Report of the international closing meeting of the CITES Tree Species Programme

Kuala Lumpur, Malaysia and online, 5–7 October 2022

Photo: A. Sarre

Contents

Acronyms

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
COVID-19	coronavirus disease
CTSP	CITES Tree Species Programme
EUR	euro(s)
FRIM	Forest Research Institute Malaysia
GC-MS	gas chromatography–mass spectrometry
ha	hectare(s)
ITTO	International Tropical Timber Organization
LAF	legal acquisition finding
m	metre(s)
NDF	non-detriment finding
NIRS	near infrared spectroscopy
USD	United States dollar(s)

Introduction

Photo courtesy FRIM

Almost 900 tree species, many of which are highly valuable, are listed in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The CITES Tree Species Programme (CTSP) was launched in June 2017 with the aim of supporting the efforts of CITES Parties to implement CITES regulations for their listed tree species. The CTSP is a continuation of the work carried out over more than a decade by a programme implemented jointly by CITES and the International Tropical Timber Organization (ITTO), which came to an end in 2016. The CTSP ends in November 2022.

The closing meeting of the CTSP was attended in person or online by 43 people from 21 countries (see Annex 1 for a list of participants). It provided an overview of the outputs and outcomes of the CTSP; reviewed the results of the CTSP's national and transnational projects; and made recommendations for future work (Annex 2 contains the agenda). Participants attended a field trip to the Forest Research Institute of Malaysia (FRIM), where they experienced the Forest Canopy Walk and visited the FRIM Genetics Laboratory.

The meeting was organized by the CITES Secretariat, ITTO and FRIM.

Opening session

Remarks by the CITES Secretariat

Photo courtesy FRIM

Ms Sofie Hermann Flensborg from the CITES Secretariat thanked all participants, including those online, for their attendance at this closing meeting of the CTSP. She thanked all those involved in the CTSP for their hard work over the five years spanned by the programme and their adaptability in the face of challenges such as those posed by the COVID-19 pandemic and United Nations procedures. The meeting was to celebrate the achievements and results of the CTSP, said Ms Flensborg. She thanked Ms Ishii Kanako and Dr Steven Johnson at ITTO, and FRIM and its staff, for their work in convening the meeting.

Ms Flensborg said that, when the CITES Secretariat signed the contract for the CTSP with the European Union in 2017, it had heralded a new adventure for Secretariat, which had not previously worked so comprehensively on the implementation of the Convention in relation to tree species. The work w essential, she said, in view of the increasing number of species in the Appendixes. In 2016, the listing of the *Dalbergia* genus added almost 300 more species, indicating the clear need for this work. Inclusion of a species in CITES Appendix II meant that international trade must meet certain criteria and trade must be sustainable. Simply stated in the Convention, trade must not be detrimental to the species and not in violation of national laws.

Two findings must be carried out or be in place before trade can be authorized—a non-detriment finding (NDF) and a legal acquisition finding (LAF), said Ms Flensborg. The scientific authorities of the range states must monitor the trade and, if they determined that trade must be

limited to maintain a species throughout its range at a level consistent with its roles in the ecosystem, there might be a need to put in export measures to limit the trade. So the scientific authority must monitor the species to ensure that any international trade was consistent with the conservation of the species.

The overall aim of the CTSP was to contribute to global biodiversity and the purpose of this closing meeting was to find out whether we succeeded, said Ms Flensborg. Were biodiversity and tree species better protected today? What discoveries had been made? Could countries better prepare NDFs for species included in CITES Appendixes? Had projects helped reduce poverty? What had already changed, what knowledge had been gained, and what impacts would the projects make in the longer term? Ms Flensborg expressed hope that the meeting would lay the foundation for a community of practice for the ongoing sharing information and knowledge, potentially with further CITES support.

Remarks by the FRIM Deputy Director-General

Photo courtesy FRIM

Dr Norwati Muhammad, FRIM Deputy Director General (Research), spoke on behalf of Dr Ismail Hj Parlan, FRIM Director-General, who was unable to attend the meeting. She said that ITTO, CITES and FRIM had a long history of cooperation through numerous forestry and biodiversity conservation projects, including a recent project under the CTSP. Under the projects, important knowledge had been acquired on the phenology, reproductive ecology and genetics of *Aquilaria malaccensis*, an information system—MyCITES—had been developed to assist the management and conservation of *Gonostylus bancanus* and *A. malaccensis*, and a genetic repository had been established for *A. malaccensis*.

Dr Norwati said that the CTSP supported countries across Africa, Asia and Central and South America in four core areas—(1) the formulation of NDFs; (2) marking and traceability; (3) tree product identification; and (4) capacity building. She set out the aims of the programme, which were to ensure the sustainable management of rare species; contribute to legal and traceable trade in products of these species; help improve and strengthen forest governance, policies and enforcement capacity and ensure benefits in species management; and promote rural development, sustainable national-level growth and poverty alleviation. The programme had implemented 20 projects, including in Malaysia. A FRIM-implemented CTSP project, which began in 2019, had established two arboreta as repositories for the genetic conservation of *Aquilaria malaccensis* and strengthened the institutional conservation network for this species.

Dr Norwati thanked the European Union, the CITES Secretariat and Mr Thang Hooi Chiew (the regional coordinator for Asia) for their support. She said the CTSP had been well-received by beneficiary countries as an effective mechanism for providing support for the sustainable management of CITES-listed tree species. The value lay in the projects, which had produced concrete tangible outputs of immediate use to stakeholders. The project had also helped empower institutions responsible for project implementation. Dr Norwati strongly recommended continuation of a similar programme in the future. The aim of the meeting, she said, was to share information on project findings, outputs and outcomes and provide recommendations for a possible future programme in range states for CITES-listed tree species. The recommendations would be put forward at the next Conference of the Parties (CoP) to CITES. Dr Norwati thanked the participants, the CITES Secretariat, ITTO, representatives of the European Union and the regional coordinators for their presence and the organizing committee for its dedication and hard work. She declared the meeting open.

Global and regional overviews

This session was chaired by regional coordinator for Asia, **Mr Thang Hooi Chiew**.

Ms Flensborg presented the context and scope of the CTSP. She said that the CTSP had provided Parties with financial assistance for conservation and management measures to ensure that their trade in products obtained from CITES-listed tree species was sustainable, legal and traceable—with "sustainable, legal and traceable" being the key words. The overall aims of the programme were to improve and strengthen forest governance to ensure benefits from long-term species conservation and to contribute to rural development. The CTSP covered a range of species in the genera *Aquilaria*, *Bulnesia*, *Dalbergia*, *Guaicum* and *Guibourtia*, as well as the following species: *Osyris lanceolata*, *Pericopsis elata*, *Prunus africana* and *Pterocarpus erinaceus*. Ms Flensborg said that the CTSP had commenced in May 2017 and was originally scheduled to be completed in May 2021 but had been extended to November 2022 because of the COVID-19 pandemic. The total budget amounted to EUR 7 million contributed by the European Union and had involved 23 partner countries in three regions and 20 projects, including one in Ecuador funded by ITTO. To date, the CTSP had produced more than 80 documents and technical reports and more than 20 short videos and trained hundreds of people in the preparation of NDFs, the enforcement of CITES regulations, the identification of CITES-listed tree species, and propagation. Four of the projects implemented under the project were in Asia, nine were in Africa and seven (including the ITTO project) were in Central/South America.

The CTSP had four outcome areas, said Ms Flensborg. These were:

1. Ensure the sustainable management of rare tree species and their products (the approximate budget allocation to this outcome was USD 1.610 million).

2. Contribute to legal, traceable and fair trade in products from CITES tree species (USD 0.785 million).

3. Improve and strengthen forest governance, policies for forest management and enforcement capacity and ensure benefit from long-term support for forest management in areas with CITES species (USD 0.563 million)

4. Contribute to rural development in remote areas, sustainable economic growth at the country level, a healthy private sector and long-term poverty alleviation (USD 0.541 million).

Ms Flensborg outlined the target output indicators and the actual results obtained by the projects. In general, the targets had been exceeded, although Ms Flensborg said she hoped to confirm the numbers during the workshop, especially on capacity building, the establishment and support for national forums and regional and international working groups, the number of enforcement staff trained in CITES regulations and compliance and the use of forest information and wood tracking systems, and the number of market studies produced and management plans in place. She reported that more than 40 documents had been produced for outcome 1, more than 15 for outcome 2, more than five for outcome 3 and more than five for outcome 4, and more were expected in coming weeks. She noted that these documents, as well as overviews of the projects and short videos, were available on a dedicated website (www.cites-tsp.org).

Mr Thang provided an overview of the four country-level projects implemented in **Asia**—Cambodia, Indonesia, Malaysia and Viet Nam—under the CTSP. Among the achievements were:

- the establishment of ten growth and yield plots for *Dalbergia latifolia*;
- the development of vegetative propagation techniques for *D. latifolia*;
- the establishment of two arboreta of *Aquilaria malaccensis*;
- the formulation of guidelines and incentives to encourage plantations of *D. cochinchinensis* and *D. oliveri* and the development of a management and conservation plan for these two species in Viet Nam;
- the preparation of NDFs for *D. latifolia* in Java and West Nusa Tenggara, Indonesia, *D. cochinchinensis* and *D. oliveri* in Choam Ksant district, Cambodia, and *D. cochinchinensis* and *D. oliveri* in Viet Nam;
- three reviews of harvest controls and monitoring for *D. cochinchinensis*, *D. latifolia* and *D. oliveri*;
- the preparation of an identification manual and app *for D. cochinchinensis* and *D. oliveri* in Viet Nam; and
- the development of a DNA database for tracing the origin of *D. latifolia* in Java and West Nusa Tenggara in Indonesia, and a DNA extraction protocol for the same species.

In addition, seven workshops had been conducted, comprising four training workshops (one in Cambodia and three in Viet Nam) and three to disseminate findings (one in Cambodia and two in Indonesia).

Dr Steven Johnson, ITTO Director of Trade and Industry, presented the regional overview for **Central and South America** in the absence of **Dr Sofia Hirakuri**, the regional coordinator, who was unable to attend the workshop.

He reported that the region had featured five country-level projects—in Argentina, Brazil (two projects), Cuba and Guatemala, a trinational project between Guatemala, Nicaragua and El Salvador, and an ITTO-funded project in Ecuador. The species covered were *Cedrela* spp., *Dalbergia* spp., *Guaiacum officale*, *G. sanctum*, *Gonopterodendron sarmientoi* and *Swietenia macrophylla*. Dr Johnson set out the main objectives of each of the projects, comprising elements towards the main CTSP outcomes (as listed above). He also summarized the main project outputs, such as the approval of a resolution on CITES certificates in Argentina, the development of near infrared spectroscopy (NIRS) techniques for mahogany and rosewood oil in Brazil, conservation plantings in Cuba, the collection of field information in Ecuador, studies on mahogany in Guatemala, and the preparation of an NDF for *Dalbergia retusa* spanning Guatemala, Nicaragua and El Salvador. Overall, said Dr Johnson, all projects in the CTSP in Central and South America had met their goals and objectives (although the project in Ecuador

was still underway) and delivered satisfactory deliverables, with some activities yet to be completed. Each project in the region produced videos showing their work and achievements.

Dr Jean Lagarde Betti, regional coordinator for Africa, presented an overview of the projects in **Africa**, comprising six country-level projects, two trinational projects and one binational project. All 12 participating countries had benefited from capacity building through the CTSP projects and were involved in the development of NDFs; six countries had made progress on the identification of products derived from CITES-listed tree species; and six had undertaken work on marking and traceability. The species covered were *Guibourtia* spp., Os*yris lanceolata*, *Pericopsis elata*, *Prunus africana* and *Pterocarpus erinaceus*. Dr Betti concluded that, among other things, the CTSP in Africa had established state-of-the-art understandings of research, harvesting, management and control for the target species in each country; developed strategic action plans for some countries and draft plans for some others; produced identification guides for *Guibourtia* spp., *Pericopsis elata* and *Pterocarpus erinaceus*; and drafted NDFs and defined export quotas for *Prunus africana* in Cameroon and the Democratic Republic of the Congo, *Guibourtia* spp. in the Democratic Republic of the Congo and Gabon, and *Pericopsis elata* in the Democratic Republic of the Congo. The programme had also undertaken domestication work on *Prunus africana* in Burundi and *Pterocarpus erinaceus* in Côte d'Ivoire and provided professionals with opportunities to obtain masters and doctoral degrees. Dr Betti suggested that any future programme should, among other things, further assist range states to implement NDFs and sustainable management plans.

Country reports and discussion on projects in Asia

This session was chaired by **Mr Thang**.

Cambodia

Project title: Integrating the development of guidelines and incentives for piloting the establishment of small-scale private Dalbergia plantations with the determination of an NDF report in Preah Vihear Province in Cambodia

Mr Dany Chheang, Deputy Director General of Cambodia's Forestry Administration, reported that the objectives of this project were to develop an NDF report for *D. cochinchinensis* and *D. oliveri* in Preah Vihear Province and to institutionalize an enabling environment to support the establishment of small-scale private plantations of the species. He said that currently there were about 5.75 million trees of planted *D. cochinchinensis* in Cambodia, and there was high market demand for its timber. Among other things, the project had produced a report on the taxonomy, biology, ecology, status, trends and population structure of the two species in Choam Ksant District; an NDF for the two species in the district; an assessment of conservation status, management practices and harvesting monitoring in the district; guidelines for private forest registration in Cambodia; guidelines and incentives to encourage the establishment of private plantations of the two species in Cambodia; and a video about the project. All eight reports produced by the project had been uploaded onto the CTSP website, as well as the video. The project had convened a training workshop on the NDF and another workshop on rules and guidelines for private forest plantation registration. The COVID-19 pandemic had caused a delay in these, although both were ultimately held successfully.

Mr Chheang said that farmers and private-sector representatives with *D. cochinchinensis* plantations had expressed a willingness to register these. Local communities and public institutions in the district had participated in planting activities convened by the project and showed a willingness to plant *D. cochinchinensis* on their farms and in their home gardens.

Mr Chheang said that the two main outputs of the project were the endorsement by the Forestry Administration of the national-level guidelines and incentives for the establishment of small-scale private forest plantations and the development of the NDF on *D. cochinchinensis* and *D. oliveri* for Choam Ksant District. This had ultimately led to the registration of about 360 ha of private forest plantations, including D. *cochinchinensis*, with the Forestry Administration. Moreover, 50 000 seedlings of *D. cochinchinensis* had been planted, with a survival rate of 80%. Mr Chheang **recommended** further financial support for efforts to develop NDFs, LAFs and traceability and to pursue compliance for all CITES-listed tree species. He recommended continuation of the CTSP.

Responding to a **question from the floor**, Mr Chheang clarified that the development of *Dalbergia* plantations in Cambodia did not require land clearance—the plantings were opportunistic, he said, taking advantage of available spaces in villages, homegardens and as part of landscape restoration efforts. Overall, almost 6 million *D. cochinchinensis* trees had been planted across the country.

Indonesia

Project title: A non-detriment findings report and a DNA database for Dalbergia latifolia in Java and West Nusa Tenggara, Indonesia

Kusumadewi Sri Yulita, from Indonesia's Research Center for Ecology and Ethnobiology, National Research and Innovation Agency, said that although project implementation had been hampered by the COVID-19 pandemic, including in the collection of field data, the two planned project outcomes had been achieved: production an NDF report for *Dalbergia latifolia* in Java and West Nusa Tenggara, and the creation of a DNA database for the species. Field surveys and in-depth reviews had been completed successfully. In creating the DNA database, a total of 551 samples had been collected from 115 locations, and the data were now available for non-commercial purposes. The project had produced three scientific papers and nine technical reports.

Dr Yulita explained that *D. latifolia* timber exports derive from two sources—plantations, and "assisted production" on both state-owned and community-owned land. Exports from assisted production require an NDF. The conservation status of the species was assessed as "least concern", and it is easily reproduced from root cuttings. The export volume of *D. latifolia* in 2021 was less than the annual allowable cut in state-owned forests and hence exports were considered non-detrimental to the survival of the species in the wild. Work was underway to determine the standing stock and sustainable yield on community-owned land.

Among the **lessons learnt** in this project were that it was important to obtain the full commitment of personnel; the role of the project coordinator was essential; contingency plans should be put in place; the donor should be sufficiently flexible to allow adaptation of the project in light of unforeseen circumstances; and coordination between institutions was crucial. Dr Yulita outlined potential future work, such as annual measurements of certain forest plots; the establishment of an online inventory; the identification of the main production areas of *D. latifolia* outside Java and Bali; and further work on DNA sequencing. She **recommended** continuation of the CTSP.

Malaysia

Project title: Establishment of arboreta and strengthening institutional network for the conservation of Aquilaria malaccensis in Peninsular Malaysia

Mr Lau Kah Hoo, research officer and project manager at FRIM, said that *Aquilaria malaccensis* was a highly desired species because of the valuable agarwood it produced. The species had been overharvested in the wild, and the project was designed to strengthen its conservation through two main approaches—strengthening the institutional network (output 1), and the establishment of arboreta to conserve genetic diversity (output 2) (a third output involved the sharing of project results). Activities designed to achieve output 1 included collaborator and stakeholder meetings and fieldwork and data-sharing with the relevant federal agency.

Mr Lau said that engagement and negotiation with the land manager on sites for the arboreta were challenging because land availability was constrained by many factors. After the identification of sites, wildlings were collected, the arboreta were designed, the land was prepared and the arboreta were established in two states on Peninsular Malaysia; data collection from these was underway. Mr Lau said that five reports were prepared under the project. He expressed hope that the two arboreta would serve as genetic repositories for *A. malaccensis.*

More research and development was underway with the University Putra Malaysia, the Forestry Department of Peninsular Malaysia and the Malaysia Timber Industry Board, and overall there had been an improvement in data-sharing and networking.

Among the **challenges** faced by the project was a lack of planting materials because of the low density of A. *malaccensis* mother trees, and a change in land-tenure status. **Lessons learnt** included the advisability of identifying several potential sites in case favoured sites became unavailable and the importance of ongoing dialogue with stakeholders. Mr Lau suggested that, in the future, the arboreta could be used for genome-wide association studies and tree improvement and breeding and as a teaching facility for tree dendrology. He expressed hope that more arboreta could be established to improve representation of the species' range, should additional funding become available.

In response to **questions from the floor**, Mr Lau said there were no plans for developing similar arboreta for other CITES-listed species, although many arboreta existed in Malaysia for non-listed species. In addition, there was no plan to exploit the arboreta directly for agarwood production because the main purpose was genetic conservation. If techniques were available for harvesting agarwood non-destructively, this might be considered in the future. The plan was to use the trees now growing in the arboreta as mother trees for the establishment of *A. malaccensis* plantations, thereby reducing the need to collect planting stock in the wild.

Viet Nam

Project title: Strengthening the management and conservation of Dalbergia cochinchinensis and Dalbergia oliveri in Viet Nam

Dr **Nguyen Manh Ha,** Director and Project Manager at Viet Nam's Center for Nature Conservation and Development, said the project had three objectives—(1) the formulation of an NDF report; (2) a long-term conservation plan for *Dalbergia cochinchinensis* and *D. oliveri* in Viet Nam; and (3) an identification manual for the two species to support identification, tracking and management. He reported that the NDF report had been completed, which reviewed the taxonomy, biology, ecology, conservation status, population structure and dynamics, harvesting controls and monitoring of the two species, assessed management practices and conducted a field survey in key protected areas. The survey enabled an updating of the distribution of the two species—including an expansion of the known natural distribution. The NDF recommended zero quotas for wild-harvested rosewood until 2027 (when the quota should be reassessed) and improved measures for in-situ conservation and recovery. A management and conservation plan had been prepared, spanning 2022–2035, which included the strengthening of protection of wild populations and the replanting of the species in their known ranges. The plan was to be piloted in Yok Don National Park and Quang Tri Province for *D. cochinchinensis* and in the Cat Tien and Bu Gia Map national parks for *D. oliveri*.

Dr Nguyen said that work undertaken to date under the management and conservation plan included the identification of mother trees; seed collection; nursery establishment and seedling raising; reparation of a monitoring and protection plan; and the planting of 2 000 seedlings of *D. oliveri* in the Cat Tien National Park. Some 15 000 seedlings of *D. cochinchinensis* would be planted in Quang Tri Province and the Yok Don National Park between September 2022 and the end of 2023. The plan included 38 key activities that should be undertaken over the period to

secure remaining populations and expand the recovery of known habitat. The project had helped build the capacity of local authorities and management agencies, including by developing an identification manual and app and providing training on these; convening technical discussions and workshops on various aspects of the project work; sharing lessons learnt in the piloting of the conservation and management plan; and providing training on the NDF recommendations and the conservation and management plan.

Dr Nguyen noted some of the **challenges** encountered by the project, including restrictions of movement and the number of people who could attend training caused by the COVID-19 pandemic, and delays caused by time-consuming financial procedures. He **recommended** the provision of further support to continue the pilot conservation plantings—including rosewood—in the list of indigenous tree species under the national reforestation programme, and piloting the use of barcoding and blockchain to improve product tracking.

Responding to a **question from the floor**, Dr Nguyen said there was an existing stockpile of rosewood that the Viet Nam CITES management authority would need to document and label as part of the proposed adoption of a zero export quota to 2027.

Country reports and discussion on projects in Central and South America

This session was chaired by **Mr Jorge Malleux**, expert on the CTSP Advisory Committee.

Argentina

Project title: Basis for the sustainable management of the species Bulnesia sarmientoi "palo santo" in the Gran Chaco region of Argentina

Mr Eduardo Manghi from Argentina's *Dirección Nacional de Bosques, Ministerio de Ambiente y Desarrollo Sostenible* provided background on Argentina's forest cover and environmental laws. The country had 53.4 million ha of native forest, which was about 19% of the land area. A law passed in 2007 ensured that a minimum budget was available for the protection of native forests, and the CTSP project, which focused on *Bulnesia sarmiento*, or palo santo, was conducted within this law. Mr Manghi said the project strategy had four main components: (1) increasing collaboration among jurisdictions and stakeholder groups; (2) filling knowledge gaps on scientific and socioeconomic aspects of the species; (3) adaptive management at pilot sites to verify the sustainability of technical guidelines; and (4) strengthening linkages with Bolivia and Paraguay (which were also range states) to ensure the sustainability of the species. He said santo palo occurred in Argentina in the Gran Chaco region. Project achievements included the following:

- An investigation into the distribution of palo santo produced a management map of the species.
- Information was obtained from existing sources on management and conservation aspects of the species.
- A systematic monitoring tool was developed, with indicators.
- Regulations were updated at the national level for palo santo exports, with new requirements such as forest inventories and verification of these.
- Videos were produced to disseminate information and more than 100 people were trained.

Argentina had a multiscalar approach to NDFs, said Mr Manghi, which were issued per export lot (container). This was producing good outcomes, with palo santo increasingly exported under management plans (rather than land-use-change plans); the country had the capability to ensure traceability from the tree to the port.

Key **lessons learnt** from the project were the importance of ensuring sufficient flexibility in regulations to enable changes as new technical and scientific knowledge became available; including all stakeholders in dialogues; and taking local realities into account in implementing CITES requirements. **Future challenges** included adapting silvicultural models to different forest types and sites; making better use of product traceability technologies; extending the palo

santo "model" to other forest types; monitoring the sustainability of interventions; and improving income distribution and adding more value to export products.

Brazil

Project title: Rapid field identification of Dalbergia woods and rosewood oil by NIRS technology (Brazil)

Dr Tereza Pastore said that the project had two main objectives: to build NIRS models using portable devices for the identification of 20 *Dalbergia* species; and to develop a method of direct analysis by NIRS to authenticate the purity of *Aniba rosiodora* ("rosewood") essential oil. For the first objective, *Dalbergia* wood samples were obtained from five xylaria in Brazil—the project had envisaged also obtaining samples from six xylaria outside Brazil, but this had not been possible because of restrictions on travel due to the COVID-19 pandemic. Overall, 221 samples had been analyzed from 29 *Dalbergia* species using a handheld device; this had produced 663 spectra, of which 441 were used for training and 222 for validation. Overall, the methodology allowed the identification of species with an efficiency rate of 94.6%; thus, it was a reliable way to identify species from wood samples. Dr Pastore said the next steps would be to expand the models to other species that were difficult to differentiate, such as *Cedrela*, *Handroanthus* and *Paubrazilia*, and to make the analysis process more user-friendly.

For the second objective, Dr Pastore reported that a total of 68 batches of rosewood oil obtained from Amazonas and Parà states and through online purchases had been analyzed using a handheld NIRS device (the same used for the *Dalbergia* wood identification experiment reported above); the results were compared with analysis using gas chromatography–mass spectrometry (GC-MS). The experiment showed that the NIRS method was fast, low-cost and efficient (98.9%) for demonstrating the authenticity of rosewood oil (as verified by GC-MS); moreover, it was non-destructive, required no pretreatment, produced no chemical residues and required only small samples. Dr Pastore said the results indicated that almost all (95%) of the commercial samples purchased in Brazil for the experiment were considered non-authentic.

Lessons learnt through the project included the following: the team must be passionate about the topic and the work; weekly meetings and the use of apps such as WhatsApp were important for cohesive teamwork; the materials and instruments should always be readily available; local consultants to collect the samples should be part of the team; and assistance with administrative procedures was essential—with a lack of clear administrative procedures causing unnecessary delays. Next steps might include further research to develop a physicochemical characterization of rosewood oil and the expansion of NIRS technology to other CITES oils, such as palo santo and East African sandalwood (*Osyris lanceolata*).

Responding to **questions from the floor**, Dr Pastore said that the NIRS tool, although demonstrated as effective, had not yet been deployed operationally; this would be a decision for government. She clarified that "non-authentic" rosewood oil meant that the samples contained other chemicals, such as alcohol, and could not be considered pure.

Project title: Big-leaf mahogany provenance and timber identification by NIRS technology (Brazil)

Mr Jez Willian B. Braga, from the University of Brasília, said that, because Brazil no longer exported significant quantities of big-leaf mahogany, the focus of this project on timber tracking had switched to *Cedrela odorata* (cedar). He said the use of NIRS for species identification and tracking had many advantages, such as minimal sample preparation and fast data acquisition, and it was relatively inexpensive. It did, however, require a certain level of control over wood moisture content, which was the main obstacle to use in the field; at high moisture contents, the method produced a high number of outlier results. The project developed an experimental procedure to reduce wood moisture content in field conditions involving the application of a heat jet focused on a small area of the wood sample, followed by rapid cooling (to room temperature) by applying a high-volatility fluid; this technique was able to reduce moisture content from 15% to 11% at one sawmill and from 25% to 13% at a second sawmill. Cedar samples could be identified at an efficiency of 95%.

A second component of the project was to deploy the technique in cargo tracking. A 20 m^3 cargo of cedar was analyzed at the Madeflona sawmill and, 22 days later, at the final destination, some 3100 kilometres away; the objective was to see whether the model would match the wood at the two locations. The drying procedure worked well at the ends of the sampled boards, and initial analysis suggested good agreement between the samples at origin and destination. Other samples of different origins were also tested for comparison. The model was able to confirm the identity of the original cargo and that other sampled cargos were from other origins. These results suggested that the drying procedure was efficient and improved field results; measurements were more effective at the ends of boards; the time of analysis was about 30 minutes; and, overall, cargo tracking was possible using the NIRS technology.

Ecuador

Project title: Generation of basic information to support the formulation of public policies for conservation, planning and forest management in Ecuador, with emphasis on the mahogany Swietenia macrophylla King

Ms Tomi Margarita Sugahara Zambrano from the University of San Francisco Quito said the project arose because existing information was insufficient for the sustainable management of *Swietenia macrophylla* at the national level. A harvesting moratorium was in place between 2017 and 2027, and more information was needed on existing natural forests and trees outside forests if it was to be lifted after 2027. Moreover, capacity must be developed to implement the CITES Appendix II listing effectively.

The project, which was still underway, had two objectives: to contribute to the sustainable management of S. *macrophylla* in Ecuador; and to increase capacity for the management of CITES-listed tree species, with an emphasis on *S. macrophylla*. An important step was planning the logistics for engaging with communities where the field work was to be carried out through meetings with provincial, cantonal and community bodies. An agreement was signed to gather data in the field, and a working group was established. Researchers and community assistants were trained before commencing the field work. An inventory has been carried out of two populations of *S. macrophylla* using a methodology developed by the Ministry of Environment, and samples have been taken for genetic analysis. Community members had also been surveyed

for their views on forest management and *S. macrophylla* conservation, and key actors had been identified.

The project had gathered important information on the status of *S. macrophylla* in the survey area. Relatively few adult trees had been found, and there were distinct peaks in the number of trees among individuals greater than 60 cm diameter at breast height and those less than 30 cm tall. Hardly any individuals were found in intermediate size classes. The project also found that knowledge traditionally handed down from father to son, such as the use of mahogany in canoe-building, was being lost because of the scarcity of trees of suitable size.

Ms Sugahara said the following **lessons** could be drawn from the project to date: coordinating the work of academia and the public sector produced valuable synergies; both desk-based and field-based information needed to be gathered; data products between initiatives were often complementary and could be analyzed together; applying scientific rigor to planning could strengthen forest governance; and it was essential to include actors from all relevant sectors in decision-making on the sustainable management of the species.

Guatemala

Project title: Comprehensive analysis of tree species of the Dalbergia genus and lookalikes, through the Forensic Laboratory of Timber, to strengthen the application of CITES in Guatemala

Project coordinator **Ms Myrna Ethel Herrera Sosa,** University of San Carlos de Guatemala, said that the overall objective of the project was to contribute to biodiversity conservation in Guatemala by strengthening forest governance and CITES application. The project set out to characterize species in the *Dalbergia* genus of Guatemala and five similar species. This work was carried out, with a distribution map created for *Dalbergia calderonii*, which was found to occur at an altitude of 413–460 m above sea level and predominantly on clayey soils subject to flooding, and a wide range of information was obtained on the species' fruits, seeds, phenology and climatic regime. The diameter class distribution was heavily skewed, with almost all individuals in the smaller diameter classes. The timber had a sweet scent.

Based on genetic analysis, a *Dalbergia* specialist confirmed the detection of four *Dalbergia* species new to Guatemala; of these, two were previously unknown to science. Among the conclusions reached by the project were that *D. stevensonii* and *D. tucurensis* could be managed sustainably; the sustainability of *D. calycina*, *D. retusa* and *D. calderonii* was uncertain; and *D. salvanatura*, *D. melanocardium* and *D. congestiflora* required urgent recovery measures. Overall in Guatemala, the project had helped improve species identification capacity using both botanical and molecular methods. The ability to identify woods had also improved. The COVID-19 pandemic posed a significant challenge for project implementation, and ongoing deforestation was a major conservation challenge.

Guatemala, El Salvador and Nicaragua

Project title: Capacity building and technical management guidelines for developing NDFs aimed at species in the Dalbergia genus in Guatemala, El Salvador and Nicaragua

Mr Gustavo Pinelo, from the Fundación Naturaleza para la Vida, said that, among other things, the project had established baseline information on *Dalbergia* species in each of the three

participating countries. A web-based tool was produced for monitoring and verifying progress in the implementation of a regional strategy for the conservation and sustainable management of *Dalbergia* in the three countries, which spanned ten years. In addition, a standardized methodology was developed for the installation and measurement of permanent monitoring plots—in El Salvador and Nicaragua, these plots were the first of their kind for monitoring the dynamics of *Dalbergia* species. In Guatemala, a report was prepared to show initial findings on the dynamics of *Dalbergia* species based on the remeasurement of 11 restored permanent monitoring plots. Under the project, more than 50 000 seedlings of *Dalbergia* and other species had been raised in nurseries across the three countries and distributed to landholders; research was also conducted into pre-germination treatments and sexual and asexual reproduction. Country-level and trinational workshops were held to build the capacity of scientific authorities in formulating NDFs, and more than ten technical guidelines and reports were published. Project implementation involved more than 50 face-to-face and virtual meetings for the coordination and execution of activities.

Mr Pinelo said that **challenges** in project implementation included delays caused by the COVID-19 pandemic; staff changes, and a change in the CITES administrative authority; administrative difficulties in establishing trinational coordination, although this was ultimately a positive experience; and ensuring the effective transfer of information and guidance to foresters in charge of preparing management plans for *Dalbergia* species. **Lessons learnt** included the following: multinational projects could be efficient and effective; the diverse experiences of the three countries could strengthen management approaches in each country; the involvement and contributions of authorities and institutions was especially important in multinational projects for achieving project goals; the participation of recognized experts on specific topics generated trust and helped ensure success; and the identification of information gaps was a key for improving research and ultimately management outcomes.

Cuba

Project title: Development of the capacity to achieve a more effective implementation of CITES in Cuba for timber species in the genus Guaiacum

Mr Malleux, who presented the project on behalf of the project coordinator in Cuba, who was unable to attend the meeting, said that the project addressed a broad topic and there had been a strong need for coordination among authorities. The project aimed to explore the current distribution and population dynamics of *Guaiacum officinale* and *G. sanctum*, obtain the information needed for generating an NDF, and determine the actions needed to ensure conservation. It also aimed to strengthen the scientific authorities and law-enforcement authorities with a view to reducing illegal trade in the species. Important outcomes of the project included the collection of up-to-date information on species distribution, with georeferenced locations; a reassessment of the conservation status of both species; the updating of management plans for protected and production areas; the development of an action plan as part of broader government efforts to improve forest governance; and the development of an NDF by the Scientific Authority. In addition, about 8 000 *Guaiacum* seedlings had been planted in protected areas in two provinces.

Mr Malleux said the following **lessons** (among others) were learnt through the project: close cooperation among institutions was essential for drafting NDFs and creating conservation

strategies; interinstitutional collaboration was also important for drawing together dispersed information on the species; regulatory authorities benefited from high-level government support for the project; and the development of a manual on nursery management for the species would enable this knowledge to be disseminated to other areas in the country. The following actions were **recommended**: continuing population studies of the two species; increasing control over illegal logging and trade; incorporating the species into the conservation objectives of protected areas; updating forest management plans; promoting the use of the two species in reforestation efforts; and evaluating *G. officinale* for greater legal protection (equivalent to that already afforded *G. sanctum*), with the aim of facilitating regulatory control.

After the presentation, Dr Johnson **commented from the floor** that two presentations had been made during the session on advances in wood identification. The next CITES CoP could see a number of new species listed in CITES, mainly because of the difficulty of distinguishing between species in genera that included certain CITES-listed species. Dr Johnson said while he understood that it was difficult to track trees to their origin, distinguishing between species was increasingly possible. Perhaps the group could bring the work on this issue undertaken in the CTSP to the CoP in discussions on species that were being proposed for listing not because they were endangered but because they were lookalikes for species that were. **Mr Malleux** responded that species identification needed to go hand in hand with traceability, and it would be important to continue developing methodologies for these.

Country reports and discussion on projects in Africa

Ms Flensborg chaired this session. Several presentations were made by project coordinators participating online, which presented challenges in terms of connectivity.

Gabon

*Project title: Assessing the state-of-the-art research on ecological dynamic, conservation status, management, harvesting, processing, traceability and trade of kévazingo (*Guibourtia tessmannii *and* Guibourtia demeusei*) tree species in Gabon as the first step for making non-detriment findings in Gabon*

Mr Donald Midoko Iponga from the Centre Nationale de la Recherche Scientifique et Technologique said that this small-scale project was aimed mainly at taking stock of the existing situation with a view to preparing an NDF for *Guibourtia* species. Gabon had five known *Guibourtia* species, two of which (*G. tessmannii* and *G. pellegriniana*) produced timber known as kévazingo. The value of kévazingo had increased sharply, which had led to an increase in illegal trade. It was difficult to distinguish between the two kévazingo species and the government had proposed both (as well as *G. demeusei*) for inclusion in CITES Appendix II in 2016, although there was insufficient information to determine whether they were under threat. The objectives of the project were to evaluate the state of research on *Guibourtia* species and their management, processing and traceability and to prepare a preliminary NDF.

The project had produced four reports: one examined the state of research on the three CITES-listed *Guibourtia* species, which was found to be outdated; one comprised an action plan for addressing gaps in research and management strategies; a third report synthesized land-use plans; and a fourth assessed the state of trade and traceability, finding that no adequate traceability system existed for *Guibourtia*. The data collected confirmed that population densities of *Guibourtia* species were very low in Gabon but also that the transportation of kévazingo products (logs and sawnwood) had almost quadrupled between 2017 and 2018 on one road alone; nevertheless, (legal) sawnwood exports declined significantly between 2016–2018 and 2019–2020.

The preliminary NDF was drafted based on data obtained from a literature review as well as discussions with stakeholders, preliminary studies in harvesting areas, and a review of data from the management plans of 34 forest concessions. The methodology for drafting the NDF involved determining the density of kévazingo trees based on data in the management plans; the total number of trees by multiplying density by the total area of production forest; and the recruitment rate—only those concessions with a recruitment rate above 50% could obtain export quotas. Of the 34 plans, only 11 qualified for export. The sustainable yield could be calculated by dividing the total kévazingo timber volume by the length of the rotation employed in the concession. It was possible to draft an NDF on this basis, although ultimately it was a government decision.

Based on the lessons learnt from the project, Mr Midoko Iponga made the following four **recommendations**: (1) conduct detailed research into the biology, ecology, phenology and silviculture of *Guibourtia* species to refine standards and management parameters; (2) carry out field inventories to obtain a better understanding of the range, density and volume of *Guibourtia* species; (3) improve collaboration and networking among institutions; and (4) provide training on the development of NDFs.

In response to **questions from the floor**, Mr Midoko Iponga said that kévazingo exports went mainly to Europe and Asia; there was scope for more timber production in Gabon, especially by increasing the range of species harvested, as long as it was done sustainably; and forest concessions could be obtained by companies of any nation and were not reserved solely for Gabon-based companies.

Cameroon

Project title: Draft action plan and update of the non-detriment finding for the sustainable management of Prunus africana *(Rosaceae) in Cameroon*

Mr **Mikhail Nelson Mvongo Nkene** from the Cameroon Ministry of Forests and Wildlife said the overall objective of the project was to lay the foundations for the transparent, sustainable management of *Prunus africana*. Among other things, the project conducted studies on the status of research into the species in Cameroon; the status of management procedures, harvesting, processing control and traceability for the species; procedures for conducting inventories; the harvesting of the species in natural forests and plantations; harvesting standards and management in the Adamaoua, Central and Coastal regions; *P. africana* value chains; and the ethnobotanical, floristic, structural and carbon sequestration potential of the species in the high Sudano-Guinean savannah. Project achievements included the following: determining, for *P. africana*, minimum harvesting diameters; rotation lengths; and principles for setting harvesting quotas. Forest inventories in the Adamaoua and North regions enabled the creation of "*Prunus* allocation units" and the development of an NDP for the two regions in which the annual export quota (published on the CITES website) had been set at 397.9 tonnes of dried bark. New measures for the sustainable management of *P. africana* had also been established, including a rotation length of 14 years based on bark regrowth rates. The project also made improvements in the science of *P. africana* management through the publication of scientific papers and assistance for two masters students and a doctoral student. Various measures specified in the NDF were planned.

Mr Mvongo Nkene made the following six **recommendations** for ongoing support: (1) build the capacity of stakeholders in the Adamaoua and North production areas; (2) strengthen the participatory fire prevention and management system in and around *P. africana* forests; (3) extend distribution and other studies to other production areas in Cameroon; (4) strengthen the bark traceability system; (5) formalize required management measures; and (6) provide technical support for ongoing monitoring and reporting.

Côte d'Ivoire

Project title: Project to save Pericopsis elata *(assamela) and* Pterocarpus erinaceus *(ivory wood) in Côte d'Ivoire*

Mr **Brêhima Coulibaly** from the Ministry of Water and Forests in Côte d'Ivoire said the country had experienced considerable forest loss in the 1990s and now had less than 10% forest cover. Both *Pericopsis elata* (assamela) and *Pterocarpus erinaceus* (ivory wood) were under threat: they had both been listed on CITES Appendix II in 2016, and the government had banned their export. The main objectives of the project were to strengthen implementation of CITES regulations for both assamela and ivory wood; create tools for their sustainable management; and involve the major stakeholders in the conservation and sustainable management of the two species. Among the project outputs were the following: the inventory and mapping of stands of

the two species; the development of a seedbank for assamela; the raising of 3 000 assamela seedlings; the development of product identification guides for both species; the development of simple management plans for the species; the production and dissemination of 8 000 brochures to raise awareness about CITES rules and the conservation and sustainable management of the species; awareness-raising among more than 10 000 people in towns and villages about the two species; and the drafting of NDFs for the two species.

Mr Coulibaly said that the inventories revealed that *Pericopsis elata* was now almost non-existent in its natural habitat, and there appeared to be no regeneration—it was almost extinct in Côte d'Ivoire. Few studies existed of stand dynamics of *Pterocarpus erinaceus* in Côte d'Ivoire. It had previously been reported growing above the eighth parallel, but the project showed that it also grew below this and extended throughout the north of the country. The species appeared to be regenerating in the centre and northeast of the country, but large-diameter individuals were rare due to excessive logging and agriculture. Among other things, Mr Coulibaly **recommended** putting in place an export quota of zero for assamela between 2022 and 2027; developing a management plan for *Pericopsis elata*; encouraging farmers to use both species in their agroforestry plots; monitoring the growth dynamics of *Pterocarpus erinaceus*; and developing management plan for this species to ensure its recovery. Future activities should include strengthening institutional capacities and the technical capacity of stakeholders; the production of plant materials for plantations and agroforestry; the conservation of forests (for biodiversity and carbon storage) containing *Pericopsis elata* and *Pterocarpus erinaceus*; and more research.

Democratic Republic of the Congo

Project title: Non-detriment findings for Pericopsis elata, Guibourtia demeusei and Prunus africana in the Democratic Republic of the Congo

Andy Mutoba Mushala from the Institut Congolais pour la Conservation de la Nature said the aim of the project was to prepare NDFs for three CITES-listed tree species—*Pericopsis elata*, *Guibourtia demeusei* and *Prunus Africana*—in the Democratic Republic of the Congo. It involved studies into diverse aspects of the three species, including socioeconomic aspects. The project assisted in producing the fourth edition of the NDF for *Pericopsis elata*; the first edition of an NDF for *Guibourtia demeusei*; and the third edition of the NDF for *Prunus africana*. Overall, said Mr Mutoba Mushala, the project achieved all its intended outputs, and there was now ongoing communication between the country's CITES Management Authority and Scientific Authority as well as with academics and those involved in harvesting the species. He **recommended** that the analysis of *Pericopsis elata* conversion rates continue for another year to produce a definitive report; the development of a new NDF for *Prunus africana* in other location; the development of an inventory in concessions overlapping with the range of *Guibourtia demeusei*; and the development of an NDF for *Pterocarpus tinctorius*, which was not included in the current project.

Madagascar

Project title: Sustainable management of the Prunus africana population of Madagascar: stock assessment, agroforestry, harvesting technique and regulatory framework

Radanielina Tendro from the University of Antananarivo reported that Madagascar had been a big exporter of *Prunus africana* bark, but overexploitation had led to its listing in CITES Appendix II and the setting of the export quota at zero from 2008. The specific objectives of the project were to conduct an inventory of the stock volume; establish a realistic action plan and standards for sustainable management; develop an NDF; and build capacity among stakeholders. Accordingly, an inventory had been prepared; biological and ecological data had been collected; and management tools were developed. The work involved a range of partners, including the CITES Management and Scientific authorities as coordinators, experts, students, non-governmental organizations and operators.

Mr Tendro listed the main outputs of the project, which included a considerable increase in knowledge on the species, including its distribution, biological and ecological data, and the state of its harvesting and management. The project also developed an action plan, a management plan, operating standards, and an NDF. There were substantial advances in capacity, including in the CITES Management and Scientific authorities, and the project supported students and helped build capacity in communities. The project focused its work in a pilot area in northern Madagascar (the region of Sofia) and developed an approach that could be used in other areas of the country.

Challenges include obtaining sufficient data at a national scale for decision-making and the need for more research, including on agroforestry and propagation techniques, to support restoration efforts. Considerable challenges also needed to be overcome on aspects of governance, such as traceability and control. **Lessons learnt** included the importance of good coordination between the CITES Management and Scientific authorities; determining the means for the sustainable management of the species; the importance of adequate oversight of operations; the need to orient research towards applying CITES regulations; the importance of the regional project coordinator; and building capacity in the CITES Management and Scientific authorities to improve CITES implementation. Mr Tendro **recommended** further support for, among other things, strengthening the control system, implementing product traceability, encouraging restoration and agroforestry, and extending the work to other regions of the country and to other species.

In response to **questions from the floor**, Mr Tendro said that an algorithm was created under the project to show the relationship between tree diameter and the quantity of bark available for harvesting. Given information on tree density and size, it was then possible to calculate a harvesting quota consistent with sustainability. He said the NDF had been submitted to the government, but a decision on quotas was still pending. The issue was less about the quota than having in place the necessary controls to avoid illegal exports. Mr Tendro said that, in the longer term, the cost of inventories, controls and traceability should be met by exporters.

Benin, Nigeria and Togo

Project title: Action plan and capacity building for the sustainable management of Pterocarpus erinaceus *(Fabaceae) in Benin, Nigeria and Togo*

Mr Balakyem Awesso from Togo's Direction des Ressources Forestières said that *Pterocarpus erinaceus*, which occurred across a wide range of habitats in Africa, was a valuable but overexploited timber species. The project had two main aims—to assist in the development of an action plan for the sustainable management of the species in Benin, Nigeria and Togo; and to build capacity for the preparation of NDFs on the species. Among the outputs were the following: inventories of *P. erinaceus*; the development of an action plan; awareness-raising activities in rural communities and among private-sector actors; the preparation of NDFs in Benin and Togo; the preparation of a management plan for the species in Benin and Togo; and the production of videos on *P. erinaceus* management in Togo.

Mr Awesso said that the effective implementation of CITES in the three countries was limited by the ability of managers to establish quotas based on sound knowledge of the resource. The project enabled cooperation between the three countries to develop NDFs, which allowed the countries to tap into each other's knowledge; there was a need to continue building capacity in Nigeria on this aspect. He said that, although overall the project could be considered a success, it had encountered **challenges** due to its short duration (implementation was slowed by certain national procedures) and the lack of sufficient allocations of funds for certain activities, such as the inventory. In the future, Mr Awesso **recommended** a continuation of capacity building in inventories and NDFs and increasing project duration and funding.

In responding to a **question from the floor**, Mr Awesso said that the NDFs applied only to specific areas in the two countries and their purpose was mainly to build capacity so that each country could take ownership and extend their NDFs over the entire country. In Togo, a ten-year moratorium was in place on *P. erinaceus* exports, and further research would be needed to develop quotas when the moratorium expires.

Kenya, Uganda and Tanzania

Project title: Conservation and sustainable management of Osyris lanceolata *for economic development in East Africa*

Ms Beatrice Khayota from the National Museums of Kenya said that *Osyris lanceolata* (East African sandalwood) was a semi-parasitic evergreen tree that occurred in arid and semi-arid habitats and had a broad distribution in sub-Saharan Africa. It was traded internationally for its fragrance in the form of oils and sawdust, and it was also valued locally as a herbal medicine and for its timber, which was used in handicrafts. *O. lanceolata* had become more important in international markets as a substitute for *Santalum* species, and its exploitation was unsustainable. The objective of the project was to assist the three participating countries—Kenya, Uganda and the United Republic of Tanzania—to undertake the necessary assessments for formulating NDFs for the species. Under the project, a trinational coordination team had been established; experts had prepared reports on the status of *O. lanceolata* in each of the three countries; and research had been conducted into relevant aspects of management, including through inventories and a detailed study on production, harvesting, processing, transport, trade, control and monitoring with a view to establishing a tracking/control system. Draft NDFs had been prepared and validated, and action plans were under development. In each country, work was still underway

to establish mechanisms for identification, verification and traceability. Training and awareness-raising workshops were convened to increase community awareness on access and benefit-sharing and knowledge of *O. lanceolata* silviculture and domestication.

Ms Khayota said that the project had generated new knowledge on *O. lanceolata* that could be applied to improve science-based decision-making. Networking had been improved through multistakeholder, interinstitutional and regional dialogues, and awareness on *O. lanceolata* conservation had increased—with the number of border seizures decreasing (indicating reduced illegal trade). The trinational format of the project had enabled synergies and peer-to-peer learning across borders and improved cross-boundary coordination among government entities involved in *O. lanceolata* interventions. Overall, said Ms Khayota, the tripartite collaboration had enabled the transfer of knowledge, such as in the use of DNA in prosecuting CITES-related crimes and on nursery practices. She made the point that the tight project timeframes made it difficult to achieve all project outputs and suggested that more time should be allocated for projects that involve more than one country; larger budgets would also ensure that project personnel were adequately compensated for the work they contributed. More work was needed to scale up the project's findings to the national scale. Ms Khayota noted that the COVID-19 pandemic, and national elections, had also interfered with the smooth operation of the project. Among her **recommendations** were the following: national-scale inventories were needed to generate data for national-level NDFs; projects should have longer timeframes and should build in adequate budgets for communication, education and public awareness; and there was a need to synchronize cross-border efforts to monitor and control trade in the species.

Responding to **questions from the floor**, Ms Khayota said the project had involved an initiating meeting between the regional coordinator and national coordinators in each of the three countries to agree on the activities to be undertaken and who would do what. Thereafter, each national coordinator had established a national-level committee. Each country had its own budget allocation and therefore undertook its own activities, but the three countries used standardized methodologies and procedures as much as possible. She said that, in Kenya, the Kenya Forest Research Institute would continue working on *O. lanceolata*, including on its propagation and planting in communities. Responding on behalf of the United Republic of Tanzania, **Joseph Nicolao Otieno** said that similar work was underway in his country with local communities, including through training on seed collection, nursery establishment and management, and transplanting wildlings and nursery seedlings into homegardens. This work would continue after project completion.

Dr Johnson said that the success of the two transnational projects suggested that countries might wish to think further about submitting regional project proposals as a means for attracting donor interest, including through ITTO.

Field trip

Participants split into three working groups in the morning of 6 October (they presented their reports on 7 October). In the afternoon, participants visited FRIM to experience the Forest Skywalk in the Kepong Botanic Garden (see photos). Afterwards, they visited the FRIM Genetics Laboratory and received a presentation from Dr Lee Chai Ting, followed by a wide-ranging discussion. The presentation covered the laboratory's work on DNA markers, genetics and genomics, DNA profiling and barcoding, genome sequencing (e.g. for *Shorea leprosula*), gene expression, molecular breeding and genetically modified organisms. It also addressed applications of these technologies, such as for conservation, providing evidence in court cases involving illegal logging and trade, species authentication, and contamination in the food industry.

Photos courtesy FRIM

Working-group presentations

Photo courtesy FRIM

The working groups, which were organized by region, were tasked with identifying common gaps, lessons learnt, potential follow-up activities (including new target species), priority areas for future work, and potential regional activities. The session, in which the working groups reported on their discussions, was chaired by FRIM's **Dr Lillian Chua Swee Lian**.

Working group 1—Asia

This working group was chaired by **Mr Thang**, and the summary of discussions was presented by **Dr Yulita**. According to the working group, **lessons learnt** under the CTSP in Asia included that:

- strong coordination was needed among relevant authorities;
- a core team of experts should be established who were fully committed to the work and had secure employment;
- the regional coordinator played a crucial role in facilitating communication and understanding between the donor and implementing agencies;
- donor funds should be disbursed efficiently and rapidly after the signing of project agreements and to release the full amount to enable completion of all project activities;
- projects should be in line with national needs and priorities and CITES obligations and regulations to ensure country "ownership" and project sustainability;
- donors should be flexible in view of changing conditions in implementing countries and prepared to amend contracts, and they should be willing to bridge gaps in the salaries of civil servants employed by projects to ensure they were paid at prevailing market rates; and
- donors should be prepared to purchase certain equipment crucial for project success, with clear ownership of such equipment on project completion.

The working group **recommended** that work continue on *Dalbergia* spp., *Taxus* spp., *Aquilaria* spp. and *Pterocarpus sanctalinus*, and two new genera—*Cycas* spp. and *Afzelia* spp.—could be added to the work. Work in any future programme could include capacity building in tree identification and traceability; and the development of DNA markers for *Dalbergia cochinchinensis*, *D. oliveri* and *Aquilaria* spp. to improve identification and traceability. There was also a need for more networking at the regional or subregional level to encourage local communities to use CITES-listed tree species in agroforestry and for capacity building to improve understanding of CITES regulations and source codes and how to generate NDFs and LAFs. The working group suggested that donors could assist countries to incorporate CITES-listed tree species in tree-planting and forest landscape restoration initiatives as part of the Decade on Ecosystem Restoration and the One Trillion Trees Initiative.

Working group 2—Africa

This working group was chaired by **Ms Flensborg**, and the summary of discussions was presented by **Mr Midoko Iponga**. According to the working group, **success factors** in the CTSP in Africa included:

- building the capacity of country coordinators who learnt through peer-to-peer interactions with other country coordinators in the region and the regional coordinator;
- developing good project governance with the support of the regional coordinator through planning meetings to, among other things, allocating roles and responsibilities;
- ensuring flexibility in project implementation, including in the CITES scientific and management authorities; recognizing and harmonizing the strengths of each country;
- understanding the bureaucratic processes in each country;
- technology-, knowledge- and experience-sharing; and
- identifying and involving all stakeholders from the start.

Working group 2 identified the following **challenges**: the lack of a single NDF template in the region; the pandemic; language differences between countries in the region and also within countries; difficulties in financial disbursements and the need to implement unbudgeted activities, such as videos; and, in the subregional projects, the fact that budgets were the same for each country despite sometimes considerable differences in the size of the countries.

The working group made a number of **recommendations** for possible follow-up. At the national level, these included expanding the collection of data on relevant species to the whole country; obtaining government agreement on NDFs; seeking funding for additional work; preparing concept notes for scaling up projects; and developing action plans and management plans for certain species. Recommendations at the regional scale included developing identification and traceability protocols for CITES-listed tree species that spanned countries; sharing experiences and technologies, such as on propagation techniques; conducting community education campaigns; developing a regional project on *Guibourtia* species for Central Africa; and convening a meeting to exchange experiences. **Priority areas** for work at the national and subnational levels included silviculture; local-level NDFs; the inclusion of other CITES-listed tree species; capacity building; restoration with CITES-listed tree species; developing propagation techniques for such species; and convening a meeting for the exchange of

experiences. A new global-scale project on CITES-listed tree species, perhaps with funding through the Global Environment Facility, was also proposed.

Responding to a question from Dr Chua, **Ms Khayota** said that a challenge in developing NDFs was that it wasn't clear which template countries should be using. Few countries in the region had developed NDFs for the species under study, so it was a learning process.

Ms Flensborg said that work was underway in CITES to develop further guidance on NDFs, including for tree species.

Dr Johnson said that, in addition to NDFs, it was also challenging for many countries to develop LAFs for species listed in Appendix II. He noted that a recent workshop hosted by the CITES Secretariat in London had addressed this issue, and further guidance would be forthcoming. He mentioned that ITTO was directly supporting work related to CITES-listed tree species, with certain donors making funds available. ITTO member countries could consider submitting proposals to tap into this funding in the interim, with the potential for a new phase of the CTSP, or equivalent, in the future.

Working group 3—Central and South America

This working group was chaired by **Mr Malleux**, and the summary of discussions was presented by **Ms Herrera Sosa**. The working group concluded that, overall, the CTSP had been important and necessary for the sustainable management of the CITES-listed tree species addressed. It had been flexible in adapting to the conditions and needs of countries and in overcoming challenges such as those posed by the COVID-19 pandemic. The following **lessons** had been learnt: there was a need to increase the participation of forest companies to ensure uptake of the tools and products developed by the projects; and the participation in the projects of communities and other actors in the species' value chains was essential.

Working group 3 made the following **recommendations**:

- The CTSP should be continued to enable the completion and consolidation of the activities underway in the region—this would enable the results to be amplified and products improved.
- Consideration should be given to making the CTSP a permanent standing programme.
- NDFs, and strategies for the conservation and sustainable management of CITES-listed tree species, should be developed in an integrated way in all ecosystems in which the species were present.

In a new phase of the CTSP, the working group recommended improving procedures to ensure administrative efficiency in the distribution of finances; prioritizing the continuation, consolidation and implementation of the results obtained in the first phase; increasing opportunities for exchange, dissemination and training at the subregional, regional and global levels (both during the projects and on completion); and continuing regional and subregional projects in light of the results achieved in the first phase of the CTSP.

Dr Chua summarized the working-group presentations by saying that the benefits of the CTSP included increasing the participation of local communities by identifying them and getting them

engaged in project work—this was crucial for sustainability. The projects had helped increase dialogue between CITES authorities and among countries, which assisted in law enforcement and governance and the management of trade challenges. Dr Chua noted with appreciation that the CITES Secretariat and donor had been flexible in granting no-cost extensions because of the impacts of the COVID-19 pandemic. Among the recommendations made by the working groups were the need to improve coordination between national and regional authorities involved in the enforcement of CITES regulations and to increase capacity. There was also a need to disburse funds more efficiently and quickly and to recognize the difficulties in seeking new deliverables that did not appear in project documents and were unbudgeted. Across the regions, there were common needs on improving traceability, increasing understanding of source codes, and working on propagation techniques for CITES-listed tree species.

Dr Johnson referred to the visit on the previous day to the FRIM Genetics Laboratory and suggested a recommendation on educating authorities on CITES rules pertaining to exports of small samples of CITES-listed species for scientific research.

Dr Chua said that Malaysia agreed on this point because moving samples across borders was increasing difficult, not just because of CITES regulations but also phytosanitary rules.

Ms Flensborg said that a relatively simple way to expedite the movement of samples for scientific purposes was to register laboratories as scientific institutions in the CITES register—this enabled exchanges with a CITES label without the need to obtain a CITES permit. Authorities were also able to issue permits in advance without issuing them for specific shipments using simplified procedures, which was another way to facilitate the exchange of scientific materials. The CITES Secretariat had made detailed guidance available on this, but it required awareness in CITES Management Authorities. (Ms Flensborg later gave a more detailed explanation of this process.)

CITES Secretary-General **Ivonne Higuero**, who had joined the workshop in the morning, congratulated participants on the work done under the CTSP. She was impressed that many projects had generated NDFs, which illustrated their usefulness. Work still needed to be done, and many other countries that had not participated in the programme also needed assistance. She said the CITES Secretariat would do everything it could, working with the European Union and others, to continue the process, although an immediate continuation was unlikely. She said she would share the outcomes of the CTSP with all Parties.

Mr Malleux noted many common findings between the regions, as informed by the working groups. A major challenge was how to continue the work, which was a recommendation shared across the regions. He said the solution for ensuring that the trade in endangered species did not harm the species went beyond biology, restoration and propagation because it required good governance. There was a need, he said, for greater coordination and dialogue among stakeholders at all levels as part of the governance process. He expressed hope that a second phase of the CTSP would ensue, with a focus on governance, legal frameworks, guidelines, priorities and coordination, as well as on capacity building for the deployment of identification and traceability technologies and processes.

The road to CoP 19, and closing of the meeting

Photo courtesy FRIM

This session was chaired by **Dr Johnson**. He noted that, among other things, CoP 19 (which would begin on 14 November 2022) would consider new proposals for listing tree species. Recent CoPs had considered many tropical tree species, and CoP 19 would consider seven new proposals covering seven genera and 153 species. The main reason that Parties were proposing the listing of entire genera was the difficulty in distinguishing between species—listing all lookalike species simplifies identification. Dr Johnson noted, however, that technologies were increasingly making such identification feasible but there was a lack of resources to make them available for customs officials. Dr Johnson described each of the seven proposals for listing tree species: (1) *Handroanthus* spp., *Roseodendron* spp. and *Tabebuia* spp., all for Appendix II—the proponents were Colombia, the European Union and Panama; (2) *Afzelia* spp., for Appendix II—the proponents were Benin, Côte d'Ivoire, the European Union, Liberia and Senegal; (3) *Dalbergia sissoo*, with the proposal being to remove the species from Appendix II—the proponents were India and Nepal; (4) *Dipteryx* spp., for Appendix II—the proponents were Colombia, the European Union and Panama; (5) *Paubrasilia echinate*, for uplisting to Appendix I—the proponent was Brazil; (6) *Pterocarpus* spp. (African populations), for Appendix II—the proponents were Côte d'Ivoire, European Union, Liberia, Senegal and Togo; and (7) *Khaya* spp., for Appendix II—the proponents were Benin, Côte d'Ivoire, the European Union, Liberia and Senegal.

Dr Johnson described the process for the consideration of listings during CoPs. The proponents presented the proposal, a discussion ensued, and then Parties either agreed by consensus or put the decision to a vote. Each Party may vote yes or no (or they may abstain, in which case they vote would not be counted). He noted that CITES, ITTO and the International Union for

Conservation of Nature were invited to comment on proposals for the listing of timber species, and these inputs were available on the CITES website. Dr Johnson briefly reviewed other agenda items at CoP 19 relevant to tree species—these being items 7.5, 19, 20, 43.1, 62, 63 (largely an information-sharing session on *Boswellia* spp.), 84 and 89.

He mentioned that a side-event on the CTSP would be convened during CoP 19, which would involve presentations by Ms Flensborg, the regional coordinators, and ITTO. Dr Johnson referred to information-sharing sessions that the CITES Secretariat would convene for various regions in the lead-up to CoP 19 to help delegations prepare for it. He said the most important voices in CITES were those of the Parties, and he urged range states to be involved because of the impacts that listings could have on people's livelihoods. He said most countries would now be formulating their positions on the various listings, and consultations were important so that Parties could reach informed positions.

Mr Lau said that, for those listings for which Malaysia and other countries that were not range states, it was important for proponents to engage with the Parties and explain the rationale. This is to avoid an abstention which would result in a vote squandered.

A discussion ensued on the lack of information often available on species proposed for listing, the inclination to list species in case they were under threat, and the pros and cons of blanket listings of genera. It was also commented that some importing countries imposed additional measures to CITES permits on listed species, making range states think twice before proposing listings.

Dr Johnson urged participants to ensure that such discussion points were raised at CoP 19.

Dr Malleux said it was clear that there was confusion about the definitions, methodologies and indicators for developing NDFs for some species. More work was required to fill the gaps and to expand field surveys of listed species and sample sizes and to take the full range of ecosystems into account. Often, decisions were based on insufficient information, and an easy way out was to include entire genera, which could pose serious problems for communities that relied on trade of certain species that were not under threat of extinction.

Dr Johnson said that ITTO had a standing decision calling for member countries considering new CITES tree species listings to consult within the Organization, although none had done so for the proposed listings to be considered at CoP 19. ITTO was an appropriate forum for discussing listings of tropical timber species, he said.

Ms Flensborg made a presentation on exemptions for the movement of samples of CITES-listed species, as specified in Article 7, Paragraph 6 of the Convention. This provision allowed for non-commercial loans, donations and exchanges between scientists and scientific institutions registered with the CITES Management Authority in their country (and the CITES Secretariat) if they carried a label issued or approved by the Management Authority. Resolution 11.15 contained further provisions for this scientific exchange for non-commercial purposes, said Ms Flensborg. Moreover, the CITES Standing Committee had endorsed detailed guidelines for using these exemptions. Ms Flensborg noted there was confusion between scientific exchange and "simplified procedures"—the difference between them was explained in the guidelines, with the latter being a means for using the Convention's permits and certificates in a simplified way. The

key requirement of scientific exchange was that the scientific institution or scientists needed to be registered with the Management Authority and the CITES Secretariat. When they were, labels could be used to enable exchanges.

In response to **questions from the floor**, Ms Flensborg said there was no need for institutions to be registered for the exchange of CITES-listed specimens between institutions in the same country. She also explained that the CITES Management Authority in a country was supposed to consult with the Scientific Authority when an institution applied for registration, although the final decision rested with the Management Authority. She said that an individual lab could register, or the institution it resided within could register and appoint a focal point to ensure that exchanges by labs under its auspices were conducted in accordance with the guidelines.

In response to a **point made by a participant**, Dr Johnson said it would be an excellent idea to undertake a study on the effectiveness of CITES tree species listings and the experiences of countries.

In response to a **question from the floor** regarding the proposal to de-list *Dalbergia sissoo*, Dr Johnson said a concern of some Parties was that countries other than India (and Nepal) might use this as a means for unethically exporting other *Dalbergia* species. Overcoming this issue would require robust identification and traceability for *Dalbergia sissoo* products originating in India.

Further discussion ensued on the issue of listings of lookalike species. The point was made about where to "draw the line" on lookalike species and whether it could include species of other genera to the species under threat. Ms Flensborg said that any species could be listed in Appendix II to ensure effective control and therefore would not need to be from the same genus.

Ms Higuero said that, although it might be possible to distinguish between lookalike species with the best technologies, this was not always feasible in field conditions and given the many demands on customs officials. It was important to understand the practical limitations in many countries in differentiating between species. Apps were becoming available that could assist in this, but even these might be ineffective in differentiating between (for example) various *Dalbergia* species.

Dr Herrera Sosa said that the wood in some *Dalbergia* species was very similar—it might be possible to distinguish between them using molecular analysis but not morphologically. When it was not possible to differentiate between similar timbers in a practical way, it was necessary to list all relevant species. **Mr Malleux** referred to the challenge of establishing a chain of custody and traceability, which could help address this issue but requires good governance.

In response to a **question from the floor**, Ms Flensborg said that traceability was an element of LAFs—it was impossible to sign off on a CITES permit unless there was certainty about the origin of the specimen. A resolution adopted at CoP 18 provided indicators for this, including the ability to track the cargo. Guidance was available on developing LAFs for tree species.

In response to a question from the floor, **Ms Herrera Sosa** elaborated on the discovery, as part of the CTSP project in Guatemala, of new *Dalbergia* species in the country. She said that originally it had been thought that only two *Dalbergia* species occurred in Guatemala, but work

conducted by the project found four additional species, not know previously to occur in the country, as well as two species not previously known to science. It was possible, said Ms Herrera Sosa, that more *Dalbergia* species existed elsewhere in Central America that had not yet been discovered. She said that Guatemala was training 100 technicians on aspects of forest governance with the objective of enabling them to distinguish between the various species.

In response to a question from the floor, **Ms Flensborg** said that timber from CITES-listed tree species produced in plantations was subject to CITES regulations, and the issue was the source code used.

Mr Tendro said that, in Madagascar, a European Union-funded project had identified 84 *Dalbergia* species, most of them endemic. This showed the complexity of regulating trade in *Dalbergia* species, and he proposed an international network for exchanging scientific information on *Dalbergia* identification.

Ms Flensborg said that the Timber Identification Resources and Tool would be launched at CoP19; this would include documents, guides, keys, and lists of institutions and consortia. They would look at the need for a specific network on *Dalbergia*; if deemed necessary, it could be brought to the attention of the CITES Plants Committee.

In closing the workshop, **Ms Flensborg** and **Dr Johnson** thanked all participants for their vigorous inputs and the interpreters for their excellent work.

Annex 1. List of participants

Country	Name	Title/Institution
AFRICA		
Benin (ONLINE)	KOROGONE Ulysses (Mr.)	Ministère de Cadre de Vie et du Développement Durable/Direction Générale des Eaux, Forêts et Chasse ;
Burundi (ONLINE)	HAKIZIMANA Claude (Mr.)	Office Burundais pour la Protection de l'Environnement (OBPE)
	ISTEGETSE Daniele (Ms.)	Directeur Administratif et Financier à l'Office Burundais pour la Protection de l'Environnement
Cameroon (ONLINE)	NGOMIN Anicet (Mr.)	Ministère des Forêts et Faune/Direction des Forêts
	MVONGO NKENE Mikhail Nelson (Mr.)	Ministère des Forêts et Faune/Direction des Forêts
Côte d'Ivoire (ONLINE)	COULIBALY Brêhima (Mr.)	Ministère des Eaux et Forêts
	Aboubakar TOURE (Mr.)	Ministère des Eaux et Forêts
D.R. Congo (ONLINE)	Crispin Mahamba Kamate (Mr.)	Assistant Chargé des Rapports et Communication avec le Secretariat de la CITES Institut Congolais pour la Conservation de la Nature (I.C.C.N)
	Mutoba Mushala Andy (Mr.)	Institut Congolais pour la Conservation de la Nature (I.C.C.N)
Gabon	MIDOKO IPONGA Donald (Mr.)	Institut de Recherche en Ecologie Tropicale (IRET), Centre Nationale de la Recherche Scientifique et Technologique (CENAREST
	ELLA Ghislain (Mr.)	Institut de Recherche en Ecologie Tropicale (IRET), Centre Nationale de la Recherche Scientifique et Technologique (CENAREST)
Kenya	KHAYOTA Beatrice (Ms.)	National Museums of Kenya, Centre for Biodiversity
Madagascar	TENDRO Radanielina (Mr.)	Département de Biologie et Ecologie Végétales Université d'Antananarivo, Faculté des Sciences
	Robsomanitrandrasana Eric José (Mr.)	Direction Générale des Forêts, Ministère de l'Environnement, de l'Ecologie et des Forêts
Nigeria	OMOVOH Blessing Odafe (Mrs.)	Senior Scientific Officer, Wildlife and CITES Management Division, Department of Forestry, Federal Ministry of Environment
Tanzania	OTIENO Joseph Nicolao (Mr.)	Institute of Traditional Medicine, Muhimbili University of Health and Allied Sciences,

Togo	AWESSO Balakyèm (Mr.)	Chef Section - Recherche forestière et lutte contre la dégradation des terres,/Direction des Ressources Forestières (DRF/MERF)
Uganda	KATWESIGE Issa (Mr.)	Department of Wildlife Conservation, Ministry of Tourism, Wildlife and Antiquities
ASIA		
Cambodia	Dany Chheang (Mr.)	Deputy Director General, Forestry Administration
	Lao Sethaphal (Mr.)	Deputy Director and Chief of Secretariat of CCMA, Dept. of Leglislation and Law Enforcement, FA/ Cambodia CITES Management Authority (CCMA)
Indonesia	Agung Nugroho (Mr.)	Deputy Director of Species and Genetic Utilization, Directorate of Biodiversity Conservation of Species and Genetic, MOEF
	Kusumadewi Sri Yulita (Dr. Ms.)	Researcher of Research Center for Ecology and Ethnobiology, National Research and Innovation Agency
Malaysia	Lillian Chua Swee Lian (Dr. Ms.)	Director, Forest Biodiversity Division, Forest Research Insititute Malaysia (FRIM)
	Lau Kah Hoo (Mr.)	Research Officer/ Project Manager, Forest Research Institute Malaysia (FRIM)
Viet Nam	Nguyen Manh Ha (Dr. Mr.)	Director/ Project Manager, Center for Nature Conservation and Development (CCD)
CENTRAL AND SOUTH AMERICA, AND THE CARIBBEAN		
Argentina	Santiago de Tellería (Mr.)	Dirección Nacional de Bosques, Ministerio de Ambiente y Desarrollo Sostenible
	Eduardo Manghi (Mr.)	Dirección Nacional de Bosques, Ministerio de Ambiente y Desarrollo Sostenible
Brazil	Tereza Pastore (Dr. Ms.)	Brazilian Forest Service, Laboratory of Forest Products
	Jez Willian B. Braga (Mr.)	Universidade de Brasília (UnB)
Cuba	Viana Victoria Barceló Perez (Ms.)	Oficina de Regulación y Control Ambiental, Autoridad Administrativa CITES
	Jacqueline de los Ángeles Pérez Camacho (Dra. Ms.)	Instituto de Ecología y Sistematica. Autoridad Científica CITES
Ecuador	Tomi Margarita Sugahara Zambrano (Ms.)	Consultora del Plan de Acción, Equipo Técnico de Consultoría Plan de Acción del Proyecto, Universidad de San Francisco, Quito (USFQ)
Guatemala	Myrna Ethel Herrera Sosa (Ms.)	Cordinadora proyecto S-566, Laboratorio For. de Maderas, Facultad de Agronomía, Universidad de San Carlos de Guatemala

	Gustavo Pinelo (Mr.)	President and legal representative, Fundación Naturaleza para la Vida - FNPV
Donors, CITES, ITTO, Regional Coordinators, Consultants		
EU (ONLINE)	Jorge Rodriguez Romero (Mr.)	Head of Unit, Global Environmental Cooperation and Multilateralism
U.S.A. (ONLINE)	Aysha Ghadiali (Ms.)	Policy Advisory, U.S. Forest Service
CITES	Sofie Hermann Flensborg (Ms.)	CITES Secretariat
	Nelly Dolidze (Ms.)	CITES Secretariat
ITTO	Steve Johnson (Dr. Mr.)	Director, Trade and Industry
	Kanako Ishii (Ms.)	Program Assistant
Regional Coordinator	Thang Hooi Chiew (Mr.)	Regional Coordinator for Asia under the CTSP
Regional Coordinator (ONLINE)	Jean Lagarde Betti (Dr. Mr.)	Regional Coordinator for Africa under the CTSP
Expert (ONLINE)	Ian Thompson (Mr.)	Expert for the CTSP Advisory Committee
Expert	Jorge Malleux (Mr.)	Expert for the CTSP Advisory Committee
	Alastair Sarre	Rapporteur

Annex 2. Agenda

CITES Tree Species Programme – International Closing Meeting and the Seventh and Final Meeting of the Advisory Committee
Kuala Lumpur, Malaysia, 5-7 October 2022

AGENDA as of 5 October 2022

Tue., 4 October 2022	Arrival of participants in Kuala Lumpur
Wed. 5 October 2022	
08:30 – 09:00	Registration by participants
09:00	Prayer reciting
09:05 – 09:30	Opening Session • Opening statement - CITES • Officiating speech by Director-General, Forest Research Institute Malaysia • Group photo session
09:30 – 10:20	Morning Session - chair: Mr. Thang Hooi Chiew – Regional Coordinator for Asia under the CTSP • CITES presentation on an overview of the CTSP (15-min.) • An overview of the CTSP in Asia (15-min.) • An overview of the CTSP in the Central and South America, and the Caribbean (15-min.)
10:20 – 10:50	Coffee/Tea break

10:50 – 12:30	• Country reports and discussions for Asia: Chair: Mr. Thang Hooi Chiew, Regional Coordinator for Asia
	  • Cambodia (15-min.)
	  • Indonesia (15-min.)
	  • Malaysia (15-min.)
	  • Viet Nam (15-min.)
	• Country reports and discussions for Central and South America, and Caribbean - Chair: Mr. Jorge Mallexu – Expert for the CTSP Advisory Committee
	  • Argentina (15-min.)

12:30 – 14:00	Lunch

14:00 – 15:30	Afternoon Session
	• Country report and discussions for Central and South America and Caribbean continues: Chair: Mr. Jorge Malleux
	  • Brazil for 2 projects (15-min. x 2)
	  • Cuba (15-min.)

	• Ecuador (15-min.) • Guatemala (15-min.) • El Salvador-Guatemala-Nicaragua (15-min.)
15:30 – 16:00	Coffee/Tea break
16:00 – 18:15	• An overview of the CTSP in Africa (15-min.) • Country reports and discussions for Africa – Chair: Dr. Jean Lagarde Betti, Regional Coordinator for Africa • Burundi (15-min.) – online by Zoom • Cameroon (15-min.) • Côte d'Ivoire (15-min.) – online by Zoom • D.R. Congo (15-min.) – online by Zoom • Gabon (15-min.) • Madagascar (15-min) • Benin-Nigeria-Togo (15-min.) • Kenya-Tanzania-Uganda (15-min.)
18:30	Cocktail
Thu. 6 October 2022	
08:30 – 09:00	Introduction of working groups (WG) and their mandates: chair: Ms. Sofie Hermann Flensborg
09:00 – 10:30	Identification of gaps and lessons learned and recommendations follow-up activities, including new target species and new work lines and activities • Identification of priority areas of future work • Identification of possible regional activities WG1 (English) – chair: Mr. Thang Hooi Chiew WG 2 (French) - chair: Ms. Sofie Hermann Flensborg WG 3 (Spanish) – chair: Mr. Jorge Malleux
10:30 – 11:00	Coffee/Tea break
11:00 – 12:30	Working groups work continues
12:30 – 14:00	Lunch
Afternoon Session	Field trip to FRIM including Forest Skywalk at the Kepong Botanic Garden

Fri. 7 October 2022	
08:30 – 11:00	Chair: Dr. Lillian Chua - FRIM • Reports of working groups • Concluding session
11:00 – 11:30	Coffee/Tea break
11:30 – 13:00	Road to CoP19 – chair: Dr. Steve Johnson - ITTO • Relevant agenda items • Side event
13:00 – 14:30	Lunch
14:30 – 18:00	Seventh and final meeting of the CTSP Advisory Committee (AC) Chair: Ms. Ivonne Higuero – Secretary General of CITES Secretariat

	(please refer to the separate agenda for the AC meeting)