

Ex-Post Evaluation

ITTO Project PD 47/94 Rev. 3 (I)

Report

**Industrial Utilization of Lesser-Known Forest Species in Sustainability  
Managed Forests**

*Submitted to:*

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## **I. Executive Summary**

### **I.1. Background**

Project PD 47/94 Rev. 3 (I) was approved by the XIX Session of the International Timber Trade Organization (ITTO) Council. The project agreement with the Government of Honduras was signed on 25 July 1997. The project duration was initially specified at 36 months, and the real duration was 72 months. The project was funded at \$ 1,035,335.00 USD including ITTO contribution of \$ 735,335.00 USD and Government of Honduras contribution of \$ 300,000.00 USD.

The Honduras Forest Development Corporation (COHDEFOR) implemented the project. The project was initiated on 1 July 1997. The original project timeframe was 36 months, but real was 72 months.

The development objective of this project was economically revaluing tropical forests in Honduras through sustainable production programs based on management plans and the use of sound low impact technologies.

The project was designed to attain the following specific objectives:

- To study the ecological and environmental impacts of lesser known species harvesting on the forest.
- To develop sound low impact technologies for the sustainable management and utilization of tropical forests.
- To develop basic and applied research studies so as to determine the most suitable end uses for the lesser known timber species.
- To ensure the transfer of knowledge on forest management, ecology, environment, industry and market opportunities.
- To facilitate the introduction of non traditional forest species into the national and international markets, while ensuring their ecological, silvicultural and economic sustainability.

The expected eleven outputs of the project were:

- To determine the allowable forest harvesting levels in accordance with the forest ecosystem capacity.
- To identify and implement low impact technologies in the forest management and sustainable utilization areas.
- Practical handbook addressed to farmers/rural communities on the application of low impact harvesting regimes and silvicultural practices.
- Knowledge and implementation of low impact industrial technologies for the use of new forest species.

- Knowledge on timber product types and their technical properties in relation of end uses.
- To determine recommended end uses for selected forest species.
- Five hundred (500) farmers will receive forest and ecological training for the sustainable management and utilization of forest resources.
- Three hundred (300) women farmers will be trained in the areas of ecology, reforestation and non timber forest products.
- Two hundred (200) forest workers from the sawyers groups of COATLAHL (*Cooperativa Agroforestal Regional Colón, Atlántida Honduras Ltd.*) and private timber companies belonging to the National Association of Timber Companies and Workers (ANETRAMA), will be trained in the areas of low impact technologies and market opportunities.
- Twenty five (25) forest species will be introduced into the national and international markets.
- Verification of the economic revaluation of forest resources.

## **I.2. Evaluation Purpose**

The ITTO Forest Industry Committee, at its 34th Session in July 2004, decided that the Ex-Post evaluation of the PD 47/94 Rev. 3 (I) should be carried out to establish how well the project served its purposes and to draw up recommendations for future actions. The Ex-Post evaluation was undertaken to review the formulation and implementation of the Project PD 47/94 Rev. 3 (I), to identify or difficulties encountered and the nature of the unanticipated delays, the resulting impacts on the success of the project in meeting Honduras development objectives, and the lessons learned that can assist in the formulation and implementation of similar projects elsewhere.

## **I.3. Scope of the Evaluation**

The following terms of reference were used for the ex-post evaluation work:

- To assess the project contribution to the achievement of its development objective.
- To assess achievement of the project's outputs and specific objectives.
- To assess the relevance and appropriateness of the activities.
- To evaluate the impact and relevance of the project.
- To determine the effectiveness of information dissemination.
- To assess the overall post-project situation for the project.

- To define and assess unexpected effects and impacts, either harmful or beneficial, and present managerial aspects.
- To recommend follow-up actions in order to enhance the use of the project results.
- Taking into account the results of the evaluation, make an overall assessment of the project's relative success or failure to summarize the key lessons learnt, and identify and issues or problems that should be taken into account in designing and implementing similar projects in future.
- To prepare the evaluation report in accordance with the references for the Project Evaluation Report, as contained in the ITTO Manual for Project Monitoring, Review and Evaluation.
- To assess the project contribution to the relevant ITTA objectives (1987, 1994) and relevant ITTO Action Plans.
- To prepare an article for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the project and of the ex-post evaluation work, including a summary of the lessons learned from the evaluation work.

Consistent with the ITTO Manual for Project Monitoring, Review, and Evaluation, Ex-Post Evaluation Checklist (ref. no. 12; pg.29), the ex-post evaluation was conducted in such a way as to allow answering these questions.

#### **I.4. Conclusions of the Evaluation**

##### **General Objective**

The project partially contributed to accomplish its general development objective to “economically revalue tropical forest in Honduras through sustainable production programs based on management plans and the use of sound low-impact technologies”.

##### **Specific Objectives**

The project permitted to reach the following specific objectives:

To develop knowledge and technologies those are the bases for the regulations for the sustainable forest management in the tropical forests of the Atlantic zone of Honduras. Knowledge about ecological aspects of the selected species; its regeneration capacity; the impact on the biodiversity, soils and hydrology; the limits in the ecological impact permitted; and the effects of the logging activities on the non wood species.

To implement the use of low ecological impact technologies in the logging activities of the tropical forests of the Atlantic coast of Honduras, sound for the national forest authorities.

To conduct technology transfer and promotional activities to disseminate technology and information about forest management, ecology and environment aspects through the Manual of Silvicultural and Logging Practices.

To generate knowledge and information about the wood technology and utilization of the 20 selected lesser known species in the Atlantic zone of Honduras. This information was disseminating through printed materials.

To generate information about the forest industry in Honduras at national level, related with the offering and the demand, the types of forest products, its prices, the species utilized and the existing type of machinery.

To implement a process of training for low income rural organized groups, women groups, forest industry owners and workers, and foresters.

To develop partially and trade strategy for the commercialization of the wood and wood products of the lesser known species selected in the project.

To develop partially the improvement of the conditions of life of the population that lives on manage, logging and transformation of the tropical forests of the Atlantic zone of Honduras.

### **1.5. Recommendations**

Based on the findings of the ex-post evaluation, the following recommendations are offered concerning ITTO Project PD 47/94 Rev. 3 (I):

To prompt the process of integration, regularization and control of the rural groups that have access to the tropical forests of the Atlantic zone of Honduras, and to promote a greater participation of the Agrarian National Institute in the processes of organization and common participation.

To revise and eliminate the legal disposition that limits the harvest of the tropical forests from Honduras to 200 annual cubic meters by collective society and to enlarge the productive capacity of the collective societies.

To diversify and to specialize in more extensive form the use of the 20 studied species.

To complement the wood production of tropical forests with the non wood products, the generation of bio-energy and the environmental payment of services, to do more competitive the forest activity.

To avoid the continuous changes in the direction of the projects like this.

To prompt a better framework of coordination among the participating institutions, with attributions well defined for each one.

To prompt the valuation differentiated of the new species taken advantage of and to revise the harvest taxes.

To develop new and more extensive processes of financing and credit for the ones that they take advantage of the forests.

To systematize the training of the different actors that participates in the forestry productive chain.

To distribute more extensively among the different sectors interested of the activity forest the printed materials that have been produced for the project, especially the technologies for the processing of the wood.

To take advantage of more extensively the results and the infrastructure of other projects related that developed before in Honduras.

## **II. Main Text**

### **II.1. Project Context**

Terms of reference for the Ex Post Evaluation of ITTO Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”.

#### **II.1.1. Background and Objectives**

The tropical forest of Honduras, that covers a surface of 2.65 million hectares, are located mainly in the north region of the country, in the coastal zone along the ocean Atlantic. Those forests have been subjects to processes of deforestation that provoke the loss of 80 thousand annual hectares that represent the 3% of the total. For the purpose of reducing the degradation of its tropical forests, the government of Honduras executed the Broadleaved Forest Development Project (PDBL), with the support of the Canadian International Development Agency (CIDA).

The PDBL was oriented to promote the development of the agroforestry and the forest management, to enlarge the production, to write down the peasants in its ground and to improve its quality of life. By means of the PDBL were developed models that were based on Integrated Management Areas (IMA), as well as management forest plans, that were approved for the COHDEFOR, that is the forest authority in Honduras. For each communal forest, were developed 5 year Forest Management Plans, upon the base of the management and use of the soil; forest inventories; and the participation of the rural population.

However, the main problem for the conservation of the tropical forest of Honduras is its under economic value associate, due to that their use is scarce and non efficient, what provokes a strong social pressure, to convert the use of the soil to the agriculture and animal husbandry. To add greater value to the forest, is necessary to promote the sustainable use of a greater number of trees species and to orient to the rural communities to the major harvest of its IMA. With the ITTO support, it was developed a project oriented to economically revalue tropical forests in Honduras through sustainable production programs based on management plans and the use of sound low impact technologies.

The 6 year project promoted the utilization of lesser known and used tropical species from the Atlantida Region in the North of the country, through research and development activities. The project was designed to attain five specific objectives:

- To study the ecological and environmental impacts of lesser known species harvesting on the forest.
- To develop sound low impact technologies for the sustainable management and utilization of tropical forests.
- To develop basic and applied research studies so as determine the most suitable end uses for the lesser known timber species.
- To ensure the transfer of knowledge on forest management, ecology, environment, industry and market opportunities.



- To facilitate the introduction of non traditional forest species into the national and international markets, while ensuring their ecological, silvicultural and economic sustainability.

### **II.1.2. Activities and Outputs**

These objectives were achieved by implementing the activities as planned in the project document, leading to the production of the following outputs:

- To determine the allowable forest harvesting levels in accordance with the forest ecosystem capacity.
- To identify and implement low impact technologies in the forest management and sustainable utilization areas.
- Practical handbook addressed to farmers/rural communities on the application of low impact harvesting regimes and silvicultural practices.
- Knowledge and implementation of low impact industrial technologies for the use of new forest species.
- Knowledge on timber product types and their technical properties in relation of end uses.
- To determine recommended end uses for selected forest species.
- Five hundred (500) farmers will receive forest and ecological training for the sustainable management and utilization of forest resources.
- Three hundred (300) women farmers will be trained in the areas of ecology, reforestation and non timber forest products.
- Two hundred (200) forest workers from the sawyers groups of COATLAHL (*Cooperativa Agroforestal Regional Colón, Atlántida Honduras Ltd.*) and private timber companies belonging to the National Association of Timber Companies and Workers (ANETRAMA), will be trained in the areas of low impact technologies and market opportunities.
- Twenty five (25) forest species will be introduced into the national and international markets.
- Verification of the economic revaluation of forest resources.

The Forest Industry Committee, at its Session in , decided that an ex-post evaluation should be carried out to establish how well the project served its purposes and to draw up conclusions for future actions.

### **II.1.3. Planned Project Duration and Costs**

The completed project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests” was awarded to the Honduras Forest Development Corporation (COHDEFOR), and was approved by the XIX Session of the International Timber Trade Organization (ITTO) Council. The project agreement with the Government of Honduras was signed on 25 July 1997. The project duration was initially specified at 36 months, and the real duration was 72 months. The project was funded at \$ 1,035,335.00 USD including ITTO contribution of \$ 735,335.00 USD and Government of Honduras contribution of \$ 300,000.00 USD.

### **II.1.4. Strategies Adopted for the Project**

The major objectives led to activities that were undertaken in the implementation of the project and resulted in the strategic development of the following studies:

- Ecological characteristics of selected forest species.
- To assess of natural regeneration capacity of the species under utilization systems.
- To carry out assessments of the impact of harvesting new forest species on the biodiversity, forest associations, soils and water regimes.
- To define and establish allowable environmental/ecological impact limits.
- To analyze the impact of harvesting of new forest species on non timber forest products.
- To identify forest harvesting methodologies and operational systems of low environmental impact.
- To design and prepare a handbook for the implementation of low impact harvesting operations and silvicultural practices.
- To disseminate information on low impact harvesting system and silvicultural practices.
- To prepare appropriate technologies for re-sawing , chemical treatments, drying and timber re-processing, so as to minimize environmental impacts while increasing production quality, efficiency and forest resource yield.
- To prepare of a practical handbook on timber workability, drying and recommended uses.
- To identify timber products with market significance.
- To determine the technical specifications of timber products according to market requirements in terms of quality, measurements, tolerance and standardization.
- To determine recommended end uses for selected forest species.

- Gather information from technological studies on selected timbers.
- To design and implement the necessary basic and applied research on selected species.
- To design and implement industrial processing trials in selected timber companies.
- To evaluate the results of the basic and applied research studies and industrial trials, and to determine recommended end uses.
- To select sawyers groups working in the integrated management areas to participate in training courses.
- To design and conduct ongoing training courses for selected sawyers groups.
- To select integrated management areas to give the courses.
- To design and implement a practical training methodology.
- To select workers to participate in training courses.
- To design and implement a training program.
- To design and implement commercial promotion program.
- To conduct the economic assessment of the valuation of forest resources.

#### **II.1.5. ITTO and ITTA Context of the Project**

The project PD 47/94 Rev. 3 (I) was prepared in accordance with the provisions of the International Tropical Timber Agreement (ITTA). The project is directly related with the following ITTO/ITTA objectives:

- To promote the expansion and diversification of international trade in tropical timber and the improvement of structural conditions in the tropical timber market, by taking in account, on the one hand, a long term increase in consumption and continuity of supplies, and, on the other, prices which are remunerative to producers and equitable for consumers, and the improvement of market access.
- To promote and support research and development with a view to improving forest management and wood utilization.
- To improve market intelligence with a view to ensuring greater transparency in the international tropical timber market.

- To encourage increased and further processing of tropical timber in producing member countries with a view to promoting their industrialization and thereby increasing their export earnings.
- To encourage members to support and develop industrial tropical timber reforestation and forest management activities.
- To improve marketing and distribution of tropical timber exports of producing members.

The project is consistent with the following ITTO criteria:

- Demonstrate the economic viability and promote long term investments in sustainable forest management.
- To be related to the production and utilization of industrial tropical timber.
- It should yield benefits to the tropical timber economy as a whole and be relevant to producing as well as consuming members.
- To assist in creating a scientific basis for sound forest management.
- To develop and to promote the intellectual, economic and technological basis for integrated forest management systems and optimal use of the tropical forests, taking in consideration multiple benefits that can be derived from them.
- They should be related to the maintenance and expansion of the international tropical timber trade.
- To offer reasonable prospects for positive economic returns in relation to costs, and
- To make maximum use of existing research institutions and, to the greatest extent possible, avoid duplication of efforts.

The research and development project is directly related to ITTO Action Plan and priorities in forest industry aspects as follows:

- Delivery of trial volumes of new species and products, and other approaches to facilitate acceptance in selected foreign markets.
- Studies, tours and seminars to link potential suppliers and clients.
- Studies on the economics of further processing.
- Projects in selected strategic locations to promote the integrated development of sustainable forest management and industrial use.
- Support for industrial trials, pilot production and marketing of new species.

- Specific research and extension on sawing difficult species.
- Research and develop on tropical timber use in construction, especially on new species and wood products.
- Support for training in planning and management of forest industries and in marketing of forest products.

## **II.2. Evaluation Scope and Focus**

### **II.2.1. Type of Evaluation**

This report represents the findings of an ex-post evaluation conducted approximately 2 years following the project completion. The evaluation was conducted according to the recommendations of the ITTO Manual for Project Monitoring, Review, and Evaluation, Second Edition, 1999 (Ref. No. ). The following relevant sections of the Manual were used to formulate the specific approach to the evaluation: Annex E, Logical Framework Matrix; Section II, C, Ex-Post Evaluation; Annex A, Checklist for Clarification for Evaluation Mission; and Annex B, Terms of Reference, Project Evaluation Report.

### **II.2.2. Terms of Reference**

The following terms of reference were used for the ex-post evaluation work:

- To assess the project contribution to the achievement of its development objective.
- To assess achievement of the project's outputs and specific objectives.
- To assess the relevance and appropriateness of the activities.
- To evaluate the impact and relevance of the project.
- To determine the effectiveness of information dissemination.
- To assess the overall post-project situation for the project.
- To define and assess unexpected effects and impacts, either harmful or beneficial, and present managerial aspects.
- To recommend follow-up actions in order to enhance the use of the project results.
- Taking into account the results of the evaluation, make an overall assessment of the project's relative success or failure to summarize the key lessons learnt, and identify and issues or problems that should be taken into account in designing and implementing similar projects in future.
- To prepare the evaluation report in accordance with the references for the Project Evaluation Report, as contained in the ITTO Manual for Project Monitoring, Review and Evaluation.

- To assess the project contribution to the relevant ITTA objectives (1987, 1994) and relevant ITTO Action Plans.
- To prepare an article for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the project and of the ex-post evaluation work, including a summary of the lessons learned from the evaluation work.

Consistent with the ITTO Manual for Project Monitoring, Review, and Evaluation, Ex-Post Evaluation Checklist (ref. no. 12; pg.29), the ex-post evaluation was conducted in such a way as to allow answering these questions.

### **II.2.3. Duration of the Evaluation**

The ex-post evaluation was conducted within a twelve month period, starting on June 15<sup>th</sup> 2005 and ending on May 30<sup>th</sup> 2006 with the presentation of the report at the Thirty Eight Session of the ITTO Committee on Forest Industry (Merida, Yucatan, Mexico). The evaluation employed the following work schedule:

15 <sup>th</sup> June to 15 <sup>th</sup> July 2005	Organizing the on-site visit; contacting the Honduras authorities and forest officials. Developing pre-visit questions base on background study of the project.
19 <sup>th</sup> September to 24 <sup>th</sup> September 2005	On-site visit. Meetings with the Honduras Forestry Authorities in Tegucigalpa, Honduras; project personnel and with project cooperators, beneficiaries, and other relevant parties in La Ceiba, Honduras.
26 <sup>th</sup> September to 7 <sup>th</sup> October 2005	Review of project information and results and preparation of draft report.
22 <sup>nd</sup> February 2006	Submission of Executive Summary to ITTO.
2 <sup>nd</sup> March to 16 <sup>th</sup> March 2006	Finalization of the report.
29 <sup>th</sup> May to 3 <sup>rd</sup> June 2006	Presentation of the report at the Thirty Eight Session of the ITTO Committee on Forest Industry (Merida, Yucatan, Mexico).

## II.3. Evaluation Methodology

### II.3.1. Review of Project Documents

The following documents were provided by ITTO to be used as background materials prior to the ex-post evaluation of Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”:

- ITTO Manual for Project Monitoring, Review and Evaluation.
- ITTA 1987 and 1994.
- ITTO Action Plan.
- Project Document PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”.
- Project Agreement between ITTO and the Government of Honduras and Honduran Forest Development Corporation (AFE-COHDEFOR).
- Terms of Reference Ex-Post Evaluation of ITTO Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests (Honduras)”.
- Progress Reports of the Project (12).
- Project Completion Report.
- Financial Audit Report of the Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”, Coca Luque y Asociados.
- Lessons Learnt from Ex-Post Evaluation Missions Carried Out by The Committee on Forest Industry; Thirty Second Session, Panama, Panama, May 2003.
- Technical Reports CUPROFOR Num. 1 to 20 Properties and Uses of The Wood of: Varillo (*Simphonia glbulifera* Linn F.); Rosita (*Hyeronimia alchorneoides* Allem); Huestito (*Macrohasseltia macrotherantha* Standley & L. O. Williams); Santa Maria (*Calophyllum brasiliense* Camb.); Marapolan (*Guarea grandifolia* D. C.); Piojo (*Tapirira guianensis* Aubl.); Sangre (*Virola koschnyi* Warb); Cumbillo (*Terminalia amazonia* (J. F. Gmel.) Excell); Barba de Jolote (*Cojoba arborea* (L.) Britton & Rose); San Juan Areno (*Ilex tectonica* W. Hahn); San Juan Peludo (*Vochysia guatemalensis* Donn. Sm.); Cedrillo (*Huertia cubensis* Grises); Barrenillo (*Mortoniendron anisophyllum* Standl. & Steyer); San Juan Colorado (*Vochysia ferruginea* Mart.); Coloradito (*Gordonia brandegeei* H. Keng); San Juan Rojo (*Vochysia* sp.); Paleto (*Dialium guianensis* (Aubl.) Sand); Selillon (*Pouteria izabalensis* (Standl.) Baehni.); Cedro Macho (*Carapa guianensis* Aubl.); and Masica (*Brosimum alicastrum* Swartz.).
- AFE-COHDEFOR Report: Characteristics and Uses of 30 Species of the Broadleaved Forest in Honduras.
- AFE-COHDEFOR Technical Report No. 1: Forest Tree Species Regeneration in Management Forests One and a Half Years after Mitch Hurricane in North Coast of Honduras.
- AFE-COHDEFOR Technical Report: Industrial Diagnosis of the Wood y Northern and Central Honduras.
- AFE-COHDEFOR Technical Report: Harvest Impact Analysis of New Forest Species on Non Wood Products in Atlantic Region of Honduras.
- AFE-COHDEFOR Technical Report: Industrial Workability Process of No Traditional Species in Northern Honduras.

- AFE-COHDEFOR Technical Report: Volume Stand of Broadleaved Species under Management Plans in Northern Honduras.
- AFE-COHDEFOR Technical Report: An Experimental Silvicultural Treatment Application in CURLA Forest.
- AFE-COHDEFOR Technical Report: Harvest Evaluation in a Broadleaved Forest and Volume Tables Elaboration in Atlantic Region of Honduras.
- AFE-COHDEFOR Technical Report: Study of Natural Regeneration of Forest Species in the Broadleaved Forest of Honduras.
- AFE-COHDEFOR Technical Report: Contribution on the Determination of Ecological Impacts Permissible Limits in Harvest Operations in the Broadleaved Forest in Northern Honduras.
- AFE-COHDEFOR Technical Report: Classification Guide for Saw Wood in the Honduran Broadleaved Forest.
- AFE-COHDEFOR Technical Report: Economical Analysis of the Broadleaved Resources Valuation in Atlantic Coastal of Honduras.
- AFE-COHDEFOR Technical Report: Silvicultural Practices and Harvest Manual for the Broadleaved Forest of Honduras.
- AFE-COHDEFOR Technical Report: Manual for Natural Regeneration of 26 Forest Species of the Broadleaved Forest of Honduras.

### **II.3.2. Preparations for a Review Visit to Honduras**

The on-site visit to Honduras was agreed upon by the AFE-COHDEFOR, ITTO and the consultant and was consistent with the terms of reference. The on-site visit to Honduras was during the days 19<sup>th</sup> to 24<sup>th</sup> September 2005. The consultant arrived to Tegucigalpa, Honduras on Monday 19<sup>th</sup> September 2005; then the consultant was in La Ceiba and surroundings during the days 21<sup>st</sup> to 23<sup>rd</sup> September; and the last two days, 23<sup>rd</sup> and 24<sup>th</sup> September was in San Pedro Sula, Honduras. Before the visit, the consultant prepared different questions for the following groups of responders:

- Government Officials.
- Project Administrators.
- Technical Personnel of the Project.
- Non Government Organization Experts.
- Academic and Research People.
- Industry Representatives.
- Forest Producers of Rural Sector.
- Marketing experts.

### **II.3.3. Review Visit**

The first purpose of the review visit was to verify past and ongoing activities related to the Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”. In addition the on-site visit was used to conduct the following interviews and meetings with a variety of participants and beneficiaries of the project and to observe and document the effectiveness of this Project on the sustainable management and industrial utilization of 20 lesser known forest species of the broadleaved forests in Northern Honduras:

<b>Government Officials</b>	AFE-COHDEFOR Central Office in Tegucigalpa, Honduras: Mr. Luis Eveline, General Manager; Mr. Jose Trinidad Suazo
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<b>(Interviews)</b>	Bulnes, General Sub Manager; Mr. Raul Contreras; Technical and International Cooperation; Mr. Martin Lagos, Statistics Official; Mr. Lindersay Eguigurens, Regional Forestry Director for Atlantic Region.
<b>Government Officials (Meeting)</b>	Meeting on State Policy for the Agro-food and Rural Sectors of Honduras 2004 – 2021, Comayagua, Honduras. Technology, Land Tenure, Forestry.
<b>Project Administrators (Interviews)</b>	AFE-COHDEFOR Atlantic Regional Office in La Ceiba, Honduras: Mr. Nelson Cerezo, Project Technical Personnel.
<b>Technical and Administration People related with the Project (Interviews)</b>	Private: Mr. Oscar Tovar; 3 years Project Coordinator.
<b>Research and Education (Interviews)</b>	National Autonomous University of Honduras, Regional University Center of the Atlantic Coastal (CURLA), Forest Engineering School in La Ceiba, Honduras: Teachers and Researchers Mr. Carlos Ramon Amaya Pacheco; Mr. Manuel Canales Guzman; Mr. Julio Lino; and Mr. Jorge Alberto Flores.
<b>Industry Representatives and Forest Producers ( Field Visit and Interviews)</b>	Coatlahl Cooperative in La Ceiba, Honduras: Mr. Constantino Guevara, Production Manager. Campos and Associates Collective Society in La Ceiba, Honduras: Mr. Leoncio Cubas, Administrative Officer.
<b>Non Governmental Organizations (Interviews)</b>	REMBLAH in La Ceiba, Honduras: Mr. Danilo Davila.
<b>Marketing Experts (Meeting)</b>	Meeting between Forest Products Utilization and Promotion Center (CUPROFOR) and Cooperative Representatives in La Ceiba, Honduras: Mr. Julio Cesar Cornijo, Industrial Incorma; Mr. Santos Tito Gutierrez, ANPFOR; Mr. Lucas Martinez, Collective Society Lucas Martinez; Mrs. Ana Teresa Ponce, Yavany Cascos Society; Mr. Jose Martin Zavala, Hernandez S. C. Fuentes and Associates; Mr. Abraham Ruiz, Leoncio Cubas Ocampo and Associates Las Camelias.
<b>Handcrafts</b>	Madera Verde Project in La Ceiba, Honduras: Mr. Victor Adrian Orellana, Handcraft Maker.
<b>Technology and Training Organizations</b>	Foundation Forest Products Utilization and Promotion Center (CUPROFOR) in San Pedro Sula, Honduras: Mr. Emilio Esbeih, Executive Director.

### III.3.3.1. Logical Framework Matrix

**Table Num. 1.** Logical Framework Matrix for Project PD 47/94 Rev. 3 (I), “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests” (Honduras).

<b>Project Elements</b>	<b>Indicators</b>	<b>Means of Verification</b>	<b>Important Assumptions</b>
<b>Development Objective</b>	<p>Increased Forest Production Value.</p> <p>Increased income for collective farmer’s societies harvesting the timber.</p> <p>Increased Forestry Guarantee Fund.</p>	<ul style="list-style-type: none"> <li>• Report and Documents (Project Reports 1 to 12)<sup>1</sup> Forestry Yearbook of Honduras 2004.</li> <li>• Interviews:               <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Central Office</li> <li>2. AFE-COHDEFOR Atlantic Forestry Region.</li> <li>3. Forest Cooperative Societies.</li> <li>4. Foundation CUPROFOR</li> </ol> </li> <li>• Interviews and site-visits               <ol style="list-style-type: none"> <li>1. Industrial Incorma; ANPFOR; Collective Society Lucas Martinez; Yavany Cascos Society; Hernandez S. C. Fuentes and Associates; and Leoncio Cubas Ocampo and Associates Las Camelias.</li> <li>2. Mr. Oscar Tovar, Ex Project Coordinator.</li> <li>3. REMBLAH Network.</li> </ol> </li> <li>• Interviews:               <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Central Office authorities.</li> <li>2. AFE-COHDEFOR Atlantic Forestry Region Authorities.</li> <li>3. Mr. Oscar Tovar, Ex Project Coordinator.</li> </ol> </li> </ul>	<p>Effective implementation of Management Plans approved by AFE-COHDEFOR.</p> <p>Willingness of farmers and industrialists to diversify current production and apply low impact technologies.</p> <p>The Forests Guarantee Fund can cover sustainable forest management costs.</p>
<b>Specific Objectives</b>	<p>Environmental Impact assessment.</p> <p>Study on natural regeneration and recuperation capacity of the forest.</p>	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews:               <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Atlantic Forest Center.</li> <li>2. REMBLAH Network.</li> <li>3. Forest Cooperative Societies.</li> <li>4. CURLA</li> </ol> </li> <li>• Site Visits               <ol style="list-style-type: none"> <li>1. Campos and Associates Collective Society.</li> </ol> </li> </ul>	<p>Scientific and technological capacity to conduct the study.</p> <p>Use of appropriate work methodologies during the implementation of the study.</p>

	<p>Study on low impact technologies.</p>	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Atlantic Region Center.</li> <li>2. REMBLAH Network</li> <li>3. Forest Cooperative Societies.</li> <li>4. CURLA.</li> </ol> </li> <li>• Site Visits: <ol style="list-style-type: none"> <li>1. Campos and Associates Collective Society.</li> </ol> </li> </ul>	<p>Scientific and technological capacity to conduct the study.</p> <p>Use of appropriate work methodologies during the implementation of the study.</p>
	<p>Technological timber test carried out in laboratory.</p> <p>Production of 1,050 m<sup>3</sup> of non traditional timber.</p>	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. Foundation CUPROFOR.</li> <li>2. AFE-COHDEFOR Central Office.</li> <li>3. Forest Cooperative Societies</li> </ol> </li> </ul>	<p>Basic research implementation agreement with CUPROFOR.</p> <p>Agreement with timber companies for industrial processing.</p>
	<p>500 farmers trained on silviculture, ecology and sawmilling.</p> <p>300 woman farmers trained on reforestation, ecology and non timber products.</p> <p>200 sawmill and timber re processing workers trained on industrial technologies and market opportunities.</p>	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. Forest Cooperative Societies.</li> <li>2. CURLA.</li> <li>3. REMBLAH Network.</li> <li>4. Mr. Oscar Tovar, Ex Project Coordinator.</li> <li>5. AFE-COHDEFOR Atlantic Region Center.</li> </ol> </li> </ul>	<p>Willingness of farmers and industrial workers to participate in the training program.</p> <p>Trainers specialized and duly trained.</p> <p>Communication capacity and appropriate training material.</p>
	<p>Introduction of 25 non traditional timber species on markets.</p>	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. Forest Cooperative Societies.</li> <li>2. Foundation CUPROFOR</li> </ol> </li> </ul>	<p>There is a market demand that is not being met.</p> <p>Competitiveness of non traditional timber species in terms of prices, quality and timely delivery.</p>

<b>Outputs</b>	To determine the allowable forest harvesting levels in accordance with the forest ecosystem capacity.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Atlantic Forest Center.</li> <li>2. REMBLAH Network.</li> </ol> </li> </ul>	
	To identify and implement low-impact technologies in the forest management and sustainable utilization areas.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. AFE-COHDEFOR Atlantic Forest Center.</li> <li>2. REMBLAH Network.</li> </ol> </li> </ul>	
	Practical handbook addressed to farmers/rural communities on the application of low impact harvesting regimes and silvicultural systems.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul>	
	Knowledge and implementation of low impact industrial technologies for the use of new forest species.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. CUPROFOR Foundation.</li> <li>2. Forest Cooperative Societies.</li> </ol> </li> </ul>	
	Knowledge on timber product types and their technical properties in relation with end uses.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. CUPROFOR Foundation.</li> <li>2. Forest Cooperative Societies.</li> </ol> </li> </ul>	
	To determined recommended end uses for selected forest species.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> <li>• Interviews: <ol style="list-style-type: none"> <li>1. CUPROFOR Foundation.</li> <li>2. Forest Cooperative Societies.</li> </ol> </li> </ul>	

	500 farmers will receive forest and ecological training for the sustainable management and utilization of forest resources.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul> <p>Interviews:</p> <ol style="list-style-type: none"> <li>1. Forest Cooperative Societies.</li> <li>2. CURLA.</li> <li>3. REMBLAH Network.</li> <li>4. Mr. Oscar Tovar, Ex Project Coordinator.</li> <li>5. AFE-COHDEFOR Atlantic Region Center.</li> </ol>	
	300 women farmers will be trained in ecology, reforestation and non timber forest products.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul> <p>Interviews:</p> <ol style="list-style-type: none"> <li>1. Forest Cooperative Societies.</li> <li>2. CURLA.</li> <li>3. REMBLAH Network.</li> <li>4. Mr. Oscar Tovar, Ex Project Coordinator.</li> <li>5. AFE-COHDEFOR Atlantic Region Center.</li> </ol>	
	200 forest workers from the sawyers groups and private timber companies will be trained in low impact technologies and market opportunities.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul> <p>Interviews:</p> <ol style="list-style-type: none"> <li>1. Forest Cooperative Societies.</li> <li>2. CURLA.</li> <li>3. REMBLAH Network.</li> <li>4. Mr. Oscar Tovar, Ex Project Coordinator.</li> <li>5. AFE-COHDEFOR Atlantic Region Center.</li> </ol>	
	25 forest species will be introduced into national and international markets.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul> <p>Interviews:</p> <ol style="list-style-type: none"> <li>1. CUPROFOR Foundation.</li> <li>2. AFE-COHDEFOR Central Office.</li> </ol>	
	Verification of the economic revaluation of tropical forest under management systems.	<ul style="list-style-type: none"> <li>• Reports and Documents (Project Reports 1 to 12).</li> </ul> <p>Interviews:</p> <ol style="list-style-type: none"> <li>1. AFE-CODEFOR Central Office.</li> <li>2. REMBLAH Network.</li> </ol>	

## **II.4. Findings and Lessons Learned**

### **II.4.1. Project Contribution to the General Objective**

The research and development Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests” through 11 Outputs and 28 specific Activities was a very ambitious proposal, and has addressed its main objective i.e. to contribute economically revalue tropical forest in Honduras through sustainable production programs based on management plans and end use of sound low impact technologies.

Low impact harvest technologies were introduced and adopted at certain levels by the rural producers that today are harvesting the National forests in Northern Honduras, and further, some of them, like COAHTLAHL Cooperative has the certification of SmartWood Program in her forest management program and custody chain for furniture production.

With respect of the contribution to the technical and scientific knowledge of lesser known forest species, the Project produced specific publications containing the information about the wood properties and uses of 20 new timber species. This technical and scientific information can be applied by other countries in the region with some of the studies timber species.

The effects of the Project in the tropical wood production in Honduras, can be appreciated in the national wood logs production volume of broadleaved species, that passed from 11,600 cubic meters in the year 2000, to 22,000 cubic meters in 2004; and in the specific Region of the Atlantic, passed from 2,600 cubic meters in the year 2000, to 9,000 cubic meters in 2004 (AFE-COHDEFOR, 2005).

However, some factors affect the best compliment of the general objective of the Project. The competence with the non legal harvest, the legal framework that limits the harvest and the limited resources of the agencies of the Government, limit a greater advance.

### **II.4.2. Relevance and Appropriateness of the R&D Activities Given the Available LUS Resource and Market Conditions in Honduras**

The increased incorporation of low ecological impact on broadleaved forest and the increased utilization of lesser known forest species has been hampered by the low level of forestry sector in the Honduran political context; the legal regulations that limits the annual authorized volume by 10 people social group at only 200 cubic meters; the legalization of land tenure process taking National Tropical Forests for the emerging social groups; the high rates of non legal timber in the markets with sub valued prices; the limitations on rural development process with low levels of appropriation of the new technologies by the rural sector; the low level of divulgation and dissemination of new programmes and technologies; low level response of authorization of forest management plans according with the Project and continuous changes in the Project conduction; non systematized training process; non consolidated commercialization strategy at local, regional, national and international levels; the cancellation of the Forest Guarantee Found (FGF); deficiencies on administrative capacities of Cooperative Societies of Forestry Groups; and the necessity of more effective cooperative links between all the project participants.

However, the lesser known forest tropical species is still a significant resource of wood and raw material potential found in Honduras that complements the main conifer softwood production. There are some well organized and certified processes that today are starting to export solid wood products to Europe; and Honduras has been a good regional player in furniture production and exportation. In the other hand, the sustainable utilization of the lesser known broadleaved forest species represents a potential social and economic opportunity for very low income people in the Northern Region of Honduras. Therefore, the relevance and appropriateness of the research and development activities conducted in this project are perceived to be very high and represent the continuity and complementation of prior projects in the country, like Broadleaved Forest Development Project (BFDP) with the support of the Canadian International Development Agency (CIDA).

#### **II.4.3. Achievement of Project Outputs and Specific Objectives**

The Project was organized to produce 11 Outputs and 28 specific activities. Subsequently a brief summary of each one of the 11 Outputs is presented:

**Output 1.** To determine the allowable forest harvesting levels in accordance with the forest ecosystem capacity. It was developed the following studies: Study of ecological characteristics of 30 selected species in the broadleaved forest of Honduras; Study of Natural Regeneration of Forest Species in the Broadleaved Forest of Honduras ; Evaluation of the natural regeneration capability of 10 species affected by the Mitch Hurricane; Study for the evaluation of new species harvest impacts on biological diversity, forest associations, soils and hydrological regime; experimental silvicultural treatment application study in the CURLA forest; Study for the determination of ecological impacts permissible limits in harvest operations in the broadleaved forest in Northern Honduras; Study on volume stand of broadleaved species under management plans in Northern Honduras and Harvest impact analysis of new forest species on non wood products in Atlantic Region of Honduras.

**Output 2.** To identify and implement low-impact technologies in the forest management and sustainable utilization areas. It was conducted a Study related with harvest evaluation in a broadleaved forest and volume tables elaboration in Atlantic Region of Honduras.

**Output 3.** Practical handbook addressed to farmers/rural communities on the application of low impact harvesting regimes and silvicultural systems. It was produced a Silvicultural practices and harvest manual for the broadleaved forest of Honduras.

**Output 4.** Knowledge and implementation of low impact industrial technologies for the use of new forest species. Study on characteristics and uses of 30 species of the broadleaved forest in Honduras; Studies on properties and uses of 20 lesser known species; and Study on industrial workability process of non traditional species in Northern Honduras.

**Output 5.** Knowledge on timber product types and their technical properties in relation with end uses. Studies on characteristics and uses of 30 species of the broadleaved forest in Honduras; and Studies on properties and uses of 20 lesser known species.

**Output 6.** To determined recommended end uses for selected forest species. Studies on properties and uses of 20 lesser known species

**Output 7.** 500 farmers will receive forest and ecological training for the sustainable management and utilization of forest resources. Design, participant's selection and realization of the training activities.

**Output 8.** 300 women farmers will be trained in ecology, reforestation and non timber forest products. Design, participant's selection and realization of the training activities.

**Output 9.** 200 forest workers from the sawyers groups and private timber companies will be trained in low impact technologies and market opportunities. Design, participant's selection and realization of the training activities.

**Output 10.** 25 forest species will be introduced into national and international markets. Study on commercialization strategy for national and international markets of lesser known species.

**Output 11.** Verification of the economic revaluation of tropical forest under management systems. Study on economical analysis of the broadleaved resources valuation in Atlantic Coastal of Honduras.

#### **II.4.4. The Market Aspects of LUS for Small Scale Community Enterprises**

An important beneficiary group of the Project is the small rural handicrafts industry. In the year 2004 there was 35 groups already organized of rural low income producers with a covenant of management forest, mainly dedicated to the saw wood industry and they had authorized a volume of wood of 56,444 cubic meters in 49,345 hectares of national forests commissioning to them.

The most representatives of these groups are in La Ceiba surroundings and some of them are Industrial Incorma, ANPFOR; Collective Society Lucas Martinez; Yavany Cascos Society; Hernandez S. C. Fuentes and Associates; Leoncio Cubas Ocampo and Associates Las Camelias; and Coatlahl Cooperative. Part of the saw wood of these groups is expended to CUPROFOR Foundation to produce export quality furniture; other short volume in processing to make export products like charcoal boxes, shoe cleaners and flooring. There are an important part of the saw wood volume that is expended to the intermediaries and private timber expenders.

The lack of an adequate structure of costs with differential costs by species, the general factors of the economy and the lack of a strategy of market, are provoking important problems for the social groups of production, that find very little attractive the prices that the consumers pay them for their products.

#### **II.4.5. The Effectiveness of Technology Transfer to the Forest Sector**

The main public and private related sectors with the Project have access to the project results trough short courses, printed material, technical assistant visits, consultations, workshops, exhibitions and seminars. However some small scale enterprises may be scattered in other broadleaved forest region with access limitations, may not been exposed to this promotional programs.



The lack of good coordination with the University; the administrative and operative restrictions of AFE-COHDEFOR; and the production of the main volumes of publications at the end of the Project development provoke limitations in the technology transfer process. The non systematic training process affected too the technology transfer effectiveness.

#### **II.4.6. The Unexpected Effects and Impacts of the Study**

There were only a few unexpected results emanating from the study. Some of them are:

- There are some differences in the wood technological characteristics of the lesser known timber species studied, based in part on the density of the wood. It is convenient to produce density level groups for future projects.
- There are 3 *Vochysia* genus different species, and one of them needs additional studies for its complete taxonomical identification. It is convenient to produce a very simplex file guide for quick identification process because the real potential of lesser known species is 400 additional.
- The Honduran legal regulations limit the volume authorizations by social group at only 200 cubic meters per year. This is a factor that affects seriously the sustainability of the forestry and only 4 or five group members are active in the process. Important extensions of broadleaved forests in coastal Atlantic of Honduras are Protected Natural Areas with serious restrictions in the harvest authorizations. It is necessary to define very clear those areas and their objectives.
- The Forest Guarantee Found (FGF) was canceled and all their positive effects now disappear. It is necessary to be sure that this administrative structures need to be a continuous process.
- This was a very ambitious project with a great number of components that's include forest management, environmental impact assessment, wood technology generation, training and promotion, and commercialization and market strategies. The commercial and market components are not totally developed and affects significantly the use of lesser known species and it is necessary to continue this supports of these components.

#### **II.4.7. The Implementation Efficiency of the Project**

The Project was well conceptualized and implemented by matching study topics with the expertise and qualifications of the study leaders and teams. However there was a continuous coordinator change that's affects the Managerial efficiency of human and financial resources, the consummate scheduling and execution of the work plans and the completion of tasks in a timely manner.

### **III. Conclusions and Recommendations**

#### **III.1. Conclusions**

##### **General Objective**

The project partially contributed to accomplish its general development objective to “economically revalue tropical forest in Honduras through sustainable production programs based on management plans and the use of sound low-impact technologies”.

##### **Specific Objectives**

The project permitted to reach the following specific objectives:

To develop knowledge and technologies those are the bases for the regulations for the sustainable forest management in the tropical forests of the Atlantic zone of Honduras. Knowledge about ecological aspects of the selected species; its regeneration capacity; the impact on the biodiversity, soils and hydrology; the limits in the ecological impact permitted; and the effects of the logging activities on the non wood species.

To implement the use of low ecological impact technologies in the logging activities of the tropical forests of the Atlantic coast of Honduras, sound for the national forest authorities.

To conduct technology transfer and promotional activities to disseminate technology and information about forest management, ecology and environment aspects through the Manual of Silvicultural and Logging Practices.

To generate knowledge and information about the wood technology and utilization of the 20 selected lesser known species in the Atlantic zone of Honduras. This information was disseminating through printed materials.

To generate information about the forest industry in Honduras at national level, related with the offering and the demand, the types of forest products, its prices, the species utilized and the existing type of machinery.

To implement a process of training for low income rural organized groups, women groups, forest industry owners and workers, and foresters.

To develop partially and trade strategy for the commercialization of the wood and wood products of the lesser known species selected in the project.

To develop partially the improvement of the conditions of life of the population that lives on manage, logging and transformation of the tropical forests of the Atlantic zone of Honduras.

#### **III.2. Recommendations**

Based on the findings of the ex-post evaluation, the following recommendations are offered concerning ITTO Project PD 47/94 Rev. 3 (I):

To prompt the process of integration, regularization and control of the rural groups that have access to the tropical forests of the Atlantic zone of Honduras, and to promote a greater participation of the Agrarian National Institute in the processes of organization and common participation.

To revise and eliminate the legal disposition that limits the harvest of the tropical forests from Honduras to 200 annual cubic meters by collective society and to enlarge the productive capacity of the collective societies.

To diversify and to specialize in more extensive form the use of the 20 studied species.

To complement the wood production of tropical forests with the non wood products, the generation of bio-energy and the environmental payment of services, to do more competitive the forest activity.

To avoid the continuous changes in the direction of the projects like this.

To prompt a better framework of coordination among the participating institutions, with attributions well defined for each one.

To prompt the valuation differentiated of the new species taken advantage of and to revise the harvest taxes.

To develop new and more extensive processes of financing and credit for the ones that they take advantage of the forests.

To systematize the training of the different actors that participates in the forestry productive chain.

To distribute more extensively among the different sectors interested of the activity forest the printed materials that have been produced for the project, especially the technologies for the processing of the wood.

To take advantage of more extensively the results and the infrastructure of other projects related that developed before in Honduras.

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## **Annex B. Questions Submitted to the different interest groups during the Visit of the Evaluator**

Ex-Post Evaluation of ITTO Project PD 47/94 Rev. 3 (I) “Industrial Utilization of Lesser-Known Forest Species in Sustainability Managed Forests”.

Mr. Carlos Enrique González Vicente. September 2005.

Targeted Groups:

- Collaborative Agency (COHDEFOR), Directive Group (Tegucigalpa, Honduras).
- Collaborative Agency (COHDEFOR), Regional Group (La Ceiba, Atlántida, Honduras).
- Project technical operators.
- Project beneficiaries.
- Project cooperators (Universidad Nacional Autónoma de Honduras – Centro Universitario Regional del Litoral Atlántico/CURLA and CUPROFOR).
- NGO (Red de Manejo del Bosque Latifoliado de Honduras/RAMBLAH).

**Collaborative Agency (COHDEFOR), Directive Group (Tegucigalpa, Honduras).**

**Collaborative Agency (COHDEFOR), Regional Group (La Ceiba, Atlántida, Honduras).**

### **Which are the functions of the COHDEFOR and how is organized?**

Las principales funciones de COHDEFOR están relacionadas con la administración, manejo, aprovechamiento y protección de los recursos forestales de Honduras.

AFE – COHDEFOR depende de un Consejo Directivo, formado por los Ministros de Agricultura, Medio Ambiente, Economía y Finanzas; también participan la Asociación Nacional de Madereros, la asociación Nacional de Industrias de la Transformación. A COHDEFOR la encabeza un Gerente General y un Subgerente General, que tienen como área de apoyo el Departamento de Auditoría Interna y dependen directamente de ellos los departamentos de Asesoría técnica, Recursos Humanos, Comunicación Institucional, Supervisión de Regiones, Administrativo, Asesoría Legal, Gestión de Información Gerencial, Auditoría Técnica Ambiental y Planificación. Además, COHDEFOR está basado en cuatro departamentos sustantivos: Desarrollo Productivo, que atiende los aspectos relativos a forestación, manejo de bosques y promoción industrial; Desarrollo Social Forestal, que atiende lo relativo a silvicultura comunitaria, transferencia de tecnología y evaluación de impactos; Protección de Ecosistemas, dedicado a incendios forestales y plagas; y Áreas Protegidas y Vida Silvestre, en donde se atienden los asuntos de vida silvestre, áreas naturales protegidas, monitoreo biológico y manejo de cuencas. COHDEFOR tiene también 11 Direcciones Regionales, que dependen de la Gerencia General.

### **Which is the orientation of the forest policy of Honduras with regard to the broadleaf tropical forests?**

La política forestal de Honduras ha estado orientada principalmente a los bosques templados de pino, no obstante que se tiene en el país un importante recurso forestal tropical.



**What types of forests has Honduras and who are the owners?**

Honduras tiene 2.6 millones de hectáreas de bosques de latifoliadas y 2.2 millones de hectáreas con bosques de coníferas y son de propiedad municipal (26%), privada (25 %) y nacional (49%).

**Which are the requirements for the management and harvest of the forests in Honduras?**

Quienes pretendan aprovechar los bosques de Honduras cuando son bosques nacionales, necesitan obtener un Contrato de Manejo y esos Contratos se otorgan a las Cooperativas o a cualquier forma de sociedad colectiva.

**How is it organized the harvest of the forests by means of cooperatives and which are the government dependences that participate in the process?**

Las sociedades colectivas originalmente estaban formadas hasta por 120 personas, actualmente no más de 10 personas y se les otorga la tierra con límites, que anteriormente eran hasta 6 mil hectáreas, sin embargo se considera que la tenencia de la tierra está en transición. El responsable de los asuntos agrarios es el Instituto Nacional Agrario y COHDEFOR solamente dictamina el uso del suelo para los títulos de propiedad.

**What it is a collective society and what are their limitations?**

Una sociedad colectiva forestal es un grupo organizado de hasta 10 titulares, a los que se autoriza el aprovechamiento forestal, sin embargo tienen un límite de 200 metros cúbicos anuales en latifoliadas tropicales y de mil metros cúbicos anuales en coníferas, a través de planes de manejo.

**How is composed the wooden production of the country?**

La producción forestal está compuesta principalmente por Madera de pino, sin embargo durante los últimos 5 años ha empezado a registrarse producción de madera tropical, principalmente en la Atlántida. En el anuario de la producción forestal se pueden consultar las cifras.

**Which is it the legal framework of land tenure?**

La tenencia de la tierra está limitada a formas de acceso como títulos o contratos. Existen muchos problemas de técnicas registrales, inseguridad, inscripciones limitadas, altos costos de transacciones, territorios sin orden de uso y ocupación, tierras agrícolas sin uso y solo el 14 % está titulado o inscrito en el registro nacional. Actualmente se realizan el Programa de Regularización Predial y el Programa de Modernización de Registros. Actualmente el marco legal son los decretos de 2003 y 2004 para el ordenamiento territorial, en los que se dictan las normas jurídicas y técnicas para el uso y ocupación de terrenos, por vocación y mediante incentivos. Cuentan con una estructura compuesta por el Consejo Nacional de Ordenamiento de tierras, el Comité Ejecutivo de Ordenamiento de Tierras, los Consejeros y la participación de las Municipalidades. Además, se tiene la Ley de Propiedad, que ejecuta el Instituto de la Propiedad y que lleva el Registro y Catastro de tierras, con unificación de registros y mejores técnicas registrales; todo ello en el Sistema de Información Territorial (SURE). El acceso a la tierra está muy limitado.

**Are there illegal harvests of the forests in Honduras?**

En Honduras se deforestan al año 80 mil hectáreas, de las que el 80 % son bosques latifoliados, se incendian 50 mil hectáreas y son afectados 715,480 metros cúbicos por el ataque de insectos descortezadores. Se estima un volumen anual de madera ilegal de entre 7 a 9 millones de pies tabla, contra solamente 810,000 pies tabla legales y se dice que entre el 30 y 40 % de la madera que se procesa es de origen ilegal.

**How was established the contact among the ITTO project PROINEL and the industry?**

El primer contacto se hizo a través de los técnicos de AFE – COHDEFOR y mediante una encuesta a 500 industrias se estableció el contacto.

**Which are the management contracts and the COHDEFOR participation?**

Los Contratos de Manejo consisten la forma de aprovechar los bosques nacionales y los otorga la AFE – COHDEFOR. Constituyen el sistema social forestal y son un elemento importante para formar las cooperativas o las sociedades forestales.

**Which are the main obstacles for the sustainable management and use of the tropical forest in Honduras?**

El principal obstáculo es la tenencia de la tierra que se encuentra en un proceso de transición y se aprecia una mala coordinación entre el Instituto Nacional Agrario (INA) y AFE – COHDEFOR, ya que hay mucha burocracia en los dictámenes y en el otorgamiento de títulos de propiedad. Otro gran obstáculo es que el aprovechamiento está limitado por ley a 200 metros cúbicos por año para cada sociedad colectiva; esto hace que solo se aproveche entre el 5 y el 10 % de todo el potencial. Otro problema importante es que la temporada de aprovechamiento y extracción es muy corta ya que solo dura de la mitad de febrero al mes de abril y vuelve en agosto y septiembre, pero en forma muy aleatoria. El abrochamiento ilegal también es un enemigo importante. Influyen los costos unitarios que son los mismos de las maderas preciosas (como el tonconaje), pero las nuevas maderas valen menos en el mercado y las tasas de ganancia son muy reducidas.

**How many tropical wood species are in use in Honduras?**

Tradicionalmente se aprovechaban la caoba, el cedro rojo y el Redondo; sin embargo ahora se tienen cerca de 30 nuevas especies gracias al proyecto PROINEL y se tienen muchas más potenciales.

**Project Technical Operators:****How are the owners of the broadleaved forest in Honduras?**

La mitad de los bosques tropicales de Honduras son bosques nacionales y una gran parte son áreas naturales protegidas. El Gobierno de Honduras los puede concesionar a los pequeños grupos organizados para su aprovechamiento sostenible.

**Which is a forest cooperative and what are the main characteristics of it?**

Las Cooperativas forestales son grupos sociales que se han formado para aprovechar los bosques tropicales y establecer pequeñas industrias que generan empleo y algunos productos de exportación. Las forman varias sociedades colectivas, que a su vez están formadas por 8 a 10 titulares. Mediante las Áreas de Manejo Integrado (AMIS) de las cuales hay integradas 10 en la Atlántida y Colón, fue posible realizar el inventario forestal y a través del Proyecto de Bosque Latifoliado se difundieron las experiencias.

**What are the broadleaved species in use?**

Durante muchos años se aprovecharon la caoba, el cedro rojo, granadillo y nogal, sin embargo, la sobre explotación provocó una crisis. En 1980 Honduras promovió el proyecto de Desarrollo del Bosque Latifoliado y el desarrollo de planes de manejo. Actualmente se cuenta con 30 a 35 especies no tradicionales.

**How do you establish the contact between the forest industries and the PROINEL project?**

AFE – COHDEFOR tiene la responsabilidad de establecer este contacto, y se ha hecho mediante encuestas del proyecto PROINEL. Las industrias creadas por las cooperativas forestales, tienen un contacto permanente con AFE – COHDEFOR debido a la necesidad de autorización de programas de manejo. La Cooperativa CUPROFOR permite también tener un contacto permanente con la industria al ofrecer capacitación, mercados y asistencia técnica.

**Which is the potential volume of tropical wood and which are the figures of harvest?**

Actualmente la producción anual legal es de 20 mil metros cúbicos anuales y se estima que el potencial es 10 veces más. Además de acuerdo a estudios realizados por los canadienses se podrían realizar aprovechamientos de hasta 50 metros cúbicos por hectárea por año.

**Which were the main obstacles for the PROINEL project development?**

Se pueden identificar como las principales limitaciones: a) La tradición y la mentalidad de la gente, b) El problema de valorizar nuevos productos, c) La competencia con la tala ilegal, d) El marco legal que limita los aprovechamientos, e) El desarrollo industrial limitado en Honduras, f) El intermediarismo, g) La falta de clasificación en el mercado de madera, y h) La limitada infraestructura de caminos. Actualmente COHDEFOR está en crisis, ya que obtenía sus recursos del aprovechamiento forestal y ahora eso ya no funciona porque se está buscando la asignación de un presupuesto fiscal para la organización. La no autorización del Fondo de Reinversión Forestal que permitiría una cuota de los productores forestales de 3 millones de lempiras afecta el desarrollo del proyecto. Además en Honduras no hay crédito forestal y no hay garantías.

**If you have an extension of the project, which areas you need to reinforce?**

Hace falta más investigación sobre manejo forestal, sin duda el estudio de mercado y comercialización deberán desarrollarse más, ya que el proyecto fue muy amplio y complejo, lo que no permitió avanzar en estos aspectos. Es necesario considerar que aún hay muchas otras especies tropicales con gran potencial. Hace falta un proyecto para consolidar la estrategia de comercialización, uno de inteligencia de mercados y se requiere reactivar el Fondo. La capacitación se necesita sistematizar y especializar. Es necesario promover mecanismos de crédito y eliminar el subsidio externo.

**Which were the main alliances between the PROINEL project and cooperators?**

Para el desarrollo del proyecto PROINEL fue creado un comité en el que participaron la Cooperativa CUPROFOR, la universidad (CURLA), los industriales, las cooperativas, COHDEFOR, la Escuela de Ciencias Forestales de Lencetia, 6 empresas consultoras de servicios ambientales, la Asociación Nacional de Productores Forestales, las ONG, la Fundación Madera Verde y la Asociación Nacional de Transformadores de Madera. Se crearon alianzas estratégicas mediante acuerdos con las ONG, con otros proyectos, con la universidad y con los centros de investigación. Existió la oportunidad de estar en el radio de acción de otros proyectos como el CATIE TRANSFORMA para capacitación.

También existió la oportunidad de que se desarrollara el Proyecto de Desarrollo de los Bosques Latifoliados (PDBL) con financiamiento del Canadá (ACDI).

**Which are the main outputs of PROINEL project?**

En primer lugar se creó una plantilla de 16 consultores, que permite ahora el desarrollo de nuevos proyectos. PROINEL permitió el desarrollo de conocimientos y tecnologías amplias y diversas sobre el bosque latifoliado y aunque las experiencias de capacitación no se sistematizaron, fueron muy importantes. La estrategia de comercialización que es fundamental, no pudo consolidarse a niveles local, regional, nacional e internacional. El 80 % de las especies estudiadas se encuentran ahora en el mercado nacional, pero no han tenido seguimiento. Otro producto específico fue el desarrollo de secuelas de secado para la madera de las nuevas especies.

**Project beneficiaries:**

**How are organized the forest cooperatives?**

Mediante el Proyecto de Desarrollo de los Bosques Latifoliados, fueron creadas las organizaciones de productores forestales y el PROINEL permitió seguirlas apoyando.

**What species are using the forest industry in Honduras?**

Antes se usaban especies como la caoba, cedro rojo y redondo. Las principales especies que está usando la Cooperativa COATLAHL son el Cumbillo, celillón, huesito, piojo, barillo y San Juan Rojo.

La cooperativa Campos y Asociados está usando las especies barillo, huesito, Santa María, rosita y cedrillo.

**Which are the main problems in the use of new forest species?**

Los costos de producción de las maderas no tradicionales son los mismos ahora para las nuevas especies, sin embargo no se pueden vender al mismo precio. Las maderas tradicionales valían en 1994 entre 7 y 10 lempiras el pie tabla y ahora valen entre 30 y 32 lempiras, mientras que las no tradicionales ahora valen entre 9.5 y 10.5 lempiras. La madera se baja de las montañas con bestias de carga en bloques de 20 pies tabla.

**Who are the buyers of the products of the cooperative one?**

La cooperativa COATLAHL está vendiendo ahora a Dinamarca limpiabarros que se hacen con 9 pies tabla de especies no tradicionales; el último pedido fue de 5 mil y solo se mandaron 2,200; están por mandar los siguientes 2,500. También están mandando cajas para carbón y han enviado muestras de pisos. Se apoyan en el proyecto NEPHETES que tiene ayuda danesa y está basado en la certificación de la cadena de custodia. Los recursos se están reinvertiendo en maquinaria y en el pago de la madera. Están buscando nuevos clientes en Suecia y en los Estados Unidos.

**The forest cooperative is certifying its products to be able to export?**

Tienen al apoyo del proyecto NEPHETES de Dinamarca para certificación y el aprovechamiento está certificado por el FSC.

**Which countries are in the cooperative list of importers?**

Dinamarca y posiblemente Suecia y los Estados Unidos. En el mercado local vende a La Ceiba, San Pedro Sula.

**How many associates form a cooperative society?**

La Cooperativa COATLAHL está formada por 12 grupos y tiene 250 socios, lo que les permite tener 15 empleados temporales que se ocupan en una industria de muebles.

**Do the cooperatives receive support and consulting of other international organizations?**

Si ahora se recibe apoyo de Noruega y se recibió de Canadá.

**How many tropical species of woods are working now?**

Las principales especies que ahora se trabajan son vaca, Cumbillo, huesito, barillo, cedrillo, Santa María, coloradito, Barba de Jolote, rosita, San Juan Rojo, San Juan Colorado, marapolan, laurel blanco, redondo, San Juan Areno, barba jolote. El barillo, rosita, huesito, Santa María, San Juan Rojo, Paca y Cumbillo los usan para elaborar muebles.

**What direct benefits the project PROINEL gave to the cooperatives?**

Se establecieron parcelas permanentes de muestreo, capacitación en administración, inventario operativo, derribo direccional, uso de motosierra con marco

**Project cooperators:**

**Which was the participation of the University and research centers in the PROINEL project?**

Los profesores de CURLA consideran que es preferible que este tipo de proyectos se ubiquen en la Universidad y no en COHDEFOR. Al PROINEL le faltó tener mayor contacto con los transformadores de la madera. Se requiere una mayor participación comunitaria y que la universidad vaya más a las comunidades con técnicas de secado y proyectos de bioenergía. Existió muy buena coordinación para los inventarios forestales y en aspectos de manejo forestal. La universidad considera que la comercialización es un problema importante, ya que el potencial real son 400 especies y solo se tienen 20 fichas técnicas. La Universidad participo con su red de parcelas permanentes.

**Are the PROINEL results included in the education programmes?**

Fue posible desarrollar algunas tesis de maestría a través del PROINEL y existió una importante coordinación académica. La Universidad realiza todavía educación social con la xiloteca formada a través del proyecto. No se ha trabajado en la domesticación y desarrollo de plantaciones de estas especies.

**Which are the coordination activities between the University and the forest producers and the industry?**

Fue creado un Consejo Ejecutivo del proyecto PRINEL.

CURLA formó parte del Comité Ejecutivo del proyecto PROINEL. El proyecto permitió apoyar al grupo docente, se desarrolló un modelo de horno solar y se incorporaron los conocimientos al programa de formación de peritos. Las xilotecas están ahora en todas las escuelas primarias y secundarias. También se participó en las exposiciones y ferias con la promoción de las especies.

**NGO:**

**How are the members of the REMBLAH network?**

La red tiene 26 miembros que son productores, técnicos e investigadores, tanto del Gobierno, como privados y académicos. Cuentan con apoyo del Canadá y de Dinamarca y sus miembros aportan el 30 % de sus necesidades.

**Which are the main activities of REMBLAH in relation with PROINEL project?**

**Is the REMBLAH network providing forest technical services, commercial services, communication services?**

REMBLAH se dedica al intercambio de experiencias en manejo forestal

**Which were the main obstacles of the PROINEL project?**

El Gobierno de Honduras no tiene prioridad en los bosques tropicales, solo en los bosques de pino, por eso la red se ha declarado con cierta independencia.

### Annex C. Itinerary of Travel of the Evaluator (Mr. Carlos E. Gonzalez Vicente)

Day	Activities	Personnel Involved
Day 1. September 19 <sup>th</sup> , 2005	Arrive to Tegucigalpa, Honduras. Organization meeting with COHDEFOR representative.	Mr. Raúl Contreras, COHDEFOR Technical and International Cooperation.
Day 2. September 20 <sup>th</sup> , 2005 (Tegucigalpa and Comayagua, Honduras)	Meeting with COHDEFOR national authorities Meeting with COHDEFOR forest statistics area Workshop: Rural Sector National Policy 2004 - 2021 (Comayagua, Honduras). Interview with handcraft makers.	Mr. Luis Eveline, General Manager; Mr. Jose Trinidad Suazo Bulnes, General Sub Manager; Mr. Raul Contreras; Technical and International Cooperation; Mr. Martin Lagos, Statistics Official
Day 3. September 21 <sup>st</sup> , 2005 (La Ceiba, Atlantida, Honduras)	Meeting with Regional authorities of COHDEFOR in Atlantida Meeting with PROINEL technical personnel	Mr. Lindersay Eguigurens, Regional Forestry Director for Atlantic Region; Mr. Nelson Cerezo, Technical Personnel in COHDEFOR.
Day 4. September 22 <sup>nd</sup> , 2005 (La Ceiba, Atlantida, Honduras)	Field visit and interviews with Industry Representatives and Forest Producers Meeting with National Autonomous University of Honduras(CURLA) Meeting with the NGO REMBLAH Network	Coatlahl Cooperative in La Ceiba, Honduras: Mr. Constantino Guevara; Mr. Leoncio Cubas, Administrative Officer, Campos and Associates Collective Society. Mr. Carlos Ramon Amaya Pacheco; Mr. Manuel Canales Guzman; Mr. Julio Lino; and Mr. Jorge Alberto Flores, Teachers and Researchers, CURLA, National Autonomous University of Honduras. Mr. Danilo Davila. REMBLAH in La Ceiba, Honduras
Day 5. September 23 <sup>rd</sup> , 2005 (La Ceiba, Atlantida and San Pedro Sula, Honduras)	Interview with the Ex Project PROINEL Coordinator Meeting with Industry and Cooperatives Representatives and Marketing Experts.	Mr. Luis Tovar, Ex PROINEL Coordinator. Mr. Julio Cesar Cornijo, Industrial Incorma; Mr. Santos Tito Gutierrez, ANPFOR; Mr. Lucas Martinez, Collective Society Lucas Martinez; Mrs. Ana Teresa Ponce, Yavany Cascos Society; Mr. Jose Martin Zavala, Hernandez S. C. Fuentes and Associates; Mr. Abraham Ruiz, Leoncio Cubas Ocampo and Associates Las Camelias. Mr. Emilio Esbeih, Executive Director CUPROFOR.
Day 5. September 24 <sup>th</sup> , 2005 (San Pedro Sula, Honduras)	Visit to: Foundation Forest Products Utilization and Promotion Center (CUPROFOR).	Mr. Emilio Esbeih, Executive Director CUPROFOR

## Annex D. Commercialization information

### Lesser known species commercialization information (September 2005):

#### Wood prizes auction (\$ Lempira)



Specie	CUPROFOR I	Producer	CUPROFOR II	Agree prize
Vaca	9.0	12.0	10.5	10.0
Cumbillo	9.5	12.0	11.5	10.5
Huesito	9.5	12.0	11.5	11.5
Varillo	10.0	12.0	11.5	11.5
Cedrillo	10.0	12.0	11.5	11.5
Santa Maria	10.5	12.0	11.5	11.5
Coloradito	8.5	12.0	9.5	10.0
Barba de Jolote	10.5	12.0	11.5	11.5
Rosita	11.0	12.0	11.5	11.5
San Juan Rojo	8.5	11.0	9.0	10.0
San Juan Colorado	8.5	11.0	9.0	10.0
Marapolan	12.0	16.0	16.0	15.0
Laurel Blanco	12.0	16.0	16.0	15.0
Redondo	12.0	16.0	16.0	15.0
San Juan Areno	10.0	12.0	11.5	11.0

### Production hardwood costs (m<sup>3</sup>):

#### Atlantic area hardwood unitary costs (\$ Lempiras)



Labor	3.50
COHDEFOR tax	0.77
Municipal tax	0.10
Hill factor	1.00
Mules	3.50
Load and unload truck	0.13
Freight	0.55
Producers organism fee	0.10
Group fee	0.12
Group chapter fee	0.05
Commercialization expense	0.10
Sale expense	0.12
Verification	0.04
Various	0.02
TOTAL	9.10



## Annex F. Photographs



1. Low cost wood kiln. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



2. Wood kiln (powder and firewood). Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



3. Training Facility. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



4. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



5. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



6. Furniture permanent exhibition made with lesser known species. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



7. Furniture samples. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



8. Furniture samples. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



9. Permanent exhibition of furniture made with lesser known species. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



10. Furniture exhibition. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.



11. Low cost wood kiln. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



12. Wood kiln. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



13. Word kiln. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



14. Wood components made with lesser known species. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



15. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



16. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



17. Leoncio Cubas and Associates. La Ceiba, Atlantida, Honduras.



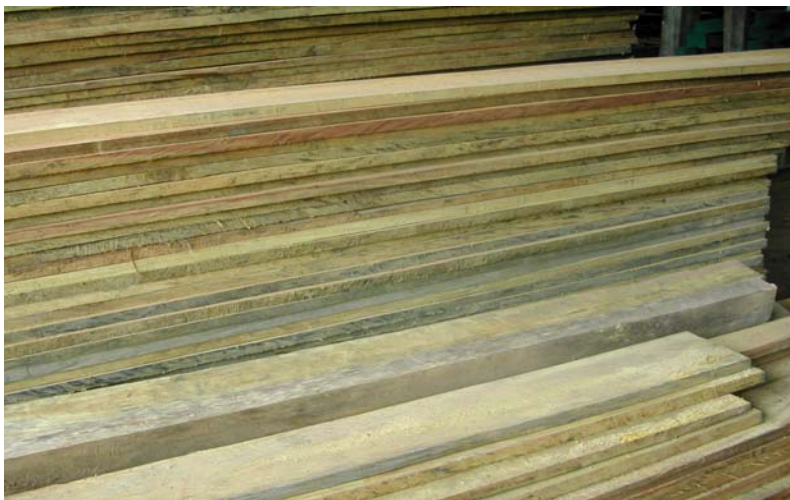
18. Mr. Constantino Guevara, Production Officer, COATLAHL Cooperative (left) and Mr. Nelson Cerezo, forest engineer AFE-COHDEFOR, La Ceiba Region, Honduras.



19. Floor samples (Cumbillo [*Terminalia amazonia*] and selillon [*Pouteria izabalensis*]/left; huesito [*Macrohassltia macrotherantha*] and Piojo [*Tapiriria guianensis*]/center; varillo [*Simphonia glubulifera*] and San Juan Rojo [*Vochysia* sp]/right). COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



20. Sawood. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



21. Sawood. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



21. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras Sawwood.



22. Clay cleaners made with lesser known species. Export products to Denmark. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras



23. Wood component manufacture process. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.





24. Furniture samples. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



25. Wood components made with lesser known species. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras



26. Women employment COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



27. Charcoal box made with lesser known species. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras



28. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



29. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras



30. Clay cleaner for exportation. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras



31. COATLAHL Cooperative, La Ceiba, Atlantida, Honduras.



32. University of Honduras – CURLA. La Ceiba, Atlantida, Honduras.



33. Academic staff. University of Honduras – CURLA. La Ceiba, Atlántida, Honduras



34. Forest management certificate issued by COHDEFOR.



35. Forest management and plantation certificate issued by COHDEFOR.



36. Region Atlantida, La Ceiba, Honduras facilities, COHDEFOR.



37. Region Atlantida, La Ceiba, Honduras facilities, COHDEFOR



38. Madera Verde Project to produce handcrafts. COHDEFOR, La Ceiba, Honduras.



39. Word pen production. Madera Verde Project to produce handcrafts. COHDEFOR, La Ceiba, Honduras



40. Rustic around to produce handcrafts. Madera Verde Project to produce handcrafts. COHDEFOR, La Ceiba, Honduras.



41. Rustic furniture. Madera Verde Project to produce handcrafts. COHDEFOR, La Ceiba, Honduras.



42. Single hardware to produce handicrafts. Madera Verde Project to produce handicrafts. COHDEFOR, La Ceiba, Honduras



43. Madera Verde Project to produce handicrafts. COHDEFOR, La Ceiba, Honduras



44. Wood pens made with residual row material. Madera Verde Project to produce handicrafts. COHDEFOR, La Ceiba, Honduras



45. Word toys. Madera Verde Project to produce handicrafts. COHDEFOR, La Ceiba, Honduras



46. Madera Verde Project to produce handicrafts. COHDEFOR, La Ceiba, Honduras.



47. Furniture simples. Central office of COHDEFOR, Tegucigalpa, Honduras.





48. CUPROFOR fundacion, San Pedro Sula, Honduras. Foundation: Forest Products Utilization and Promotion Center (CUPROFOR), San Pedro Sula, Honduras.