

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

TITLE:	EVALUATION OF COMMERCIAL STOCKS AND STRATEGY FOR THE SUSTAINABLE MANAGEMENT OF MAHOGANY (<i>Swietenia macrophylla</i>) IN PERU
SERIAL NUMBER:	PD 251/03 Rev.3 (F)
COMMITTEE:	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY:	GOVERNMENT OF PERU
ORIGINAL LANGUAGE:	SPANISH

SUMMARY

Mahogany (*Swietenia macrophylla*) is the most important commercial forest species in Peru and is subject to intense harvesting, which has increased in the last five years due to the high prices it attracts in the international market. This has led to high annual volumes of harvested timber, which according to rates established by several studies, may be exceeding the annual allowable cut of this species, as well as encouraging a high level of illegal logging activities to the detriment of the environment and the economy of the Peruvian forest sector.

In November 2002, during the meeting of the CITES Council in Santiago, Chile, the listing of mahogany in Appendix II of CITES was approved despite the objections of major producing countries (Peru and Brazil). This has set an important precedent to establish a monitoring and control system for this species in order to avoid the depletion of commercial stocks and a drastic reduction in its genetic potential. However, the national private sector involved in mahogany logging and marketing has flatly rejected this decision, arguing that there are still significant stocks of this species and it is in no way in danger of depletion and much less extinction.

The scientific authority in the area of mahogany in the country is the Faculty of Forestry Science of the National Agrarian University of La Molina in Lima, Peru. This institution is responsible for monitoring actual export levels and ensuring that stocks of this species are kept at a level that is consistent with ecosystem sustainability through the monitoring of stocks to issue non-detriment findings for the species. The Faculty is concerned that there is no highly reliable information available to take appropriate action on this matter and therefore believes that it is essential to conduct a reliable assessment of stocks in all mahogany-producing forests of the country, particularly production forests. WWF-Peru also agrees with this recommendation, believing that a joint project with the said scientific institution would effectively contribute to a solution to the problem of lack of reliable information.

The project will also share its results and methodologies with the CITES Scientific and Administrative Authorities in charge of mahogany in Brazil and Bolivia

The objective of this project is to carry out extensive field surveys with the support of satellite images for the short-term generation of reliable information on current mahogany stocks vis-à-vis current harvesting rates, and on this basis, establish a sustainable management strategy for the target species.

EXECUTING AGENCY: NATIONAL AGRARIAN UNIVERSITY OF LA MOLINA – FACULTY OF FORESTRY SCIENCE (UNALM/FCF) AND WWF-PERU

COOPERATING GOVERNMENTS: ---

DURATION: 18 MONTHS

APPROXIMATE STARTING DATE: UPON APPROVAL

BUDGET AND PROPOSED SOURCES OF FINANCE:	Source	Contribution in US\$
	ITTO	351,000
	UNALM/FCF – WWF	176,978
	TOTAL	527,978

PART I: CONTEXT

1. ORIGIN

The geographic distribution of mahogany (*Swietenia macrophylla*) extends south from sub-tropical Mexico to Brazil and Bolivia. Over its extensive latitudinal range, the species grows under varying environmental conditions, particularly in terms of rainfall levels and soil quality. Both moist and dry tropical forests of the Amazon have optimal climate conditions for the development of this species, including annual precipitation levels ranging from 1,200 to 2,000 mm and a marked 3-6 month dry season (Lamb, 1966). Most of the Peruvian Amazon forest is an ecologically suitable habitat for the development of mahogany (*Swietenia macrophylla*); the natural range of this species in Peru has been estimated to cover an area of 45,560,551 ha, accounting for approximately 60% of our territory (Ríos et al. 2002) (see Annex).

The degradation and elimination of natural tropical forest ecosystems in the Amazon Region of South America, and specifically in Peru, has always been a matter of concern for national authorities and the organised civil society in general, as nearly 300,000 ha of forests are annually deforested in the country, accounting for 0.45% of the total area of tropical moist forests in Peru. The over-logging of certain species of high commercial value in quantities that exceed their annual allowable cut leads to genetic degradation and stock reduction. Such is the case of mahogany (*Swietenia macrophylla*), the commercial stocks of which are rapidly being diminished, thus exerting a tremendous pressure on conservation areas and native community territories.

Peru is currently the main exporter of mahogany in the world, with export volumes of approximately 100,000 cubic meters per annum (Brazil exports under 50,000 m³), which accounts for nearly 80% of the total value of timber forest product exports in Peru (US\$100 million). Studies carried out by J. Ríos (2000) have indicated that the commercial stocks of mahogany could be depleted within a period of 5 years, while R. Kometer (2002) argues that commercial stocks of this species could be depleted in a maximum period of 10 years. Whichever the case, commercial mahogany stocks are undoubtedly near depletion, which is the reason why there is currently an enormous pressure being exerted for the harvesting of mahogany from reserved areas, conservation units and native community territories.

The recent approval of the listing of mahogany in Appendix II of CITES has generated strong protests from Peruvian industrialists concerned with the harvesting and marketing of this species and has led to a widebased national debate, where scientific authorities responsible for monitoring mahogany exports and issuing non-detriment findings have expressed concern about the lack of adequate reliable information to assume a more objective position on this matter, which would require the establishment of a monitoring system for adequate follow-up and control.

In the last session of the International Tropical Timber Council held in Panama it was recommended that the Executive Director should take action regarding the CITES-MAHOGANY matter by offering technical, scientific and financial support to the work of the Mahogany Working Group, as well as providing the necessary assistance to countries that are mahogany exporters and mahogany range States so as to encourage them to develop and submit projects to facilitate the effective implementation of the Appendix II listing.

Consequently, the only way or alternative to improve the management of this species in the Peruvian Amazon Region is through the precise assessment and integrated evaluation of mahogany stocks that are currently available in forest ecosystems, particularly in permanent production forests. This will require the collection of harmonised and updated information based on specific parameters to facilitate the quantitative and qualitative measurement of available volumes, frequency distribution, and volumes by size and forest type, using adequate sampling designs for the implementation of forest inventories to ensure ongoing field monitoring, to provide both the scientific community (UNALM/FCF) and administrative authorities (INRENA) with reliable baseline information.

WWF-PPO is currently implementing a number of forest resource assessment studies to set the basis for the provision of technical and financial support to concessionaires and native communities. These studies will produce important information for the country on the status of the resource and the harvesting potential of various species, in particular through the CEDEFOR Project, which is currently under implementation. (See Annex)

2. SECTORAL POLICIES

This project is consistent with the strategies and policies implemented by the Peruvian State through the promulgation of the following legislation:

The recently promulgated Forestry and Wildlife Law (Act No. 27308), replacing Decree Law No. 21147 of 1975, regulates the sustainable utilisation and conservation of forests and forest lands for the benefit of present and future generations, harmonising the social, economic and ecological interests of the country. This Law requires, as the basis for sustainable forest management, the preliminary evaluation and demarcation of forest resources. To this end, an ongoing national forest inventory programme should be implemented through forest inventories carried out at the forest unit, local, regional and country levels, as well as a regular integrated evaluation of major forest ecosystems in accordance with the priorities established in the national, regional, departmental and local development plans.

The Natural Protected Areas Law (Act No. 26834) regulates the management of the National System of State Protected Areas (SINANPE) and sustainable management and utilisation instruments for natural protected areas.

The Organic Law for the Sustainable Harvesting of Natural Resources (Act No. 26821) provides the general framework for the conservation of biological diversity and sustainable utilisation of biodiversity resources. It contains provisions regarding forest planning, inventories and monitoring, conservation mechanisms, the protection of rural and indigenous communities, and scientific and technological research.

The new Forestry Law of Peru establishes the national plan for deforestation prevention and control in the Amazon Region, which is particularly important for the rehabilitation and management of degraded or deforested areas such as those found in the Central Forest Region of the country. To this end, a preliminary integrated evaluation of the areas in question is essential.

According to the CITES Convention, to which Peru is a signatory party, mahogany is listed in Appendix II as a conservation tool to protect this species from the damaging effects of overexploitation geared to the international trade and to ensure its sustainable utilisation.

3. PROGRAMMES AND OPERATIONAL ACTIVITIES

Peru is currently implementing its forest policy within the framework of the latest Forestry and Wildlife Law, where forest concessions are considered to be the new forest harvesting units but are required to comply with a management plan approved by the relevant forest authorities, which represents a significant step forward that will lead to the orderly management of forest activities and the formalisation of the people responsible for forest harvesting.

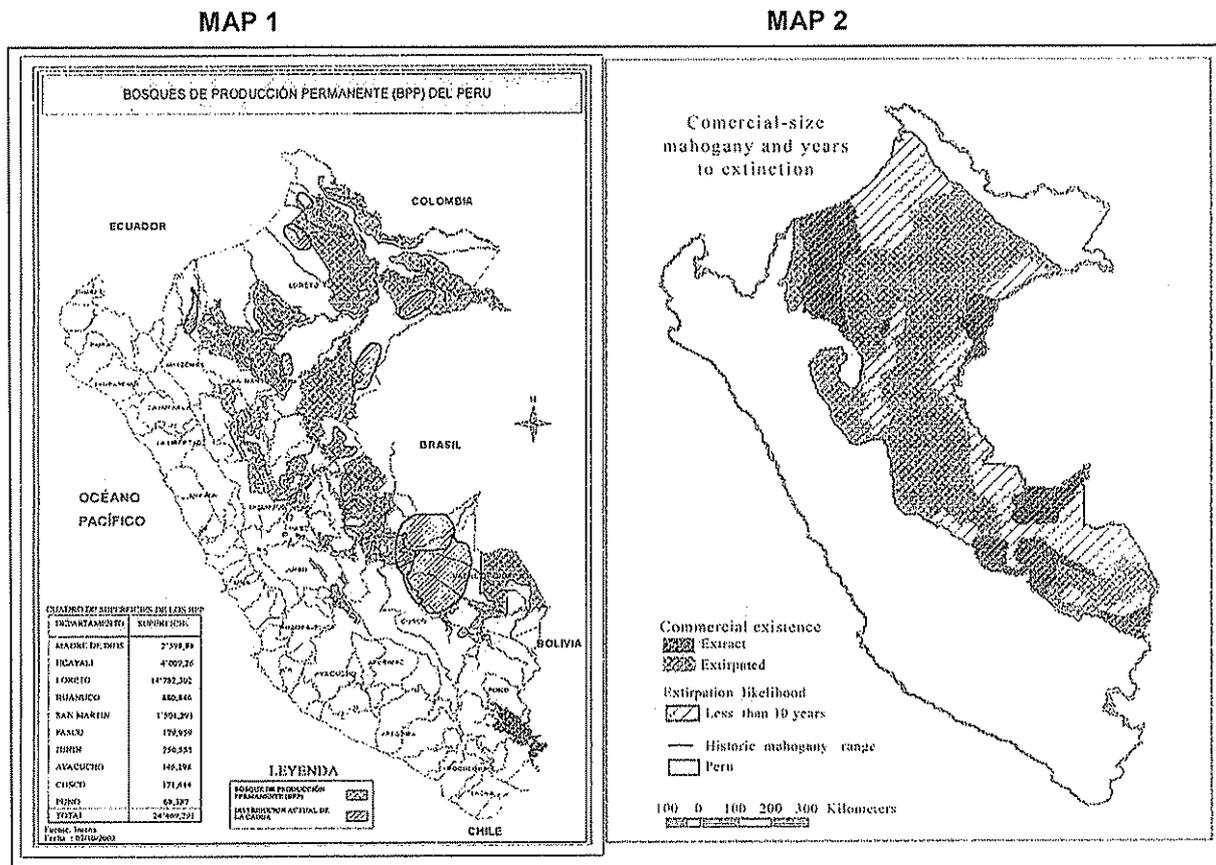
The Management Plan developed for the Von Humboldt Forest has served as the basis for the implementation of a forest management model. After the listing of mahogany in Appendix II of CITES, the Government saw the need to establish a mechanism to control the harvesting of this species, particularly the timber extracted for export.

UNALM/FCF has implemented a project for the training of forest and research professionals in the area of Dantas with the support of the Swiss Government and has also carried out, in conjunction with other institutions or individually, a number of research and development studies, as well as most of the forest inventories implemented in the country.

WWF has been making a strong contribution and has provided significant human and financial resources for the consolidation of the forest concessions process in Peru, as well as the control of illegal timber logging and trade throughout the Peruvian territory, with a view to achieving the ultimate objective of modernisation of the forest sector in Peru. In this context, this institution has been supporting INRENA for the last two years, providing technical and financial assistance in major forest resource regions that have traditionally been producers of high mahogany volumes, including Madre de Dios, Ucayali, Loreto and San Martin.

It is necessary to carry out an assessment of existing mahogany populations in Permanent Production Forests and Native Community Lands, which cover approximately a total of 24,469,291 ha as illustrated in Map 1. Map 2 shows the estimated distribution of commercially viable mahogany stands in the country (unpublished studies conducted by WWF, PPO and Conservation International).

The departments of Ucayali, San Martin and Madre de Dios contain a total of 8.1 million hectares; project activities will be concentrated in these departments as export statistics indicate that 80% of exported timber originates from these departments.



PART II: THE PROJECT

1. PROJECT OBJECTIVES

1.1 Development objective

The main objective of this project is to provide integrated, comprehensive, detailed, updated and highly reliable information on mahogany stocks from Amazon forests in Peru, in order to establish the annual allowable cut of this species at the national, regional and local levels so as to identify annual or regular harvesting quotas, develop a national strategy and ensure its implementation in sustainable management plans with a view to biodiversity conservation and sustainable forest resource management.

1.2 Specific objectives

The following specific objectives are proposed for the 18-month project implementation period:

1. Prepare a detailed map on the natural distribution (range) of *Swietenia macrophylla*, including concentration levels, production capacity and areas of greater impact from illegal and legal logging, as well as an assessment of the risk of extinction of this species.
2. Implement a forest inventory based on field sampling and comprehensive review of previous forest assessments so as to collect quantitative and qualitative information on stock volumes, frequency, and silvicultural and ecological indexes of mahogany stocks.
3. Develop a proposal for a national conservation strategy based on sustainable forest management and low impact logging of *Swietenia macrophylla* to provide the scientific community and administrative authorities of the Peruvian forest sector with sufficient elements to facilitate decision-making regarding the effective implementation of the CITES Appendix II listing of this species.

2. JUSTIFICATION

2.1 Problem to be addressed

For the past 25 years, national forest harvesting operations were based on selective logging practices. Forest management activities were disorderly and the existing legislation provided for the utilisation of small areas, which led to chaos in the control of production areas and resulted in indiscriminate pressure being exerted on the forest resource. The new legislation seeks to streamline harvesting operations by demanding the implementation of forest management plans in plots of appropriate size. Concessions totalling 4.1 million hectares have been granted up until last April in accordance with Act No. 27308.

The World Wide Fund for Nature (WWF) and Conservation International (CI) have been studying and monitoring the areas with mahogany species and have concluded that the sustainable utilisation of mahogany species in small production units is not possible and that it could lead to the extinction of the species. Concessions under forest management plans would ensure the survival of mahogany species, but existing mahogany stocks should be carefully evaluated. (See annex)

In the late 1990's, there was a number of small-scale contracts covering areas of up to 1,000 hectares, which made it impossible to monitor and control timber logging. In order to redress this situation, a new law (Act No. 23308) was passed, providing forest access through a competitive bidding process for the allocation of 40-year contracts.

However, illegal logging pressure has increased over the last few years and may be adversely affecting mahogany populations in the country.

CITES Scientific Authorities in Peru have indicated that the proposed project activities will greatly assist them in their ability to effectively implement the Appendix II listing requirements for mahogany. Annex III contains background information on the areas to be assessed by the project which include the most important mahogany producing areas in the south-east of the country near the borders with Brazil and Bolivia.

The 12th Conference of the Parties (COP12) of the CITES Convention adopted the decision to include mahogany (*Swietenia Macrophylla*) in CITES Appendix II. In accordance with this new position, concession holders that wish to harvest mahogany for export purposes must first approach the relevant scientific and administrative authorities so that they can evaluate compliance with management plans and other technical and legal provisions. Once the administrative authority ratifies the approval of the scientific authority, the concession holders can then export their timber.

However, the lack of updated and reliable information about the current situation of this valuable forest product at the national and even the sub-national levels, is a recurrent problem that generates serious difficulties when making decisions related to sustainable management, particularly in relation to individual species such as mahogany. In other words, there is a lack of knowledge about the current stocks of mahogany in the country's forests and particularly in those that have been designated as permanent production forests in accordance with the new legal regime established by the Forestry and Wildlife Law that has been recently promulgated in Peru.

The data on mahogany stocks or stocks of other high commercial value species that are provided by some forest concessionaires are often overstated, showing much higher volumes of these stocks than actual available volumes. The objective is to obtain harvesting permits that will allow them to extract timber volumes several times higher than the allowable cuts or practice illegal logging in other areas.

The following table shows the current situation of mahogany exploitation in Peru, which must be corrected in order to comply with the CITES-MAHOGANY agreement and thus place this species in a provisional status and, if possible, remove it from the Appendix.

Data on mahogany exploitation in Peru

Region	Province	Transport method	Protected areas	Level of harvesting of mahogany	Secondary species being harvested
LORETO	Maynas	River: Amazon		Limited; due to previous logging activity	Yes
	Loreto	River: Marañón and Iquitos	Pacaya-Samiria National Reserve	Moderate; by indigenous communities; Illegal logging in the Pacaya-Samiria national reserve	Yes
	Alto Amazonas	Road: road to Chiclayo; River: Huallaga to Iquitos		Intensive; in the short term with the improvement of road access. Forest contracts over large areas-forest management practices?	Yes
	Ramón Castilla	River, Yavarí to Brazil		Illegal logging in Yavarí	Yes
	Requena	River: Tapiche to Ucayali to Pucallpa	Pacaya-Samiria National Reserve	Intensive; Alto Tapiche, Blanco; Illegal activity in Pacaya-Samiria	No
	Ucayali	River: Ucayali to Pucallpa	Cordillera Azul National Park	Intensive	?
SAN MARTIN	Picota	Marginal road	Cordillera Azul National Park	Moderate; due to previous logging. Illegal logging in national park.	Yes
	Bellavista	Marginal road	Cordillera Azul National Park	Moderate; due to previous logging. Illegal logging in national park.	Yes
	Mariscal Cáceres	Marginal road		Moderate; due to previous logging	Yes
	Tocache	Marginal road		Moderate; due to previous logging	Yes
UCAYALI	Coronel Portillo	River: Ucayali to Pucallpa		Limited; due to previous logging	Yes
	Padre Abad	Land: Tingo Maria to Lima road		Moderate due to previous logging	SI
	Atalaya	River: Ucayali to Pucallpa; Air, from Breu		Intensive	No
	Purús	Air: military cargo planes	Alto Purús	Intensive; Illegal logging in the reserve	No
MADRE DE DIOS	Tambopata	Road to Cusco (Mazuko); Air	Tambopata-Candamo; Bahuaja-Sonene	Limited due to the protected areas and the ecological conditions	Yes
	Tahuamanu	River: Tahuamanu, de los Amigos, de las Piedras; Land: Road to Pto. Maldonado	Alto Purús	Intensive and highly illegal due to the zoning of the area (Tahuamanu, Amigos, Piedras, area of indigenous peoples that have not been contacted)	No
	Manu	Road to Cusco (Kosnipata); River: Alto Madre to Pto Maldonado	Manu; Amerakaeri	Limited due to the protected areas and the ecological conditions	Yes/ No

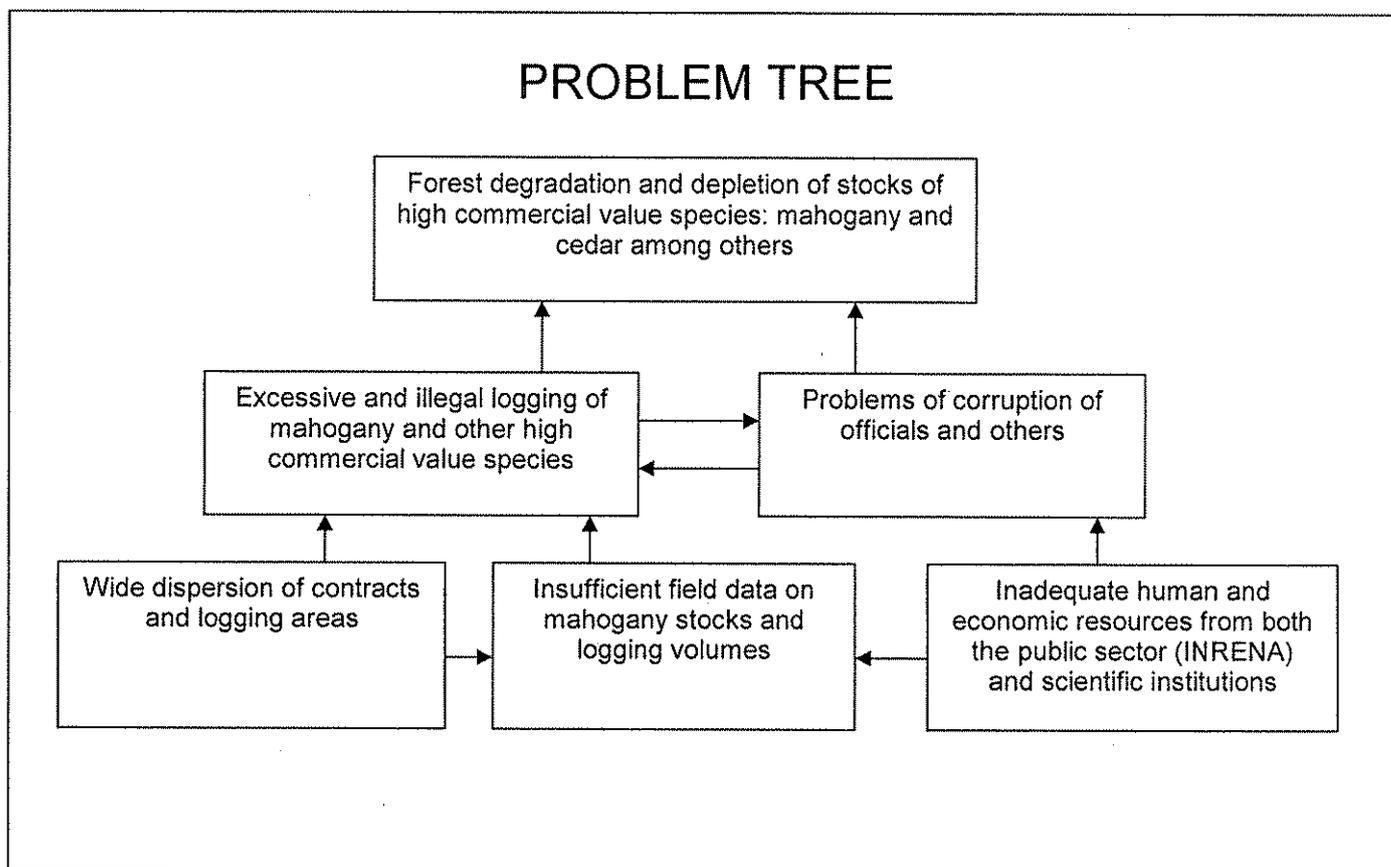
The natural range area for mahogany goes from Mexico down to Bolivia, going through Peru and Brazil, and the species is found under different environmental conditions, particularly in relation to temperature and rainfall levels. The moist tropical region has rainfall levels of between 1200 and 2000 mm over periods of between 3 to 6 months of the year. The Peruvian Amazon region, which covers an area of 46,560,551 hectares, is well suited for the development of mahogany species.

As well as the native community areas, Peru has allocated a total of 24,496,291 hectares of Amazon forests for production purposes. The departments of Madre de Dios, Ucayali and San Martin have a total of 8.1 million hectares and, according to available statistics, 80% of mahogany exports are produced in these departments. (See annex)

The scientific authority for the monitoring and export of mahogany and the Faculty of Forestry of UNALM urgently require support to implement an evaluation of current mahogany stocks in the Peruvian Amazon region and in particular in the areas that are traditionally production areas of this species. The objective of

the evaluation is to establish allowable cuts and clearly define their position vis-à-vis the logging and marketing of mahogany in accordance with the requirements established under Appendix II of CITES.

The problem tree clearly indicates the situation that the project seeks to rectify.



This project addresses the main problem arising out of the continued harvesting of mahogany in accordance with actual forest stocks, the application of CITES Appendix II and the decisions that the administrative and scientific authorities must make to this end. The lack of updated and reliable information on available commercial stocks of this species makes it impossible to implement the above actions, which will only be achieved through the immediate assessment of these stocks based on highly reliable, reasonably expedient and low-cost systems.

2.2 Intended situation after project completion

After the completion of the three-year project implementation period, the situation should be as follows:

- 2.2.1 The problem related to the availability of reliable and necessary data on current and future mahogany stock levels will have been resolved, and allowable cuts will have been determined.
- 2.2.2 A fairly complete database will have been established in the project study areas, which will be available to all potential users.
- 2.2.3 The public sector will have formulated clear policies and strategies, providing the private sector with sufficient data and proof to ensure the constructive participation of this sector in a joint plan with the government aimed at the sustainable management of natural forests and, in particular, of the species being considered in this study.

2.3 Project strategy

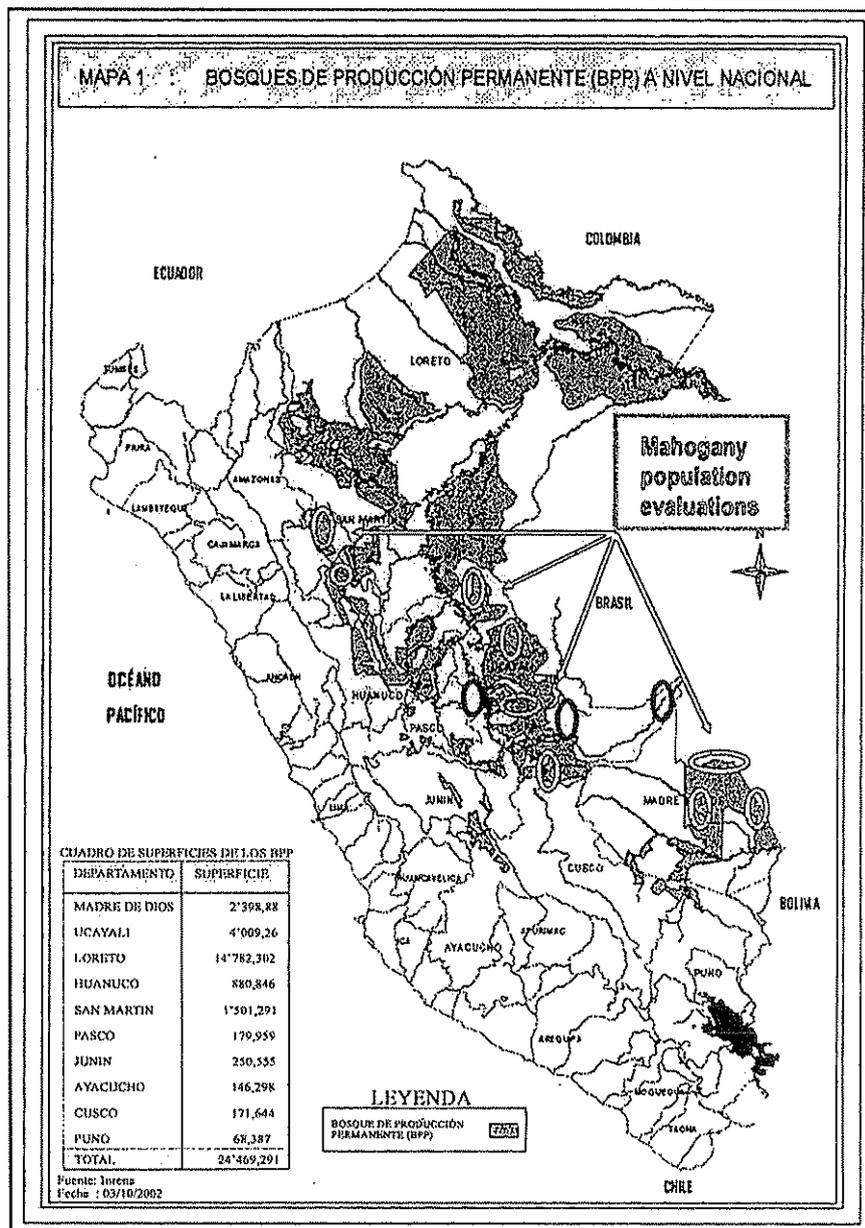
The project will implement a comprehensive study of all the available cartographic and documentary information on the presence and availability of *Swietenia macrophylla*, as well as a study of satellite images, field monitoring and forest inventories with a view to obtaining adequate and reliable information. The project

will bring together forest professionals and specialists, users and decision-makers so that they can jointly formulate and propose a sustainable mahogany harvesting strategy for the Peruvian Amazon region.

In order to take maximum advantage of the fixed costs of mapping, field work systems, etc., the project will also compile data on the existence, volume and regeneration capacity of other high commercial value forest species found in the sampling units, such as cedar (*Cedrela odorata*), ishpingo (*Amburana cearencis*) and tornillo (*Cedrelinga Catenaeformis*).

Inventoried forest concessions cover an estimated area of 4.1 million hectares of the total area of permanent production forests that have been allocated in San Martin, Madre de Dios and Ucayali. This project will select a total of 09 evaluation sites located in permanent production forests and 03 sites in indigenous community areas (see Map 3).

MAP 3



2.4 Target beneficiaries

The direct project target beneficiaries will include:

The forest scientific and administrative authorities, which will obtain the necessary data for decision making, the sustainable management of mahogany and the implementation of CITES Appendix II.

Forest users and concession holders, local governments and forest traders, who will have information on the potential, sound management requirements and more efficient mahogany harvesting practices, which will also help them to better position themselves in the international market.

Academic and research institutions, which will benefit from the information and methodology developed during project implementation, as well as during their participation in specific project phases.

2.5 Technical and scientific aspects

1. In 2002, Peru was the leading exporter of mahogany in the international market. Eighty five per cent (85%) of all mahogany stocks imported into the North American market came from Peru and one single company supplied 75% of all the mahogany exported.
2. Several methods have been established to "legalise" mahogany at different points of the production chain, from the Amazon forest to the shipping port in Callao.
3. The implementation of the new Forestry Law of Peru provides for the sustainable management of natural forests over long periods of time (40 years); after prolonged discussions, the different groups of forest loggers accepted the basic principles of sustainable forest management.
4. INRENA, the government institution responsible for controlling timber logging and trade, has a very limited number of trained staff, a weak field infrastructure and very limited economic resources to control the whole forest production chain.
5. Timber loggers and timber traders usually exaggerate data on valuable timber species stocks in their concession areas, and INRENA cannot carry out the required field checks. As a result, there is a high volume of "legalised" mahogany on the market which originates from these "false" forest inventories
6. The data provided by the current concession holders must be verified by comparing them with the results of field studies (forest and sawmill).
7. It is possible that under the current logging regime mahogany stocks may be depleted within the next 10 years, despite the assurances to the contrary given by timber loggers and traders.
8. The logging ban imposed by the Government in October 1999 in certain areas rich in this species did not stop illegal logging. On the contrary, the ban gave rise to creative ways of breaking the law and thus perpetuate the mahogany "mafia". The ban was lifted in 2001.
9. Encroachment of mahogany timber loggers into remote native community areas with logging bans in place have resulted in violent clashes with isolated local communities.
10. In the year 2000, the price of mahogany in Amazon cities ranged from \$267 to \$489/m³. In Lima the average price was \$542/m³, and the price in the international market was \$900-1200 m³.

Methodology for the assessment of stocks:

The assessment of mahogany stocks in the forests of the Amazon region of the country will be carried out through the following technical/scientific procedures.

- 1 Collection, evaluation and analysis of currently available information (maps, reports, etc.). This activity will allow verification of inventory data submitted by concessionaires and other mahogany producers as part of their forest management plans. It will include field checking and

- forest inventories (using limited new sample plots) in selected areas that will be classified in accordance with a range of densities.
- 2 Detailed study of TM satellite images of selected areas (approximately 15 images) at a scale of 1/100,000 and field checking in representative and special interest areas.
The study of TM satellite images, while not allowing identification of species level detail, will allow, together with ground truthing, the establishment of relationships between mahogany densities and different forest types which are discernible from the TM satellite images. This will also contribute to verification procedures when assessing inventory information submitted as part of forest management plans.
 - 3 Based on the results of items 1 and 2 above, and in so far as data is available, development of a specialised database on mahogany volumes, frequencies, abundance, regeneration capacity, silvicultural indexes and harvesting possibilities by forest type and region at the national, local and regional levels.
 - 4 Workshops for information exchange and coordination of activities for the conservation and management of mahogany. These workshops will disseminate information on mahogany management, inventory techniques, etc. to concessionaires and other relevant stakeholders. Participants from Brazil and Bolivia will also be invited to share the experiences arising from the project outputs through these workshops.
 - 5 The infrastructure and field and office activities will also be used to obtain similar information for other high commercial value species or for other species of concern that may be identified during the field sampling activities.

2.6 Economic aspects

The project will develop a highly reliable reference database that will be available for all stakeholders and relevant institutions, and will also formulate a national strategy for the conservation of the species which, if implemented, will lead to the development of appropriate management plans in accordance with existing stocks of the species, thus ensuring important improvements in the logging and marketing of mahogany. This in turn will translate into important improvements in the valuation of forests and the transparency of the logging and marketing systems for mahogany, thus enhancing the profile of the country and its industrialists in the international market. With reference to stricter controls and the protection of the species, the project will also provide important benefits as it will ensure a more integrated forest harvesting system which will incorporate other lesser known but more abundant species into the national and international markets.

2.7 Environmental aspects

Environmental benefits are indeed the most important considerations in the main project objective. Given the extrapolation potential of this project, the sustainable management or protection of the species will provide significant and far-reaching environmental benefits, not only for the project region but for the country as a whole.

Furthermore, the project will contribute to forest conservation by ensuring that only available stocks are harvested and by guaranteeing the appropriate conditions so that the natural regeneration of these species will adequately develop into future harvests.

2.8 Social aspects

The economic and social benefits will include a better balance between national and international supply and demand, thus promoting a low impact and more efficient logging of the natural forests under sustainable forest management, which can generate employment and become an important source of work and income generating activities in rural areas.

2.9 Risks

In general terms, no major risks are associated with the implementation of the mahogany assessment and management strategy. The only potential risk for the project, which would not affect this phase but rather its long-term objective, would be if users and decision-makers did not participate in or support the formulation of the mahogany conservation strategy. It is for this reason that the project must develop an extensive strategy for the dissemination, promotion and sharing of project outputs, thus committing users and decision-makers to an active participation in the project.

3. OUTPUTS

3.1 Specific objective 1

Prepare a detailed map on the natural distribution (range) of *Swietenia macrophylla*, including concentration levels, production capacity and areas of greater impact from illegal and legal logging, as well as an assessment of the risk of extinction of this species.

- Output 1.1: Review and compilation of forestry work information currently available for collection, evaluation, analysis and systematisation.
- Output 1.2: Preparation of map on mahogany distribution, concentration, impact levels and areas, at a scale of 1/250,000 with 1/100,000 originals.
- Output 1.3: Development of GIS with the information and results obtained.

3.2 Specific objective 2

Implement a forest inventory based on field sampling and comprehensive review of previous forest assessments so as to collect quantitative and qualitative information on stock volumes, frequency, and silvicultural and ecological indexes of mahogany stocks.

- Output 2.1: Design, implementation and processing of forest inventories and field information survey.
- Output 2.2: Definition of mahogany population characteristics, and current and future status at the national, regional and local levels, according to forest type, regeneration capacity and critical areas.

3.3 Specific objective 3

Develop a proposal for a national conservation strategy based on sustainable forest management and low impact logging of *Swietenia macrophylla* to provide the scientific community and administrative authorities of the Peruvian forest sector with sufficient elements to facilitate decision-making regarding the effective implementation of the CITES Appendix II listing of this species.

- Output 3.1: Implementation of 3 workshops or meetings for the dissemination of results and information sharing on strategies to be followed in sustainable forest management plans as the basis for mahogany conservation.
- Output 3.2: Development of proposal for action plan and strategy aimed at mahogany conservation and sustainable management.

4. ACTIVITIES

4.1 Output 1.1

Review and compilation of forestry work information currently available for collection, evaluation, analysis and systematisation.

- Activity 1.1.1: Compilation of information from inventories carried out over the last 15 years.
- Activity 1.1.2: Location of reviewed studies for preliminary zoning of mahogany production areas.
- Activity 1.1.3: Systematisation of collected information.

4.2 Output 1.2

Preparation of map on mahogany distribution, concentration, impact levels and areas, at a scale of 1/250,000 with 1/100,000 originals.

- Activity 1.2.1: Location of reviewed studies on map.
- Activity 1.2.2: Development of scales for definition of concentrations and impacts.
- Activity 1.2.3: Field checking of preliminary results.

4.3 Output 1.3

Development of GIS with the information and results obtained.

- Activity 1.3.1: Development of dynamic database with information on mahogany producing areas and particularly on their status.
- Activity 1.3.2: Making database available to national users.

4.4 Output 2.1

Design, implementation and processing of forest inventories and field information survey.

- Activity 2.1.1: Identification of criteria to define sample size.
- Activity 2.1.2: Field location of sample plots.
- Activity 2.1.3: Field information survey.
- Activity 2.1.4: Information processing.

4.5 Output 2.2

Definition of mahogany population characteristics, and current and future status at the national, regional and local levels, according to forest type, regeneration capacity and critical areas.

- Activity 2.2.1: Definition of plot size, field location and information survey.
- Activity 2.2.2: Characterisation of mahogany populations, their distribution by area and regeneration status.
- Activity 2.2.3: Establishment of allowable cut at the national, regional and local levels.

4.6 Output 3.1

Implementation of 3 workshops or meetings for the dissemination of results and information sharing on strategies to be followed in sustainable forest management plans as the basis for mahogany conservation.

- Activity 3.1.1: Preparation of workshops.
- Activity 3.1.2: Development of dissemination material.
- Activity 3.1.3: Implementation of workshops.

4.7 Output 3.2

Development of proposal for action plan and strategy aimed at mahogany conservation and sustainable management.

- Activity 3.2.1: Participatory development of mahogany conservation proposal.
- Activity 3.2.2: Conservation mechanisms implementation strategy.

5. Logical framework worksheets

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS /RISKS
<p>DEVELOPMENT OBJECTIVE: The main objective of this project is to provide integrated, comprehensive, detailed, updated and highly reliable information on mahogany stocks from Amazon forests in Peru, in order to establish the annual allowable cut of this species at the national, regional and local levels so as to identify annual or regular harvesting quotas, develop a national strategy and ensure its implementation in sustainable management plans with a view to biodiversity conservation and sustainable forest resource management.</p>	<p>Annual or regular allowable cut and annual harvesting quota established at the national, regional and local levels. Forest supply and demand balance established.</p>	<p>Coordination office reports. Documents published on methodology applied and quota establishment.</p>	<p>National and regional forest policies continue encouraging sustainable forest management. Reduction of conflicts between the national and regional governments.</p>
<p>SPECIFIC OBJECTIVE 1: Prepare a detailed map on the natural distribution (range) of <i>Swietenia macrophylla</i>, including concentration levels, production capacity and areas of greater impact from illegal and legal logging, as well as an assessment of the risk of extinction of this species.</p>	<p>Species concentration levels identified and production capacity deterioration risks assessed.</p>	<p>Reports on map preparation. Map published.</p>	<p>The national policy is maintained and regional conflicts have decreased.</p>
<p>SPECIFIC OBJECTIVE 2: Implement a forest inventory based on field sampling and comprehensive review of previous forest assessments so as to collect quantitative and qualitative information on stock volumes, frequency, and silvicultural and ecological indexes of mahogany stocks.</p>	<p>Mahogany stocks assessed based on reliable information at the national, regional, local and concession levels.</p>	<p>Inventory reports and information processed.</p>	<p>No relevant assumptions.</p>
<p>SPECIFIC OBJECTIVE 3: Develop a proposal for a national conservation strategy based on sustainable forest management and low impact logging of <i>Swietenia macrophylla</i> to provide the scientific community and administrative authorities of the Peruvian forest sector with sufficient elements to facilitate decision-making regarding the effective implementation of the CITES Appendix II listing of this species.</p>	<p>Mahogany conservation strategy proposal in the process of being accepted and implemented.</p>	<p>Dissemination material and reports.</p>	<p>Mahogany is maintained in Appendix II of CITES and the State maintains its species restoration policy.</p>
<p>OUTPUT 1.1: Review and compilation of forestry work information currently available for collection, evaluation, analysis and systematisation</p>	<p>Information collected and systematised.</p>	<p>Reports on collected and analysed material.</p>	<p>Unavailability of information.</p>
<p>OUTPUT 1.2: Preparation of map on mahogany distribution, concentration, impact levels and areas, at a scale of 1/250,000 with 1/100,000 originals</p>	<p>Mahogany producing areas identified and located.</p>	<p>Maps of species distribution areas in the country.</p>	<p>No relevant assumptions.</p>

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS /RISKS
OUTPUT 1.3: Development of GIS with the information and results obtained	Database available to users.	Reports and documents.	No relevant assumptions.
OUTPUT 2.1: Design, implementation and processing of forest inventories and field information survey	Quantitative and qualitative information available including basic indicators on conservation status.	Reports on inventory carried out and methodology applied.	Social unrest hinders the implementation of field work.
OUTPUT 2.2: Definition of mahogany population characteristics, and current and future status at the national, regional and local levels, according to forest type, regeneration capacity and critical areas	Current mahogany status and future prospects.	Reports on species status rates and indicators.	No relevant assumptions.
OUTPUT 3.1: Implementation of 3 workshops or meetings for the dissemination of results and information sharing on strategies to be followed in sustainable forest management plans as the basis for mahogany conservation	Project results are known and accepted by major stakeholders.	Report on workshops and meetings.	Stakeholders' unwillingness to participate.
OUTPUT 3.2: Development of proposal for action plan and strategy aimed at mahogany conservation and sustainable management	Species conservation strategy accepted by stakeholders and in the process of being implemented.	Reports.	Forest policies are maintained.

6. Work plan

OUTPUTS / ACTIVITIES	Responsible party	SCHEDULE (in months)																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
OUTPUT 1.1 Review and compilation of forestry work information currently available for collection, evaluation, analysis and systematisation																			
Activity 1.1.1 Compilation of information from inventories carried out over the last 15 years	National Coordinator /Expert	■	■	■															
Activity 1.1.2 Location of reviewed studies for preliminary zoning of mahogany production areas	National Coordinator /Expert			■	■	■													
Activity 1.1.3 Systematisation of collected information	National Coordinator /Expert							■	■										
OUTPUT 1.2 Preparation of map on mahogany distribution, concentration, impact levels and areas, at a scale of 1/250,000 with 1/100,000 originals																			
Activity 1.2.1 Location of reviewed studies on map	National Coordinator /Expert						■	■											
Activity 1.2.2 Development of scales for definition of concentrations and impacts	National Coordinator /Expert								■	■									
Activity 1.2.3 Field checking of preliminary results	National Coordinator /Expert								■	■	■								
OUTPUT 1.3 Development of GIS with the information and results obtained																			
Activity 1.3.1 Development of dynamic database with information on mahogany producing areas and particularly on their status	National Coordinator /Expert						■	■	■	■									
Activity 1.3.2 Making database available to national users	National Coordinator /Expert								■	■	■	■							
OUTPUT 2.1 Design, implementation and processing of forest inventories and field information survey																			
Activity 2.1.1 Identification of criteria to define sample size	National Coordinator /Expert						■	■	■										
Activity 2.1.2 Field location of sample plots	National Coordinator /Expert								■	■									
Activity 2.1.3 Field information survey	National Coordinator /Expert								■	■	■	■	■	■					
Activity 2.1.4 Information processing	National Coordinator /Expert											■	■	■					
OUTPUT 2.2 Definition of mahogany population characteristics, and current and future status at the national, regional and local levels, according to forest type, regeneration capacity and critical areas																			
Activity 2.2.1 Definition of plot size, field location and information survey	National Coordinator /Expert														■	■			

OUTPUTS / ACTIVITIES	Responsible party	SCHEDULE (in months)																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Activity 2.2.2 Characterisation of mahogany populations, their distribution by area and regeneration status	National Coordinator /Expert																		
Activity 2.2.3 Establishment of allowable cut at the national, regional and local levels	National Coordinator /Expert																		
OUTPUT 3.1 Implementation of 3 workshops or meetings for the dissemination of results and information sharing on strategies to be followed in sustainable forest management plans as the basis for mahogany conservation																			
Activity 3.1.1 Preparation of workshops	National Coordinator /Expert																		
Activity 3.1.2 Development of dissemination material	National Coordinator /Expert																		
Activity 3.1.3 Implementation of workshops	National Coordinator /Expert																		
OUTPUT 3.2 Development of proposal for action plan and strategy aimed at mahogany conservation and sustainable management																			
Activity 3.2.1 Participatory development of mahogany conservation proposal	National Coordinator /Expert																		
Activity 3.2.2 Conservation mechanisms implementation strategy	National Coordinator /Expert																		

7. **BUDGET**

7.1 **Budget by component**

CONSOLIDATED YEARLY PROJECT BUDGET

ITTO CONTRIBUTION

BUDGET COMPONENTS		TOTAL	YEAR 1	YEAR 2
10	Project Personnel			
	11 National experts	51 000	45 000	6 000
	13 Other labour	84 000	55 000	29 000
	19 Component Total	135 000	100 000	35 000
20	Subcontracts			
	21 Publications	9 000	3 000	6 000
	22 Preparation of maps and cartography	18 000	10 000	8 000
	29 Component Total	27 000	13 000	14 000
30	Duty Travel			
	31 DSA	36 800	30 000	6 800
	33 Transport costs	28 200	25 000	3 200
	39 Component Total	65 000	55 000	10 000
40	Capital Items			
	44 Capital equipment	40 000	40 000	
	49 Component Total	40 000	40 000	
50	Consumable Items			
	51 Raw materials	5 500	3 000	2 500
	53 Utilities /Fuel	7 000	5 500	1 500
	59 Component Total	12 500	8 500	4 000
60	Miscellaneous			
	61 Sundry	13 100	10 000	3 100
	62 Auditing			
	63 Contingencies	2 400	600	1 800
	69 Component Total	15 500	10 600	4 900
70	Executing Agency Management Costs			
	71 Administration			
	79 Component Total			
	SUBTOTAL	295 000	227 100	67 900
80	ITTO Administration, Monitoring & Evaluation			
	81 Monitoring and review costs	15 000		
	82 Evaluation costs	15 000		
	83 Programme support costs (8%)	26 000		
	89 Component Total	56 000		
90	Refund of pre-project costs			
100	GRAND TOTAL	351 000		

CONSOLIDATED YEARLY PROJECT BUDGET

UNALM/FCF CONTRIBUTION

BUDGET COMPONENTS		TOTAL	YEAR 1	YEAR 2
10	Project Personnel			
	11 National experts	33 000	18 000	15 000
	13 Other labour	4 900	2 500	2 400
	19 Component Total	37 900	20 500	17 400
20	Subcontracts			
	21 Publications			
	22 Preparation of maps and cartography			
	29 Component Total			
30	Duty Travel			
	31 DSA	2 200	1 000	1 200
	33 Transport costs	2 000	1 000	1 000
	39 Component Total	4 200	2 000	2 200
40	Capital Items			
	44 Capital equipment	9 000	9 000	
	49 Component Total	9 000	9 000	
50	Consumable Items			
	51 Raw materials	1 500	1 000	500
	53 Utilities /Fuel	2 100	1 500	600
	59 Component Total	3 600	2 500	1 100
60	Miscellaneous			
	61 Sundry	1 900	1 400	500
	62 Auditing			
	63 Contingencies	600	600	
	69 Component Total	2 500	2 000	500
70	Executing Agency Management Costs			
	71 Administration	52 076	35 000	17 076
	79 Component Total	52 076	35 000	17 076
	SUBTOTAL	109 276	71 000	38 276
80	ITTO Administration, Monitoring & Evaluation			
	81 Monitoring and review costs			
	82 Evaluation costs			
	83 Programme support costs (8%)			
	89 Component Total			
90	Refund of pre-project costs			
100	GRAND TOTAL	109 276		

CONSOLIDATED YEARLY PROJECT BUDGET

WWF-PERU CONTRIBUTION

BUDGET COMPONENTS		TOTAL	YEAR 1	YEAR 2
10	Project Personnel			
	11 National experts	21 000	12 000	9 000
	13 Other labour	7 500	3 900	3 600
	19 Component Total	28 500	15 900	12 600
20	Subcontracts			
	21 Publications			
	22 Preparation of maps and cartography			
	29 Component Total			
30	Duty Travel			
	31 DSA	8 000	6 000	2 000
	33 Transport costs	3 200	2 000	1 200
	39 Component Total	11 200	8 000	3 200
40	Capital Items			
	44 Capital equipment			
	49 Component Total			
50	Consumable Items			
	51 Raw materials	3 500	3 000	500
	53 Utilities /Fuel	3 000	2 000	1 000
	59 Component Total	3 500	5 000	1 500
60	Miscellaneous			
	61 Sundry	2 500	2 000	500
	62 Auditing	8 000	4 000	4 000
	63 Contingencies	1 450	1 000	450
	69 Component Total	11 950	7 000	4 950
70	Executing Agency Management Costs			
	71 Administration	9 552	5 752	3 800
	79 Component Total	9 552	5 752	3 800
	SUBTOTAL	67 702	41 652	26 050
80	ITTO Administration, Monitoring & Evaluation			
	81 Monitoring and review costs			
	82 Evaluation costs			
	83 Programme support costs (8%)			
	89 Component Total			
90	Refund of pre-project costs			
100	GRAND TOTAL	67 702		

7.2 Budget by year and by source

YEARLY BUDGET BY SOURCE – ITTO

/ ANNUAL DISBURSEMENTS	TOTAL	YEAR 1	YEAR 2
BUDGET COMPONENTS			
10 Project personnel	135 000	100 000	35 000
20 Subcontracts	27 000	13 000	14 000
30 Duty/study travel	65 000	55 000	10 000
40 Capital items	40 000	40 000	
50 Consumable items	12 500	8 500	4 000
60 Miscellaneous	15 500	10 600	4 900
Subtotal 1	295 000	227 100	67 900
80 Administration, monitoring and evaluation	30 000		
Subtotal 2	325 000		
83 Programme support costs (8%)	26 000		
90 Refund of pre-project costs			
ITTO TOTAL	351 000		

YEARLY BUDGET BY SOURCE – UNALM/FCF – WWF

/ ANNUAL DISBURSEMENTS	TOTAL	YEAR 1	YEAR 2
BUDGET COMPONENTS			
10 Project personnel	66 400	36 400	30 000
20 Subcontracts			
30 Duty/study travel	15 400	10 000	5 400
40 Capital items	9 000	9 000	
50 Consumable items	10 100	7 500	2 600
60 Miscellaneous	14 450	9 000	5 450
70 Executing Agency Management Costs	61 628	40 752	20 876
EXECUTING AGENCY TOTAL	176 978	112 652	64 326

OVERALL PROJECT BUDGET BY ACTIVITY											
	10	20	30	40	50	60	70	80	90	TOTAL	QTR/YEAR
O.1.1											
A.1.1.1	6864 (I) 3376(E)		600 (I) 200 (E)	3000(E)	750(I) 500(E)	800 (I) 735 (E)				9014 (I) 7811 (E)	Q1, Y1
A.1.1.2	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	800 (I) 735 (E)				8764 (I) 5011 (E)	Q1,Q2,Y1
A.1.1.3	4576(I) 2250(E)		600(I) 400(E)		500(I) 500(E)	400 (I) 485 (E)				6076 (I) 3635 (E)	Q3,Y1
O.1.2											
A.1.2.1	4576(I) 2250(E)		2000(I) 400 (E)	12000 I 2000(E)	1000(I) 500 (E)	1600 (I) 485(E)				21176 (I) 5635 (E)	Q2,Q3,Y1
A.1.2.2	4576(I) 2250(E)	18000(I)	800(I) 800 (E)	2000 (I)	500(I) 500(E)	400 (I) 485 (E)				26276 (I) 4035 (E)	Q3,Y1
A.1.2.3	6864 (I) 3376(E)		4600(I) 800(E)		1000(I) 500 (E)	800 (I) 735 (E)				13264 (I) 5411 (E)	Q3,Q4,Y1
O.1.3											
A.1.3.1	9160(I) 4511(E)		2400(I) 800 (E)	4000 (I) 1000(E)	750(I) 500(E)	800(I) 987(E)				17110 (I) 7798 (E)	Q2,Q3,Y1
A.1.3.2	9152(I) 4501(E)		800(I) 800 (E)		500(I) 500(E)	800(I) 987(E)				11252 (I) 6788 (E)	Q3,Q4,Y1
O.2.1											
A.2.1.1.	6864 (I) 3376(E)		1400(I) 400(E)	5000 (I)	500(I) 500(E)	800 (I) 735 (E)				14564 (I) 5011 (E)	Q2,Q3,Y1
A.2.1.2	4576(I) 2250(E)		3200(I) 1200(E)		750(I) 500(E)	400 (I) 485 (E)				8926 (I) 4435 (E)	Q3,Y1
A.2.1.3	11440(I) 5627(E)		20000(I) 2800(E)	12000 I 3000 (E)	1000(I) 500 (E)	1600(I) 1233(E)				46040 (I) 13160 (E)	Q3,Q4,Y1 Q1,Y2
A.2.1.4	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	800 (I) 735 (E)				8764 (I) 5011 (E)	Q4,Y1 ; Q1,Y2
O.2.2											
A.2.2.1	4576(I) 2250(E)		1400(I) 800(E)		500(I) 500(E)	400 (I) 485 (E)				6876 (I) 4035 (E)	Q1,Y2
A.2.2.2	4576(I) 2250(E)		1400(I) 800(E)	3000 (I)	500(I) 500(E)	800 (I) 485 (E)				10276 (I) 4035 (E)	Q1,Q2,Y2
A.2.2.3	4576(I) 2250(E)		1400(I) 800(E)		500(I) 500(E)	800 (I) 485 (E)				7276 (I) 4035 (E)	Q2,Y2
O.3.1											
A.3.1.1	6864 (I) 3376(E)		2800(I) 400(E)	2000 (I)	500(I) 500(E)	800 (I) 735 (E)				12964 (I) 5011 (E)	Q3,Q4,Y1 Q2,Y2
A.3.1.2	6864 (I) 3376(E)	9000 (I)	1000(I) 400(E)		750(I) 500(E)	600 (I) 735 (E)				18214 (I) 5011 (E)	Q3,Q4,Y1 Q2,Y2
A.3.1.3	6864 (I) 3376(E)		9200(I) 1400(E)		500(I) 500(E)	800 (I) 735 (E)				17364 (I) 6011 (E)	Q3,Q4,Y1 Q2,Y2
O.3.2											
A.3.2.1	11440(I) 5627(E)		9600(I) 1000(E)		500(I) 600(E)	1000(I) 1233(E)				22540 (I) 8460 (E)	Q1,Q2,Y2
A.3.2.2	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	300 (I) 735 (E)				8264 (I) 5011 (E)	Q2,Y2
EXEC. A. COSTS							61628 (E)			61628 (E)	
ADM, MON & REV								56000 (I)		56000 (I)	
PROJECT TOTAL	135000 (I) 66400 (E)	27000 (I)	65000 (I) 15400 (E)	40000 (I) 9000 (E)	12500 (I) 10100 (E)	15500 (I) 14450 (E)	61628 (E)	56000 (I)		351000 (I) 177978 (E)	

PART III: OPERATIONAL ARRANGEMENTS

1. Management structure

UNALM's Faculty of Forestry will be responsible to ITTO for the implementation of this project with the participation of WWF – Peru as cooperating agency (through a Memorandum of Understanding signed by both parties).

A Steering Committee will be established at the highest level of the project's organisational structure. This committee will be made up of two representatives from each of the following institutions: WWF-Peru, UNALM/FCF, INRENA, a representative from the National Forestry Chamber (Cámara Nacional Forestal – CNF) and an ITTO representative.

The Steering Committee will meet at least twice a year to approve work plans and progress reports, establish project policies and strategies, and monitor project activities.

Daily project management will be under the responsibility of the Project Coordinator, who will act as Executive Secretary of the Steering Committee.

2. Monitoring, reporting and evaluation

WWF-Peru, ITTO, INRENA, UNALM/FCF and CNF, as Steering Committee members, will be jointly responsible for the monitoring and evaluation of project achievements. Two meetings will be held during the first year to ensure smooth project implementation in its initial stages. Only one meeting will be held during the second year unless otherwise decided by the Committee. WWF-Peru will be responsible for auditing and internal control services during the project implementation period. Regular audits will be carried out and the relevant reports will be made available to the Steering Committee. The Project Coordinator will be responsible for preparing regular progress reports and the project completion report in accordance with ITTO requirements.

3. Future operation and maintenance

Upon project completion, local stakeholders, in conjunction with INRENA, will take over the implementation of the proposal within the framework of the Forestry and Wildlife Law and CITES, as a way of ensuring the sustainable management of mahogany and natural tropical forests in general in Peru.

Furthermore, coordination links will be established to ensure that local and regional governments incorporate the sustainable mahogany harvesting and management strategy into their work programs and budgets. To this end, WWF-Peru, UNALM/FCF and INRENA will provide technical assistance as required.

PART IV: THE TROPICAL TIMBER FRAMEWORK

1. Compliance with ITTO objectives

This project is included within the framework of and is closely related to the objectives set out in Article I of the International Tropical Timber Agreement, 1994. A description of the relevance of expected project outputs to these objectives is given below:

- ❖ Objective a: The Project will provide technical and scientific information on environmental, ecological, economic, social and cultural aspects, in the context of the harvesting of mahogany and the adequate management of this species, which will be supplied at the national and international levels and will facilitate consultations and field visits by the personnel working in the Amazon sub-region.
- ❖ Objective b: The Project will contribute to the process of sustainable forest management and development, establishing allowable cut levels for the harvesting of species of high commercial value, particularly mahogany, and planning and zoning activities for an improved administration, integrated utilisation and conservation of resources.
- ❖ Objective c: The local capacity of the country and other ITTO members will be enhanced in relation to the implementation of strategies for the conservation of the species and mechanisms for the market introduction of products and resources from sustainably managed forests that are socially, economically and ecologically viable.
- ❖ Objective d: Sustainable forest management will lead to the establishment of production areas for local consumption, where the commercial availability of the species and its genetic resources will not be affected, with potential to satisfy, in the medium to long term, the demand of the international trade, ensuring the harmonisation of strategies to achieve equitable prices for producers and consumers.
- ❖ Objective e: The integrated management of resources, including forests, water, soils, timber and non-timber products, will be ensured with the active participation of the local communities, using the most suitable methodologies and technologies developed as a result of research and development activities.
- ❖ Objective f: Project actions will serve as an example for the use of knowledge acquired at a larger scale and will contribute to the development of action plans with a view to improving the capacity for the conservation of genetic resources and the sustainable utilisation of major commercial forest species.
- ❖ Objective g: Using adequate sustainable forest management mechanisms and appropriate silvicultural practices, it will be possible to achieve a better utilisation of the species under study and various timber and non-timber products, ensuring more efficient and higher value-added processing.
- ❖ Objective m: The Project will generate relevant information on forest management, zoning and characterisation technologies as well as on sustainable forest utilisation, and will help to improve access to knowledge and information in this field.

2. Compliance with ITTO Action Plan

The proposed project is consistent with the project-related activities of the Organisation described in Article 25 of the ITTA 1994. Furthermore, the proposal takes into account the priorities and guidelines established in the ITTO Libreville Action Plan (1998 – 2001). In particular, it is related to the areas of biodiversity conservation, genetic resources conservation, commercial valuation of natural forests, reforestation and forest management (section 3.2 of the Action Plan) and specifically to Goal 1, actions 1, 2, 4 and 7, and Goal 2, actions 1, 4 and 5.

With regard to Goal 1, the Project envisages activities aimed at sustainable production, increase of knowledge and information for the establishment of sustainable forest management guidelines, and support to raise awareness at all levels. In addition, the Project will contribute to the sustainable harvesting and conservation of mahogany and other commercial species found in forest ecosystems, with the participation of forest authorities, concessionaires, local communities and NGOs. The project will particularly focus on the prevention of illegal and destructive logging activities.

The Project is consistent with Goal 2, actions 1, 3, 4 and 5 because expected project outputs are related to the adequate and sustainable use of resources by developing and implementing forest management guidelines and criteria.

Furthermore, the Project is directly related to what was agreed and recommended by the Thirty-Fourth Session of the International Tropical Timber Council, i.e. to assist mahogany producing countries in the formulation and submission of projects to increase the knowledge on the species status and future prospects to ensure its conservation.

ANNEX A – PROFILE OF THE EXECUTING AGENCY

3.1 Expertise of the executing agency

The National Agrarian University of La Molina – UNALM is an institution that for over 100 years has been offering services to the country in the fields of teaching, research and social projection, and has been committed to the rural development of the country and less favoured populations, generating appropriate, easy-to-understand, and user-friendly technologies in its fields of expertise, which include the area of forestry under the responsibility of its Faculty of Forestry – FCF.

UNALM has concluded a number of agreements and international technical cooperation arrangements between the Swiss, Dutch, Canadian, American, Spanish, Belgian governments and the Faculty of Forestry.

FCF has a permanent faculty devoted to teaching and research activities in the areas of silviculture, forest management, forest ecology, forestry measurement and forest industry, covering a wide range of disciplines from physical-mechanical assessments to chemical processing.

In addition, the Faculty has wood technology, preservation and drying, forest seed, silvicultural and other laboratories.

FCF has established a very good relationship with both forest concessionaires and forest industrialists, as well as other national and international research institutions.

3.2 Infrastructure of the executing agency

The Faculty has laboratories in the following areas: wood technology, mechanical and chemical processing, silviculture, dendrology, forest measurement and monitoring, and has capacity to develop geographic information systems.

In addition, it has experimental areas in various locations throughout the country, including the Forest Training Unit of Dantas in Pachitea and Adefor in Cajamarca, and has concluded agreements with national institutions such as IIAP to carry out research and training work in Genaro Herrera – Iquitos.

3.3 Budget

The Institution's budget is funded by Public Treasury resources, which are not sufficient and are therefore supplemented by commercial activities carried out by the University through its production units. The allocated budget is approximately US\$300,000, of which 80% is used in the payment of salaries.

3.4 Personnel

The Faculty has professors with PhD degrees in the areas of dendrology and wood chemistry and with Master's degrees in the areas of forestry measurement, watershed management, wood technology and silviculture, while the remaining faculty members have extensive experience in the field and have all completed training courses and education in various parts of the world.

ANNEX B – CURRICULA VITAE OF THE KEY STAFF

Project key staff

The technical aspects of the project will be managed by a general coordinator specialised in forest evaluation, who will work for the project for a period of 18 months; an expert in forest mapping and GIS, who will work for a period of 12 months; a botanical and forest ecology expert during 8 months; a systems expert over a period of 4 months; national consultants for a total period of 6 months, as well as field personnel and assistants as required by the relevant work plan.

Other personnel not already employed by the University may also be recruited as needed to meet work requirements. The terms of reference of the above positions are given below.

TERMS OF REFERENCE OF PROJECT PROFESSIONAL STAFF

A. EXPERT IN FOREST RESOURCES ASSESSMENT

Forest engineer specialised in the assessment of forest resources with a thorough knowledge of geographic information systems, forest inventories and photo-interpretation.

Duties:

1. In close coordination with the scientific and administrative authorities in charge of the implementation of CITES in Peru, this expert will be responsible for coordinating project technical and administrative activities during the project implementation period.
2. Design and implement a GIS to develop the project cartography.
3. Coordinate the preparation of a location map of mahogany population concentration and risk and degraded areas in the Amazon Region of Peru, prepare the map legend, and supervise the photo-interpretation work in all its phases.
4. Design and supervise the forest inventory for the evaluation of forests containing mahogany and other valuable species.
5. Participate, in conjunction with other project professionals, in the preparation of a manual for the evaluation of the results of field and office work.
6. Participate in the development of a proposal of a management strategy for mahogany and other high commercial value species identified through the above forest inventories.
7. Prepare project technical and administrative reports.

Duration of contract: 18 months.

Location: Lima, with frequent trips to the Forest Region.

B. EXPERT IN FOREST MAPPING

Under the supervision of the Project Coordinator and in coordination with other project professionals, the forest mapping expert will perform the following duties:

1. Preliminary and final photo-interpretation and preparation of relevant maps for the demarcation of mahogany population concentration and risk areas, using satellite images and relevant aerial photographs, and corresponding field checking activities.
2. Coordinate field checking activities to validate the photo-interpretation process.
3. Participate in the design of a GIS system to develop the project cartography, in the preparation of the manual for the assessment of forests containing commercial species populations and risk areas for mahogany populations and other high commercial value species.

4. Prepare technical reports as required.

Duration of contract: 12 months.

Location: Lima, with regular trips to the Forest Region.

C. EXPERT IN FOREST PHENOLOGY AND BOTANY

Under the supervision of the Project Coordinator, the forest phenology and botanical expert will perform the following duties:

1. Participate in the cartography development process so as to identify areas susceptible to imminent or potential degradation, and demarcate the areas that should be protected.
2. Carry out the work related to botanical identification and phenological information on forest species found in the field.
3. Participate in the development of a proposal of a management strategy for mahogany and other high commercial value forest species.
4. Participate in studies and field surveys on the use of forest resources.
5. Prepare technical reports as required.

Duration of contract: 8 months.

Location: Lima, with regular trips to the project area.

D. SYSTEMS EXPERT

Under the supervision of the Project Coordinator, the Systems Expert will perform the following duties:

1. Prepare a prototype proposal for a database to be developed in conjunction with the GIS, photo-interpretation, conservation and socio-economic experts.
2. Develop the most suitable database system on the basis of the tests of the previously developed prototype.
3. Participate in the data entry and analysis process.
4. Train the project staff in the use of the system.
5. Participate in the preparation of the manual for secondary forest evaluation.
6. Prepare technical reports as required.

Duration of contract: 4 months.

Location: Lima.

ANNEX C – TERMS OF REFERENCE FOR SUBCONTRACTS

PUBLICATIONS SUBCONTRACT

The Publications Unit will:

1. Have the facilities required for the editing and publication of texts.
2. Have an offset printing system to produce and reproduce dissemination material, reports, methodological documents and other relevant documentation.
3. Have the facilities required for printing maps of various characteristics and incorporating them into the different types of documents to be produced.
4. Use high-quality materials.

MAPPING AND CARTOGRAPHY SUBCONTRACT

The Mapping and Cartography Unit will:

1. Have the GIS software most commonly used in the country, among others.
2. Have the software required for editing and printing maps of various characteristics.
3. Have the facilities required to print maps of different sizes and characteristics.
4. Have the facilities required to process, analyse and interpret satellite images and aerial photographs.

ANNEX I

OVERALL PROJECT BUDGET BY ACTIVITY											
	10	20	30	40	50	60	70	80	90	TOTAL	QTR/YEAR
O.1.1											
A.1.1.1	6864 (I) 3376(E)		600 (I) 200 (E)	3000(E)	750(I) 500(E)	800 (I) 735 (E)				9014 (I) 7811 (E)	Q1, Y1
A.1.1.2	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	800 (I) 735 (E)				8764 (I) 5011 (E)	Q1,Q2,Y1
A.1.1.3	4576(I) 2250(E)		600(I) 400(E)		500(I) 500(E)	400 (I) 485 (E)				6076 (I) 3635 (E)	Q3,Y1
O.1.2											
A.1.2.1	4576(I) 2250(E)		2000(I) 400 (E)	12000 I 2000(E)	1000(I) 500 (E)	1600 (I) 485(E)				21176 (I) 5635 (E)	Q2,Q3,Y1
A.1.2.2	4576(I) 2250(E)	18000(I)	800(I) 800 (E)	2000 (I)	500(I) 500(E)	400 (I) 485 (E)				26276 (I) 4035 (E)	Q3,Y1
A.1.2.3	6864 (I) 3376(E)		4400(I) 1000(E)		1000(I) 500 (E)	800 (I) 735 (E)				13064 (I) 5611 (E)	Q3,Q4,Y1
O.1.3											
A.1.3.1	9160(I) 4511(E)		2400(I) 800 (E)	4000 (I) 1000(E)	750(I) 500(E)	800(I) 987(E)				17110 (I) 7798 (E)	Q2,Q3,Y1
A.1.3.2	9152(I) 4501(E)		800(I) 800 (E)		500(I) 500(E)	800(I) 987(E)				11252 (I) 6788 (E)	Q3,Q4,Y1
O.2.1											
A.2.1.1	6864 (I) 3376(E)		1400(I) 400(E)	5000 (I)	500(I) 500(E)	800 (I) 735 (E)				14564 (I) 5011 (E)	Q2,Q3,Y1
A.2.1.2	4576(I) 2250(E)		3200(I) 1200(E)		750(I) 500(E)	400 (I) 485 (E)				13937 (I) 4435 (E)	Q3,Y1
A.2.1.3	11440(I) 5627(E)		20000(I) 2800(E)	12000 I 3000 (E)	1000(I) 500 (E)	1600(I) 1233(E)				46040 (I) 13160 (E)	Q3,Q4,Y1 Q1,Y2
A.2.1.4	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	800 (I) 735 (E)				21924 (I) 5011 (E)	Q4,Y1 ; Q1,Y2
O.2.2											
A.2.2.1	4576(I) 2250(E)		1400(I) 800(E)		500(I) 500(E)	400 (I) 485 (E)				6876 (I) 4035 (E)	Q1,Y2
A.2.2.2	4576(I) 2250(E)		1400(I) 800(E)	3000 (I)	500(I) 500(E)	800 (I) 485 (E)				10276 (I) 4035 (E)	Q1,Q2,Y2
A.2.2.3	4576(I) 2250(E)		1400(I) 800(E)		500(I) 500(E)	800 (I) 485 (E)				7276 (I) 4035 (E)	Q2,Y2
O.3.1											
A.3.1.1	6864 (I) 3376(E)		2800(I) 400(E)	2000 (I)	500(I) 500(E)	800 (I) 735 (E)				12964 (I) 5011 (E)	Q3,Q4,Y1 Q2,Y2
A.3.1.2	6864 (I) 3376(E)	9000 (I)	1000(I) 400(E)		750(I) 500(E)	600 (I) 735 (E)				18214 (I) 5011 (E)	Q3,Q4,Y1 Q2,Y2
A.3.1.3	6864 (I) 3376(E)		9200(I) 1400(E)		500(I) 500(E)	800 (I) 735 (E)				17364 (I) 6011 (E)	Q3,Q4,Y1 Q2,Y2
O.3.2											
A.3.2.1	11440(I) 5627(E)		9600(I) 1000(E)		500(I) 600(E)	1000(I) 1233(E)				22500 (I) 8460 (E)	Q1,Q2,Y2
A.3.2.2	6864 (I) 3376(E)		600(I) 400(E)		500(I) 500(E)	300 (I) 735 (E)				8264 (I) 5011 (E)	Q2,Y2
EXEC. COSTS							61628 (E)			61628 (E)	
ADM., MON. & REV.								69351 (I)		69351 (I)	
PRE-PR. REFUND									(I)	(I)	

ANNEX II

MODIFICATIONS MADE IN RESPONSE TO THE 26TH EXPERT PANEL'S RECOMMENDATIONS

RECOMMENDATIONS	MODIFICATIONS
<p>1. Provide more background information on the areas to be assessed by the project and on its link with key problems in Peru, such as illegal logging and lack of data on mahogany stocks, in order to enable the Panel to assess whether the project has the capacity to reach its specific objectives;</p>	<p>The natural range area for mahogany goes from Mexico down to Bolivia, going through Peru and Brazil, and the species is found under different environmental conditions, particularly in relation to temperature and rainfall levels. The moist tropical region has rainfall levels of between 1200 and 2000 mm over periods of between 3 to 6 months of the year. The Peruvian Amazon region, which covers an area of 46,560,551 hectares, is well suited for the development of mahogany species.</p> <p>As well as the native community areas, Peru has allocated a total of 24,496,291 hectares of Amazon forests for production purposes. The departments of Madre de Dios, Ucayali and San Martin have a total of 8.1 million hectares and, according to available statistics, 80% of mahogany exports are produced in these departments. (See annex)</p>
<p>2. If coverage of the whole Peruvian Amazon Region is planned, then contemplate extending the project's timeframe. Attach a map describing the potential areas to be assessed;</p>	<p>Maps are included in the relevant annexes.</p>
<p>3. Clearly describe the role of WWF and consider requesting the collaboration of Peruvian forestry industry associations in the implementation of the project;</p>	<p>WWF-PPO is currently implementing a number of forest resource assessment studies to set the basis for the provision of technical and financial support to concessionaires and native communities. These studies will produce important information for the country on the status of the resource and the harvesting potential of various species, in particular through the CEDEFOR Project, which is currently under implementation. (See Annex)</p>
<p>4. Include both detailed and consolidated budgets by both activities and components and by source. Transfer the reimbursement of the pre-project costs to the counterpart contribution, as it cannot be covered by ITTO funds unless it was previously approved by Council;</p>	<p>Annex I includes a project budget by activity and project formulation costs have been eliminated from the budget.</p>
<p>5. Adjust the budget for ITTO's Monitoring and Evaluation Costs to US\$ 10,000/year, and recalculate ITTO's Programme Support Cost to the new standard of 6 % of total project costs [ITTO Decision 2(XXX)]; and</p>	<p>The relevant amounts in the budget tables have been revised as per the EP's recommendation.</p>
<p>6. Include an Annex showing the recommendations of the 26th Expert Panel and the respective modifications in tabular form.</p>	<p>Included in this table.</p>

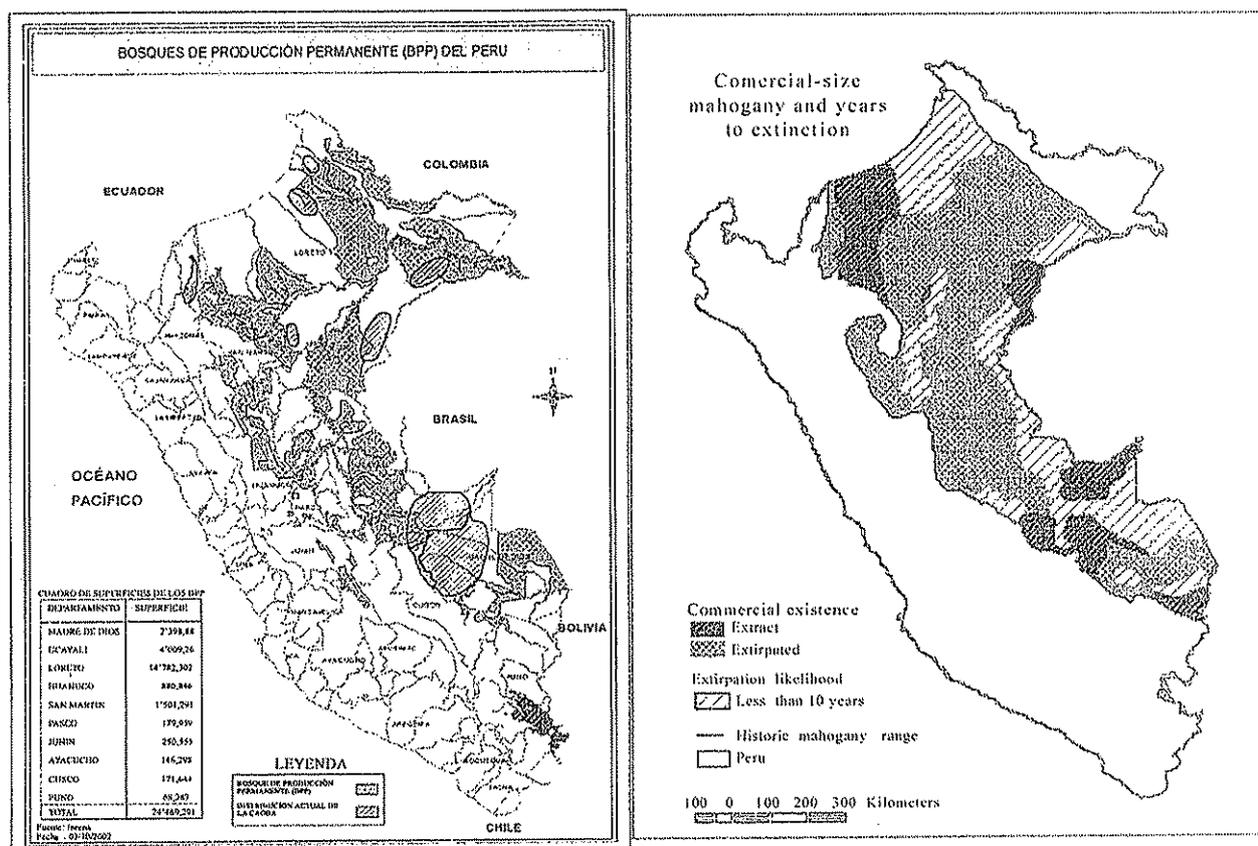
ANNEX III

PD 251/03 (F) Evaluation of Commercial Stocks and Strategy for the Sustainable Management of Mahogany (*Swietenia macrophylla*) in Peru

Background information on the areas to be assessed by the project

The geographic distribution of *Swietenia macrophylla* extends south from subtropical Mexico to Brazil and Bolivia. Over its huge latitudinal range, the species exists under varying environmental conditions, especially in terms of rainfall and soil quality. In the humid tropical rainforest of the Amazon basin as well as in dry tropical forest, development is optimal in dry or humid seasonal climates with an annual precipitation between 1 200 and 2 000 mm, and a marked 3-6 month dry season (Lamb, 1966). Most of the Peruvian Amazonian forest is an ecologically appropriate habitat for *Swietenia macrophylla* and the historical range of mahogany in Peru included 45 560 551 hectares, or about 60 % of the total original forest cover of the eastern side of the Andes (Rios *et al.*, 2002).

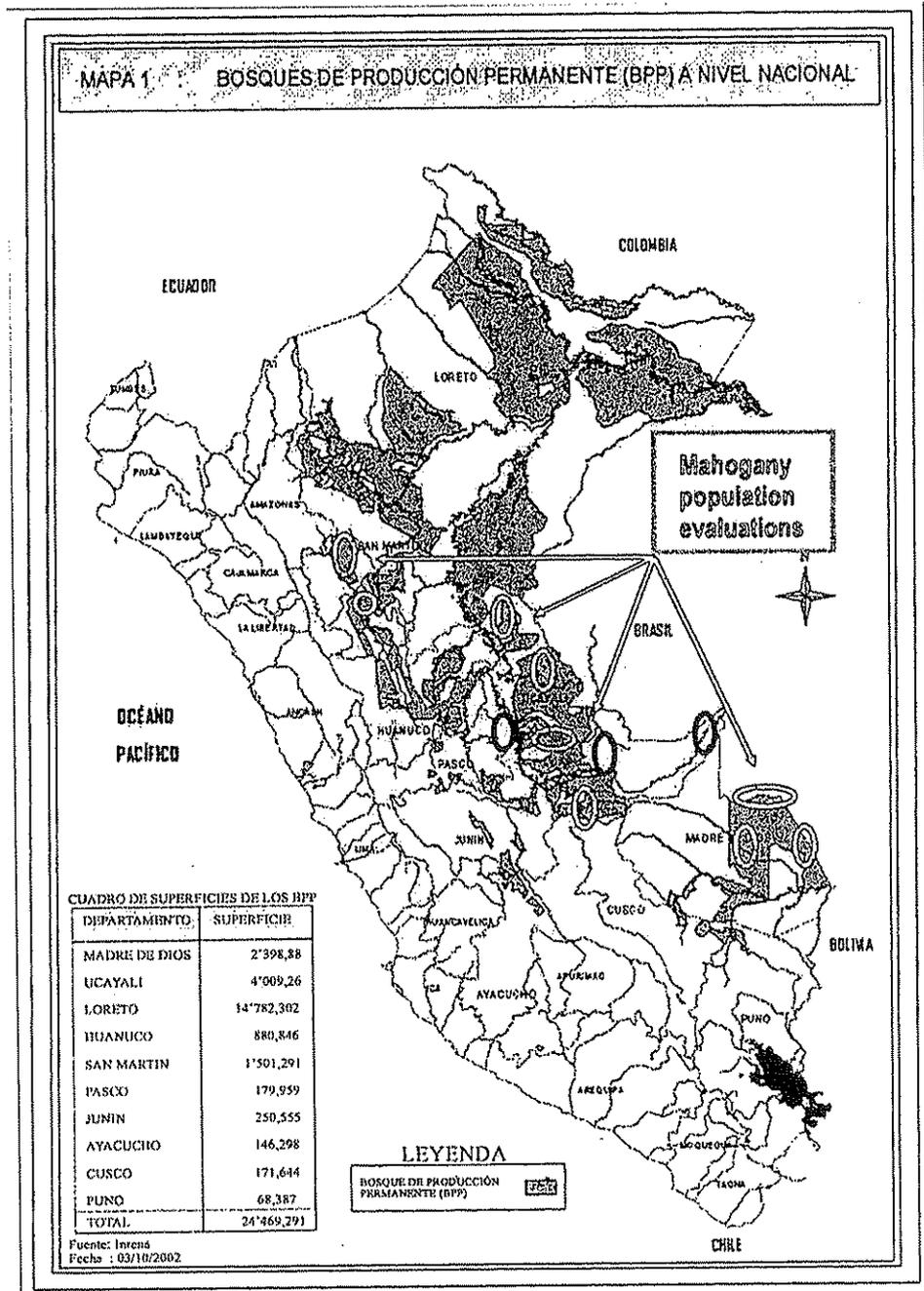
The evaluation of commercial stocks of mahogany to be carried out by this project will be assessed in Primary Production Forests and key indigenous communities. These forests cover a total of 24 469 291 hectares, as illustrated in Map 1. Maps 1 and 2 also indicate the estimated distribution of commercially viable mahogany populations (unpublished studies produced by the WWF-PPO and Conservation International respectively). Project activities will be concentrated in the Departments of Ucayali, San Martín and Madre de Dios, which contain a total of 8,1 million hectares. Mahogany export statistics for the years 2002 and 2003 (January-June) indicate that approximately 80 % of mahogany timber originates from these Departments.



Map 1: Primary Production forests and estimated distribution of commercially viable mahogany populations

Map 2: Likely distribution of mahogany populations

Forest concession inventories presently being carried out throughout the 4,1 million hectares of Primary Production Forests that have been allocated to forest concessionaires (San Martin, Huanuco, Ucayali and Madre de Dios) indicate that commercially viable populations of mahogany may be more widely distributed than those illustrated in the above maps. This project will select a total of 09 evaluation sites located in primary production forests and 03 sites in indigenous communities (see Map 3).



Map 3: Proposed location for field evaluation sites

Project's link with key problems in Peru

- o **Illegal logging**

During the last 25 years, selective logging in Peru has been conducted in chaotic and lawless fashion. Short-term logging contracts and relatively small 1 000-hectare timber concessions promoted unsustainable harvesting practices by loggers who pursued immediate financial gain. Timber concession holders had one to two year forest contracts and their activities were limited to identifying, felling, and transporting as much mahogany as possible in that short period of time, before turning the concession back to the government.

In the late 1990s, there were numerous attempts to reform the process of direct granting of 1 000-hectare logging plots and secure the conservation of valuable species such as big-leafed mahogany and tropical cedar. Nevertheless, these initiatives were repeatedly stonewalled and undercut by entrenched interest groups, such as the loggers' unions controlled by mahogany exporters. In July 2000, the first definitive steps were taken to reform and modernize the Peruvian forestry sector with the signing of the new Forestry and Wildlife Law No. 27308. This represented the beginning of a battle to design, implement, and support the long-term economic occupation of the Peruvian forest. The regulations of Law No. 27308 were passed in April 2001 and, to date 4.1 million hectares of forest concessions have been allocated to concessionaires through a competitive public bidding process.

The most important feature of Law No. 27308 is its requirement to establish sustainable management plans based on forest inventories and censuses. Long-term management planning is a key component of forest stewardship and is a means of promoting sustainability. The new law provides innovative solutions to the past problems of corruption, informality, environmental degradation, and lack of rule of law and economic development within the forest sector. Through the allocation of 40-year contracts, large concession areas and compulsory management plans, the Law stimulates sustainable use and long-term investment in forest management.

Despite the New Forestry Law, illegal logging pressure has increased over the past five years in response to high prices in the international market. Recent research on illegal logging on Las Piedras River which flows out of the Alto Purus protected area (May to September 2002), for example, recorded a total of 1 429 boats and 444 rafts of illegally logged mahogany. The estimated total amount of mahogany was 6 074 m³, worth almost \$7 million on the US market (Schulte-Herbruggen y Rossiter 2003). INRENA (2001) estimates that ninety percent (90%) of Peruvian mahogany is illegally logged. Such level of illegal activity presents a serious threat to the modernization of the sector as it undermines the economic viability of sustainable timber extraction from forest concessions. In addition, the illegality of current mahogany extraction and the lack of baseline information on mahogany populations makes it almost impossible to determine the impact of this extraction on mahogany populations. For this reason, the CITES scientific authorities in Peru have indicated that they will be unwilling to approve mahogany exports in November, when the CITES Appendix 11 listing of mahogany must be implemented by the Peruvian government.

ANNEX IV

MODIFICATIONS MADE IN RESPONSE TO THE 27TH EXPERT PANEL'S RECOMMENDATIONS

RECOMMENDATIONS

1. Incorporate the information provided in Annex III into the body of the proposal so as to fully conform to the ITTO format.
2. Clearly define which institution will be the executing agency and which will be the cooperating agency.
3. Include the terms of reference for the proposed sub-contracts.
4. Provide detailed yearly budgets by component and source for the ITTO and counterpart contributions.
5. Recalculate ITTO's Programme Support Costs to the new standard of 8% of total ITTO project costs, as decided by the 35th ITTC.

MODIFICATIONS

The information provided in Annex III has been incorporated into different sections of the proposal, which are marked in bold.

The executing agency will be the National Agrarian University of La Molina – Faculty of Forestry Science.

WWF will be the cooperating agency.

This is shown in the project document cover as well as in Part III: Operational Arrangements.

Annex C includes the basic terms of reference for the sub-contracts.

Table 7.1 shows the modifications made as suggested. Separate budget tables are provided for the ITTO, FCF/UNALM and WWF-PERU contributions. Changes are marked in blue.

The Programme Support Costs have been recalculated as recommended – changes are marked in bold.