



# PROGRAM FOR IMPLEMENTING CITES LISTINGS OF TROPICAL TREE SPECIES

## Newsletter



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This Newsletter reports on activities under the second phase of the ITTO-CITES Program for Implementing CITES Listings of Tropical Tree Species. Following up on the successful first phase of the Program (2007-2011), this second phase is continuing work for four more years (2012-2015) on the most important CITES-listed tropical tree species in trade. The Program is majority-funded through a grant from the European Union (via the European Commission), which calls for part of the available funds to be devoted to activities relevant to both the ITTO-CITES Program and the ITTO Thematic Program on Trade and Market Transparency (TMT). The Newsletter is published on a quarterly basis, in English, French and Spanish, and is made available to all Program stakeholders and other individuals interested in the progress of the ITTO-CITES Program. This issue covers a summary of the Program activities up to June 2014.

Suggestions and contributions from Program stakeholders are essential to make future issues of this Newsletter as informative and interesting as possible. Please send any correspondence to the relevant contact(s) listed on the last page.

### Editorial

This issue of the ITTO-CITES Program Newsletter marks the approximate half-way point of the Program's implementation under the second funding grant provided by the EU which provides the bulk of the Program's resources. Progress to date has been remarkable, with 35 activities implemented under the Program since this second phase began. Work under the Program has included a broad range of Activities, from silvicultural studies of listed tree species to sophisticated DNA tracking systems to allow accurate species identification and confirmation of sourcing. The Activity progress reports summarized in this Newsletter provide a snapshot of this work; readers are referred to the Program website for more complete information on the outputs of the Program.

ITTO and CITES are particularly proud of the role of the Program in assisting countries to address issues of sustainable management of listed species that may have led to trade suspensions or to them being placed under the CITES Significant Trade Review (STR) process. To date several countries have seen quotas approved for species that were subject to trade suspensions following work to complete acceptable non-detriment findings (NDFs) funded under the Program. The most recent example is the Democratic Republic of Congo (DRC), where a joint effort by the Program and FAO's FLEGT country support program led to the submission of the NDF for *Pericopsis elata* in DRC and its subsequent removal from the STR process. The CITES Secretariat is in the process of publishing an annual export quota of up to 25,000 cubic meters for this species.

While the Program can be proud of its successes, there is still much work to be done. The 2013 listing in CITES Appendix II of several species of rosewoods (*Dalbergia* spp.) from around the world has resulted in increased demand for Program support from range states in Central America and Africa, mainly Madagascar whose 2013 listing proposal of over 100 tree species was facilitated with Program funding. And recent high profile concerns expressed by NGOs and other stakeholders regarding the flows of Siamese rosewood from Indochina to China and Vietnam (ITTO's newest member) will no doubt give rise to new demand for Program support in Asia too.

This growing demand to support work on new species, coupled with the continued need for support in many countries to implement earlier listings of tropical tree species, means that the ITTO-CITES Program needs the on-going support of donors. We are grateful to the EU and other Program donors and hope their generosity will continue to allow us to assist countries through this effective collaborative initiative.

In order to attract new and additional funds, ITTO and CITES continue to undertake outreach activities to disseminate Program work. Three videos were recently produced highlighting the Program's work on *Prunus africana* in Cameroon, ramin in Indonesia and mahogany in Peru. These videos, available on the Program website, are an excellent introduction to our work and

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### Donors



European Union



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Norway



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Private sector donors: Abbott-Solvay, Indena, EuroMed and Plavuma

## ITTO-CITES Program

The "ITTO – CITES Program for Implementing CITES Listings of Tropical Tree Species" aims to ensure that international trade in CITES-listed tropical tree species is consistent with their sustainable management and conservation. The specific objective of the Program is to assist CITES national authorities and the private sector to meet the requirements for managing and regulating trade in CITES-listed tree species; to provide capacity-building support, and to conduct specific studies where information is lacking so as to develop an enhanced global framework for the collection and analysis of information related to the biology and management of species and trade in tropical forest products. The main species covered to date are *Pericopsis elata* (afromosia or assamela), *Prunus africana* (pygeum) and *Diospyros* spp. (ebony) of Central Africa and Madagascar; *Swietenia macrophylla* (big-leaf mahogany), *Cedrela odorata* and other *Cedrela* spp. (cedro) in Latin America; as well as *Dalbergia* spp. (rosewood) in both Africa and Latin America. Those covered in Southeast Asia are *Gonystylus* spp. (ramin) and *Aquilaria* spp./*Gyrinops* spp. (agarwood).

The main range States exporting significant volumes of these species are Cameroon, Democratic Republic of Congo, Madagascar and Republic of Congo in Africa; Indonesia and Malaysia in Asia; and Bolivia, Brazil, Guatemala, Honduras, Paraguay and Peru in Latin America. The direct beneficiaries of this Program are public authorities and private sector operators in the forest sector in the range States. The indirect beneficiaries are other Parties to CITES and members of ITTO that trade in these species, who will benefit through capacity building and awareness raising programs. Program assistance is available to countries that are significant exporters of products from CITES-listed tree species, or that have the potential to become significant exporters.

### Editorial (cont'd from page 1)

I commend them to readers. The ITTO and CITES Secretariats also plan to host side events highlighting Program achievements at the upcoming IUFRO World Congress and CBD COP 12 (see "Upcoming events" section). If you plan to attend either of these meetings please come and join our side events, it will be an excellent chance for us to meet with Program stakeholders new and old.

Steve Johnson  
ITTO

## Program funding

Phase II of the Program has an approved budget of nearly \$10 million and has so far received pledges of funding from the European Union (through the European Commission - EC), United States of America, Norway, Germany, the Netherlands and the private sector. The second pre-financing of EUR 1.2 million under the ITTO-EC contract (that provides for two-thirds of the Phase II budget) was received from the European Commission in April 2013, with the same amount received under the third pre-financing in March 2014. The United States of America pledged USD 180,000 during the 48th ITTC Session in November 2012 and USD 200,000 during the 49<sup>th</sup> ITTC Session in November 2013 while the Netherlands provided USD 70,000 at the end of 2013. ITTO will encourage donors to continue providing funds to meet the co-financing provisions of the ITTO-EC contract since requests for support under the Program continue to exceed available resources.

## Activity progress reports

Under Phase II of the Program, ITTO has, in consultation with the CITES Secretariat, approved 10 new Activities in Africa, 12 in Asia, 10 in Latin America and one global Activity; while one Activity in both Africa and Latin America approved during Phase I of the ITTO-CITES Program was extended and continued to be implemented under Phase II of the Program. All of the 35 Activities approved or extended under Phase II have finalized agreements with ITTO to facilitate their implementation or are in the process of doing so. In addition to the 35 Activities approved or extended under Phase II of the Program, an additional 12 Activity proposals (eight in Africa, two in Asia and two in Latin America) submitted to ITTO are pending approval/availability of funds.

Information about each country Activity (country, Activity document, executing and implementing agency, final reports, other outputs, etc.) can be found on the Program website ([http://www.itto.int/cites\\_programme](http://www.itto.int/cites_programme)). The following section provides brief descriptions and progress reports for Activities undertaken since the inception of Phase II of the Program until June 2014. Activities pending funding will be reviewed as additional resources become available with a view to making the most effective use of available Program resources.

### Africa Cameroon

#### **Settlement of a monitoring system for logging and processing of assamela and training control agents on the use of CITES tools and procedures in Cameroon**

**Implementing agency:** Agence Nationale d'Appui au Développement Forestier (ANAFOR)

**Status:** Completed

**Start date:** September 2012

**Planned duration:** 12 months

**Actual duration:** 19 months

The Activity aimed to develop an effective monitoring system for logging, processing and trade in Assamela products, as well as to train control agents in forest control and the use of CITES tools. It started in September 2012 and was re-scheduled for completion in February 2014 instead of August 2013. The Activity is now completed. A total of six outputs were identified including: (i) the scheme of data flow is developed; (ii) data required are identified; (iii) the architecture of the system is built; (iv) data are collected and stored; (v) users of the database are trained; and (vi) control agents are trained in the use of the CITES tools.

From 4-6 March 2014, the *Agence Nationale d'Appui au Développement Forestier* (ANAFOR), the National Forestry Agency implementing the Activity, organized a workshop at Mbalmayo to share the results of the Activity with different stakeholders. More than 40 people from the Ministry of Forestry and Wildlife, the National Forestry Agency, the Ministry of Research and Innovation, and the association of timber companies, attended the workshop. The workshop elaborated a roadmap to ease the gathering of data for the database which was developed under the Activity.

#### **Law enforcement and management of *Pericopsis elata* in production forests in Cameroon**

**Implementing agency:** Agence Nationale d'Appui au Développement Forestier (ANAFOR)

**Status:** Operational

**Start date:** November 2013

**Planned duration:** 18 months

**Actual duration:** 8 months

The Activity is a continuation of assistance to Cameroon to address its first non-detriment findings (NDF) report on *Pericopsis elata* in production forests under Phase I of the ITTO-CITES Program. It started implementation in November 2013 and is expected to be completed in mid-2015. In almost

all the management plans of southeast Cameroon, prescriptions were made to promote the regeneration and silviculture of *P. elata*, but tools or standards for such activities have never been developed by the forest administration. The Activity aims to implement the main recommendations outlined in the NDF report and those related to law enforcement regarding *P. elata*. The expected outputs of the Activity will result in (i) research results well analyzed; (ii) silvicultural operations in forest concessions well promoted; and (iii) tools required for more effective implementation of forest laws and the CITES requirements in Cameroon well developed. The Activity is executed by the *Agence Nationale d'Appui au Développement Forestier* (ANAFOR) in collaboration with the Association of timber companies.

All the experts who will be supporting ANAFOR in achieving the envisaged outputs have been identified. They are from research institutions, including universities, and the National Institute for Development and Agricultural Research (IRAD).

***Sustainable management of Pericopsis elata towards the implementation of the simple management plan of the Bidou II plantation in the Kienké South Forest Reserve, Cameroon***

**Implementing agency:** Agence Nationale d'Appui au Développement Forestier (ANAFOR)

**Status:** Operational

**Start date:** November 2013

**Planned duration:** 18 months

**Actual duration:** 8 months

The Activity started implementation in November 2013 and is expected to be completed in mid-2015. The aim of the Activity is to implement the simple management plan of Bidou II plantation of *Pericopsis elata*, based in the south region of Cameroon, which was prepared during Phase I of the ITTO-CITES Program. The expected outputs of the Activity will include (i) silvicultural operations in the Bidou plantation realized; (ii) seeds and seedlings required to develop new plantations produced; (iii) new plantations of *P. elata* established; and (iv) ecological, biological and silvicultural knowledge on *P. elata* improved and disseminated. The Activity is executed by the *Agence Nationale d'Appui au Développement Forestier* (ANAFOR) in collaboration with the National Institute for Development and Agricultural Research (IRAD). As for the Activity - *Law enforcement and management of Pericopsis elata in production forests in Cameroon*, the start date of the Activity corresponds to the date of the first meeting of the National Technical Committee (NTC) that was held on 4 November 2013.

All the experts who will be supporting ANAFOR in achieving the envisaged outputs have been identified. They are from research institutions, including universities, and the National Institute for Development and Agricultural Research (IRAD).

***Pilot implementation of a DNA traceability system for Pericopsis elata in forest concessions and sawmills in Cameroon and Congo***

**Implementing agency:** Double HELIX

**Status:** Operational

**Start date:** April 2014

**Planned duration:** 12 months

**Actual duration:** 2 months

The Activity commenced implementation in April 2014 and supports the ITTO-CITES project output of a cost-effective regulatory system for the trade in CITES listed tree species. The main outputs are: (1) development of genetic markers for *Pericopsis elata* suitable for DNA fingerprinting, (2) Capacity building and training of local teams in DNA sample collection and storage, (3) Implementation of DNA traceability in three controlled supply chains from pre-harvest to point of export. Workshops were undertaken in both Cameroon and Congo in June 2014.

***Pilot implementation of a DNA traceability system for Prunus africana in Prunus Allocation Units in Cameroon and Democratic Republic of Congo***

**Implementing agency:** Double HELIX

**Status:** Operational

**Start date:** June 2014

**Planned duration:** 18 months

**Actual duration:** 1 month

The Activity was recently signed and implementation commenced. This activity seeks to demonstrate that, using DNA techniques, *Prunus africana* bark can be traced back to specific trees from controlled Prunus Allocation Units (PAUs). The proposed DNA traceability system will secure controlled supply chains, detecting substitution of illegally harvested bark and allowing for timely corrective actions to be implemented.

**Republic of Congo**

***Dissemination of the CITES convention and its implementation texts in Republic of Congo***

**Implementing agency:** Centre national d'inventaire et d'aménagement des ressources forestières fauniques (CNIAT)

**Status:** Completed

**Start date:** September 2012

**Planned duration:** 8 months

**Actual duration:** 9 months

The Activity started in October 2012 and was completed in June 2013. It was implemented by the National Centre for Inventories and Management of Flora and Wildlife Resources (CNIAT) in response to the questions raised during Phase I of the ITTO-CITES Program conducted in the Tala Tala Forest Management Unit in the North Congo (see NDF report for *Pericopsis elata* in Congo on Program website). The specific objectives were to (i) train control agents on the verification of compliance of CITES permits; (ii) promote use of the "CITESWOOD-ID" tool; and (iii) disseminate relevant CITES documents in the country.

***Promotion of the silviculture of Pericopsis elata in the North Congo***

**Implementing agency:** Centre national d'inventaire et d'aménagement des ressources forestières fauniques (CNIAT)

**Status:** Operational

**Start date:** November 2013

**Planned duration:** 18 months

**Actual duration:** 8 months

The Activity commenced implementation in November 2013 and is expected to be completed in October 2015. The Activity is a continuation of the work done during Phase I of the ITTO-CITES Program in the Tala Tala Forest Management Unit in the North Congo (see NDF report for *Pericopsis elata* in Congo on Program website). It aims to address the main recommendations outlined in the non-detriment findings (NDF) report on *Pericopsis elata* in north Congo. The expected outputs of the Activity will include (i) biological and ecological data on *P. elata* collected and analyzed; (ii) silvicultural operations well promoted in forest concessions located in north Congo; and (iii) results of the Activity published and disseminated. The Activity is implemented by the *Centre National d'Inventaire et d'Aménagement des Ressources Forestières et Fauniques* (CNIAT), in collaboration with the Timber Industries Association in Congo.

All the experts who will be supporting CNIAT in achieving the envisaged outputs have been identified. They are from research institutions, including universities, and the National Institute for Development and Agricultural Research (IRAD). ITTO has disbursed the second instalment of funds based on the recent submission of the required Activity's financial statements by the coordination team.

**Democratic Republic of Congo**

***Non-detriment findings for Prunus africana (Hook.f.) Kalman in North and South Kivu, Democratic Republic of Congo***

**Implementing agency:** Institut Congolais pour la Conservation de la Nature (ICCN)

**Status:** Operational



**Start date:** March 2011  
**Planned duration:** 10 months  
**Actual duration:** 40 months

The Activity started in March 2011 under Phase 1 of the ITTO-CITES Program is now re-scheduled for completion in July 2014. The Activity still encounters many problems in its implementation, namely, the instability/insecurity in the *Prunus* production sites due to the presence of many rebel groups, and the long distance that separates Kinshasa, the headquarters of the implementing agency at the *Institut Congolais pour la Conservation de la Nature* (ICCN), and the production sites in North and South Kivu. Nevertheless, two local trade companies, namely, "Maison Kahindo Muvunga" and "PLAVUMA" have agreed to conduct *Prunus* inventories under the supervision of the Activity in secure production forests in the North Kivu.

The ICCN conducted a mission in early February 2014 to strengthen the field work done by "Phusys", the partner of one local trade company - "Maison Kahindo Muvunga", in the Walikale territory. The ICCN has submitted to ITTO, a practical roadmap as per the monitoring mission of the Regional Coordinator for Africa conducted at the end of 2013. ITTO has disbursed the last instalment of funds that will allow the ICCN to continue to strengthen and monitor the inventories conducted by the trade companies, and to also conduct *Prunus* inventories in the Kahuzi Biega National Park. The ICCN and the two most important local trade companies organized a second training workshop in Butembo, North Kivu from 25 April-3 May 2014. The regional coordinator will assist in the training workshop.

#### **Elaboration of non-detriment findings for *Pericopsis elata* in the Democratic Republic of Congo**

**Implementing agency:** Direction de la conservation de la nature  
**Status:** Operational  
**Start date:** October 2013  
**Planned duration:** 12 months  
**Actual duration:** 9 months

The Activity commenced implementation in October 2013 and is expected to be completed in September 2014. It aims to collect data on the status of *Pericopsis elata* in the forest concessions of the Democratic Republic of Congo (DRC). It will include data on phenology, health and stocking, as well as current harvest rates and information on sound silvicultural practices of the species. At the completion of the Activity, the expected outputs are (i) status report on the production, processing, and trade in *P. elata* in DRC; (ii) status and stocking of *P. elata* in forest concessions; (iii) harvest rate, as well as sustainable export quota; (iv) information on the biology, ecology and the minimum



**Meeting of the Ad-hoc Technical Committee to analyze reports of experts and draft the NDF report on *P. elata* in DRC, April 2014. Photo: Malele Sébastien**

exploitable diameter; (v) implementation of the CITES provisions and the European Union Timber Regulation, as well as putting in place an effective tracking system to better control *P. elata* products from DRC; (vi) silvicultural practices of *P. elata* promoted in forest concessions; and (vii) non-detriment findings report and Activity results published and disseminated.

A total of five experts has been selected by the national coordination team comprising (i) an expert on biology, ecology, and silviculture of *P. elata*; (ii) an expert on the management, production and trade in *P. elata*; (iii) an expert on the constraints in applying the CITES and the European Commission's rules on *Pericopsis*; (iv) an expert on mapping (GIS specialist); and (v) an expert in setting a preliminary national quota based on the management inventories conducted by the private sector.

All experts have already submitted their reports. However, due to the delay encountered in the implementation of the Activity, the Secretary General of the Ministry of Environment, Nature Conservation and Tourism (MECNT) had on 21 February 2014 established an Ad-hoc Technical Committee to elaborate the NDF report on *P. elata*. The Committee comprises seven representatives from the MECNT, two technical assistants from the Activity, and six and five representatives from the private sector and cooperation agencies respectively. Although the activity on *P. elata* is encountering some delays in elaborating the NDF, it is expected that the NDF report will be finalized during the months of March to April 2014 and sent to the CITES Secretariat before the 21st Meeting of the CITES Plants Committee scheduled to be held from 2-8 May 2014 in Veracruz, Mexico. Invited by the Secretary General of the MECNT, the Regional Coordinator for Africa undertook a mission to Kinshasa from 21-28 March 2014

to assist the Ad-hoc Technical Committee to analyze the experts' reports and draft the NDF report. An estimated 38 forest management units (FMUs) are found with stocking of *P. elata* in DRC, especially in the Province Orientale and Province de l'Equateur. Of the 38 FMUs, only nine of them have completed their forest management inventories which are currently being validated by the forest administration. Eight out of these nine FMUs are located in the Province Orientale. For the simulation of the national quota, the Regional Coordinator for Africa proposed a simplified method for the calculation of the renewal rate of *P. elata*, while the Forest Resource Management (FRM), a consulting agency that assisted many timber companies in developing their management plans in DRC, proposed a matrix model for the calculation of the renewal rate. Nevertheless, irrespective of the formula used, the renewal of *P. elata* is possible at diameter at breast height equal to 70 cm, which is high as compared to the current minimum exploitable diameter fixed by the DRC authorities. The simulation of the national quota of *P. elata* is carried out according to areas stocked with the species. It varies from 38,000 m<sup>3</sup> for FMUs located in the Province Orientale to 65,000 m<sup>3</sup> for the entire 38 FMUs.

#### **Ghana**

##### **Improving intra-African trade and market transparency in timber and timber products**

**Implementing agency:** Ghana Timber Millers Organization (GTMO)  
**Status:** Operational  
**Start date:** April 2013  
**Planned duration:** 24 months  
**Actual duration:** 15 months

African timber suppliers accounted for less 10% per year of the total African imports of timber and timber products (ITTO 2010). One major constraint identified was the lack

of knowledge among traders in the region. This proposal seeks to increase knowledge of the regional market and promote trade (and thus leading to an increased intra-African market share) within the region through active engagement of traders and information provision. CITES-listed species will be a specific focus of this work. The outputs of the study will be an online timber marketplace, capacity building of enterprises to leverage ICT to enhance their competitiveness, and a geospatial database of market access and logistic information. The online timber marketplace will catalogue timber companies, trade leads and provide social media tool to facilitate liaison among African traders. At the marketplace, regular surveys will be conducted with traders, market intelligence gleaned, prepared and reported on the website for various users. This Activity is implemented under ITTO's thematic programme for Trade and Market Transparency.

## Madagascar

### **Provision of taxonomic data and development/validation of methods for the sustainable management of Madagascar's valuable timber species**

**Implementing agency:** Département de Biologie et Ecologie Végétales de la Faculté des Sciences de l'Université d'Antananarivo (DBEV)

**Status:** Completed

**Start date:** July 2012

**Planned duration:** 15 months

**Actual duration:** 18 months

This Activity started in July 2012 with the Plant Biology and Ecology Department, Science Faculty, Antananarivo University (DBEV - CITES Scientific Authority for Plants) as executing agency. The main objectives of the Activity are: (i) provision of taxonomic data for *Dalbergia* and *Diospyros* species from Madagascar; and (ii) conception validation and development of quantification methodologies for valuable timber species through the combined use of remote-sensing imagery analysis and ecology and flora-related field observations. A specific objective of the activity is to provide information to support Appendix II listing proposals for these species.

A detailed report on this Activity was included in the previous issue of this Newsletter, including the successful listing of several *Dalbergia* and *Diospyros* species from Madagascar in CITES Appendix II during CoP 16 in 2013. The executing agency completed all activities and submitted the completion report at the end of 2013 which is available on the Program website.

## Asia Indonesia

### **The assessment of ramin plantation requirement and the establishment of ramin genetic resources conservation gardens**

**Implementing agency:** Forestry Research and Development Agency (FORDA)

**Status:** Completed

**Start date:** September 2012

**Planned duration:** 12 months

**Actual duration:** 16 months

The Activity started implementation in September 2012 and was extended to December 2013 from the earlier planned completion in October 2013. This was further extended to February 2014 to enable the Activity to complete the establishment of a new Hedge Orchard at Lubuk Sakat, Riau; the production of additional ramin stem cuttings at Palembang using the permanent nursery of the Center for Seed Production (BPTH) of South Sumatra; and further improvement of existing technical guidelines for vegetative propagation of ramin. The Activity is now completed. The objective of the Activity is to contribute to the enhancement of recovery of *Gonystylus bancanus* (ramin) population and habitats, and the conservation of ramin plant genetic resources in Sumatra and Kalimantan in Indonesia.

The Activity produced five documents for publication, namely, (i) *Identifikasi Lokasi Penanaman Kembali Ramin (Gonystylus bancanus Kurz) di Sumatera dan Kalimantan (Identification of sites for ramin (Gonystylus bancanus Kurz) in Sumatra and Kalimantan)*; (ii) *Prosiding Workshop: Lokasi Penanaman Kembali, Jumlah Kebutuhan Bibit dan Skema penanaman Berkelanjutan ramin (Workshop Proceeding: Site for ramin replantation, the number of required seedlings and sustainable scheme for planting ramin)*; (iii) A manual for vegetative propagation of ramin, in both English and Indonesian; (iv) An Executive Summary: Assessing of ramin plantation requirement and the establishment of ramin genetic resource conservation garden in Indonesia; and (v) the Completion Report of the Activity.

Cooperation in the mass propagation of ramin planting materials between the Forestry Research and Development Agency (FORDA) and the Centers for Seed Production (BPTH) of South Sumatra and South Kalimantan will continue even after the completion of the Activity, among others, in the establishment of hedge orchards and genepool, the production of rooted cuttings, and the certification of seed sources.

### **Capacity building on seedling propagation techniques and awareness raising on CITES implementation and ramin roadmap**

**Implementing agency** Directorate of Biodiversity Conservation, DG Nature Conservation and Forest Protection

**Status:** Operational

**Start date:** July 2013

**Planned duration:** 12 months

**Actual duration:** 12 months

The Activity has revised its effective implementation period from July 2013-June 2014 to February-December 2014. The main objective of the Activity is to contribute to the enhancement of ramin plantation and conservation through capacity building and awareness raising activities on vegetative propagation techniques, CITES implementation and the wider dissemination of the Ramin NDF Guideline and the Ramin Roadmap which were developed during Phase I of the ITTO-CITES Program. The expected outputs are (i) improved capacity on ramin vegetative propagation techniques; (ii) improved capacity and understanding of the CITES rules and regulation on ramin; and (iii) wider dissemination of the Ramin NDF Guideline and the Ramin Roadmap.

The first Technical Advisory Committee meeting of the Activity was held in Jakarta on 19 March 2014 where it agreed to hold the training workshop on wood identification of ramin and ramin looked-alike species in Bogor, Indonesia from 13-14 April 2014. Materials for the workshop are currently being prepared. The other three training workshops on ramin vegetative techniques in Riau and South Kalimantan, and the identification of *Gonystylus* species are planned to be held in June 2014. The venues for these training workshops have yet to be decided. Action has also being taken to recruit national experts to undertake the wider dissemination and application of the Ramin NDF Guideline and the Ramin Roadmap which were developed under Phase I of the ITTO-CITES Program.

### **Managing agarwood plantation in Indonesia**

**Implementing agency:** Directorate of Biodiversity Conservation, DG Nature Conservation and Forest Protection

**Status:** Operational

**Start date:** July 2013

**Planned duration:** 12 months

**Actual duration:** 12 months

The Activity has revised its effective implementation period from July 2013-June 2014 to February-December 2014. It aims to contribute to the sound management of planted agarwood from establishment to production, and trade, including artificially inoculated agarwood. The two main outputs envisaged from the Activity are, namely, (i) data on plantation, agarwood production and its quality from planted species; and (ii) a proposed national policy on agarwood plantation and production, including market potential and trade.



The Activity has recruited three national experts to undertake the documentation of agarwood plantation in Indonesia; establishment of a registration mechanism to capture information from plantation to agarwood production and trade; and provision of estimates of the annual production of agarwood and its quality in Indonesia. A number of assistants to assist them in their work were also recruited. In this regard, discussions and stakeholder consultations on the required strategy and policy for agarwood plantation establishment, including production and trade regulations for agarwood from both natural and planted forests in Indonesia, as well as compliance of trade regulations, are planned to be conducted in August 2014.

**Promoting conservation of plant genetic resources of *Aquilaria* and *Gyrinops* species in Indonesia**

**Implementing agency:** Forestry Research and Development Agency (FORDA)  
**Status:** Operational  
**Start date:** October 2013  
**Planned duration:** 12 months  
**Actual duration:** 9 months

The Activity commenced implementation in October 2013 and is expected to be completed in September 2014. The objective of the Activity is to explore and obtain information on the current status of *Aquilaria* and *Gyrinops* species in Indonesia, with specific reference to their taxonomy, population and conservation status, and to promote initial establishment of genepools of selected species in specific and secure areas. The required data and information will be obtained through literature review, workshops and field exploration in selected representative areas. The expected outputs are (i) knowledge of the taxonomical and population status of *Aquilaria* and *Gyrinops* species; and (ii) the initial establishment of genepools of selected *Aquilaria* and *Gyrinops* species.

From February to March 2014, collection of seeds and seedlings as well as the assessment of the taxonomical and population status of *Aquilaria* and *Gyrinops* through examination of herbarium collection and identification of the species had continued in West Nusa Tenggara and South Sulawesi. In this regard, a nursery was established to cultivate and maintain the seeds and seedlings that have been collected. A discussion among the stakeholders on "Agarwood *in situ* and *ex situ* conservation status, location, potency and management status" was conducted on 20 February 2014, while the collection of data and information on *in situ* and *ex situ* conservation of both the species was carried out in South Sumatra, Bangka Belitung and Bengkulu Provinces in March 2014.



**Focus Group Discussion (FGD) on techniques for development of conservation gardens of *Aquilaria* and *Gyrinops* species, Bogor, Indonesia, 13 February 2014.**  
**Photo:** Iwan Ruswandi Puskonser

A Focus Group Discussion (FGD) on techniques to develop conservation gardens of selected *Aquilaria* and *Gyrinops* species for producing agarwood was also conducted in Bogor on 13 February 2014. The objective of the FGD was to obtain informations on the biophysical suitability, nursery techniques, silvicultural systems and pest management which would form the basis for determining the locations for the development of conservation gardens of *Aquilaria* and *Gyrinops* species. It was attended by 28 participants representing various relevant institutions, such as the Ministry of Forestry, Indonesia; the Indonesian CITES Scientific Authority (LIPI); Perhutani (a state-owned company); university and farmers to share their experiences. A number of areas were proposed for the establishment of conservation gardens for agarwood producing species including the Cibitung-Gunung Halimun Salak National Park; the Cimanggu-Ujung Kulon National Park; and the Gunung Dahu Research Forest.

**Development of a ramin conservation concept (*Gonystylus spp.*) for plantation forest concessions**

**Implementing agency:** Association of Indonesian Forest Concessions (APHI)  
**Status:** Pending agreement  
**Planned duration:** 12 months

The Activity aims at the development of a Ramin conservation concept (*Gonystylus spp.*) in the operation of Plantation Forest Concessions. The outputs expected from the Activity are, namely, (i) a formulated Ramin conservation concept for Plantation Forest Concessions; (ii) a Ramin conservation guideline for Plantation Forest Concessions operation; and (iii) a Review of the Minister of Forestry Decree No. 127/KPTS-V/2002 on Temporary Moratorium of Logging Activities and Ramin Trade.

**Ensuring genetic diversity of ramin seed sources and ramin population from rooted cuttings**

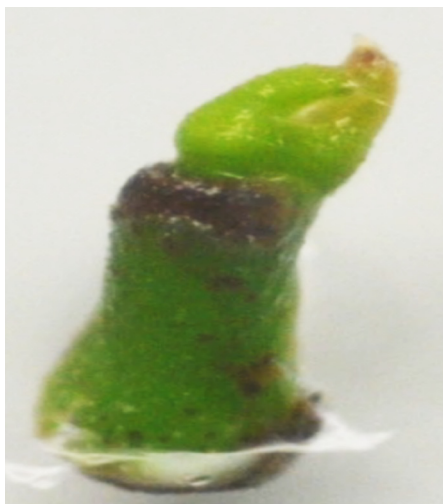
**Implementing agency:** Forestry Research and Development Agency (FORDA)  
**Status:** Pending agreement  
**Planned duration:** 12 months

The main objective of the Activity is to contribute to the conservation and plantation of ramin using wildlings and rooted cuttings in Sumatra and Kalimantan through genetic analyses and infusion of genetic materials to ramin cuttings. The expected outputs are (i) early detection of genetic variation of ramin in the conservation gardens at OKI, South Sumatra and Tumbangnusa, Central Kalimantan; (ii) genetic infusion to ramin cuttings in the conservation gardens at OKI and Tumbangnusa; and (iii) exploration and *ex situ* conservation of non-*Gonystylus bancanus* species in Sumatra and Kalimantan.

**Establishment of an integrated agarwood cluster in Bintan Island**

**Implementing agency:** Forestry Research and Development Agency (FORDA)  
**Status:** Pending agreement  
**Planned duration:** 12 months

The Activity aims to ensure (i) the sustainable production of agarwood from both natural and planted forests; and (ii) the sustainable production and conservation of genetic resources, as well as to improve market transparency of agarwood products, including the development of inoculation technology, processing and handling. The primary objective of the Activity is to accelerate the establishment of an integrated agarwood cluster in Bintan Island, Indonesia. The expected outputs are (i) the development of a design for an integrated agarwood cluster for Indonesia; and (ii) the development of a market information system for added transparency.



**Axenic explant cultured on RAM basal medium with 0.5 mg/L benzylaminopurine (BAP) after two weeks of initiation culture.**  
Photo: Linna Chieng

## Malaysia

### *In vitro* propagation of *Gonystylus bancanus* (ramin) in Sarawak

**Implementing agency:** Ministry of Natural Resources and Environment of Malaysia

**Status:** Operational

**Start date:** October 2012

**Planned duration:** 12 months

**Actual duration:** 21 months

The Activity started implementation in October 2012 and is now re-scheduled to be completed in mid-2014 instead of September 2013. The objectives of the Activity are to (i) establish effective protocols for the axenic (contamination-free) culture establishment of *G. bancanus* using field-grown planting materials; and (ii) establish protocols for *in vitro* regeneration of *G. bancanus* via direct organogenesis using axenic explants. The expected outputs are (i) an effective protocol for surface sterilization of field grown planting materials; (ii) an effective protocol for axenic culture establishment of surface-sterilized explants of *G. bancanus*; (iii) the optimum concentrations of cytokinin alone or in combination with auxin for shoot induction of axenic explants; and (iv) the optimum explants for shoot induction. This will contribute to the health and survival of ramin populations in the wild.

The collection of planting materials (leaves, young shoots and wildings), as well as epicormic shoots from bent saplings has been completed. In addition, the most optimum treatment for surface sterilization of lamina explants prior to culturing on media was 20% Clorox with 5 minutes exposure time. Meanwhile, surface sterilization regime of 0.2% HgCl<sub>2</sub> with 10 minutes exposure time was applied in the organogenesis experiments.

In determining the optimum media for axenic culture establishment of surface-sterilized explants of *G. bancanus*, it was found that the basal medium that was specifically formulated for ramin (RAM) was best for shoot induction using node and shoot tip explants; while for lamina explants, RAM should be used as the basal medium for somatic embryogenesis and Woody Plant Medium (WPM) for direct organogenesis, as different basal media contribute to different responses in callus growth. In this regard, newly grown young leaf samples were used for the study of somatic embryogenesis and indirect organogenesis, while nodal and shoot-tip explants were used for direct organogenesis. For callus induction using different concentrations of cytokinins, it was found that lamina explants cultured on 0.2 mg/L naphthelene acetic acid (NAA) produced more callus than on 0.1 mg/L NAA. Although lamina explants cultured on high concentrations of auxins did produce somatic embryos, to date no shoot or root growth was observed. As such, somatic embryogenesis may take years.

### *Use of DNA for Identification of Gonystylus species and Timber Geographical Origin in Sarawak*

**Implementing agency:** Ministry of Natural Resources and Environment of Malaysia

**Status:** Operational

**Start date:** October 2012

**Planned duration:** 12 months

**Actual duration:** 21 months

The Activity started implementation in October 2012 and is now re-scheduled to be completed in mid-2014 instead of September 2013. The objectives of the Activity are to (i) construct a molecular database of ramin for the identification of species and the geographical origin in Sarawak; and (ii) develop a protocol for extracting DNA from ramin timber. The expected outputs are (i) DNA from ramin samples extracted; (ii) chloroplast DNA haplotypes between species and origin determined; and (iii) DNA extraction protocol for ramin timber developed. The results from this Activity will complement those achieved under the Activity on *Development of DNA Database for Gonystylus bancanus in Sarawak*, implemented in 2008 during Phase I of the ITTO-CITES Program, which used DNA that were extracted from leaf and bark samples.

More than 480 leaves and wood samples collected from 13 sampling sites (Kubah National Park (NP), Gading NP, Bako NP, Serayan Forest Reserve (FR), Lanjak Entimau Wildlife Sanctuary, Lingga FR, Bukit Mina FR, Similajau NP, Bakun Forest Area, Lambir Hills NP, Mukah Hill, Biawa and Mentawai) comprising 22 species of *Gonystylus* have been identified. DNA extraction on the collected samples has been completed and

the extracted DNA were all kept in a -20°C freezer. In addition, sequencing analysis of intergenic spacer regions of cpDNA using universal chloroplast primers on all the samples required for data analysis has also been completed.

The analysis for species identification through chloroplast sequence DNA was conducted using phylogenetic tree, pairwise distance and BLAST, where 85.7% of ramin species was resolved. The database for species identification of ramin was also developed. There were two informative variable sites which distinguished the ramin species found in the trnL region, namely, seven in the trnF-trnE region and three in the trnH-psbA region.

To date the DNA extraction protocol for ramin timber has also been developed through the optimization and modification of the protocol for leaf extraction. Using this protocol, a chloroplast primer, trnF(F)+trnE(R), was successfully used to amplify wood DNA from 21 different species using preserved wood under different preservation periods, and for different parts of the wood: the core heartwood, sapwood and inner bark.

### *Reproductive and genetic studies towards the conservation and management of Aquilaria malaccensis in Peninsular Malaysia*

**Implementing agency:** Ministry of Natural Resources and Environment of Malaysia

**Status:** Operational

**Start date:** June 2013

**Planned duration:** 24 months

**Actual duration:** 12 months

The Activity, which commenced implementation in June 2013, will complement the work carried out between 2007 and 2008 under the project on “*In vitro* Technology for Mass Propagation and Phytochemical Analysis of *Aquilaria malaccensis* and *Aquilaria hirta* (Endangered Gaharu Producing Species)”, and the “Conservation Studies and the Development of DNA Microsatellite Markers on *Aquilaria malaccensis* in Peninsular Malaysia” that was undertaken between 2011 and 2012, both projects being funded by the Government of Malaysia.

The Activity aims to (i) document the flowering phenology and reproductive behavior of *A. malaccensis*; (ii) develop DNA profiling databases of *A. malaccensis* in Peninsular Malaysia; and (iii) develop a conservation action plan to reduce harvesting pressures on wild populations for the agarwood resin. At the completion of the Activity in May 2015, the expected outputs are (i) reproductive information of *A. malaccensis*; (ii) ecological genetic information for the preparation of a



conservation action plan for *A. malaccensis* in Peninsular Malaysia; (iii) DNA profiling databases of *A. malaccensis* in Peninsular Malaysia for timber tracking and forensic applications; and (iv) a conservation action plan to reduce harvesting pressures on wild populations for the agarwood resin.

Currently, 68 trees flowering in the Penang Botanic Gardens and another 15 in Perak are being monitored for a study to be conducted on flowering phenology, flower maturity and anthesis/receptivity. Aborted flowers were also collected from seed traps and analyzed. These traps are placed under the tree and are visited once every two weeks for cleaning and capsules collection.

Population survey was also conducted where a total of 153 samples of *A. malaccensis* was collected in Kedah, 53 in Selangor, 89 in Johor, 102 in Kelantan, 40 in Kuala Lumpur, 60 in Perak and 69 in Pahang. Information derived from the population survey, among others, will be used to prepare a conservation action plan for *A. malaccensis* in Peninsular Malaysia.

In addition, DNA sequencing on samples from eight populations were carried out to determine suitable chloroplast regions for population genetic studies. In this regard, screening was conducted on 59 chloroplast regions where eight of the regions might be suitable for *A. malaccensis*.

#### **Development of an information database for the conservation and sustainable use of *Gonystylus bancanus* (ramin) and *Aquilaria malaccensis* (karas) in Malaysia**

**Implementing agency:** Ministry of Natural Resources and Environment of Malaysia

**Status:** Operational

**Start date:** June 2013

**Planned duration:** 22 months

**Actual duration:** 12 months

The Activity commenced implementation in June 2013 and is expected to be completed in March 2015. The main objective of the Activity is to develop a web-based information system of ramin and karas in Malaysia for management and conservation purposes (MyCITES). The expected outputs of the Activity are information on (i) ramin and karas distributions in Malaysia; (ii) research and development of ramin and karas in Malaysia; (iii) timber trade and production of ramin and karas in Malaysia; (iv) Malaysia's policy and management practices of ramin and karas; and (v) a comprehensive web-based information system of ramin and karas in Malaysia that contains all the outputs from (i) to (iv).

The development of the MyCITES will be based on an interactive web-based information system to enable the sharing of information and spatial data on ramin

and karas in Malaysia using a combination of Geographic Information System (GIS) software with Open Source to generate GIS Base Enterprise architecture on-line and real time. A number of potential web developers have been identified and will be invited to discuss further the development of the web-based system, while preparation of the draft design for the website is ongoing.

Collection of non-spatial information of ramin and karas, such as phenology and habitat, from books, relevant journals and publications is on-going where information on 32 species of *Gonystylus* has been compiled. All research papers on ramin and karas that are available in the Journal of Tropical Forest Science (JTFS) for the past 26 years from 1988-2013 (Volume 1 to Volume 26) have also been compiled.

#### **Capacity building of Forestry Department Peninsular Malaysia's staff in identifying *Aquilaria* to species level and in the grading of Agarwood**

**Implementing agency:** Ministry of Natural Resources and Environment, Malaysia (MNRE).

**Status:** Pending agreement

**Planned duration:** 12 months

The objectives of the Activity are to (i) develop training materials, including practical field manual to enable staff of FDPDM to undertake identification of *Aquilaria* to species level; (ii) develop a manual for the grading of agarwood to be used by the staff of FDPDM; and (iii) provide training to a core team of trainers, which consists of 30 persons from FDPDM, in order to provide continuous training to all the other staff of FDPDM when required.

### **Latin America Brazil**

#### **Ecology and silviculture of mahogany (*Swietenia macrophylla* King) in the western Brazilian Amazon (continued from Phase I)**

**Implementing agency:** Foundation for Supporting Research Extension and Teaching in Agrarian Sciences (FUNPEA)

**Status:** Completed

**Start date:** March 2009

**Planned duration:** 24 months

**Actual duration:** 48 months

The Activity commenced its implementation in March 2009 and completed in March 2014 and aimed at establishing best silvicultural practices for mahogany in natural forests and to improve the present government regulations concerning forest management plans to ensure that international trade meets CITES' requirements for sustainable management and conservation of the species.

#### **Ecology and silviculture of mahogany (*Swietenia macrophylla* King) in the western Brazilian Amazon (Phase 2)**

**Implementing agency:** Foundation for Supporting Research Extension and Teaching in Agrarian Sciences (FUNPEA)

**Status:** Operational

**Start date:** April 2014

**Planned duration:** 24 months

**Actual duration:** 3 months

The Activity started in March 2009 under Phase I of the ITTO-CITES Program. This second phase was approved by ITTO during the current Phase II of the Program. It started effective implementation in April 2014 and is expected to be completed in March 2016. Most of the Phase I findings were related to the impact of logging on mahogany's seedlings population. Growth and natural regeneration dynamics during the initial years of the forest regeneration period will be evaluated during Phase II of the Activity. Efforts will be made towards documenting the Phase I results in peer reviewed journals. Attention will be given to the outputs that were not completed in the first phase of the Activity. These will include a database on growth of mahogany and seedling demography after canopy opening.

Evaluation of enrichment plantings in gaps created by logging with mahogany will be given attention in the current extension period. This is an important post-harvest silvicultural activity aiming at complementing natural regeneration and enhancing mahogany future production.

Training and capacity building of undergraduate and graduate students will continue during this phase of the Activity. Two M.Sc. and two undergraduate students have been selected and will start their academic activities in May 2014.

New premises for executing the Activity were established at the University's Wood Technology Laboratory. This will offer more comfort and space to house the research team and equipment.

#### **Big-leaf mahogany (*Swietenia macrophylla*) in the Brazilian Amazon: Long-term studies of population dynamics and regeneration ecology towards sustainable forest management**

**Implementing agency:** Instituto Floresta Tropical

**Status:** Operational

**Start date:** September 2012

**Planned duration:** 22 months

**Actual duration:** 22 months

The Activity started implementation in September 2012 and is expected to be completed in June 2014. Planning continues for a training workshop on how to use and adapt the Big-leaf Mahogany Growth &





**Use of tree branches, stumps, and buttress of a mahogany tree in Fazenda Seringal Novo Macapá, Acre state, Brazil. Photo: Jose Natalino Silva**

Yield Model to local conditions in South and Central America. Workshop materials will emphasize using data from local populations to project population dynamics and sawn timber production over multiple cutting cycles. The model was presented at the Forest Management & Monitoring Stakeholder Forum held from 20-21 March 2014 at the University of Belize in Belmopan, Belize.

Since the completion of the 2013 field season in last October, project activities have focused on data management, analysis, and synthesis for publication. A list of all the publications resulting from the support of the ITTO-CITES Program is available at <http://www.swietking.org/our-research.html>. All the publications are also available on request ([jgrogan@swietking.org](mailto:jgrogan@swietking.org)) in PDF format.

One manuscript titled "Management implications of long-term tree growth & mortality rates: A case study of big-leaf mahogany (*Swietenia macrophylla*) in the Brazilian Amazon" was completed and submitted for review to the scientific journal *Forest Ecology and Management*; authors of this manuscript are Christopher Free, Matt Landis, James Grogan, Mark Schulze, Marco Lentini, and Oliver Dünisch.

A second manuscript titled "Big-leaf mahogany growth and recruitment of future timber trees through enrichment planting in logging gaps in Acre, Brazil" was revised and will also be submitted to *Forest Ecology and Management*; authors of this manuscript are James Grogan, Mark Schulze, Frank Pantoja, Edson Vidal, Marco Lentini, Denis Valle, and Christopher Free.

A scientific article about implications of population dynamics for long-term timber production was published online by the *Journal of Applied Ecology*. Its abstract is presented in this Newsletter.

***Using the Near Infrared Spectroscopy (NIRS) technique on a pilot scale, as a potential tool for the monitoring of Mahogany trade***

**Implementing agency:** Foundation of Forest Technology and Geoprocessing (FUNTEC)

**Status:** Operational

**Start date:** March 2014

**Planned duration:** 24 months

**Actual duration:** 4 months

The Activity officially started in March 2014, with the release of the first instalment of the funding by ITTO, and is expected to be completed in February 2016. The main initial focus of the Activity was to acquire a new portable near infrared spectrophotometers (NIRS) device that was both within the Activity's budget as well as be able to meet the required performance standards. Between the period of submission of the proposed Activity for ITTO approval and the beginning of its implementation, new portable near infrared spectrophotometers became available in the market at attractive prices.

Thus the first order of business was to conduct a technical visit to the University of Campinas to test the newly acquired portable device. The test was done using the same species of wood (mahogany, cedar, crabwood, and curupixá) as those which were used previously to compare the performance between the bench equipment and that of another portable NIRS device. Preliminary results indicated that the equipment that was tested also ranked satisfactorily for the four different wood species. It is worth noting that wood of these four tree species are visually very similar and up until now they could only be identified by trained botanists.

Therefore, the next step of the Activity will be to purchase the field equipment and

transfer the statistical model from the bench equipment to the portable one.

**Guatemala**

***Inventory of population and species abundance of Dalbergia retusa and D. stenosonii in areas of natural occurrence in Guatemala***

**Implementing agency:** Fundación Naturaleza para la Vida (FNPV)

**Status:** Operational

**Start date:** April 2014

**Planned duration:** 24 months

**Actual duration:** 3 months

The Activity has just started its implementation in April 2014 and is expected to be completed within 24 months. It expects to generate technical and scientific information to ensure the conservation and sustainable management of the species *Dalbergia retusa* and *D. stenosonii*, through undertaking an inventory in their natural habitats, based on the exploratory information generated in the National Inventory with regard to their abundance, distribution and displacement that the species faced from anthropogenic factors that could influence their extinction.

In the inventory of rosewood (*Dalbergia* spp.), sampling plots of 1 ha will be established, divided into 4 sub-plots of 20 m X 50 m in the 4 cardinal points, where seedlings, saplings and trees having diameter at breast height from 10 cm will be enumerated. In addition, other important variables will also be measured to ascertain the current status of the availability of commercial *Dalbergia* species where large number of samplings will be conducted. These activities will be carried out in close coordination with the National Council of Protected Areas (CONAP) and the National Forest Institute (INAB).

The results of the Activity will determine the current status of the species in its natural habitat; strengthen the implementation of a monitoring system that allows carrying out immediate and medium-term actions to control anthropogenic activities that endanger the ecosystem where these species occur.

***Establishment of a forensic laboratory for wood identification and description for the application of legal processes and systems of traceability of products included in CITES***

**Implementing agency:** Fundación Naturaleza para la Vida (FNPV)

**Status:** Operational

**Start date:** April 2014

**Planned duration:** 24 months

**Actual duration:** 3 month

The Activity has just started its implementation in April 2014 and is

expected to be completed within 24 months. Currently, there is not enough systematic information compiled on the macroscopic and microscopic botanical identification of wood and other characteristics of Guatemalan tree species included in CITES Appendix II. Thus, the legal system does not have scientific certainty to support legal procedures against violators of the national legal system. Such offenders have benefited from this uncertainty, increasing environmental crimes without punishment and recurrence of fraud with regard to trade in species with similar macroscopic characteristics.

Illegal trade in precious woods constitutes a major threat to the biological diversity of Guatemala. Therefore, immediate actions need to be taken by the authorities such as the establishment of a forensic laboratory for wood identification which will allow the development of a scientific database for effective law enforcement.

The laboratory aims to install equipment such as microscopes, microtome, and place personnel for handling and collection of samples at specific points of the country, as well as for scientific evaluation of the collected samples of Guatemalan timber species that are listed in CITES Appendix II.

#### **Non-detriment findings – Practical guidance for CITES-listed tree species**

**Implementing agency:** Universidad de Córdoba (Spain) and CONAP (Guatemala)  
**Status:** Pending agreement  
**Planned duration:** 15 months

The Activity aims to provide guidance to CITES Authorities regarding the procedures, methodologies and information required to develop non-detriment findings for timber and other tree species so as to facilitate the adequate implementation of export provisions for CITES-listed species and ensure that their international trade is consistent with their sustainable management and conservation. This will be achieved through the implementation of 18 activities during a 15-month period.

#### **Guyana**

##### **Enhancing the sustainable management and commercial utilization of the CITES-listed species *Cedrela odorata* (red cedar) in Guyana**

**Implementing agency:** Guyana Forestry Commission  
**Status:** Operational  
**Start date:** May 2014  
**Planned duration:** 18 months  
**Actual duration:** 2 months

The Activity has just started its implementation in May 2014 and is expected to be completed within 15 months.

The Activity was formulated because of the desire of the Government of Guyana to diversify the range of commercial species used in its wood products that are offered to the international wood products trade. The overall objective of the Activity is to “enhance sustainable forest management of the forest sector of Guyana through improved market intelligence and trade of CITES-listed timber species.” The specific objective is to “strengthen forest planning and marketing of CITES-listed, current and potential timber species from Guyana”. Among the main expected outcomes of the Activity are: (i) completion of a resource assessment of red cedar in Guyana’s commercial forest estate so as to establish the status of the species; (ii) informed decision on the status of conservation and/or utilization of red cedar; (iii) development of capacity in Guyana for managing red cedar; (iv) formulation of a strategy for developing and commercializing CITES-listed species in Guyana, including statistical databases; and (v) development of markets for red cedar both locally and internationally in areas of value-added products. This Activity is implemented under ITTO’s thematic programme for Trade and Market Transparency.

#### **Peru**

##### **Assessment of regeneration of natural big-leaf mahogany and cedar populations in Peru**

**Implementing agency:** Universidad Nacional Agraria La Molina (UNALM)  
**Status:** Completed  
**Start date:** September 2012  
**Planned duration:** 12 months  
**Actual duration:** 13 months

The Activity aimed to evaluate the recovery of mahogany (*Swietenia macrophylla* King.) and cedar (*Cedrela* spp.) species in the permanent production forest areas where logging of these species are taking place (South Amazonian region of the country) through the conduct of field work. One of the outputs obtained was an updated database including information collected from Annual Operating Plans of the Department of Madre de Dios. This has allowed for the generation of location maps of mahogany and cedar seed trees by the Department and the finding that the number of seed trees totaled 2061 trees, with 572 mahogany trees and 1489 cedar trees. Another output of the Activity is a manual for the assessment of seed trees and natural regeneration of mahogany and cedar for commercial production. The manual has been validated and used in the three field sites located in Madre de Dios. In addition, the manual had also been shared with officials of the Ministry of Environment and

the Ministry of Agriculture, as well as with the authorities and professionals of Madre de Dios. The manual was published with the support of the Ministry of Environment and the USAID Technical Assistance Program.

##### **Confirmatory evaluation of forest inventories of cedar and mahogany species**

**Implementing agency:** Universidad Nacional Agraria La Molina (UNALM)  
**Status:** Operational  
**Start date:** November 2013  
**Planned duration:** 9 months  
**Actual duration:** 8 months

The Activity started implementation in November 2013 and is expected to be completed in July 2014. The Activity aims to design a technically and statistically supported method for confirmation of forest census results of mahogany (*Swietenia macrophylla* King) and cedar (*Cedrela* spp.) species. This is to provide an effective monitoring tool for concessionaries and consultants, as well as a control and supervision method for national forest authorities in optimizing time, efforts and resources to the benefit of the Peruvian State.

Presently, the database has been updated, which includes information collected from Annual Operating Plans (POAS) with legal titles of the Departments where cedar and mahogany are found. This has enabled the preparation of a location map of mahogany and cedar trees at the national level. In addition, it was found that among usable trees, seed trees of future harvest and protection trees, the total number of mahogany and cedar trees was estimated at 12,360 and 45,019 trees respectively.

The first version of the procedure for obtaining sizable sample of trees for the evaluation of forest census has been developed, where the target population is determined by sample plots, rectangular in shape, where cedar and mahogany trees are found in areas of annual felling. The sample is defined by a number of sample plots chosen randomly that contain harvestable cedar and mahogany trees. This procedure has as a criterion that it should not have defective trees for the inventory to be accepted. With this methodology, it is expected that the forest census tool will be accepted by the forest control authorities.

##### **Management of mahogany (*Swietenia macrophylla* King.) and cedar (*Cedrela* spp.) seed stands in a forest concession for the conservation of the Tahuamanu Seed Stand in the province of Tahuamanu, Madre de Dios, Peru**

**Implementing agency:** Universidad Nacional Agraria La Molina (UNALM)  
**Status:** Pending agreement  
**Planned duration:** 18 months



The Activity, which aims to study natural regeneration of mahogany and cedar, will soon start its implementation. The Regional Coordinator plans to carry out a monitoring visit to Tahuamanu in July 2014. More details will be reported in the next issue of the newsletter.

## Global

**Preparation of the publication “atlas of tropical timber species – 1<sup>st</sup> Edition: Technological characteristics and uses of 273 tropical timber species (and 17 temperate species)”**

**Implementing agency:** CIRAD

**Status:** Operational

**Start date:** September 2013

**Planned duration:** 24 months

**Actual duration:** 10 months

This project aims to produce, publish and disseminate an Atlas of tropical timber species (including CITES-listed species) covering the information contained in the latest TROPIX software (version 7 - 2011) distributed by CIRAD; the very first version of this software was developed in the late 1980s by CTFT (CIRAD Forestry Department) with financial support from ITTO. This new Atlas is meant to be an update of the three former timber Atlases covering Africa, South America, and Asia respectively, the last of these three books (on timber from South America) have been produced and published in 1988 by CTFT and ATIBT with financial support from ITTO. These three books are still in high demand among operators of the timber sector but they are partly out of print; in addition, most of the information they contain is partly obsolete and should be updated and supplemented. This Atlas will be published in French and English (TROPIX is available in these two languages). This new edition will be associated with the release of a new version of TROPIX (version 8) describing species in greater number than the current version 7 (290 total instead of the current 245) and having new technological features requested by operators in the timber sector. This Activity is implemented under ITTO's thematic programme for Trade and Market Transparency.

## Relevant events/ initiatives

### Participation of the Regional Coordinator for Africa at workshop and meetings

The Regional Coordinator for Africa participated at the national workshop organized by ANAFOR in Mbalmayo on March 2014 and the Second Meeting of the Ad-hoc Scientific Committee also organized

by ANAFOR on 13 January 2014 at Yaoundé, Cameroon. He also attended the meeting of the Ad-hoc Technical Committee responsible for the elaboration of the NDF on *P. elata* in DRC, and at the invitation by the Secretary General of the Ministry of Environment, Nature Conservation and Tourism (MECNT), he undertook a mission to Kinshasa from 21-28 March 2014 to assist the Ad-hoc Technical Committee to analyze the experts' reports and draft the NDF report on *P. elata*.

## Articles from Program activities

“Big-leaf mahogany (*Swietenia macrophylla*) population dynamics and implications for sustainable management” by Grogan J, Landis RM, Free CM, Schulze MD, Lentini M, Ashton MS.

### Abstract

1. The impacts of selective harvesting in tropical forests on population recovery and future timber yields by high-value species remain largely unknown for lack of demographic data spanning all phases of life history, from seed to senescence. In this study, we use an individual-based model parameterized using 15 years of annual census data to simulate population dynamics of big-leaf mahogany (*Swietenia macrophylla* King) in southeast Amazonia in response to multiple harvests and in the absence of harvesting.
2. The model is based on regression equations of stem diameter growth, mortality, and fruit production estimated as a function of stem diameter and prior growth; it includes functions for germinating seeds, growing trees from seedling to adult senescence, producing seeds, and creating disturbances at specified spatial scales and return intervals, including logging. We simulate six harvest scenarios by varying the minimum diameter cutting limit (60 cm, 80 cm) and the retention rate requirement (20%, 40% and 60% commercial population retained).
3. Without logging, simulated populations grew over 100 years by 182% from observed densities, indicating that one or more parameters in the model may overestimate long-term demographic rates on this landscape. However, 100-year densities did not far exceed values reported from forests across this region, and other modeled demographic parameters resembled observed behaviors.
4. Under current harvest regulations for mahogany in Brazil (60 cm minimum diameter cutting limit, 20% commercial-sized tree retention rate, minimum 5 commercial-sized trees 100 ha<sup>-1</sup> retained after harvest, 30-year cutting cycle),

commercial densities at the study site would decline from 39.7 to 11.3 trees 100 ha<sup>-1</sup> before the fourth harvest in year 90, yielding an estimated 16.4% of the initial harvest volume during the fourth harvest. Increasing retention rates caused first-cut harvest volumes to decline but improved population recovery rates between harvests. Under both minimum diameter cutting limit scenarios, increasing retention rates led to more robust population recovery compared with the current 20% rate, and higher subsequent harvest yields relative to initial (first-cut) values.

5. Synthesis and applications. These results indicate that current harvest regulations in Brazil for mahogany and other high-value timber species with similar life histories will lead to commercial depletion after 2–3 cutting cycles. Increasing commercial-sized tree retention rates improved population recovery at the cost of reduced initial harvest volume yields. Sustainable harvests will require, in combination, a moderate increase in the retention rate, investment in artificial regeneration to boost population recovery, and implementation of silvicultural practices designed to increase growth rates by future crop trees.

Note: The full article was published online by the *Journal of Applied Ecology*  
DOI: 10.1111/1365-2664.12210.

## Upcoming events

65th Meeting of the CITES Standing Committee, 7-11 July 2014, Geneva, Switzerland

ITTO and CITES: Collaborating to sustain tropical tree species. Side events planned for the IUFRO World Congress (Salt Lake City, USA, 9 October 2014) and CBD COP 12 (Pyeongchang, Korea, 16 October 2014)

50th ITTC Session and 10th ITTO-CITES Program Advisory Committee meeting, 3-8 November 2014, Yokohama, Japan

Regional meeting on agarwood, 19-23 January 2015, Guwahati, Assam, India



## Program Monitoring

To ensure the transparency of the ITTO-CITES Program, regular monitoring of field implementation is conducted in Africa, Asia and Latin America by the respective Regional Coordinators. Mid-term and ex-post monitoring will also be conducted as per the terms of the grant agreement with the EC and ITTO's rules and procedures.

In this context, the Regional Coordinator for Asia, Thang Hooi Chiew, will undertake a monitoring mission to Jakarta, Indonesia in September 2014 to evaluate the progress in implementing the six Activities in Indonesia, namely, "Capacity building on seedling propagation techniques and awareness raising on CITES implementation and

Ramin Roadmap"; "Managing agarwood plantation in Indonesia"; "Promoting conservation of plant genetic resources of *Aquilaria* and *Gyrinops* species in Indonesia"; Ensuring genetic diversity of ramin seed sources and ramin population from rooted cuttings"; Establishment of an integrated agarwood cluster in Bintan Island, Indonesia"; and "Development of a ramin conservation concept (*Gonystylus* spp.) for plantation forest concessions".

A mission to DRC to review Program funded activities will be undertaken by the African regional coordinator in July 2014, while the Latin American regional coordinator will review Program-funded activities in Peru in July 2014.

## Contacts

ITTO - **Steven Johnson**, ITTO Coordinator – johnson@itto.int

**Kanako Ishii**, Program Assistant – ishii@itto.int

CITES - **Milena Sosa Schmidt**, CITES Coordinator – milena.schmidt@cites.org

Regional Coordinator for Africa – **Jean Lagarde Betti** – lagardeprunus@gmail.com

Regional Coordinator for Asia – **Thang Hooi Chiew** – hooichang@gmail.com

Regional Coordinator for Latin America – **Ivan Tomaselli** – itomaselli@stcp.com.br

**Sofia Hirakuri** – shirakuri@stcp.com.br

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