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ITTO - CITES

PROGRAM FOR IMPLEMENTING CITES LISTINGS OF TROPICAL TREE SPECIES

Newsletter

In this Issue

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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 (through 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 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 Program activities to the end of the first half of 2013. 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

In many tropical countries, policies and strategies have been developed to ensure sustainable forest management, including tree species listed in the CITES Appendices. However, capacity building activities are still needed to further enhance enforcement and compliance of the CITES regulatory provisions. In Asia, a number of activities targeting *Gonystylus* species (ramin) were implemented under Phase I of the ITTO-CITES Program (2007-2011) in Indonesia and Malaysia. These activities included: improving inventory design; developing and implementing appropriate silvicultural systems; developing guidelines for non-detriment findings (NDF); monitoring flowering/ fruiting and vegetative propagation of ramin; assessing potential uses of non-*G. bancanus* ramin species in Indonesia; developing a DNA database for *G. bancanus* using mainly bark samples; ensuring enforcement of/compliance with CITES provisions and the Malaysian International Trade in Endangered Species Act 2008 (INTESA 2008); determining recovery rates for ramin sawn timber; using hyper-spectral technology to generate spatial distribution maps; and employing radio frequency identification (RFID) to track and trace the supply chain of ramin in Malaysia.

These activities have contributed to improved knowledge, skills, capacity and understanding on CITES rules and regulation within the CITES Management and Scientific Authorities of Indonesia and Malaysia, among others. They have also facilitated the preparation of NDFs and the establishment and approval of ramin harvest quotas in both countries. Work under the Program has contributed to a comprehensive review and analysis on the Terms of Reference of the Tri-National Task Force on Trade in Ramin and the linkages between the Task Force (linking Malaysia, Indonesia and Singapore) and other ASEAN fora and networks. The work to use microsatellite markers for the development of a DNA database for ramin under Phase I of the Program has led to the Activity - "Use of DNA for Identification of *Gonystylus* species and Timber Geographical Origin in Sarawak" that is currently being implemented under Phase II of the ITTO-CITES Program. Other Activities currently implemented under the Program included an assessment of ramin plantation requirements and the establishment of ramin genetic resources conservation gardens, and *in vitro* propagation of *G. bancanus* in Indonesia and Malaysia respectively.

At the conclusion of the successful implementation of the Phase I Activities in Indonesia and Malaysia, a total of 40 technical reports, 6 workshop reports/proceedings and 14 Completion Reports, including 13 complete Activity documents were uploaded in the Program website (http://www.itto.int/cites_programme) for public access.

The implementation of these and other new Activities in Indonesia and Malaysia will further enhance the management and conservation of the CITES-listed *Gonystylus, Aquilaria* and *Gyrinops* species, including compliance with the regulatory provisions of CITES regarding the trade of their products in the international market.

Thang Hooi Chiew, **Regional Program Coordinator, Asia**

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 (afrormosia or assamela), *Prunus africana* (pygeum) and *Diospyros* spp. (ebony) of Central Africa and Madagascar; *Swietenia macrophylla* (bigleaf 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.

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, Germany, Norway, 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. The United States of America pledged USD 180,000.00 and the Netherlands USD 70,000.00 during the 48th ITTC Session in November 2012; these funds were also made available during the first half of 2013. ITTO will encourage donors to continue providing funds to meet the co-financing provisions of the ITTO-EC contract and since requests for support under the program continue to exceed available resources.

Activity approvals and agreements

Under Phase II of the Program, ITTO has, in consultation with the CITES Secretariat, approved seven new Activities in Africa, eight in Asia and two in Latin America; while one Activity in Africa and two Activities in Latin America approved during Phase I of the ITTO-CITES Program were extended and continued to be implemented under Phase II of the Program. Of the 20 Activities approved or extended under Phase II, ITTO has finalized agreements to facilitate implementation of the 10 Activities listed in the next section. Agreements for the remaining 10 approved Activities are currently being concluded with Cameroon, Congo, Democratic Republic of Congo, Indonesia, Malaysia and Peru. The titles of these new activities are provided in the Box below; progress reports on these Activities will be reported in the next issue of this newsletter once implementation has begun. In addition to the 20 Activities approved or extended under Phase II of the Program, an additional 11 Activity proposals (5 in Africa and 6 in Latin America) submitted to ITTO are pending approval and will be considered for funding (and reported in this newsletter) when Program finances allow.

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). The following section provides brief descriptions and progress reports for Activities undertaken since the inception of Phase II of the Program until mid- 2013. Activities pending funding will be reviewed in the third quarter of 2013 with a view to making the most effective use of Program resources.

Approved Phase II Activities pending conclusion of agreements with ITTO in mid-2013

Cameroon

- Law enforcement and management of *Pericopsis elata* in production forests in Cameroon
- Sustainable management of *Pericopsis elata* towards the implementation of the simple management plan of the Bidou II plantation in the Kienke South Forest Reserve, Cameroon

Republic of Congo

- Promotion of the sivilculture of *Pericopsis elata* in North Congo

Democratic Republic of Congo

- Elaboration of a non-detriment finding for *Pericopsis elata* in Democratic Republic of Congo

Indonesia

- Capacity building on seedling propagation techniques and awareness raising on CITES implementation and ramin roadmap
- Managing agarwood plantations in Indonesia
- Promoting conservation of plant genetic resources of *Aquilaria* and *Gyrinops* species in Indonesia

Malalysia

- Reproductive and genetic studies towards the conservation and management of *Aquilaria malaccensis* in Peninsular Malaysia
- Development of an information database for the conservation and sustainable use of *Gonystylus bancanus* (ramin) and *Aquilaria malaccensis* (karas) in Malaysia

Peru

- Confirmatory assessment of forest inventories for cedar and bigleaf mahogany

Activity progress reports

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

The Activity started in September 2012 and is expected to be completed in August 2013. It aims 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. The first meeting of the National Technical Committee (NTC) was organized by the *Agence Nationale d'Appui au Développement Forestier* (ANAFOR) on 7 September 2012, chaired by the General Inspector of the Ministry of Forestry and Wildlife.

The first recruited expert has completed a final report on the state-of-the-art of the current monitoring system. The report contains a critical analysis of the tools used for monitoring logging, processing, internal transactions, trade, and the export of Assamela (*Pericopsis elata*) products. The current system of monitoring faces the problem of lack of coordination between the CITES Management Authority (MA), the CITES Scientific Authority (SA), and the timber companies. Data recorded by the timber companies in systematic inventories, logging, processing, transactions with other trade companies, or exports are not automatically transferred to the two CITES Authorities. The CITES SA does not monitor all the steps related to the supply chain of the timber from the forest to the points of export. Annual reports of the logging companies should be automatically sent to the CITES SA containing all data on the density, regeneration, volume logged, permanent plots, growth rate, etc; in view that *P. elata* is a CITES-listed tree species. The tracking system being developed under Cameroon's Forest Law Enforcement, Governance and Trade (FLEGT) initiative with the EU will be more efficient since it is a computer-based one using Personal Data Assistant (PDA), and not one that is based on narrative reports as previously used. However, the system will be based on inventories conducted by logging companies themselves with no guarantee on the accuracy of the data provided and recorded by the loggers. Systematic field controls by reliable forest agents will be required to verify these inventories. The new tracking system for FLEGT should include details related to CITES-listed tree species in general.

The report on the existing monitoring system provided the much needed information to enable the second recruited expert to develop, complete and submit a proposal for an updated monitoring system on logging, processing, trade and export of *P. elata*. The report is currently still being revised by ANAFOR.

Two training workshops are scheduled to be held from 10-14 June at Bertoua in the east region, and from 17-19 June 2013 at Douala in the littoral region of Cameroon. The main objective of the two workshops is to train control agents in forest control and the use of "CITESWOOD-ID" tool. An international expert from the Democratic Republic of Congo (who received training himself under Phase I of the Program) will be engaged to train participants on the use of the "CITESWOOD-ID" tool.

Republic of Congo

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

The Activity started in October 2012 is a 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). It is being implemented by the National Centre for Inventories and Management of Flora and Wildlife Resources (CNIAF) and aims to (i) train forest agents posted in different entry and exit points (ports and others) on the control of Assamela and *Prunus* products; and (ii) to disseminate information on CITES and its implementation tools. The specific objectives are 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.

A first training workshop was organized at Ouesso, the provincial capital of the Sangha Division in North Congo from 7-8 December 2012. It trained forest officers, logging associations' agents, customs officials and other groups on the CITES texts, as well as the CITES implementing laws and regulations in Congo. The second workshop is scheduled to be held from 26-27 June 2013 at Pokola, again in Sangha Division in the North Congo which will train control agents, forest and customs officers in the use of the "CITESWOOD ID" tool.

Democratic Republic of Congo

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

This Activity started in March 2011 under Phase I of the ITTO-CITES Program and has been extended to complete its work under Phase II. It seeks to assist DRC's CITES Scientific Authority (SA) to develop a Non-detriment Findings report for *Prunus africana* in the North and South provinces of Kivu and to draft a report for the CITES Secretariat addressing all recommendations directed to DRC by the Plants Committee in the context of the Review of Significant Trade in this species. The results of the Activity have already supported a request for the lifting of a suspension on exports of *Prunus africana* from DRC, based on the scientific data generated with the implementation of this Activity.

However, the Activity has encountered many problems in its implementation, namely, the instability/insecurity in the *Prunus* production sites due the presence of many rebels groups, and the long distance that separates Kinshasa, the Headquarters of the implementing agency (ICCN) and the production sites in the North and South Kivu. As a result, it was estimated that the Activity had only achieved 20% of its planned activities by September 2012.

As such, the Regional Coordinator (RC) for Africa undertook a monitoring mission to the DRC from 8-11 April 2013 which included planning the extension of inventories to secured sites; development/implementation of a bark tracking system; and to assist in the gathering of relevant information for the listing of timber species bubinga and wengé from the DRC in Appendix III of CITES.

The CITES Management Authority (MA) has observed that the exploitation of *Prunus* started last year with the first quota of 72 tons for 2012 being awarded to "Maison Kahindo" (MK), the local partner of Euromed (a European pharmaceutical company that, together with others, is helping to finance this work in DRC). The CITES MA pointed out three main problems facing *Prunus* in the DRC, namely, the lack of compliance with harvesting guidelines as outlined in the NDF report, the illegal harvesting of *Prunus*, and the very low quota as compared to the demand expressed by trading companies. It was observed that some companies that harvest *Prunus* in the DRC export their products to Asia using CITES permits issued by the CITES MA of neighbouring countries. The RC and the CITES MA agreed that a specific activity to develop a tracking system for the *Prunus* bark from production sites should be implemented. It was suggested that additional sites be inventoried, placed under management and NDF reports developed so as to seek an increase in the current low quota on *Prunus*. *Prunus* inventories could be extended to the Kahuzi Biega national park, a park located about 20 km from Bukavu, the provincial capital of South Kivu; and in the Mombassa territory located in the "province Orientale" as these areas are found to be more secure at the moment. In general, the North and South Kivu provinces still face instability and

security concerns with the situation in the North Kivu being more serious.

Following the advice of the RC, the Coordination Team recruited a GIS specialist who has assisted in (i) drafting the simple management plans for Ibathaama and Mwenda, the first two production sites assessed in the North Kivu; (ii) delineating the first annual plots in each inventoried site; and (iii) formulating a sampling design for extending management inventories to additional production sites in the South Kivu covering an area of 52,000 ha in the east of the Kahuzi Biega national park.

The RC will undertake a second trip to the DRC in July 2013 to assist the Coordination Team in implementing the sampling design proposed by the GIS specialist.

Madagascar

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

The 15-month Activity started in July 2012 with 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.

The executing agency has identified additional scientific evidence supporting the listing of Madagascar's valuable timber species in CITES Appendix II which led to actual usage of results for supporting the listing of *Dalbergia* and *Diospyros* from Madagascar in Appendix II at CITES COP 16 in March 2013. Furthermore, the exact number of logged species was clarified and additional scientific information on *Diospyros ferrea*, a widespread species across the Indian subcontinent and some countries in East Africa, was provided.

Current obstacles to complete the Activity are: (i) natural disasters such as cyclones together with flooding have caused difficulties to access inventory areas, in particular during the rainy season; (ii) the lack of high-resolution satellite imagery and the significant cloud cover at the time of photo capture have led to a major impediment for project implementation; (iii) throughout the country illegal logging within Protected Areas limits access to some sites due to insecurity; and (iv) the political situation in the country has caused insecurity throughout the island - an impediment for project implementation.

Because of these difficulties, the executing agency has yet to achieve the following activities: (i) establish an inventory of the resource in various types of plant formation, i.e. to determine the growing stock available for logging in sampling plots; (ii) establish and validate criteria for the identification of valuable timber species and/or stands or population based on high resolution satellite images; (iii) extrapolate results to Madagascar's various unit areas of vegetation; and (iv) propose consolidation measures and a sustainable management framework for the industry, taking into account internal and external trade movements. However it is expected that all of these activities will be completed in the next 3-4 months allowing the Activity to submit a final report by the end of 2013.

Asia

Indonesia

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

The Activity started implementation in September 2012 and is expected 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. From 28 February-2 March 2013, a total of 1047 ramin cuttings comprising 896 cuttings from Tumbang Nusa Hedge Orchard in Central Kalimantan and 151 cuttings from the Forest District of Ogan Komering Ilir (OKI), South Sumatra had been produced. An estimated 238 rooted shoot and stem cuttings had been field planted in the Ramin Conservation Garden in Kedaton, South Sumatra, at a spacing of 5 m between planting lines and 2 m within each planting line. During planting, 10 gm of NPK fertilizer was applied to each planting site. On average, 70% of the planted seedlings and rooted cuttings survived and presently they are intensively managed for the production of future shoot and stem cuttings. Weeding and slashing (removing all climbers and shrubs) at least 3-4 times a year is also being carried out. This will also contribute to the prevention of potential forest fires during the dry season. Training of personnel on vegetative propagation techniques was conducted in March 2013.

Cooperation in the mass propogation 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 had been formalized. This included the establishment of hedge orchards and genepool, the production of rooted cuttings, and the certification of seed sources. In this regard, 1500 cuttings were collected in April 2013 from the Tumbang Nusa Hedge Orchard and the cuttings are now being grown at the FORDA's Gunung Batu Fogging Nursery. The Regional Research Center (BPK) of South Kalimantan had also collected wildlings of ramin to replenish the hedge orchard of Tumbang Nusa using its own budget as part of ensuring the sustainablility of the Activity.

Planted ramin in the Ramin Conservation Garden, Kedaton, South Sumatra, Indonesia. Photo: Tajudin E.K.

Malaysia

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

The Activity started implementation in October 2012 and aims to establish effective protocols for the axenic (contamination-free) culture establishment of *G. bancanus* using field-grown planting materials, and protocols for *in vitro* regeneration of *G. bancanus* via direct organogenesis using axenic explants. It will contribute to the health and survival of ramin populations in the wild. The Activity collected leaves and young shoots from Lingga, Sri Aman, while wildings were transferred from the nursery to the green house where the tips were trimmed to induce new shoot formation. Cuttings were also carried out and after a few days bud-break was observed. The new buds from the cuttings were cultured on medium with cytokinin to induce shoot formation.

In conducting surface sterilization of field-grown materials, a biocide, Plant Preservative Mixture (PPM), was initially incorporated into the basal medium to inhibit contamination. The explants remained axenic in high concentrations of PPM, but contamination occurred after transferring them to a lower concentration of PPM. Experiments were also carried out to establish axenic culture without incorporation of PPM in the medium as prolonged period in the medium with PPM or high concentration of PPM might inhibit further growth of the explants. Nodal and shoot-tip explants surface sterilized with mercuric chloride were observed to maintain their green color and remained axenic. Percentage of contamination was low. Axenic nodal explants obtained from the field were also transferred to basal medium incorporated with cytokinin to boost growth and although the petioles wilted, new buds had sprouted. With these studies, a surface sterilization regime was developed and applied on field-grown materials which proved to be effective in providing contamination-free explants (leaves and nodes) and was used to conduct regeneration experiments. It was also observed that calluses were successfully induced on cultured leaf samples. However, development of embryo from the callus stage usually takes time and may not be able to develop into an embryo; research is continuing into this.

Use of DNA for identification of* Gonystylus *species and timber geographical origin in Sarawak

The Activity started implementation in October 2012 and aims to develop a molecular database of ramin for the identification of the species and its geographical origin in Sarawak, and a protocol for extracting DNA from ramin timber. The Activity completed identifying the distribution of ramin in Sarawak based on information in the Sarawak Herbarium and the BRAHMS database. A total of 166 leaves and wood samples from 14 species were collected. The collected samples were preserved in NaCl or hexadecyltrimethylammonium bromide (CTAB) solution and silica gel. A total of 137 samples were used for DNA extraction. In this regard, DNA from the collected leaf samples was extracted using three main extraction protocols, namely, CTAB method, Qiagen QIAamp Stool kit and Qiagen QIAamp Plant kit. The CTAB extraction method was found to be the best as it yielded higher volumes of DNA. Experiments to extract DNA from preserved wood samples evaluated five preservation methods, namely, keeping wood in tubes containing NaCl-CTAB solution, absolute ethanol or normal water; air-dried and oven-dried, and in using different parts of the wood, namely, the inner bark, sapwood and heartwood.

With the completion of the listing of microsatellite markers and chloroplast DNA (cpDNA) primers for screening, the amplification of leaf DNA using two cpDNA primers was successfully carried out for 13 different ramin species. Another eight pairs of primers will be tested while the analysis of chloroplast sequence DNA will be conducted at the Forest Research Institute Malaysia (FRIM) after further screening and selection of suitable primers. In addition, the DNA extraction protocol modified from the CTAB had been optimized and completed. The optimized CTAB protocol was successfully used to extract DNA from sapwood although some species gave low concentration of DNA as had been expected. In May 2013, a further 36 and 76 leaves and wood samples as well as voucher specimens for species identification were collected from the Semenggoh Forest Reserve in the Kuching Division and the Lambir Hills National Park in the Miri Division respectively.

Latin America

Brazil

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

Since ITTO-CITES Newsletter 2-2 (March 2013), substantive updates to the website 'Big-Leaf Mahogany in Brazil and South America' (http://www.swietking.org/index.html) have been undertaken. Descriptive accounts of all field sites with interactive maps showing mahogany distribution patterns and field site infrastructures have been posted. Additional information on regional climate, geomorphology, hydrology, soils, and floristic patterns have also been included in the website (http://www.swietking.org/field-site-data.html). Several new postings are planned under the topic 'Management' in the coming months for the website (http://www.swietking.org/management.html). Preparation is also underway for a training workshop on how to use and adapt the Big-Leaf Mahogany Growth & Yield Model (http://www.swietking.org/model-applet.html), or *El Modelo de Crecimiento y Rendimiento de la Caoba* (http://www.swietking.org/spanish-model.html, to local conditions in South and Central America. Workshop materials would emphasize using data from local populations to project population dynamics and sawn timber production over multiple cutting cycles. However, the venue is yet to be decided.

More than 400 adult mahogany trees were re-enumerated for their survival rate, diameter growth, fruit production, and crown phenology; while several thousands of naturally occurring and experimentally out-planted seedlings were also re-enumerated for their survival rate and growth. In addition, new research initiatives will investigate site and mahogany population histories through the use of dendro-chronological techniques. For the 2013 dry season, plans are also being made to undertake field work at Marajoara and Corral Redondo.

Several mahogany-related research articles have been accepted for publication or are under preparation or review at scientific journals as listed in the Box on the next page. A complete list of publications resulting from ITTO-CITES supported research under this Activity can be found at http://www.swietking.org/our-research.html.

The implementers of this Activity wish to take the opportunity to record the passing of Sr. Honorato Babinski, founder and owner of Serraria Marajoara Ltda (SEMASA), and extend their most sincere condolences to his family. He was instrumental in initiating the field work on Big-leaf mahogany at the two sites owned by his company in southeast Pará: Marajoara (http://www.swietking.org/marajoara.html) and Corral Redondo (http://www.swietking.org/corral-redondo.html. His generosity in granting access to these sites is being continued by the current owner of Marajoara, Sr. Claudiomar Vicente Kehrnvald.

Grogan J, Loveless M (accepted). Implications of flowering behavior for management of Big-leaf mahogany (*Swietenia macrophylla)* in southeastern Amazonia, Brazil. *American Journal of Botany.*

Grogan J, Landis RM, Free C, Schulze M, Lentini M, Ashton MS (under review). Big-leaf mahogany population dynamics and implications for sustainable international trade. *Journal of Applied Ecology*.

Grogan J, Schulze M, Pantoja F, Vidal E, Lentini M, Valle D (under review). Enrichment planting of Big-leaf mahogany in logging gaps in Acre, Brazil. *Forest Ecology and Management*.

Free C, Landis RM, Grogan J, Schulze M, Lentini M (under preparation). Management implications of long-term tree growth & mortality rates: a case study of Big-leaf mahogany (*Swietenia macrophylla*) in the Brazilian Amazon. For *Forest Ecology and Management.*

Grogan J, Loveless M, Free C, Landis RM, Schulze M (under preparation). Management implications of fruiting behavior by Big-leaf mahogany (*Swietenia macrophylla)* in southeastern Amazonia, Brazil. For *American Journal of Botany.*

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

The Activity started in March 2009 under Phase I of the Program and was extended under Phase II due to problems in completing the field work which has now been finalized in December 2012. The Activity was divided into two stages: the first, completed during Phase I of the Program comprised all pre-logging activities covering forest inventory, stock maps preparation, harvest planning, harvesting operations and the establishment and assessment of eight permanent sample plots and 20 regeneration plots. The second stage, completed in March 2013, covered post-logging activities, such as re-assessment of the regeneration plots, re-measurement of the permanent sample plots, and collection of specimens for tree identification.

The short duration of the Activity did not allow inferences to be made on forest dynamics. Most of the findings refer to trees and the abundant natural regeneration, as well as the logging impacts on the natural regeneration, and seed dispersal and establishment. Logging was found to reduce the stock of saplings by nearly 76% and that of seedlings by 6%. Seed dispersal had also proven to be very efficient. Prior to logging, saplings and seedlings were found up to a distance of 200 m from the parent trees. On average, the highest densities had occurred at a distance of 145 m and 104 m from the parent trees for saplings and seedlings respectively. The average dispersal distance was reduced to 61 m after logging mainly due to high mortality but seedlings were recorded up to a distance of 123 m from the parent trees, i.e., the dispersal distance had increased due to seed germination and establishment after logging. The dispersal area was 6.28 ha located west of the parent trees. Taking cognizance of the results of the Activity, the following considerations could be drawn: Bamboo (*Guadua* spp.) is a serious obstacle to mahogany natural regeneration and its control must be part of the silvicultural system; and logging impacts on natural regeneration combined with losses due to herbivores and natural seedling mortality raise the need to carry out enrichment planting in order to assure enough trees for the next harvest; this activity should be part of the post-logging silvicultural operations. In addition, the application of the present regulations concerning forest management in Brazilian mahogany forests (Normative Instruction No.7) leaves too few potential trees for the next harvest. Revision of the regulations should be considered together with the Normative Instruction No.5 which regulates forest management in non-mahogany forests, in view that a mahogany forest is a mosaic of patches of occurrence of mahogany and non-mahogany species. Logging restrictions in both Instructions would enhance species conservation. However, to increase its productivity it is advisable that enrichment planting in logging gaps be carried out as its success has been demonstrated in the Batisflor forest management unit and elsewhere in the Amazon region. Controlling shoot borer attack is absolutely necessary to ensure high survival and low damage by *Hypsipyla grandella* Zeller. The use of the insect killer, Colacid, tested within a project funded under Phase I of the ITTO-CITES Program, has proven to be very effective in its control and must be part of the plantation protection measures.

Four undergraduate students had been trained under the Activity's auspices, one article had been submitted to a scientific journal and one M.Sc. dissertation is under preparation. The final report of the Activity will be submitted to ITTO by August 2013.

Peru

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

The Activity aims 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 is an updated database including information collected from Annual Operating Plans of Madre de Dios province. This allowed for the preparation of location maps of mahogany and cedar seed trees in the Province and the finding that the number of seed trees totaled 2019 trees, with 556 mahogany trees and 1463 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 study team conducted field work for validation and has evaluated 27 plots, six located in the conservation concession area of Rodal Semillero Tahuamanu (Control Area) with the balance of 21 plots located in disturbed areas comprising 11 plots for cedar seed trees and 16 for mahogany. Between June and July 2013, it is envisaged that the field work and the evaluation of the samples will be completed.

The methodology of the manual has been shared with officials of the Ministry of Environment and the Ministry of Agriculture. The implementation team from UNALM made a presentation to officials, professionals and university students in

Measurement of diameter at breast height (DBH) of *Cedrela* species in Peru. Photo: FCF-UNALM.

Puerto Maldonado (Madre de Dios) with the support of the Ministry of Environment. The team also presented the results of the work on *Swietenia macrophylla* which had allowed the Peruvian government to formulate non-detriment finding reports. In addition, the results and findings of the Activity were also presented at the *International Meeting on Sustainable Forest Management in CITES* held in Bali, Indonesia, from 8-10 January 2013.

Relevant events/ initiatives

International Meeting of Sustainable Forest Management in CITES, Bali, Indonesia 8-10 January 2013

The final report of the meeting (which was covered in the last issue of this newsletter) is now available at http://www.itto.int/outputs/.

ITTO-CITES Program Side Event at CITES CoP16, Bangkok, Thailand, 8 March 2013

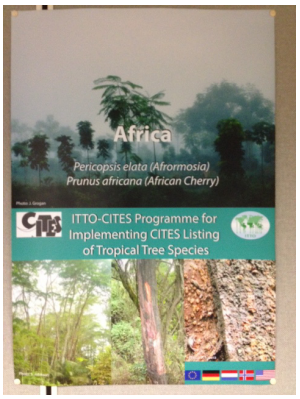
The ITTO-CITES Program hosted a joint side event to the 16th Meeting of the Conference of the Parties to CITES (CoP16- 3-14 March 2013) in Bangkok, Thailand on 8 March 2013. The event was attended by approximately 140 people, including representatives from CITES Management and Scientific Authorities, national delegations, NGOs, and private companies. The event was chaired by Margarita África Clemente Muñoz, the Chair of the CITES Plants Committee and opened with speeches and welcoming remarks by Emmanual Ze Meka, Executive Director of ITTO, and John Scanlon, Secretary General of CITES, in which they heralded the unique and successful partnership between CITES and ITTO and congratulated the Program's participating countries on their many successes.

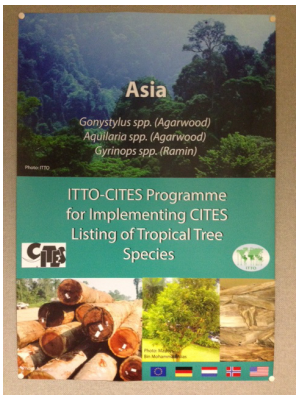
Next a panel discussion was held with panelists Steven Johnson (General Coordinator of the ITTO-CITES Programme for ITTO), Milena Sosa-Schmidt (CITES Scientific Officer for Flora), Nandang Prihadi (Directorate General of Forest Protection and Nature Conservation, Indonesia Ministry of Forestry), Aro Vonjy Ramarosandratana (Madagascar Department of Plant Biology and Ecology, University of Antananarivo), César August Beltetón Chacón (Guatemala, Chair of CITES Plants Committee Mahogany Working Group), and Hélène Perier (Scientific Officer, Multilateral Environmental Agreements, Processes and Trade Issues, European Union). The panelists represented countries with projects from each of the three ITTO-CITES Program regions, and Program donors. Panelists gave an introduction to the ITTO-CITES Program, a review of success stories and lessons learned from the participation of their respective countries in the Program, and the impact of the Program on the work of the Scientific Review Group of the European Commission, which has been a major donor to both phases of the Program.

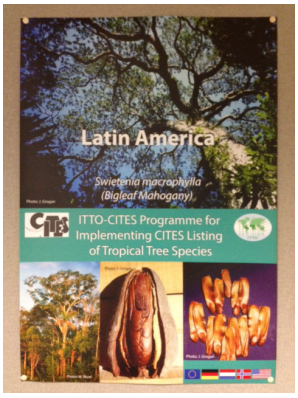
The event was closed with a video from Cameroon highlighting the importance of *Prunus africana* to Cameroon and the work done by Cameroon through the ITTO-CITES Program on *Prunus* conservation. The video, available on the ITTO and CITES websites, will soon be joined by similar videos to be produced by the Program on its work on mahogany in South America and ramin in Asia. A final discussion period was lively and questions from the audience were wide ranging, including requests for further and more specific information on certain projects and on how to become eligible for Program funding.

Outreach materials

The side event at CITES COP 16 spurred the creation of new outreach materials, which will be used for the duration of Phase II of the ITTO-CITES Program and beyond. Outreach materials include a brochure in English, French, and Spanish with an overview of the Program, the species and regions involved, highlights from Phase I, and areas of emphasis for Phase II. Additionally, three posters accenting each region and species were created (shown at right), and three banners were produced on the Program in general, non-detriment findings and timber tracking technologies. A "toolkit" is also in the process of being compiled and drafted, which will make available the outcomes of the final products of the Phase I activities through a single tool, which can be widely distributed and translated into local languages, and revised to include project outcomes from Phase II.







CITES Secretary General John Scanlon (left), Plants Committee Chair Margarita Clemente and ITTO Executive Director Emmanuel Ze Meka open the side event. Photo: CITES Secretariat

Upcoming events

Training workshops on CITES Tools in Cameroon

Two *Training Workshops on CITES Tools* are planned to be held in Bertoua and Douala, Cameroon, from 10-14 June and 17-19 June 2013 respectively.

Training workshop on CITES Tools in Republic of Congo

A *Training Workshop on CITES Tools* is planned to be held in Pokola, Republic of Congo, from 26-27 June 2013.

Workshop on the ITTO-CITES Program and its relevance to Central America

This workshop will introduce the Program and help to develop Activities for assistance in implementing CITES for *Dalbergia* spp. (several Central American species were listed in Appendix II at CITES COP 16) and for mahogany (trade is increasing from some countries in the region). It will be held from 16-18 July in La Antigua, Guatemala.

Program monitoring

To ensure the transparency of the ITTO-CITES Program, regular monitoring of field implementation will be 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, Mr. Thang Hooi Chiew, undertook a field visit to Palembang, South Sumatra, Indonesia from 20-22 May 2013 to monitor the establishment of the Ramin Conservation Garden in Kedaton, Ogan Komering Ilir (OKI) District, South Sumatra; and the activities undertaken at the Sukomoro Nursery located on the outskirts of Palembang. In brief, approximately 4 ha of the total area of 20 ha of the Ramin Conservation Garden had been planted with about 4000 ramin plants using planting materials from seeds and rooted cuttings. Other species planted included jelutong (*Dyera lowii*) and pineapples, a cash crop. The average age of ramin is 2.5 years with a height of 1.5 m, while the recorded average height of the jelutong at the age of 3 years was estimated to be 2.5 m. Meanwhile, the Sukomoro Nursery covering an area of 3.7 ha is managed by the Center for Forest Seed Production (CFSP) under the Directorate of Rehabilitation and Social Forestry, Ministry of Forestry, Indonesia and is expected to produce 1 million seedlings of selected tree species yearly for the Ministry to carry out its community and social forestry programs. Currently, it is also producing rooted shoot and stem cuttings for the establishment of the Ramin Conservation Garden at Kedaton. The Regional Coordinator for Asia had also held discussion with the Indonesian National Program Coordinator of the ITTO-CITES Program on, among others, the status on the signing of the two Agreements between ITTO and Indonesia, namely, with the Directorate of Biodiversity Conservation and the Forestry Research and Development Agency (FORDA), as well as the proposed new Activities that are currently being developed by FORDA for submission to ITTO for its consideration and approval.

The Regional Coordinator for Africa travelled to DRC in April 2013 to oversee work on *Prunus africana* (see Activity Progress Reports section). A follow-up mission is to be carried out in July 2013. Details of this and other monitoring missions (including upcoming missions planned by the Regional Coordinator for Latin America) will be provided in the next issue of the Newletter.

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