



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 during 2012-2016 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 also provides 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 April 2015.

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 – ITTO-CITES Program in Africa

In Africa, the first phase of the ITTO-CITES Program (2007 – 2011) assisted countries in the Congo Basin in conducting targeted forest inventories, developing simple management plans (SMPs), formulating non-detriment findings (NDFs), and training control agents in the use of CITES tools. The Program assisted Cameroon, Congo and DRC to improve management of *Pericopsis elata* (afromsia or assamela) and Cameroon and DRC to improve management of *Prunus africana* (African cherry or pygeum), both species listed in CITES Appendix II.

Under its current second phase (2012-2016), the Program continues the work in Africa started in phase one. A major objective of the Program is to assist target countries in (1) implementing the guidelines prescribed in their NDF reports and (2) implementing the SMPs developed. Phase two of the Program has also extended assistance to Madagascar, which recently listed multiple species of *Dalbergia* (rosewood) and *Diospyros* (ebony) in CITES Appendix II.

In all target countries, good policies exist in the forest sector, but the problem of their application and enforcement remains. Most such problems are identified in the NDF reports produced by the target countries. Developing and implementing effective monitoring/tracking systems and training forestry control agents in the identification/control of trade of targeted species are priority activities for all countries receiving assistance under phase two of the Program.

For example, the activity “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” is a response to the recommendations of the NDF study conducted by the *Agence Nationale d’Appui au Développement Forestier* (ANAFOR) during phase one of the Program. The Program is now working to develop effective tracking systems in all target countries, including through the implementation of DNA identification techniques which have shown that both *Prunus africana* bark and *Pericopsis elata* logs can be traced back to specific trees from controlled production sites.

DRC has been a special focus of phase two of the Program. The country is considered to have the most important reserves of *Pericopsis elata* and *Prunus africana* in Africa, with both of these species unfortunately the subject of significant scrutiny in recent years (including trade bans/restrictions) due to inability to comply with various aspects of CITES regulations. *P. elata* is found mainly in the provinces of Equator and Orientale, while *P. africana* is concentrated in North Kivu and South Kivu provinces.

The activity “Non-detriment findings for *Prunus africana* (Hook.f.) Kalkman in North and South Kivu, Democratic Republic of Congo” was approved with the view to assist formulation of the country’s NDF report for *Prunus africana* and to establish an appropriate export quota based on the NDF report findings. The work of this activity resulted in the lifting of a suspension on exports of *Prunus africana* from DRC based on the scientific data generated

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Donors



European Union



United States of America



Norway



Germany



Netherlands

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

Program funding

Phase II of the Program has an approved budget of over \$8 million (€7.5 million) and has to date been funded by the European Union (through the European Commission - EC), United States of America, Germany, Norway, the Netherlands and the private sector. The third installment of €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 March 2015. The United States of America also continues to support the Program, pledging \$200,000 during the 50th ITTC Session in November 2014 while the Netherlands pledged \$70,000

at the end of 2013 and an additional \$130,000 during the 50th ITTC Session. The government of Germany also agreed that starting in 2015, half of the budget it was providing under ITTO's regular project cycle for PD 620/11 Rev.1 (M) (total budget \$2,046,274) "Development and Implementation of a Species Identification and Timber Tracking System in Africa with DNA Fingerprints and Stable Isotopes" could be counted as a contribution to the ITTO-CITES Program due to the close linkages between the Program and project objectives. A total of \$1 million has therefore been added to the non-EC contributions to the Program

and a progress report on this project is included in this issue of the newsletter.

Due to the sharp drop in the US dollar – euro exchange rate over the past several months, the third instalment of funds under the EC contract resulted in a drop of around \$400,000 in the amount of dollars received compared to previous installments. ITTO and CITES are working to offset this shortfall in the final year of Phase II of the Program, including through renewed efforts to 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.

Editorial (cont'd from cover page)

which allowed for an export quota of 72 tons of dried bark from two production sites in North Kivu starting in 2011. Since then, the activity encountered several delays in completing inventories and other planned work due primarily to insecurity problems in the region. Starting in 2014, the implementing agency (ICCN) began cooperating with agencies active in the Kivu region, including the Centre for Information on and Promotion of Agricultural Projects (CIPAGRI) and the Catholic University of Grabben (CUG). Inventories have been completed in the field with the help of these agencies leading to SMPs and NDFs for three additional production sites (Walikalé, Lumé, and Mangurejipa) with an approved additional export quota of 160 tons of dried bark of *Prunus*. Similar work is proceeding on *Pericopsis elata* in DRC, with the NDF report completed with Program assistance in May 2014. The Program is now funding independent verification missions to visit the nine main production concessions identified in the NDF report to confirm the inventory data provided by the companies operating in these concessions for *P. elata* in order to confirm/justify the requested export quota. These independent verification missions were just about to get underway at the time of preparing this Newsletter.

Refining management parameters for CITES-listed tree species should be a priority for consideration under a possible third phase of the program. Most management parameters (minimum harvest diameter, rotation length, growth rates, etc.) used by African countries are not based on rigorous scientific studies. Range states of CITES-listed tree species in Africa hope that support will be forthcoming for such work under a third phase of the Program and thank ITTO, CITES and their donor partners for the valuable assistance provided to date in sustaining these species.

Jean Lagarde Betti,
Regional Coordinator for Africa

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.

Activity progress reports

Under Phase II of the Program, ITTO has, in consultation with the CITES Secretariat, funded 13 new Activities in Africa, 13 in Asia, 11 in Latin America and three global Activities; while one Activity in both Africa and Latin America approved during Phase I of the ITTO-CITES Program was extended and continues to be implemented under Phase II of the Program. All of the 42 Activities approved or extended under Phase II are now underway or have already been completed. Among the 42 Activities approved or extended under Phase II of the Program, eight Activities under the TMT component are currently under implementation. Five of these have just been approved in early May 2015 and consultations are underway to finalize agreements with implementing agencies; these will be reported on in the next issue of the newsletter. The other three TMT Activities are reported on here, as is the German-funded project PD 620/11 Rev.1 as noted above. An additional 14 Activity proposals (eight in Africa, two in Asia and four in Latin America) submitted to ITTO by countries are pending approval/availability of funds.

Information about each country Activity (country, Activity document summary, executing and implementing agency, final reports, other outputs, etc.) can be found on the Program website (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 April 2015 (except for completed Activities which have already been reported on in previous issues of the Newsletter). 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

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 (extended to 24)
Actual duration: 18 months

This Activity is a continuation of assistance to Cameroon to address recommendations from its first non-detriment findings (NDF) report on *Pericopsis elata* in production forests produced under Phase I of the ITTO-CITES Program. The Activity aims to implement the main recommendations outlined in the NDF report and those related to law enforcement regarding *P. elata*. It is executed by the Agence Nationale d'Appui au Développement Forestier (ANAFOR) in collaboration with the national association of timber companies. ANAFOR requested to re-schedule the completion date from April to November 2015 so as to allow experts to complete their specific activities in the field, mostly on matters related to phenology and silviculture studies. A total of nine experts have been recruited and are currently working in the field. 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: ANAFOR
Status: Operational
Start date: November 2013
Planned duration: 18 months
Actual duration: 18 months

The Activity started implementation in November 2013 and is expected to be completed by 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 Activity is executed by ANAFOR in collaboration with the National Institute for Development and Agricultural Research (IRAD). As with the Activity "Law enforcement and management of *Pericopsis elata* in production forests in Cameroon", two progress reports have been submitted to ITTO, the first one in January 2014 and the second one in August 2014. A total of three experts have been recruited and are currently working in the field. The first important result obtained was the cleaning

of the plantation of Bidou II in March 2015. The products obtained are currently being used by the expert in charge of studying the technological properties of the Assamela wood, while the expert in charge of silviculture expressed some concerns regarding the low quality of the seeds used in the nurseries. It is envisaged that the Activity will encounter minor delays in completing its implementation.

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

Implementing agency: ANAFOR in collaboration with Double Helix
Status: Operational
Start date: April 2014
Planned duration: 12 months
Actual duration: 13 months

The Activity commenced implementation in April 2014 and contributes to the ITTO-CITES Program output calling for development of cost-effective regulatory systems for the trade in CITES-listed tree species. The first training workshop on DNA sampling was organized in Cameroon from 2-3 June 2014, in the "Residence Julie", at Kribi, by ANAFOR in collaboration with Double Helix. Samples of cambium have already been collected in two forest management units in east Cameroon by a student from the University of Douala and a field technician from ANAFOR. A delay was observed in the delivery of collected samples to the Double Helix laboratory, due to delays in obtaining CITES permits for export. Another delay was caused by the change in the annual logging allocation to one of the timber companies that will be used to test the tracking system. These delays have resulted in a slight extension in duration of the Activity which is now expected to be completed by the end of 2015. ANAFOR organized the second meeting of the National Technical Committee (NTC) at the end of April 2015.

Pilot implementation of a DNA traceability system for *Prunus africana* in *Prunus* Allocation Units in Cameroon

Implementing agency: ANAFOR in collaboration with Double Helix
Status: Operational
Start date: June 2014
Planned duration: 18 months
Actual duration: 11 months

The Activity commenced implementation in June 2014. It seeks to demonstrate that through the use of DNA techniques *Prunus africana* bark could be traced back to specific trees from the controlled *Prunus* Allocation Units (PAUs). After the training workshop that was organized in June 2014 in Kribi, Cameroon, and as taught during the workshop, the coordination team from Cameroon has sent students and field technicians to the forest to collect samples

of *Prunus*. In this regard, the students started collecting samples in August 2014 at the PAU level. The collected samples have been sent to the Double Helix laboratory for analysis. The students were sent back to the field and are collecting *Prunus* samples in the annual plot at Mount Cameroon for testing the tracking system.

Republic of Congo

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

Implementing agency: Centre national d'inventaire et d'aménagement des ressources forestières et fauniques (CNIAF)
Status: Operational
Start date: November 2013
Planned duration: 18 months
Actual duration: 18 months

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 *P. elata* in north Congo. The Activity is implemented by the Centre National d'Inventaire et d'Aménagement des Ressources Forestières et Fauniques (CNIAF), in collaboration with the Timber Industries Association in Congo. Two of the experts who are committed to support CNIAF in achieving the envisaged outputs are currently revising and finalizing their reports. A national workshop was organized from 10-11 February 2015 to validate the reports prepared by the different experts recruited by the coordination team. A total of three experts presented their reports, namely, (i) the expert working on soil and edaphic properties of *P. elata*; (ii) the expert working on diseases of *P. elata*; and (iii) the expert working on the biology and ecology of *P. elata*. More than 15 participants, considered as "the Scientific Committee" attended the workshop including researchers from the University of Marien Ngouabi as well as from other research institutions (agriculture, soil sciences). The members of the Scientific Committee concluded that more scientific and field data was required to yield concrete results. From 12-19 February 2015, the Regional Coordinator for Africa (RC) monitored the work being implemented in the field and noted that some wild seedlings of *P. elata* were planted in less than 5 ha of forest in the Tala Tala Forest Management Unit using the 'lining' planting method. The RC proposed to the coordination team to acquire more seeds, put in place a bigger nursery, and test different silvicultural techniques. The completion date of the Activity will be re-scheduled to the end of 2015.

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

Implementing agency: CNIAF in collaboration with Double Helix

Status: Operational

Start date: April 2013

Planned duration: 12 months

Actual duration: 13 months

The Activity commenced implementation in April 2014 in conjunction with similar work being carried out in Cameroon. The *Centre National d'Inventaire et d'Aménagement des Ressources Forestières et Fauniques* (CNIAF) is the implementing agency. Samples of cambium have already been collected in two forest management units in northern Congo by two students from the University of Marien Ngouabi, Brazzaville. Due to delays in obtaining CITES permits for export, there was a delay in delivering the collected samples to the Double Helix laboratory for analysis. Field activities are completed now.

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: 50 months

The Activity started in March 2011 under Phase 1 of the ITTO-CITES Program and is now re-scheduled for completion in August 2015. The Activity still encounters many problems in its implementation, namely, the instability/insecurity in many *Prunus* production sites.

In November 2014, the Regional Coordinator for Africa undertook a monitoring mission to evaluate the level of implementation of the work plan as agreed in the MoU signed between ICCN, the Centre for the information and promotion of agricultural projects (CIPAGRI) and the Catholic University of Grabben (CUG). In fact, following an earlier monitoring and evaluation mission that was conducted by the RC in September 2013, it was agreed that ICCN would play the role of a facilitator, while field activities would be implemented directly by CUG and CIPAGRI. The RC noted that there was weak cooperation among the partners as CIPAGRI had conducted the field inventories alone, without involving CUG. The RC proposed that the CUG authorities should convene a meeting with the other two partners to re-examine the role and responsibilities of each party.

In this regard, the three parties involved in the *Prunus* inventories are working well together since January 2015. As a result, ICCN has developed simple management plans for three production sites, namely, Walikalé, Lumé

and Mangurejipa, for a total annual production of 160 tons of dried bark of *Prunus*. This new approach adopted by ICCN is yielding some good results. Inventories are being conducted in the field with the assistance of CIPAGRI and the Grabben University of Butembo under the supervision of ICCN. At the same time, the local staff of ICCN has started conducting inventories in the Kahuzi-Biega national park. The pilot inventories conducted in February 2015 revealed that the park hosts important stocks of *Prunus africana* in some hills. The current approved annual quota for *Prunus* from DRC is 232 tons of dried bark as compared to 72 tons for the period 2011 – 2014.

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: September 2013

Planned duration: 12 months (extended to 24 months)

Actual duration: 20 months

The Activity commenced implementation in September 2013 and 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. The DRC authorities succeeded in producing the non-detriment findings (NDF) report in May 2014 as scheduled. The Regional Coordinator for Africa (RC) conducted a monitoring and evaluation mission to DRC in November 2014 with two objectives. The first objective was to monitor the implementation of the "NDF on *Pericopsis elata* in DRC", while the second objective was to monitor the level of implementation of the recommendations made in the NDF report on *P. elata*. The RC conducted another monitoring and evaluation mission in March 2015 with the aim to (i) assist in the evaluation of the Activity conducted by the international consultant recruited by ITTO to undertake a mid-term review of the activities implemented under Phase II of the ITTO-CITES Program; and (ii) address the problem of the control of forest inventories. The mission noted the importance of putting in place a framework to control and validate inventories conducted by timber companies and to develop a tracking system that will allow for reliable and timely tracing of the proposed quota of 23,000 m³ to be harvested from the production forests covered by the NDF. Pilot control missions to undertake inventory validation are currently being planned by the RC and DRC authorities for sample production forests in the Province Orientale. The first mission is scheduled for May 2015, after ITTO disburses the second instalment of funds to DRC.



A student collecting a DNA sample (bark and cambium) from a *Prunus* tree in North Kivu, DRC, January 2015. Photo: Ngoy

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

Implementing agency: Minister of Environment, Nature Conservation and Tourism (MECNT) in collaborations with Double Helix

Status: Operational

Start date: June 2014

Planned duration: 18 months

Actual duration: 10 months

The activity commenced implementation in June 2014 in parallel with the similar Activity in Cameroon. It seeks to demonstrate that through the use of DNA techniques *Prunus africana* bark could be traced back to specific trees from controlled production sites in North Kivu. The proposed DNA traceability system will secure controlled supply chains, detect substitution of illegally harvested bark and allow for timely corrective actions to be taken. The coordination team has sent students from the University of Grabben (Butembo) and field technicians to the forest to collect samples of *Prunus* as taught during the training workshop. Samples of cambium and bark collected by the students and technicians have already been sent to the laboratory of Double Helix for analysis. An integral part of the traceability system involves taking DNA samples from the cambium of standing trees in Prunus Allocation Units (PAUs) and match them with DNA samples taken from bark post-harvest. However, Double Helix has encountered some difficulties (mixture of bark samples much earlier in the supply chain and insecurity problems) in this approach and in March 2015 requested ITTO to change the scope of this activity. Rather than matching the bark to individual trees (DNA fingerprinting), Double Helix proposes to match bark samples back to distinct *Prunus* populations. Whilst the activity would no longer be aiming to identify the specific tree that a piece of bark came from, Double Helix would be able to identify and verify the PAU that the bark was obtained from.

Ghana

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

Implementing agency: Ghana Timber Millers' Organization (GTMO)
Status: Operational (TMT Component)
Start date: April 2013
Planned duration: 24 months
Actual duration: 25 months

The Activity to improve market transparency for African timber products (including those arising from CITES-listed species) has been progressing well. The tariff database (www.atmam.org) was recently completed. The translation of the database into French is the only major uncompleted activity. The translation and implementation of the Activity will be completed following verification of all phrases (about 170,000) before uploading to the translation service. The resulting online tariff database in English and French, expected to be available by mid-year, will facilitate the expansion of timber markets in the region.

Regional

Development and implementation of species identification and timber tracking in Africa with DNA fingerprints and stable isotopes (PD 620/11 Rev.1 (M))

Implementing agency: Thünen Institute of Forest Genetics, Germany
Status: Operational
Start date: February 2012
Planned duration: 36 months
Actual duration: 39 months

This project has recently been included in the ITTO-CITES Program as explained in the section on Program Funding. It supports seven African countries (Cameroon, Republic of Congo, Democratic Republic of the Congo, Côte d'Ivoire, Gabon, Ghana and Kenya) to develop and implement tools to identify tree species (including CITES-listed species) and their geographic origin using DNA fingerprints and stable isotope technologies. Implementation is supported by 14 collaborative agencies in Africa, Asia and the Pacific, and Europe.

For each of the three main target species - iroko (*Milicia excelsa*, *M. regia*), sapelli (*Entandrophragma cylindricum*) and ayau (*Triplochiton scleroxylon*) - more than 1000 gene markers (single nucleotide polymorphisms) have been developed and genetic geographic reference maps have been created to tests claims of geographic origin. A similar approach has been taken for the development of a database of stable isotopes to determine the region of origin of a particular sample.

In addition, differences in DNA sequences have been identified for another 21 important taxa (including CITES listed species) in Africa that can be used to help

identification to the species level. Blind tests are currently performed to evaluate the reliability of the various timber identification tools - DNA fingerprinting, stable isotopes, DNA sequencing and the more conventional approach of using anatomical characteristics - and the potential for combining various techniques.

To help build capacity and transfer technology, the project has also supported the establishment of three regional reference laboratories: at the Forest Research Institute of Ghana (FORIG) in Kumasi for West Africa; at the Institut de Recherche en Ecologie Tropicale, IRET in Libreville, Gabon, for Central Africa; and at the Kenya Forestry Research Institute, KEFRI in Nairobi for East Africa. Laboratory staff are being trained in the application of DNA fingerprinting and wood anatomical tree species identification techniques and also to perform simple DNA fingerprinting and stable isotope tests for determining origin. It is foreseen that in the future the regional laboratories will perform DNA testing directly on timber products, to ensure legality before export or to check claims of timber designated for domestic markets. The regional laboratories will allow neighbouring timber producing countries to access and make use of these facilities.

A final project meeting involving representatives from all relevant stakeholder groups will be held in Douala, Cameroon, 1-2 July 2015 and the project is expected to be completed by the end of 2015.

Asia

Indonesia

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

Implementing agency: Directorate of Biodiversity Conservation, DG Forest Protection and Nature Conservation
Status: Completed
Start date: February 2014
Planned duration: 12 months (extended to 14 months)
Actual duration: 14 months

The implementation of the Activity was extended to the end of March 2015 and it has now been completed. During the final months of Activity implementation, the dissemination for the wider application of the Ramin Roadmap was conducted in Pontianak, West Kalimantan from 25-29 November 2014 with the final dissemination workshop conducted in Jambi, Sumatra from 15-19 December 2014. In addition, a training workshop on vegetative propagation techniques was conducted from 10-12 December 2014 in Banjarbaru, South Kalimantan, where a total of 30 trainees from South Kalimantan and Central Kalimantan participated. Public consultation on the adoption of the Ramin NDF Guideline was also conducted in Bogor on 26 January 2015 where 40 participants attended. The purpose of the consultation was to obtain further relevant inputs on the Ramin NDF Guideline.



Practicing vegetative propagation techniques for ramin. Photo: Safinah Surya Hakim

At the conclusion of the Activity, a total of four proceedings of training workshops were prepared, including on ramin vegetative propagation techniques and wood identification of ramin and ramin looked-alike specimens. Two technical reports on assessing the current estimate of ramin growing stock in Indonesia and on the dissemination and wider application of the Ramin Roadmap were also prepared.

The results of the Activity have enhanced the conservation of ramin (*Gonystylus spp.*), raised awareness on CITES implementation through its capacity building activities, and contribute to a fuller understanding of the Ramin NDF Guideline and the Ramin Roadmap on sustainable management and conservation of ramin in Indonesia.

Managing agarwood plantation in Indonesia

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

Status: Completed

Start date: February 2014

Planned duration: 12 months (extended to 14 months)

Actual duration: 14 months

The implementation of the Activity was extended to the end of March 2015 and has now been completed. The Activity aimed 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 were: (i) data on plantations, agarwood production and its quality from planted species; and (ii) a proposed national policy on agarwood plantation and production, including market potential and trade. In this regard, a final one-day workshop on Agarwood Plantation Management, Production and Trade was held on 9 December 2014, at the Research and Development Center for Conservation and Rehabilitation, Bogor, Indonesia, to gain further inputs to develop and implement an agarwood management policy in Indonesia. It was attended by 35 participants from the Scientific Authority of Indonesia, the Forestry Regional Offices of South Sulawesi, West Java, Nusa Tenggara Barat, Papua, and South Sumatra, as well as from the Bogor Agriculture Institute, Gadjah Mada University, State Company of Forestry (*Perhutani*), Agarwood Exporter Association (ASGARIN), the Indonesia Agarwood Forum, and other interested stakeholders.

A total of seven reports were prepared by the Activity. They are: (i) Managing Agarwood Plantation in Indonesia - Documenting Agarwood Plantation; (ii) Developing a Registration Mechanism covering from Plantation to Production and Trade in Agarwood; (iii) Managing Agarwood Plantation in Indonesia - Estimating the



Discussion at the Workshop of Agarwood Plantation Management, Production and Trade, Bogor, Indonesia. Photo: Directorate of Biodiversity Conservation, Ministry of Environment and Forestry, Indonesia

Annual Production of Agarwood and its Quality; (iv) Proceeding of the Workshop on Stakeholder Consultations on Agarwood Plantation, Production and Trade; (v) A Review on Trade and Market of Agarwood; (vi) Policy on Agarwood Plantation, Production and Trade; and (vii) a Completion Report. All reports are available on the Program website.

The outcomes of the Activity have provided updated information on agarwood resources in Indonesia which will contribute to the further enhancement in planning, management, utilization and trade in agarwood products in Indonesia.

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

Implementing agency: Centre for Rehabilitation and Conservation, Forestry Research and Development Agency (FORDA)

Status: Completed

Start date: October 2013

Planned duration: 12 months (extended to 15 months)

Actual duration: 15 months

The Activity aimed 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. It was completed in December 2014.

At the completion of the Activity, a total of seven reports were published: (i) *Status Taksonomi dan Populasi Jenis-Jenis Aquilaria dan Gyrinops* (Exploratory Assessment on the Taxonomical and Population Status of *Aquilaria* and *Gyrinops* Species); (ii) *Panduan Lapangan Pengenalan Jenis Pohon Penghasil Gaharu Aquilaria spp. di Indonesia* (Field Guide for Identification of Agarwood-producing species of *Aquilaria* spp. in Indonesia); (iii) *Panduan Lapangan Pengenalan Jenis Pohon Penghasil Gaharu Gyrinops spp. di Indonesia* (Field Guide to Identification of Agarwood-producing species of *Gyrinops* spp. in Indonesia); (iv) Agarwood Bibliography; A Compilation of Abstracts on Agarwood Studies; (v) *In situ* and *Ex situ* Conservation of *Aquilaria* and *Gyrinops*: A Review; (vi) *Manual Pembangunan Plot Konservasi Eks-Situ Jenis-Jenis Tanaman Penghasil Gaharu* (Manual on establishment of *ex situ* conservation garden for agarwood-producing species); and (vii) a Completion Report. All are available on the Program website.

The conservation gardens established under the Activity, besides conserving the genetic materials from nature, will also act as seed sources for future plantation programs. This will further enhance efforts of the Scientific Authority, and in particular the Management Authority in Indonesia to better regulate trade in the two genera and prevent agarwood from being depleted any further.

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

Implementing agency: Directorate of Biodiversity Conservation and Association of Indonesian Forest Concessionaires (APHI)

Status: Operational

Start date: February 2015

Planned duration: 12 months

Actual duration: 3 months

The Activity, which commenced implementation in February 2015, aims to (i) formulate a ramin conservation concept for plantation forest concessions; (ii) develop a ramin conservation guideline for plantation forest concessions operation; and (iii) conduct a review of the Minister of Forestry Decree No. 127/KPTS-V/2002 on Temporary Moratorium of Logging Activities and Ramin Trade.

Meetings have already been held to revise the various components of the approved Activity budget, as well as to identify and recruit key personnel and national experts to execute the planned activities. There is no potential risk in the execution of the Activity as plantation forest concession holders and the government have a strong commitment to ensure that ramin conservation activities are effectively implemented on the ground and as part of the operation of plantation forest management.

At the completion of the Activity, it is envisaged that the outputs will enable a ramin conservation concept (strategy) within the operational area of plantation forest concessions to be produced. A review document on the Minister of Forestry Decree No. 127/KPTS-V/2002 on Temporary Moratorium of Logging Activities and Ramin Trade will also be produced which will provide inputs to the government for its further work on the Decree.

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

Implementing agency: Center for Biotechnology and Tree Improvement

Status: Operational

Start date: January 2015

Planned duration: 12 months

Actual duration: 4 months

The Activity commenced implementation in January 2015. A Team Leader for the Activity was recruited, as well as three national experts. The task of the first national expert is to study molecular genetic and morphological growth variation of ramin cuttings in the conservation gardens in South Sumatra and Central Kalimantan, as well as to undertake genetic analyses of the ramin populations. The second national expert is to undertake collection of wild genetic resources of ramin from Sumatra and Kalimantan for the production of rooted

cuttings, while the third national expert is to conduct research into *ex situ* conservation of non-*Gonystylus bancanus* species in Sumatra and Kalimantan. A research assistant was recruited to undertake work on the development of tissue culture for mass propagation of planting materials of ramin. A secretary and an administrative assistant were also recruited to assist the Team Leader to administer the office.

The benefits envisaged from the Activity are the early detection of genetic variation of ramin and the genetic infusion to ramin cuttings in the conservation gardens in South Sumatra and Central Kalimantan; as well as *ex situ* conservation of non-*Gonystylus bancanus* species in Sumatra and Kalimantan.

Establishment of an integrated agarwood cluster in Bintan Island, Indonesia

Implementing agency: Center for Rehabilitation and Conservation, Forestry Research and Development Agency (FORDA)

Status: Operational

Start date: January 2015

Planned duration: 12 months

Actual duration: 4 months

The Activity commenced implementation in January 2015. A Team Leader for the Activity was recruited, and two national experts retained to develop an integrated agarwood cluster in Bintan Island. However, the development of the integrated agarwood cluster has now being relocated to Bangka Belitung, another group of islands located on the east coast of Sumatra south of Bintan as there are more substantial agarwood resources and farmers engaged in agarwood

activities, especially in Central Bangka. There is also strong support given by the local government to establish the agarwood cluster in the province, as well as by the Ministry of Environment and Forestry, Indonesia.

The envisaged benefit of the Activity is the availability of an integrated agarwood cluster as a model for developing sustainable management and conservation practices, including a market information system which will enable all stakeholders to interact and access data on agarwood trade. The primary beneficiaries of the Activity are the CITES Management Authority, the CITES Scientific Authority, the Ministry of Environment and Forestry, Indonesia, research institutions, universities, companies, agarwood associations, and local communities.

Malaysia

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

Implementing agency: Forest Research Institute Malaysia (FRIM)

Status: Operational

Start date: June 2013

Planned duration: 24 months

Actual duration: 23 months

The Activity, which commenced implementation in June 2013, 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.



Maintenance of tags and re-measurement of each specimen of *Aquilaria malaccensis* for demography study in Malaysia. Photo: Lau Kah Hoo

To date, data on flowering phenology, flower maturity and anthesis/receptivity were analyzed in efforts to study the reproductive ecology of *Aquilaria malaccensis*. The tasks are now focused on germination and temporary plot set up to study population distribution pattern. Quadrats were set beneath five trees for regeneration study at the Universiti Teknologi PETRONAS (UTP) in Perak where the number of seedlings was counted at every visit. Regeneration study and analysis of flower/fruit production are still ongoing.

For the preparation of a conservation action plan for *A. malaccensis*, three approaches were used to determine the relationship among populations: cluster analysis, Principal Component Analysis (PCA) and STRUCTURE analysis. Preliminary results from PCA showed that the populations in Peninsular Malaysia were divided into two major clusters. Data analyses using the others two approaches are still ongoing.

In the establishment of DNA profiling database for species identification, DNA sequencing on samples from five *Aquilaria* species were carried out to determine suitable chloroplast regions for phylogenetic studies. Data analysis is ongoing on 32 samples for seven chloroplast regions; while for population identification, screening has been conducted on 286 samples for eight chloroplast regions.

In terms of training on species identification and methods to identify flowering initiation, rangers from the Penang National Park were trained to identify *A. malaccensis* seedlings and methods for transferring the seedlings from the forest to the nursery; while university students were taught methods to identify seedlings of *A. malaccensis*, the characteristics of mature trees and flowering initiation. All team members of the Activity were taught to identify flowering initiation as well as the differences between leaf flushing and young leaves.

A paper entitled "Agarwood flowering: Masting or Coincidence?" was published in Conservation Malaysia Issue 20 (2015).

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

Implementing agency: Forest Research Institute Malaysia (FRIM)

Status: Operational

Start date: June 2013

Planned duration: 22 months (extended to 24 months)

Actual duration: 23 months

The Activity duration has been extended to mid-2015 to enable the local website developer, Hasrimy Technologies Sdn. Bhd, to complete the development of the

interactive web-based information system (MyCITES) for ramin and karas in Malaysia. All the other activities have been completed, namely, information on (i) ramin and karas distributions in Malaysia (ecology, phenology, habitat, etc.); (ii) research and development of ramin and karas in Malaysia where 218 and 287 publications of ramin and karas respectively have been collected/analyzed; (iii) timber trade (import and export data) and production of ramin and karas by products type in Malaysia has been compiled; and (iv) Malaysia's policy and management practices of ramin and karas have been documented. All the information will be uploaded to the interactive web-based information system when it is fully operational.

It is envisaged that at the completion of the Activity, technical reports will be prepared, among others the "Status and Availability of Information on Ramin and Karas in Malaysia", and "The Administrator and User Manual: MyCITES Website and Database Information System".

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

Implementing agency: Forestry Department Peninsular Malaysia (FDPM)

Status: Operational

Start date: September 2014

Planned duration: 12 months

Actual duration: 8 months

The Activity commenced implementation in September 2014. It aims to: (i) develop training materials, including a practical field manual to enable staff of Forestry Department Peninsular Malaysia (FDPM) to undertake identification of *Aquilaria* to species level; (ii) develop a manual for the grading of agarwood to be used by the staff of FDPM; and (iii) provide training to a core team of trainers, which consists of 30 persons from FDPM, in order to provide continuous training to all the other staff of FDPM when required.

The Activity has recruited two national experts, with one of them tasked to prepare a field manual on the identification of *Aquilaria* to species level, including testing the manual in the field; and the other tasked to prepare a field manual for the grading of agarwood, as well as a syllabus on the identification of *Aquilaria* to species level and in the grading of agarwood, including conducting a training workshop.

The first draft of the field manual on the identification of *Aquilaria* to species level has been prepared and is currently under revision. Data collection for preparing the field manual for the grading of agarwood is currently ongoing. Data from four states

have been collected with the remaining three states to be completed by the end of May 2015. A workshop on the grading of agarwood is planned to be held from 18-20 May 2015.

The results of the Activity will enable FDPM to increase the number of competent personnel working on the conservation and management of *Aquilaria* species, especially in species identification and the grading of agarwood.

Latin America

Brazil

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

Implementing agency: Universidade Federal Rural da Amazonia (UFRA)

Status: Operational

Start date: February 2014

Planned duration: 24 months

Actual duration: 15 months

To date, 42 permanent mahogany regeneration plots established in 14 mahogany seed bearing regions were re-established and re-assessed for the second time (three measurements, one before and two after logging). So far it has been observed that logging has drastically affected mahogany natural regeneration (seedlings and saplings) reducing by 73% seedling population and by 96% sapling population. On the other hand, new seed dispersal occurred four years after canopy opening as logging has greatly increased seedlings and saplings populations by 238% and 850% respectively. Regarding the situation before logging, it was observed that only 2.75% (0.33 seedlings per ha) were still alive four years after logging disturbance.

During logging operations, 125 sample trees were measured for developing volume equations. As logging had to be interrupted due to heavy rains, the activity will resume in the 2015 harvest season. It is expected to measure at least 300 new sample trees for volume equation determination. The data collected so far were used to test preliminary equations. Seven double-entry models ($V = f [D, H]$) were tested. The Spurr model ($V = b_0 + b_1 D^2 h$) was preliminarily chosen to estimate volume of standing trees in the Seringal Macapá forest management unit (FMU). As expected, the equation's coefficient of variation was relatively high (20%) and therefore the equation must be used with caution to estimate volumes of trees in the FMU forest inventories. Precision of the model will be improved as new sample trees are added to the dataset.

Two M.Sc. and two undergraduate students are using the Activity's data for preparing their dissertations and monographs respectively.



Field crews and a mahogany stump at Fazenda Seringal Novo Macapá, Acre state, Brazil. Photo: Rui Ribeiro

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

Implementing agency: IFT/J. Grogan

Status: Operational

Start date: September 2012

Planned duration: 22 months (extended to 34 months)

Actual duration: 32 months

The Activity which commenced implementation in September 2012 has now been extended to June 2015. After completing field activities during September–November 2014 at the research sites in southeast Pará, project activities have focused on data management, analysis, and synthesis for publication. A list of all publications resulting from the support of the ITTO-CITES Program is available at <http://www.swietking.org/our-research.html>. All publications are also available in PDF format on request (jjgrogan@swietking.org).

A manuscript titled "Herbivores limit the population size of big-leaf mahogany trees in an Amazonian forest" was recently accepted for publication at the scientific journal *Oikos*. Authors of this manuscript which uses the Big-Leaf Mahogany Growth & Yield Model to simulate outcomes from different seedling predation scenarios are Julian Norghauer, Christopher Free, Matthew Landis, James Grogan, Jay Malcolm and Sean Thomas. The abstract of the article will be published in the next issue of the ITTO-CITES Program Newsletter.

A second manuscript titled "Management implications of population structure: a modeling study of big-leaf mahogany (*Swietenia macrophylla*) in the Brazilian Amazon" is nearing completion for submission to the scientific journal *Forest Ecology and Management*. Authors of this research article are Mark Schulze, Christopher Free, Matthew Landis, James Grogan and Marco Lentini.

A third manuscript titled "Enrichment planting for sustained timber production: a modeling study of big-leaf mahogany (*Swietenia macrophylla*) in the Brazilian Amazon" is being prepared for submission to *Forest Ecology and Management*. Authors of this research article are Matthew Landis, Christopher Free, James Grogan, Mark Schulze and Marco Lentini.

A fourth manuscript titled "Success story: sustainable forest management practices for big-leaf mahogany in Guatemala's Maya Biosphere Reserve" is being prepared for submission to *Conservation Biology*. Authors of this manuscript which uses the Big-Leaf Mahogany Growth & Yield Model to evaluate forest management parameters in use by forest communities since the mid-1990s in Guatemala's Petén region are James Grogan, Christopher Free, Gustavo Morales, Andrea Johnson, Rubí Alegria, Matthew Landis and Mark Schulze.

A fifth manuscript titled "Managing lesser-known timber species for sustained yield in Guatemala's Maya Biosphere Reserve" is also being prepared for submission to *Conservation Biology*. Authors of this manuscript which uses a modified version of the Big-Leaf Mahogany Growth & Yield Model, are Christopher Free, James Grogan, Gustavo Morales, Andrea Johnson, Rubí Alegria, Matthew Landis and Mark Schulze.

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

Implementing agency: Laboratory of Forest Products / Brazilian Forest Service (LPF/SFB)

Status: Operational

Start date: February 2014

Planned duration: 24 months

Actual duration: 15 months

The near infrared technique for wood identification has attracted attention of both the scientific community and international

organizations involved in preventing illegal timber activities. This Activity is using the technique to help identify mahogany and look-alike species to help control their trade.

In December 2014, Dr. Vera T. R. Coradin, the wood anatomist of the Activity and the Brazil CITES Scientific Authority on flora for South America, Central America and Caribbean attended the Expert Group Meeting on Timber Analysis, hosted by the United Nations Office on Drugs and Crime (UNODC). The NIRS technology is considered an emerging method available for wood and timber origin identification. The group of participants is preparing a document to support the international, national and regional laws regarding the harvesting, processing and trade in timber and its products.

In January 2015, Dr. Tereza C. M. Pastore, the Activity Coordinator, was invited to deliver a lecture at the 12th Semi-Annual Membership Meeting sponsored by the Forest Legality Alliance in Washington, DC. The latest results on the identification of forest species and origin were presented, followed by open discussion with representatives from various international organizations.

A second pilot test took place at two sawmills located in Brasilia on 19 March 2015 during the visit of Mr. Ian Thompson (who conducted the mid-term review of the ITTO-CITES Program) and the Regional Coordinator for Latin America. The NIRS portable device and the statistical model were tested for *Cedrela odorata*, *Erismia uncinatum*, *Micropholis melinoniana* and *Swietenia macrophylla* wood species which yielded very good discrimination results for the sawnwood tested.



Wood anatomist identifying sawnwood prior to NIRS measurement at a sawmill in Brasília, Brazil. Photo: Tereza Pastore

Guatemala

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

Implementing agency: Nature for Life Foundation (FNPV)

Status: Operational

Start date: April 2014

Planned duration: 24 months

Actual duration: 13 months

Inventory of the species *Dalbergia retusa*, *D. stevensonii* and other species of this genus began in Guatemala in May 2014 aiming to (i) determine the current population's status; (ii) analyze the dynamics of the species' environment and their identification; (iii) generate potential distribution models; (iv) propose ecological indicators that allow a monitoring system to be developed; and (v) disseminate the results.

According to the preliminary results of the Activity, *D. stevensonii* is found on flat and undulating topography with poor drainage and in sparse, low-density forests. It is mainly associated with the genera *Lonchocarpus*, *Spondias*, *Gymnanthes*, *Bursera*, *Metopium*, *Sebastiania*, *Protium*, *Jathropa*, *Guettarda*, *Aspidosperma*, *Swietenia*, etc. The species abundance is estimated at 4.52 trees/ha and 1.22 m³/ha. In general, the 10 cm diameter at breast height (DBH) data show that the species has a poor distribution by diameter class above 40 cm DBH (0.16 trees/ha) and therefore, management should be conservative.

D. retusa was found in flat to hilly terrain with drainage ranging from good to poor and in tall-dense forest to medium-sparse forest. It is associated with the species *Lochocarpus* gender, *Cedrela*, *Spondias*, *Bursera*, *Swietenia*, *Vochysi*, *Ceiba*, *Gliricidia*, etc. These species are present in abundance and are estimated at 2.85 trees/ha and 1.09 m³/ha for trees from 10 cm DBH. Data also show that the species has a moderately even diameter class distribution, but with total absence of regeneration. No other species of the genus was found in the evaluated forests.

The forest strata established (regardless of size ranging from <5,000 ha, 5,000-20,000 ha and >20,000 ha), have been evaluated which showed some degree of threat because of illegal logging, advancing of cattle ranching and agriculture, etc. This puts the existence of the species in danger.

Regarding the *Dalbergia* genus, it is necessary to protect it and/or establish guidelines for sustainable forest management to ensure the continued existence of natural forests which are essential to maintain seed sources and seed propagation with acceptable genetic characteristics.



Botanical collection during *Dalbergia* genus inventory in Guatemala. Photo: Fernando Palacios

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: Nature for Life Foundation (FNPV)

Status: Operational

Start date: April 2014

Planned duration: 24 months

Actual duration: 13 months

The set-up of the Forensic Laboratory advances as planned and currently the Activity team is in the process of purchasing laboratory equipment. Histological procedures for the Guatemalan *Swietenia*, *Guaicum* and *Dalbergia* species have been tested prior to further statistical analysis.

Three Guatemalan researchers visited the Center for Wood Anatomy Research (CWAR) of the United States Forest Service (USFS) at Madison, Wisconsin, during the third week of December 2014. The Center's Director, Dr. Alex Wiedenhoef and his team organized an intensive training program including (i) forensic wood identification techniques; (ii) histological procedures for wood microscopic analysis; (iii) selection of equipment required for the laboratory; and (iv) a detailed look at the wood identification system being developed at the CWAR. In addition, the Activity team also looked into other related topics such as inter-institutional cooperation possibilities.

The Activity team participated at a workshop on "Governance, legality verification systems and Guatemala and Honduras forest sector competitiveness" that was held in February 2015 in Antigua, Guatemala. The workshop was organized by the National Forestry Institute (INAB), the National Council for Protected Areas (CONAP) and the International Union for Conservation of Nature (IUCN).

The Forensic Laboratory project was introduced to Guatemalan forestry researchers at the Seminar on "Conservation and management of endangered high value forest species" that was held at the Faculty of Agronomy of the University of San Carlos de Guatemala on 25 March 2015.

Collection and botanical identification of *Swietenia*, *Dalbergia* and *Guaicum* species, as well as phenological studies of these species have been completed for up to 80% of the Southern/Eastern coast of the country, and in the so-called Franja Transversal del Norte, in northern Guatemala, starting in El Petén.

To date, the Activity has: (i) collected numerous complete botanical specimens; (ii) carried out comprehensive botanical descriptions of the species; (iii) prepared descriptions of the species' habitats and current status; (iv) created a photographic collection of the species and their habitats;



Dr. Alex Wiedenhoef (seated) during the wood identification training program. Photo: Myrna Herrera

(v) prepared geographical distribution maps which will complement the studies of the activity on the “National inventory of *Dalbergia*”; and (vi) assisted CONAP and INAB in the field identification of tree species listed in CITES Appendix II.

Non-detriment findings - Practical guidance for CITES-listed tree species

Implementing agencies: University of Cordoba (Spain); CONAP and BALAM Association (Guatemala)

Status: Operational

Start date: September 2014

Planned duration: 15 months

Actual duration: 8 months

The main objective of the Activity is “To provide guidance to CITES authorities regarding the processes, methodologies and information necessary for making non-detriment findings for timber species and other species of non-timber trees so that the provisions required for the export of species listed in the CITES Appendices can be implemented in a suitable manner and that international trade is compatible with the sustainable management and conservation of the species”. The expected outcome of the Activity is the production of a manual providing flexible guidance to the Parties for the making of non-detriment findings in the three official languages of CITES.

The first six-month Activity progress report has been submitted to ITTO and the Activity is expected to be completed in December 2015. The outcomes achieved thus far are (i) compilation of the results of the international workshop on non-detriment findings for tree species, the IUCN guidelines, and workshops conducted by CITES Parties, as well as other available information; and (ii) analysis of the different options for preparing NDFs.

Currently a document providing guidance on the necessary elements and methodology for making NDFs for trees is being prepared. This document will be used as the basis for discussion at the meeting of the Working Group scheduled to be held from 16-19 September 2015 in the city of Antigua, Guatemala.

Experts from the following countries and institutions have already been identified and invited to attend the meeting of the Working Group, namely, Brazil, Guatemala, Peru, Mexico, Burundi, Cameroon, Malaysia, Indonesia, Spain, Canada, the United States, the European Union and the CITES Secretariat. All invited participants have a high level of expertise that will make it possible to analyze and discuss different options, methodologies and special cases in order to prepare NDF guidance that will be submitted to the CITES Plants Committee for discussion.

Guyana

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

Implementing agency: Guyana Forestry Commission (GFC)

Status: Operational (TMT component)

Start date: August 2014

Planned duration: 18 months

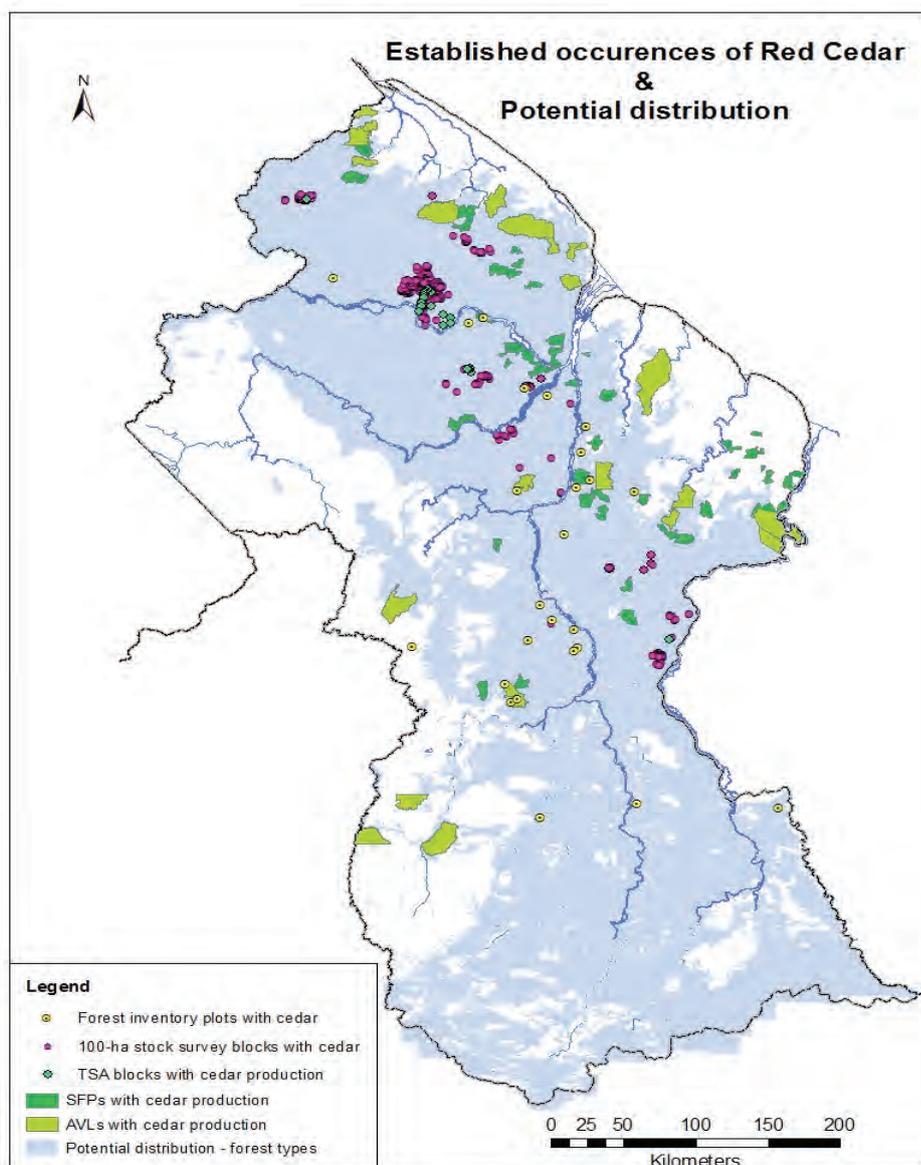
Actual duration: 9 months

The Guyana Forestry Commission has completed a resource assessment for the CITES-listed species *Cedrela odorata* (red cedar) in Guyana. This is one of the major deliverables of the Activity being implemented in Guyana and is intended to inform the management of this species at the national level.

The Activity aims to complete and update the available information on *C. odorata* using a variety of available information on

its distribution, population structure and production. The main sources of information are national forest inventories, and forest inventories and stock surveys carried out by forest concessionaires. Another source of information is production records.

Whilst red cedar is limited in distribution, it appears to occur widely in about three-quarters of the territory according to the national forest inventories, stock surveys and production records. Based on the national forest inventories, the species does not appear to have a specific preference for a certain forest or soil type, but appears to occur on all soil types from loam to white sand and in many forest types ranging from swamp forest to Wallaba forest. Data from 100% pre-harvest stock surveys in large concessions and production statistics from small concessions and Amerindian Village Lands confirmed that the species is found in



Occurrence and potential distribution of red cedar in Guyana. Source: Activity team

various forest types; in low swamp forest, in mixed forest on flat and undulating to hilly terrain, and in deeply dissected and steep high hills, as well as in Wallaba forest on white sand soils.

The Activity's assessment report describes the information sources and methodology that are used to assess the population size, distribution, stand density, size structure, and regeneration dynamics of red cedar in Guyana. It also provides a description of the species *C. odorata*, including taxonomy, botanical description, natural history and population dynamics, wood properties, technological characteristics, uses, habitat and population trends, and threats and international trade, including an overview of CITES covering the CITES Appendices, CITES export permit requirements, non-detriment findings, and trade records.

The report also describes the current and potential geographic distribution of red cedar, based on a variety of geo-referenced inventory information, forest concession allocation maps and regional and national vegetation maps, as well as an assessment of the regeneration dynamics and sustainable harvest levels.

Peru

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: Operational

Start date: August 2014

Planned duration: 18 months

Actual duration: 9 months

The Activity aims to test treatments for improving the conditions of seed stands and ensure the perpetuity of mahogany and cedar in natural forests through controlled seed production in the Tahuamanu seed stand in Madre de Dios with the purpose of conservation administered by the NGO Conservation International Peru.

The Activity began with the collection of information about the Tahuamanu seed stand (management plan and inventories) and other documents on silviculture treatments, phenology and monitoring of natural regeneration. In addition, three field missions were carried out in October and December 2014 and in March 2015.

A total of 129 individuals of *Cedrela* spp. and 77 individuals of mahogany were located in the study area. This included the verification of location of some mahogany trees surveyed in previous inventories conducted by Conservation International.



Installation of the weather station in the "San Miguel" camp at the forest concession Rodal Semillero Tahuamanu. Photo: Proyecto UNALM-CITES-ITTO

The information gathered consists of tree size as well as qualitative variables such as vigor, form of tree crown, sanitary condition, dominance, stem straightness, infestation of lianas and vines, etc.

In addition, a portable weather station has been established which will allow collection of data on temperature, rainfall, solar radiation and wind direction/speed. Daily data are automatically recorded which will contribute to studying the distribution and natural regeneration of cedar and mahogany.

Photographic equipment has also been installed to monitor the phenology characteristics of mahogany and cedar. The cameras will capture daily shots of individuals selected for evaluation for a period of 12 months so as to register all phenological phases of the species found in the area.

The Activity team will continue to undertake fieldwork throughout 2015 which will include conducting silviculture treatments and monitoring regeneration of selected individuals. The results will allow the design of a suitable methodology to manage seed stands in natural forests, quantify the volume of production of fruits and/or controlled seeds, and to develop guidelines for the protection of seed trees earmarked for the production of controlled seeds.

Global

Preparation of the publication "Atlas of tropical timber species – 1st Edition: Technological characteristics and uses of 273 tropical timber species (and 17 temperate species)"

Implementing agency: CIRAD, France

Status: Operational (TMT component)

Start date: October 2013

Planned duration: 24 months

Actual duration: 16 months

The Atlas aims to make reliable and timely information available on the technological characteristics and uses of tropical timber species by producing, publishing and disseminating an Atlas of tropical timber species covering the information contained in the latest TROPPIX software (version 7 - 2011). This new edition of The Atlas of tropical timber species will facilitate and enhance access to information on these timber species for all operators in the timber sector, both producers (forest managers, logging companies, policy makers) and consumers (importers, traders, timber industrialists, end-users).

Production of the Atlas is basically on track, with the following achievements already accomplished:

- Documentary research and complementary literature reviewed. The number of species to be described in the Atlas was increased from 290 to 328 species;
- Additional testing technology and digitization of wood samples developed;
- Photo collection increased. 150 more pictures have been collected and collection continues. However, it has proven more difficult than expected to obtain photos for some species being traded in small volumes or entirely new and this activity has therefore been delayed;
- Writing technical descriptions for species to be added in Tropix database and Atlas has been largely finalized. As for the collection of photographs, writing technical descriptions for some new or minor species being traded is becoming more difficult. Thus, the share of added species in Tropix has only reached 80% of the foreseen total;
- The manuscript of the Atlas for the designer/printer has been finalized.

- The new version of the Tropix software (V 7.5) is undergoing validation and will soon be available on the website <http://tropix.cirad.fr/>.
- Proofreading of technical descriptions for species to be included in the Atlas is ongoing.

CITES timber trade study

Implementing agency: ITTO

Status: Operational

Start date: April 2014

Planned duration: 8 months (extended to 18 months)

Actual duration: 13 months

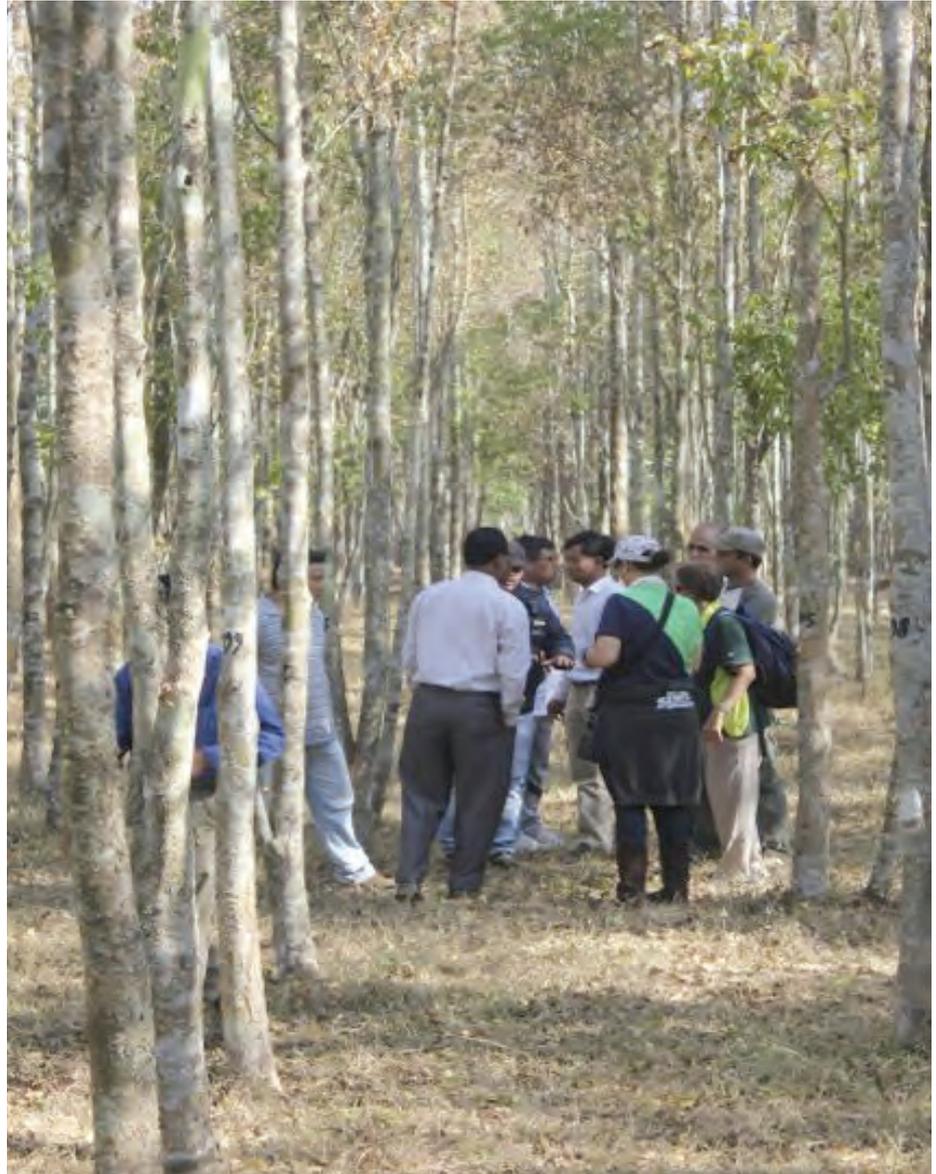
The study was requested by CITES Parties in Decision 15.35 to review trade in timber products from listed tree species that fall outside the listing annotations. Its outputs will be used to inform an ongoing review of listing annotations, including annotations for tree species. In July 2014, progress in the study was described to the 65th CITES Standing Committee (SC); the SC formed an Inter-sessional Working Group on Annotations and suggested that the study focus on four species for which the listing annotation limits CITES trade controls to primary (minimally processed) wood products: *Pericopsis elata*, *Dalbergia cochinchinensis*, *Cedrela odorata* and *Swietenia macrophylla*. The trade study will assist in the annotation review by examining range country trade in processed wood products that are not subject to CITES trade controls. Although the trade study cannot (and is not intended to) provide definitive evidence of trade in listed species outside the scope of the annotation, initial results display the scale and complexity of wood products trade and show that many range countries export processed wood products that might include products manufactured from CITES-listed tree species. The study is expected to be completed in the third quarter of 2015 following an extension agreed to allow time to incorporate responses to a CITES notification to all Parties asking for information on their trade in products from listed tree species that might fall outside of the scope of the listing annotations.

Relevant events/ initiatives

“EU-FLEGT Week”, 16-19 March 2015, Brussels, Belgium

In March 2015, the ITTO and CITES Program Coordinators along with the Regional Coordinator for Africa provided inputs to meetings on *Pericopsis elata* in DRC and *Prunus africana* organized during the EU-FLEGT week.

“Asian regional workshop on the management of wild and planted agarwood taxa”, 19–23 January 2015, Guwahati, India.



Workshop participants inspect an agarwood plantation during a field trip in northeastern Assam. Photo: Alastaire Sarre

Agarwood is a resinous wood that forms in species of *Aquilaria*, *Gyrinops* and several other genera native to Southeast Asia. These species produce a dark aromatic resin in response to infection by a type of fungal mould. The resin-embedded wood, called agarwood, is highly valued for its fragrance and is used to produce incense, perfumes and various other products. Prices of up to US\$2 million per kg of woodchips have been recorded for the highest-quality agarwood.

Aquilaria malaccensis, the primary source of agarwood, was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1995. All other agarwood-producing species of the genera *Aquilaria* and *Gyrinops* were listed in Appendix II in 2004, and their listings entered into force on 12 January 2005.

Over the years, range States and importing countries have made significant progress in implementing CITES in relation to agarwood-producing tree species. The secretariats of CITES and the International Tropical Timber Organization (ITTO), and the Ministry of Environment, Forests and Climate Change of the Government of India, hosted a workshop on agarwood management in January 2015 with the aim of making further progress on:

- the management and conservation of agarwood-producing species;
- the formulation of non-detriment findings;
- the adoption of management strategies that integrate the overall management of agarwood-producing natural forests with plantations of agarwood-producing species; and

- strengthening the agarwood stakeholder communication network.

Forty participants from 15 countries attended the workshop, including representatives of most range States. Presentations were made by the ITTO and CITES secretariats, the range States, and experts on agarwood production and trade. Participants formed two working groups to consider the sustainable management of agarwood in natural forests and plantations. The recommendations put forward by the two working groups were discussed and agreed in the final plenary session (see below).

Participants also undertook a two-day field trip to visit agarwood plantations and home gardens in rural Assam. They were able to observe local women working to extract agarwood from plantation-grown wood, and a local enterprise that extracts agarwood oil from agarwood chips.

On visiting various agarwood plantations in Assam during the field trip, the Indian CITES Management Authority, Mr Vinod Ranjan, expressed satisfaction in the system employed by the Government of Assam for the harvesting of agarwood plantations and the chain of custody, and he indicated that CITES export permits would be able to be issued accordingly. Previously, no export permits had been granted for exports of plantation-grown agarwood products from India.

Workshop participants agreed on the following recommendations:

- There is no current need to amend the guidance on non-detriment findings for agarwood.
- Where possible, range States should be encouraged to generate data on *Aquilaria* and *Gyrinops* species in addition to *Aquilaria malaccensis*.
- Range States with small populations of agarwood-producing species in the wild and which do not allow commercial use from the wild should be encouraged to generate, record and compile biological, ecological and law-enforcement information on these populations for future use in management and recovery programmes.
- Plantation programmes should be encouraged to contribute to the recovery of agarwood-producing populations in the wild, involving local communities to the extent possible.
- The vegetative propagation of agarwood-producing species should be studied as a possible means of reducing pressure on the harvesting of agarwood seed and seedlings in natural forests.

- Indonesia and Malaysia, which are currently exporting agarwood harvested in the wild, should continue using the system of voluntarily established national export quotas, and they should continue to conduct regular forest inventories.
- The illegal harvesting and poaching of agarwood-producing populations in the wild should be addressed.
- Range States should cooperate to build capacity in forest law enforcement to ensure the protection of agarwood-producing trees in the wild.
- The identification of agarwood products in trade remains challenging. The amended glossary on agarwood, when agreed by the Plants Committee, should be made available to range States to assist in the identification of agarwood products in trade.
- The management of plantations and natural forests should be coordinated to ensure the genetic diversity and vigour of agarwood-producing populations and the conservation of wild populations.
- Those range States that do not have policies on artificially propagated agarwood trees should be encouraged to develop such policies.
- Where planters and owners have properly registered their plantations, and a verification system is in place, planters and owners could be allowed to export if national legislation permits.
- Range States should be encouraged to offer incentives (e.g. a waiving of fees or improved taxation arrangements) to planters for registering their plantations.
- Range States should promote the sustainable production and trade of agarwood, especially through the coordinated sustainable management of agarwood plantations and the conservation and sustainable management of agarwood-producing trees in the wild.
- Range States and agarwood producers should develop networking to enable the sharing of technologies as well as agarwood planting materials.
- Range States should be encouraged to make use of improved planting stock (using germplasm collection materials) in enrichment planting in natural forests to help maintain and increase the genetic diversity of wild populations.
- Range States should be encouraged to implement the above-mentioned recommendations, seeking assistance

where necessary, including from the ITTO–CITES Programme by submitting project proposals for possible approval and funding.

Based on the above recommendations, workshop participants agreed on several draft decisions to be considered at the 22nd meeting of the Plants Committee (PC22, Georgia, October, 2015) and at the 17th meeting of the Conference of the Parties to CITES (CoP17, South Africa, October, 2016). The final report of the workshop is available on the Program website.

Article of interest

“Improve customs systems to monitor global wildlife trade”. Hon-ki Chan, Huarong Zhang, Feng Yang, Gunter Fischer.

Science, Vol. 348, Issue 6232, 17 April 2015, available at the following link: <http://www.sciencemag.org/content/348/6232/291.summary?rss=1>.

The volume of international trade in wildlife commodities is immense and, in many cases, is rising. Although there are already wildlife trade data sources, for example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Trade Database and the U.S. Fish and Wildlife Service Law Enforcement Management Information System (LEMIS), coverage of traded species or countries involved is not comprehensive. This can undermine supply-chain monitoring and fast aggregation of data to inform policy-making. The article discusses whether widely used, but limited, international customs codes and governance might evolve to address these gaps. It argues for reforming the Harmonized System of customs classification to make it easier for wildlife commodities (including timber) to be monitored worldwide.

Upcoming events

22nd meeting of the CITES Plants Committee (PC22), Tbilisi, Georgia, 19-23 October, 2015 (ITTO-CITES Program Advisory Committee meeting to be held in parallel).

World Forest Conference, Durban, South Africa, 7-11 September 2015 (ITTO-CITES Program Side Event confirmed 8 September 2015; see Program website for details).

51st Session of the International Tropical Timber Council, Kuala Lumpur, Malaysia, 16-21 November 2015.

17th meeting of the Conference of the Parties to CITES (CoP17), South Africa, October, 2016 (venue and date to be determined)

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 Africa conducted a monitoring mission to the Republic of Congo from 9-15 February 2015 where he assisted in organizing the workshop that was held in Brazzaville from 10-11 February 2015. He also conducted a mission to evaluate the field work carried out in the Tala Tala Forest Management Unit in north Congo and noted some delays in implementing the activity.

The Regional Coordinator for Africa plans to undertake a mission to the Democratic Republic of Congo in May/June 2015 to assist the authorities in the validation/verification of *Pericopsis* inventories conducted in the production sites in the Province Orientale.

The Regional Coordinators for Asia and Latin America will travel to Indonesia and Guatemala, respectively, in the second half of 2015 to monitor Program-funded activities in these countries.

In March 2015 ITTO engaged an international consultant, Mr. Ian Thompson, to undertake a mid-term review of the ITTO-CITES Program. He visited the Democratic Republic of Congo and Brazil to evaluate the progress achieved by the implementing agencies and other institutions involved in executing the Activities under Phase II of the ITTO-CITES Program.

More specifically, Mr. Thompson held a meeting with the Regional Coordinator for Asia, Mr. Thang Hooi Chiew, in Phnom Penh, Cambodia on 4 March 2015 to discuss progress achieved by the Activities that are being implemented under the Program in Indonesia and Malaysia under Phase II of the ITTO-CITES Program, including constraints and lessons learned.



Near infrared portable device and statistical model testing in a sawmill in Brasilia, Brazil (Prof. Jez Braga, left and Mr. Ian Thompson, right). Photo: Tereza Pastore

From 10-15 March 2015 Mr. Thompson accompanied by the Regional Coordinator for Africa, Mr. Jean Lagarde Betti, visited Kinshasa, Democratic Republic of Congo and held discussions with different stakeholders on the elaboration of non-detriment findings for *Pericopsis elata*. This had resulted in an urgent need to validate the inventories used to justify the current quota of 23,000 m³ of *P. elata* for the Democratic Republic of Congo.

From 16-21 March 2015 Mr. Thompson visited Brasilia, Brazil. Accompanied by the Regional Coordinator for Latin America, Mr. Ivan Tomaselli, he visited (i) the Brazil CITES Management and Scientific Authority, the Brazilian Institute of Environment and Renewable Resources (IBAMA); and (ii) the Laboratory of Forest Products/Brazilian Forest Service (LPF/SFB). In addition, meetings were held with the Activity coordinators of the LPF/SFB Activity on "Using the Near Infrared Spectroscopy (NIRS) technique on a pilot scale, as a potential tool for the monitoring of mahogany trade", and the

UFRA Activity on "Ecology and silviculture of mahogany (*Swietenia macrophylla* King) in the western Brazilian Amazon (Phase II)". Field visits to sawmills were also carried out for testing the portable NIRS wood identification device.

Mr. Thompson's review of the ITTO-CITES Program was broadly positive, finding that activities are making a concrete impact on strengthening CITES implementation for listed tree species in all regions. The discussions with regional coordinators and Program stakeholders were productive and Mr. Thompson provided valuable perspectives on the implementation of activities under the Program and possible directions for any extension to a third phase. Mr. Thompson also visited donors in Europe (the EC) and USA during his review, as well as the CITES and ITTO Secretariats with whom he consulted extensively during his mission. His report is currently being finalized and will be circulated to donors and the Program Advisory Committee along with ITTO's management response in June 2015.

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