market after the project completion.

### **PART IV**

#### **TROPICAL TIMBER FRAMEWORK**

##### **1. Compliance with the objectives of the 1994 ITTC.**

The project complies with the following objectives established at the 1994 International Tropical Timber Convention.

##### **C) To add to the sustainable development process.**

The project reinforces the existing structure for the supply of seeds and seedlings, helping in the recuperation of degraded areas.

##### **J) To stimulate the members to support and develop reforestation and management activities of forests aimed at the production of industrial tropical timber, as well as in the rehabilitation of degraded forest lands considering the interests of the local communities that depend upon forest resources.**

Community involvement in seed supply, training and discussions on the alternatives for other sources of income is highly promising.

##### **M) To foster access to technologies, transparency and technical cooperation in order to bring to practice the objectives of the current agreement, also under favorable and preferential circumstances to be established jointly.**

The training on the levels of seed collection, processing and storage, and high quality seedling production for the communities and technical and graduate students foster new initiatives.

This is an irrefutable demonstration of joint work and its diffusion.

2. Compliance with the ITTC Action Plan.

The project's scope is in line with the ITTC Yokohama Action Plan 2002 – 2006 in the field of reforestation and forest management, more specifically with Target 1 – To back forwarded activities in order to ensure the basis for tropical timber resources, specifically regarding the measures:

4) To foster conservation, recuperation, and sustainable management of endangered forest ecosystems such as mangroves in cooperation with relevant organizations.

The proposed project is also in compliance with the actions that the members are being stimulated to carry out, including:

To improve the production capacity of natural forests, where applicable, by means of forestry practices, better utilization of unpopular species, fostering non-timber products, stimulating natural regeneration, enrichment planting and reforestation.

The results achieved by the project guarantee the supply of seeds and seedlings from selected species to those interested in the recuperation of degraded and spoiled areas, stimulating communities to make use of seed collection as a source of alternative income.

The proposed project will show that each reforested hectare represents the minimum protection to 20 hectares of native forests in the region, since tropical forest in this region only grows one cubic meter per hectare per year

## ANNEX A

### Profile of the Executing Agency

The implementing agency will be AIMEX – Timber Exporting Industries Association. This association was created in 1981 and is the leading organization representing the tropical timber industry in Brazil

The organization has 60 members, including sawmills, veneer and plywood producers, and value-added industry. AIMEX members account for about 80 % of the total exports of Pará State.

AIMEX works in close cooperation with FIEPA, Pará State Industries Federation, and SINDIMAD, Pará State Timber Companies Union. SINDIMAD is an association of the timber producers of Pará State and has a long lasting relationship with ITTO. SINDIMAD was responsible for the implementation of Pre-Project PPD 3/92- Rev.1 (F)- Integrated Forest Project for the Production of Seedling in Pará State – Feasibility Study, which findings were incorporated to this Project Proposal.

AIMEX has already established a basic structure for seeds collection and seedling production. In this respect, AIMEX has a close cooperation with EMBRAPA, a national research organization, which established the seed collecting and storage procedures presently used in the Amazon. AIMEX has received support from the federal and state governments for the implementation of several forestry-related activities, including the implementation of the existing nursery.

AIMEX and SINDIMAD have jointly taken part of many national and international Forums, including ITTO Council Sessions and other activities, CITES, G7 Program, and others.

The organizations were co-responsible, along with ABIMCI (National Association of Mechanically Processed Timber), for the promotion of the II, III and IV International Plywood and Tropical Timber Congress, held in Belém in 1994 and 1997, respectively. They are also responsible for the organization of the Belém Wood and Machinery Fair, a parallel event to the International Congress.

The experience learned by SINDIMAD in the implementation of Pre-Project PPD 3/92 Rev. 1 (F), AIMEX existing basic seedling production infra-structure cooperation established with EMBRAPA and other government agencies, demonstrates the institutional capability of AIMEX to implement the proposed project



## ANNEX B

### Terms of Reference

#### Position - Project Coordinator

Period to be involved - 12 months

- To prepare a detailed work plan and to discuss with AIMEX President and Members of the Council;
- Submit the work plan to ITTO Secretariat;
- Select and hire the consultants in accordance with ITTO rules and procedures
- To discuss with the consultants the work plan prepared and submitted to ITTO, and make the necessary adjustments;
- To monitor the implementation of the project's activities, including those developed by the consultants;
- To discuss and agree with the forestry consultant on the species and areas for seed collection;
- To monitor laboratory and nursery activities;
- To review the training program proposed by the forestry consultant and make suggestions to improve it;
- To decide on the location and program for the training courses, and to take part in implementation of such courses;
- To monitor the technical assistance program and propose, if necessary, adjustments for improvements;
- To keep a complete file of all documents, information collected and document produced by the project;
- To keep AIMEX directors informed on the work progress;
- To prepare work progress reports and submit to ITTO;
- To participate in the steering committee meetings when requested;
- To prepare a project report;
- To submit the final report to AIMEX directors and to ITTO Secretariat;
- To disclose the project's developments and results to AIMEX members, government organizations, and other institutions;
- To prepare the completion report taking into consideration ITTO established model and submit it to ITTO Secretariat.



#### **Position – Forestry / Nursery Consultant**

Period to be involved -5 months

- To discuss with the project coordinator, and other persons involved in the project on the proposed work plan;
- To propose, if necessary, adjustments to improve the work plan;
- To collect information to support definitions on species and areas to be considered for seed collection;
- To propose and discuss with the Project Coordinator on species and areas for seed collection;
- To discuss with the nursery consultant on the seedling production activities;
- To develop a training program and submit it to the consideration of the Project Coordinator;
- To prepare a final report on the implementation of the project, discuss it with the Project Coordinator and make the necessary adjustments;
- To attend meetings as requested by the Project Coordinator.

#### **Position – Forest Engineer**

Period to be involved -12 months

- To discuss with the project coordinator and other persons involved in the project on the proposed work plan;
- To propose, if necessary, adjustments to improve the work plan;
- To collect information to support definition on species and areas to be considered for seed collection;
- To propose and discuss with the Project Coordinator on species and areas for seed collection;
- To be responsible and take part in seed collection activities;
- To be responsible for the seed processing and storage activities;
- To discuss with the nursery consultant on the seedlings production activities;
- To implement the training courses in cooperation with the Project Coordinator;
- To keep the Project Coordinator fully informed on the implementation of the work;
- To prepare regular progress reports as agreed with the Project Coordinator;
- To attend meetings as requested by the Project Coordinator.

## ANNEX C

### PD 434/06 (F) Thirty-second Panel Recommendations Fulfillments

#### A) Overall Assessment

The text was revised and explanations were incorporated as the area where the project will be implemented has an excellent infrastructure and the organizations involved have a long experience in the Amazon which guarantees the project performance.

Specific Recommendations	Recommendations fulfillment
1. Strengthen problem analysis in highlighting particular short comings and impacts of the current situation and the existing laboratory established by AIMEX;	1. Since AIMEX's seed and seedling laboratory inauguration, the demand for seeds and seedlings of forest species has increased and the current structure can no longer meet such demand. It needs facilities improvements to increase its seed storage and seedling production to attend the region needs and a guarantee of native forest trees seed supply by means of three communities training and permanent assistance on seedling production. Pg. 3.
2. Review the problem tree, as one cause of the main problem (Limited Supply of Seeds of Forest Species) is addressed in two hierarchy boxes;	2. Revision made.
3. Strengthen the training component of the project, and review the budget expense lines 30, 40, 80 plus the internal monitoring to be borne by Brazil;	3. The training component is very important and the budget is adequate since AIMEX has no transport facilities and car rental will be necessary for the training activities, the capital items involved are necessary, and the internal monitoring is explained at point 10.
4. Strengthen the management structure and indicate the scope of cooperation with SINDIMAD and EMBRAPA to ensure an efficient implementation and monitoring of the project and assure the long term sustainability of the project through commitment at regional level to continue operations in years to come;	4. Recommendations accepted and incorporated.
5. Strengthen the section on risks analysis in assessing all main risks associated with the project and in formulating their mitigating measures;	5. The project's minimum risk can be low seed collection if a natural drop in seed production capacity of any native tree species in any seed supply area takes place. The outcome would be a lower amount of seeds and seedlings available for reforestation should this rare phenomenon occur. This risk can be minimized by importing seeds from communities trained by EMBRAPA in other regions. Pg. 8.
6. Review the strategy of the project in order to preserve the viability of seeds collected. In this connection the establishment of decentralized/subregional seeds storage facilities should be considered;	6. AIMEX's seed and seedling laboratory is strategically located in the city of Benevides, 25 km away from Belém. This location allows for selling seeds and seedlings for the main target region, shown in Figure 1, it has easy access through the several federal, state and municipal roads. Its location will facilitate seed transportation considering a regional good infrastructure regarding roads and the communities will be trained to collect and store seeds for a few days

	which will not impact the collected seed viability according to AIMEX's experience. So, no sub-regional seed storage will be needed. Pg. 3.
7. Clarify the established procedures for seeds collection and make sure that seeds will be collected from genetically superior trees;	7. The technical agreement between AIMEX and EMBRAPA – Amazônia Oriental, an official tropical forest research institution, as well as contracting trainees from the forestry technical course from JK Technical School and from the Technical School of Castanhal city, will be important in the execution of the project. The seed collection procedures are those established by EMBRAPA, and other Amazon research organizations. Pg. 7.
8. Specify, by species, quantum requirements and quantity targets to be achieved under the project;	8. As it is difficult to predict native tropical trees seed production per species as it changes according to climate (seed year), no quantity targets per species is possible to specify. Pg. 3.
9. Justify costs allocated for car rental. The opinion of the Panel is that this kind of support can be provided by AIMEX;	9. Car rental and fuel is necessary for the community training scheme as some places do not have public transportation and it will speed up the project implementation. AIMEX has no transport facilities so the demand for car-rental e fuel is kept for two months.
10. Costs for Monitoring and Evaluation by ABC should be supported by the Government/Executing Agency;	10. This recommendation was discussed with the Government / Executing Agency and they recommended maintaining it.
11. Provisions should be included in the project budget for the reimbursement of ITTO's expenses incurred in the implementation of the pre-project from which the proposal is originating;	11. The Pre Project PPD 3/92 Rev. 1 (F) was proposed and managed by SINDIMAD a syndicate institution which was responsible for it. AIMEX is another organization, although both will cooperate closely to achieve the project goals.