

# Conserving Rosewood genetic resources for resilient livelihoods in the Mekong

Project Inception workshop

Vientiane, Lao PDR, 10-14 September 2018



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## Introduction

This document reports the discussions and action points from the Inception workshop of the project “Conserving Rosewood genetic resources for resilient livelihoods in the Mekong”. The workshop was held in Vientiane, Lao PDR, from 10 to 14 September 2018. The project is funded by the UK Darwin Initiative and runs from July 2018 to March 2021.

Working with forestry authorities and rural communities in Cambodia, Lao PDR, Thailand and Vietnam, the project will use *in situ* and *ex situ* methods to safeguard the genetic resources of three *Dalbergia* rosewood species of high conservation concern, namely *Dalbergia cochinchinensis*, *D. oliveri*, and *D. cultrata*. The project will develop novel, and strengthen existing, capacity for seed collection, seed source and nursery management, and associated value chain development. The project will build the capacity of rural households to generate livelihood benefits from sustainable use of these resources.

The project is implemented as a collaboration of the following organisations:

- Institute of Forest & Wildlife Research & Development, Cambodia
- Forest Science Research Center, National Agriculture & Forestry Research Institute, Lao PDR
- Forest Genetics & Conservation Department, Center for Biodiversity & Biosafety, Vietnam Academy of Agricultural Sciences
- Expert Office, Forest and Plant Conservation Research Office, Department of National Parks, Wildlife & Plant Conservation, Thailand
- Research Institute of Forestry, Chinese Academy of Forestry, China
- Department of Plant Sciences of University of Oxford (Project lead)
- Bioversity International (Project co-lead)
- University of Copenhagen, Denmark

The overall aim of the Inception workshop was to ensure the project makes a successful start, putting in place plans to fulfil its activities by the end of year 1. Specifically, the workshop had the following 5 objectives, with assignment and clarification of roles among partners:

- Discuss and agree plans to carry out activities to ensure project outputs
- Develop a detailed work plan for the first year of the project
- Developing trust and working relationship between partners
- Explore/clarify collaborations with other *Dalbergia* genetic resources projects and more broadly conservation/ management/ restoration projects and programmes in the countries, to link and contribute to other ongoing initiatives to ensure complementarity and mutual benefits
- Clarify accounting/reporting procedures and timelines according to Darwin requirements

Workshop programme is given in Annex 1 and list of participants in Annex 2.

Workshop presentations are available from: [https://cgiar-my.sharepoint.com/:f:/g/personal/r\\_jalonen\\_cgiar\\_org/EktH6rKE\\_O1DsRY9dQnztI0B4LH-6H1jOM3mC\\_Z8Vsmn2w?e=cp9OII](https://cgiar-my.sharepoint.com/:f:/g/personal/r_jalonen_cgiar_org/EktH6rKE_O1DsRY9dQnztI0B4LH-6H1jOM3mC_Z8Vsmn2w?e=cp9OII)

## Day 1

### Opening ceremony

The workshop was officially inaugurated by Dr **Bounthong Bouahome**, Director General of the National Agriculture and Forestry Research Institute, and His Excellency Mr **Hugh Evans**, British Ambassador to Lao PDR.

In his opening remarks, Dr Bounthong explained that the project contributes to the Lao PDR's National Strategy for 2025 that covers rural development and sustainable forest management, and includes a target to increase forest cover to 70% by 2020. Conservation and sustainable use of forest resources are both of crucial importance in Lao PDR. Knowledge of forest genetic resources and conservation approaches is still limited in the country. A Tree Seed Project funded by the Danish Government in 2002-2010 identified and established in total 100 tree seed sources for 29 species across the country, of which 76 still remain. *Dalbergia* species are among the species for which seed sources have disappeared, and it is not easy to find these species in nature anymore. Illegal logging continues despite of the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES). To help conserve *Dalbergia* species, it is important to work with markets and traders.

HE Hugh Evans explained that the project is of high priority for Lao government, given its obligations for the CITES. Priorities for the diplomatic relations between the governments of UK and Lao PDR include strengthening political ties, education and governance. Combating the Illegal wildlife trade (IWT) that currently amounts to US\$ 23 billion, is one of UK's global priorities. One third of global timber seizures are Rosewood. In 2018, the British Embassy in Lao PDR ran a competition for local filmmakers to produce short films on IWT, and the entries will be showcased at the Luang Prabang International Film Festival in December 2018 (speech available on project sharepoint).

Project Leader Dr **David Boshier**, Department of Plant Sciences (University of Oxford), explained how the project was conceived through regional collaboration under the Asia Pacific Forest Genetic Resources Programme (APFORGEN). The project is funded by the British Government, but it was developed through a regional workshop that was sponsored by the Republic of Korea. Moreover, the project has a sister project in China to conserve local Rosewood species, including some of which are shared with the Mekong countries, with funding from the National Science Foundation of China. The project team hopes to attract further additional funds to help expand the project and its impacts.



**Figure 1.** Workshop participants with dignitaries at the opening ceremony

## Session 1: Regional assessment of conservation status of three *Dalbergia* species

David Boshier presented the workshop objectives, after which participants introduced themselves.

David Boshier gave an introduction to the 1<sup>st</sup> session on regional assessment of the conservation status of the project's target species. In thinking about the need for regional assessment of conservation status he noted the importance of detailed information for individual tree species for more confident decision making in use and conservation. He presented the activities for this output in the proposal. He then asked people to think about: what information needs are; identify how each country may use database/results; which specific national plans/strategies do results apply to and how; what groups will be interested in the results; what should results/outputs look like to address these plans/strategies and suit the interests of different user groups?

Hannes Gaisberger, Bioversity International, presented recent approaches and applications of spatial analysis for the conservation of forest genetic resources. Spatial approaches help, for example, identify areas of highest diversity and highest threats, gaps in existing germplasm collections, and species suitability to growth sites. In species distribution modelling (also known as ecological niche modelling), environmental predictors are used to predict the species' potential and actual distributions. While the number of scientific papers published on species distribution modelling keep increasing, its application for practical conservation decisions is still limited. Species distribution modelling has been used for example to assess the conservation status of crop wild relatives in South African countries, comparing diversity hotspots with climate change predictions and analysing eco-geographic diversity so as to identify potentially distinct populations. A proposed network of in situ conservation areas was proposed as a result of the project, focusing on complementarity with existing conservation sites. In another project in Burkina Faso, modelled distributions were compared with estimated intensity of threats, and conservation priorities and approaches (in situ, ex situ or assisted natural regeneration) were proposed based on each context. Available resources online include the Crop Wild Relatives Portal (<http://www.cropwildrelatives.org/sadc-cwr-project/>) and online atlas of MAPFORGEN which includes basic information on species reproductive biology, seed dispersal and uses (<http://www.mapforgen.org/>).

Riina Jalonen, Bioversity International, explained the process for the spatial conservation assessment for the project's target species. Distribution modelling and basic threat analysis will be conducted through a related project 'APFORGIS – Establishing an Information System for conserving native tree species and their genetic resources in Asia-Pacific' ([www.apforgen.org/activities/apforgis](http://www.apforgen.org/activities/apforgis)) that is conducting distribution modelling for another approximately 50 native Asian tree species using the same methodology. Darwin project partners will collect and provide information on the target species' natural distribution (current or historical), and additional information is also compiled through the APFORGIS project. APFORGIS team then performs state-of-the-art species distribution modelling SDM and basic status assessment, including predicted potential, current and future distribution, and seed zones identified based on eco-geographic variation across the species' range (including also other countries than those involved in this project). Results are fed back to this project for more detailed analyses and conservation planning.

## Use of project results by national programmes and stakeholders

Participants discussed in groups how their countries may use the knowledge and results generated by the projects, and which national strategies and policies they help to implement. They highlighted, among other things, the following:

**Vietnam:** National policies currently strongly emphasize mainstreaming biodiversity conservation and sustainable use with other land uses. This involves understanding land use changes and the threats and opportunities they present to biodiversity, and preparing land use plans. However, there is lack of spatial data on land uses for implementing the National Biodiversity Strategy and Action Plan in Vietnam. Species distribution and threat maps by the project will importantly contribute to this process

**Lao PDR:** There is lack of centralised databases on species conservation. Partners vision strategy and action plan for *Dalbergia* conservation as an output from the project.

**Cambodia:** National Forest Programme has indicators and targets for areas under in situ and ex situ conservation, hectares under tree planting, and priority species for planting and conservation. Distribution maps for *Dalbergia* species, including information e.g. on rainfall and soil types, will be important for planning planting programmes

**Thailand:** The long-term national strategy for biodiversity conservation includes mapping of rare, endangered and threatened tree species for conservation, and the project directly contributes to that by generating and compiling relevant information. Poaching is a serious problem, and knowledge on distributions can help strengthen law enforcement in areas where the species are known to occur. Sensitivity of information is important; rangers need specific location data, but it should not be spread. Occurrence data can be shared publicly at the level of province of occurrence.

**China:** The country has a national implementation plan for the *Global Plan of Action on Forest Genetic Resources* (FAO 2014). There is a national biodiversity database with 130,000 occurrence records. Access is open but not all information, especially location data, is freely available. The data is being used for developing 5-year national plans for forest genetic resources. Distribution maps do not yet exist and would be nice to have as next step. The project can contribute to better planting material and species-site matching, support seed collection and gene exploration.

The following stakeholders were mentioned across the countries as potential users of information from the project:

- Ministries of Environment, Agriculture and Rural Development, for guiding the development and implementation of policies, strategies and regulations
- Universities, for use in education and training
- Rural communities, to guide forest management and tree planting programmes
- Non-governmental organisations working on biodiversity conservation
- Private companies and nursery managers for guiding seed sourcing and establishment of plantations
- Tree breeders and associated industries, for the development of new varieties (especially in China)
- Researchers studying conservation and management of *Dalbergia* species



**Figure 2.** Dr Suchitra and Dr Voradol (Department of National Parks, Wildlife & Plant Conservation, Thailand) engaged in group discussions

**Action points:**

- Identify specific strategies and actions for engaging with key of stakeholders in each country, and helping them understand information and tools.
- Carefully consider formats in which data would be made available, and needs for data harmonisation, to facilitate use and integration of project results in national programmes and strategies. Data formats often differ even between institutions in one country, which makes comparisons difficult.

Species occurrence data

Country partners identified available occurrence data for the project’s target species from forest inventories, research agencies and their own field research. Only already available data is needed; the results of the modelling can then help plan and prioritise future field studies.

**Action points:**

- Country partners will submit available occurrence data to Bioversity by 8 October 2018, for developing distribution models.

Baseline for *in situ* reserves and *ex situ* collections

Project targets include increasing the number of designated *in situ* reserves and *ex situ* collections for *Dalbergia* species by 50% (indicator 0.1). During project development, country partners had

reported that there would currently be 12 *in situ* and 17 *ex situ* conservation units for the tree species across the project countries (Table 1).

Possible new conservation sites include:

- Cambodia: at least 10 populations are known from community forests; to be inventoried
- Lao PDR: *Dalbergia oliveri* is known to occur in Upper Central and Southern Lao, but more information on locations is needed. *Dalbergia cochinchinensis* has been identified in national forest protection area in Vientiane province. Tentative information on potential *in situ* conservation areas exists. *D. cochinchinensis* and *D. cultrata* have also been found in recent inventories of rattan species, and are known to occur in lower central region.
- Thailand: 12 populations have been assessed and highly diverse populations have been identified. Target would be to identify 3 populations for conservation each in North, Central and Southern Thailand. All National parks in Thailand are expected to have some data on species occurrences (perhaps apart from *Dalbergia oliveri*). Populations could be used for seed collection including for restoration purposes.
- Vietnam: existing *in situ* sites are in three different National Parks. One *ex situ* collection is found in a community forest area. More information is needed on distributions of *Dalbergia cultrata*.
- China: information on 50 locations of *Dalbergia cultrata* has been collected. The species is recognised as important species and has been researched for silviculture.

Discussion: Good practices and challenges for identifying and establishing new conservation units:

- Common problems in assessing the conservation status of the target species include lack of data of the existing conservation units, changing conservation status of the units (e.g. due to illegal logging), and difficulty of sharing information between multiple organisations working on the topic
- Definitions of *in situ* and *ex situ* conservation units vary between the countries. For example, while Thailand has many *ex situ* conservation units, there are currently no designated *in situ* conservation units for *Dalbergia* species. Wild populations of the species are conserved only as part of the Protected Areas system.
- For assessing the achievement of the indicator by the end of the project, it is important to confirm the current status of the pre-existing reserves and collections. Some reserves or collections may not exist anymore in the field. Sustainability of the reserves to be established through the project is very important.
- Conservation sites should ideally be as large as possible (at least approximately 50 trees). However, it must also be considered what is available and how feasible conservation is in the landscape context. Areas with high potential for conservation (e.g. well managed community forests) are better than areas with higher diversity coupled with high vulnerability to threats.
- Data about reserves and collections is held by different organisations, and time is needed to compile it. Accessing information held by some parties may be difficult.
- Chinese partners prefer to publish data in scientific literature before sharing it. After publishing, data sharing is easy.

**Table 1.** Existing *in situ* and *ex situ* conservation units for three *Dalbergia* species in the project countries.

Species		Cambodia	Lao PDR	Thailand	Vietnam	TOTAL
<i>Dalbergia cochinchinensis</i>	In situ	2	0	0*	3	5
	Ex situ	0	?	13	2	15
<i>Dalbergia oliveri</i>	In situ	2	0	0	4	6
	Ex situ	0	?	0	1	1
<i>Dalbergia cultrata</i>	In situ	1	0	0	0	1
	Ex situ	0	?	0	0	0

\* Only in protected areas

**Action points:**

It was agreed that the project partners provide the following information for verifying the baseline by 31 December 2018:

**In situ reserves:**

- Location of site
- Forest type
- Number of trees
- Diameter range
- Size of the site (ha)
- Map (showing delineation)

**Ex situ collections:**

- Location of site AND origin
- Forest type of site AND origin
- Number of mother trees
- Age of the site
- Size of the site (ha)
- Map (showing delineation)

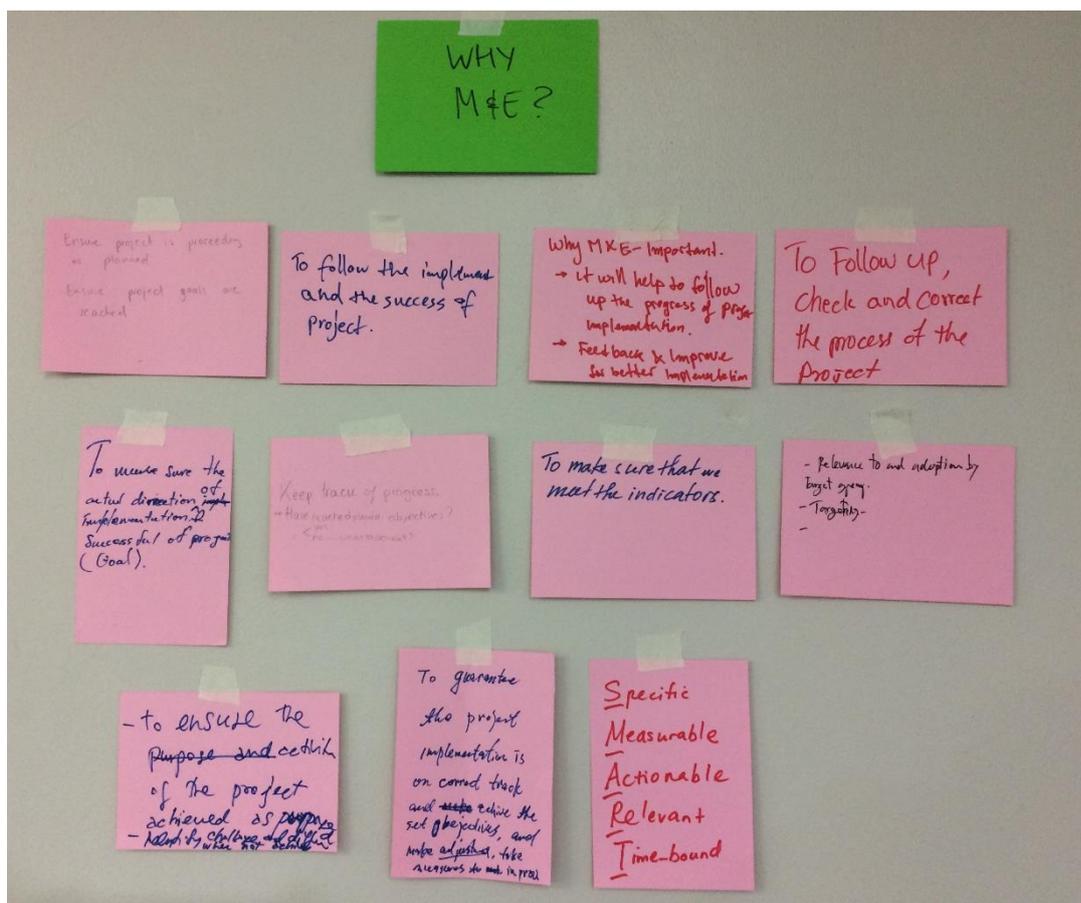
Session 2: Monitoring and evaluation

Riina Jalonen presented Monitoring and evaluation plan for the project. The project has three types of targets:

- Proportional change targets compared to current situation (baseline required to measure progress) (Table 2)
- Numerical targets, e.g. number of people trained through project (Table 3)
- Qualitative change targets, e.g. availability of maps or recommendations

A monitoring and evaluation plan is being prepared that details the information needs and responsibilities for monitoring project progress. Next steps for monitoring and evaluation include:

- Finalise monitoring and evaluation plan (specify responsibilities, reporting lines etc)
- Establish M&E Advisory Group: one representative per organisation, not directly involved in project
- Prepare detailed work plans to assist in monitoring
- Plan for data collection for the baseline



**Figure 3.** Why is monitoring and evaluation needed? Participants' thoughts.

**Table 2.** Project targets requiring baseline.

Indicator	Target	Countries	Data source
0.1 number of designated in situ/ex situ Dalbergia conservation units	50% increase	Cambodia, Lao PDR Thailand, Vietnam	Official documents and records
0.2 forest-related income of 175 rural households in 3 countries	20% increase	Cambodia, Lao PDR, Vietnam	Household survey (Q2, Q13); National records?
0.3 Number of households planting Dalbergia on their farmland in 4 communities	30% increase	Lao PDR, Vietnam	Household survey (Q2, Q13)

**Table 3.** Numerical targets of the project

Indicator	Target	Countries
0.3 (2.2, 3.3. 3.4)	100 professionals and 175 rural households trained	All
2.1	At least 25 new <i>in situ/ex situ</i> conservation units	All
2.3	15 new coordinated seed collections	All
2.4	Regional/national provenance trials with 8 provenances and 4 sites	All
3.2	Seed sourcing in 3 public and 3 private sector tree planting programmes reviewed	Cambodia, Lao PDR
3.5	175 households in 7 communities involved in seed collection businesses	Cambodia, Lao, Viet Nam
3.5	4 community nurseries, capacity 10,000 seedlings per year from year 3 onwards	Cambodia, Lao, Viet Nam

## Day 2

### Session 3: Taking stock of past conservation and seed sourcing initiatives for planning detailed data collection

Riina Jalonen introduced the objectives for Day 2:

- Gather ideas and experiences on strengths and weaknesses of past conservation initiatives and seed supply systems
- Identify sources of information for a detailed data collection
- Generate inputs for work plan for activities 1.7 (conservation), 3.4 (current seed sourcing by public/private sector) and 3.5 (barriers to community involvement)

To identify conservation priorities and opportunities for community engagement in seed production, many types of information are needed about the current situation:

- Strengths of past initiatives / conservation priorities (activity 1.7)
- Current practices for seed and seedling sourcing in  $\geq 3$  state-owned and  $\geq 3$  private sector nurseries (3.4)
- Staff's knowledge of seed quality and genetic diversity (3.4)
- Staff's knowledge and attitudes to community-based seed supply (3.4)
- Communities' current seed collection practices (3.5)
- Seed exchange networks and market linkages (3.5)
- Tree planting (3.5)
- Community institutions and capacities (3.5)
- Traditional knowledge (3.5)
- Income from seed and seedling sales (3.5)

This information will be collected through household and village surveys, key informant interviews, participatory methods, review of literature and reports, and observation, mainly during Q3 and Q4 of Year 1.

## Strengths and weaknesses of past conservation initiatives

Participants discussed the strengths and weaknesses of past conservation initiatives using a SWOT matrix (Strengths, Weaknesses, Opportunities, Threats). Participants were divided into three groups for the exercise, focusing on perspectives of different stakeholders: forest authorities, local community members, and conservation biologists or geneticists (Tables 3-5). After developing the SWOT matrices, participants were asked to identify informants with good knowledge of the issues they had highlighted, for conducting interviews.

**Table 3.** SWOT analysis of past and current species conservation initiatives from the perspective of forest authorities

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Forestry Law in place</li> <li>• Forest Strategy and action plans in place</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of capacity (manpower, budget)</li> <li>• Only focus on short term economic gains</li> <li>• Limited support by governmental and/or non-governmental organisations (often focusing on social issues only)</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Awareness rising</li> <li>• Corporate social responsibility projects, for example for establishing community nurseries (Thailand, Cambodia)</li> <li>• International Cooperation and knowledge sharing</li> </ul>	<ul style="list-style-type: none"> <li>• high demand of Dalbergia spp.</li> <li>• Political involvement in (illegal) timber trade</li> </ul>



**Figure 4.** Dr So Thea (Institute of Forest & Wildlife Research & Development, Cambodia), presenting his group's results of the SWOT analysis

**Table 4.** SWOT analysis of past and current species conservation initiatives from the perspective of local community members

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Good organisation and structure for community-based forest management</li> <li>• Decision-making power</li> <li>• Proximity to forests (location, neighbourhood, etc.)</li> <li>• More human resources</li> <li>• Income from seed/seedlings and forest products</li> <li>• Involvement of the monks (religious community setting examples; Cambodia)</li> <li>• NGO's provide technical support in seed storage (Vietnam)</li> <li>• National parks maintain an online directory of nodal farmers who supply seed (Vietnam)</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Difficulty in communication between communities &amp; government (sometimes)</li> <li>• Sustainable use of resources</li> <li>• Lack of technical &amp; professional knowledge</li> <li>• Lack of involvement (gender and age difference), e.g. men hunting in forests</li> <li>• Lack of monitoring management</li> <li>• No clear land boundaries; difficulty in maintaining conservation sites</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Government policies / regulations</li> <li>• Financial support from the government</li> <li>• Teaching and guidance programmes (e.g. seed storage, cultivation techniques)</li> <li>• Monitoring and educations</li> <li>• Research on landscape and soil improvement</li> <li>• Government provides 5% subsidy for planting <i>Dalbergia</i> or other trees, for climate change mitigation (Thailand)</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Over-exploitation of forest resources</li> <li>• Encroachment of the community forests</li> <li>• Land conversion</li> <li>• Land development plans may differ at provincial vs national levels</li> </ul>

**Discussion: Opportunities and threats for strengthening conservation initiatives**

- CITES agreement is both an opportunity and threat for *Dalbergia*: it encourages planting of the species, but obtaining permissions to harvest and sell timber later may still be difficult, if planted origin cannot be confirmed.
- In Thailand, timber sales of *Dalbergia* and teak from planted stands are taxed at 40%. Legislation should be changed to incentivize planting. There is a network of communities who are successfully planting *Eucalyptus* and *Paraserianthes falcataria* for income, and the model could possibly be extended to *Dalbergia* species as well. Companies provide improved planting material. Communities may sell timber to any company, not necessarily to the one which provided material.
- China has similar joint forest management models by communities and government organisations. Government provides high quality seed sources, farmers own the land, and ownership of trees is shared. Several communities may get together and propose joint planting programmes to the government. Government also provides subsidies for private sector to partner with communities in tree planting. Planted species include *Dalbergia* and other high value tree species. Communities sell seed online.
- Listing of all *Dalbergia* species under CITES II has promoted planting of *Dalbergia latifolia* in Indonesia. The price of the timber has increased, but harvesting and sales are not a problem since the species is exotic in the country.
- Selling seed from planted trees is probably easier than selling timber, and provides much quicker returns

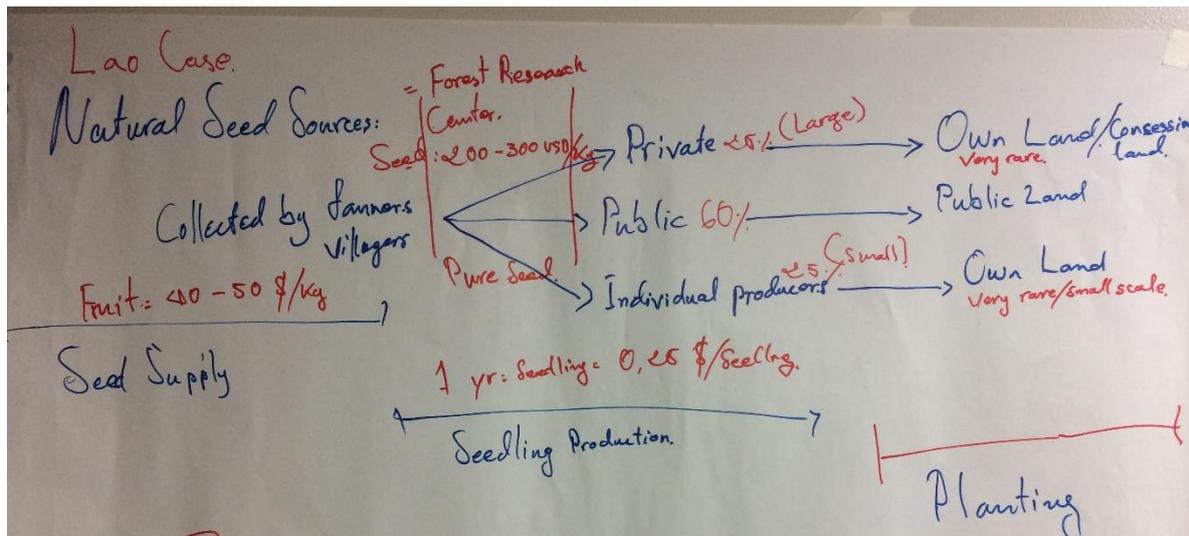
**Table 5.** SWOT analysis of past and current species conservation initiatives from the perspective of conservation biologists / geneticists.

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Policies, measures, regulations, laws in place</li> <li>• Potential populations for conservation identified</li> <li>• Conservation areas (PA) strictly protected by law</li> <li>• Number of initiatives on conservation in place</li> <li>• Genetic diversity of some <i>Dalbergia</i> spp. have been assessed</li> <li>• Based on genetic diversity evaluation, some potential populations have been identified for ex situ / in situ conservation</li> <li>• Awareness of importance of <i>Dalbergia</i> spp. recognized / concerned</li> </ul>	<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Law enforcement not effectively implemented due to illegal logging</li> <li>• Some countries are facing lack of good seed sources for ex situ conservation / restoration</li> <li>• Genetic erosion / potential of inbreeding depression because of fragmentation</li> <li>• Genetic studies are costly and time consuming</li> <li>• Lack of knowledge on seed collection and registration increases risk of inbred material</li> </ul>
<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• DNA markers to trace origin / individuals</li> <li>• Simple guidance for proper seed collection for ex situ conservation / restoration</li> <li>• Awareness on conservation raising</li> <li>• Vegetative propagation is alternative for genetic materials for ex situ / restoration? But genetic diversity of clones needs to be ascertained</li> <li>• New technologies: GPS chips in wood to trace illegal logging; colour-marking trees to distinguish origin (technology developed in USA)</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>• To ensure that genetic diversity is not decreased and inbreeding depression is avoided, in order to obtain good seed yield</li> <li>• Local seed sources must be collected and registered / planted for good adaptation – need simple guidance for practitioners</li> <li>• Seed availability is uncertain</li> </ul>

### Market chains for *Dalbergia* seed and seedlings

Participants drew in groups current market chain maps for seed and seedlings, to help assess diversity of existing chains and new market opportunities. These included:

- In Cambodia, seed sources are in natural forests or community forests. Local communities are provided training in seed collection. Seed is sold partly to middlemen. Government obtains 70-80% of seed or seedlings from own nurseries. Private sector companies have their own nurseries. Seed certification does not exist. Forestry Administration is working to first connect communities to seed markets, to foster use of natural seed sources. Further improving collection practices and genetic quality would then be the next step.
- In Lao PDR, farmers collect *Dalbergia* fruit and sell to Forestry Department, which then tests, certifies and packages seed. Genetic quality of seed or collection practices are not known. Planting areas include barren lands and degraded areas (planting by government), as well as in some cases agroforestry and integrated land management systems
- In Vietnam, villagers obtain seed from relatives and neighbours, and plant on their farmland. Seed may be mixture of *Dalbergia* species. Certified seed carries a premium price in Vietnam.



**Figure 5.** Market chain map for *Dalbergia* seed and seedlings in Lao PDR.

After drawing the market chain maps, participants identified existing barriers to communities' involvement in seed collection and production. These included (depending on country context):

- Lack of ownership of, or access rights to, seed sources
- Prices are dictated by Forestry Administration
- Lack of interest and support from government organisations to develop seed supply
- Issues of trust and communication challenges between actors.
- Only selected species are bought and not necessarily every year
- Short term contracts, sometimes at very short notice
- Small amount of seedlings required by non-governmental buyers such as private sector and NGOs
- Low prices; commissions by middlemen
- Lack of market knowledge allows middlemen to cheat sellers (offering lower prices and claiming that seed quality is poor)
- Difficulty of maintaining community involvement beyond the duration of individual projects
- Poor and varying seed availability
- Lack of tools for seed collection results in unsustainable collection practices such as cutting branches (Lao PDR)
- Lack of standardised methods for seed storage
- Lack of seed quality testing and certification to raise interest of potential seed buyers.
- Lack of understanding of the importance of seed quality among buyers
- People fail to see the long-term benefits from planting trees

## Session 4: Project management

David Boshier presented reporting requirements for the project. Brief half-yearly reports must be submitted by 31 October annually. Annual reports are due 30 April and must detail progress against planned activities, outputs and outcomes. Indicators from the logical framework matrix, and evidence of progress and changes in the field (secondary data, quotes, figures) should be used to demonstrate project status, and help to reduce long narratives. Reports are sent for expert review and rated for progress. Reports are shared publicly on the internet. Up to 10% movement of funds between budget lines is allowed. Carrying forward funds to the following year must be avoided, but if it is necessary, request must be made by the end of January annually. Approval is not guaranteed.

### **Action points:**

- Highlight ongoing coordination and synergising with other related projects and initiatives for the first half-year report (31 October 2018),
- Plan now for the activities that must be reported on in the annual report (30 April 2019), so as to have the adequate information and evidence for reporting

## Day 3

### Session 5: Work plan for socio-economic data collection

Objectives of the session were to develop timeline and work plan for data collection for activities 1.7 (conservation), 3.4 (current seed sourcing by public/private sector) and 3.5 (barriers to community involvement), and to identify available human resources and needs.

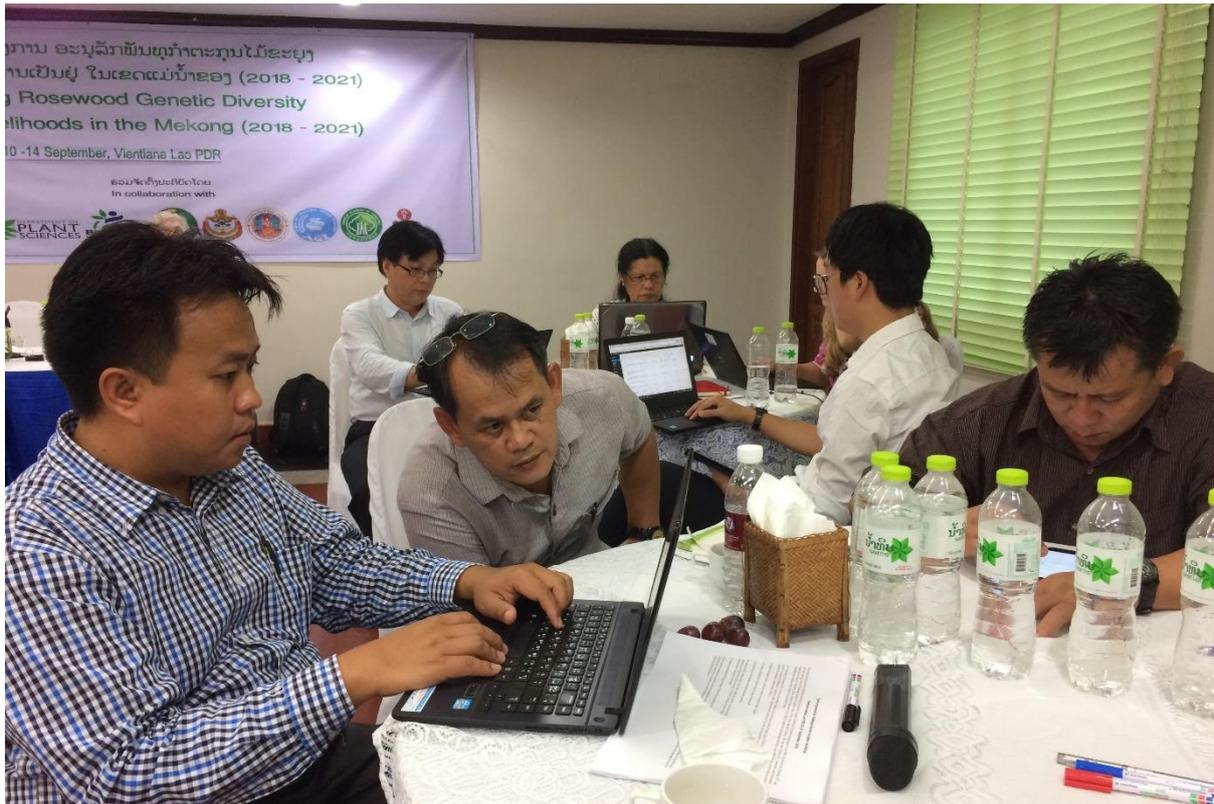
Country partners were asked to:

- Review the list of tasks, time and team needs, and add information about available resources and skills at their organisation/unit
- Add comments to the work plan (timeline) where relevant

The following timelines were identified as suitable for data collection in communities, regarding local agricultural seasons and festivals:

- Cambodia and Lao PDR: December to March
- Vietnam: December and March (January and February unsuitable as community members are busy with other activities)

Dalbergia species fruit from October to December, so this timing is well suited for asking about seed collection activities and related incomes in household surveys and focus group discussions.



**Figure 6.** Mr Chaloun, Mr Vongvilay and Mr Bansa (Forest Research Centre, Lao) planning field data collection.

The following considerations and tips for data collection were identified by participants:

- In most cases, partners already have good relationships with project communities, and also experience in data collection. Support is needed in designing questionnaires and interview guides as well as in data management
- It is important that questionnaires are understandable, not academic style.
- Sample size for household surveys should be reduced to be more feasible (20 households)
- Local translators from communities are needed because of local dialects (Lao PDR and Vietnam). Identifying and hiring local coordinators from the communities is also very helpful
- Need to provide tokens for research participants, equivalent to a day's wage
- Examples of costs:
  - Transportation to field (horse, motorbike, porters): daily wage, 10-15 USD / person (Vietnam)
  - Local translators and local coordinators: daily wage, 10-15 USD / person (Vietnam)
  - Token for research participants: up to 8-10 USD (Cambodia)

**Table 6.** Draft data collection plan, with forestry professionals and experts as informants

Method	Task	Team needed	Time needed	Skills needed
<b>Interview (professionals, semi-professionals)</b>	interview 5-6 people per country on strengths and weaknesses of past conservation initiatives	2 people	3-4 days	Good knowledge about general conservation issues; ability to identify follow-up questions based on interview and observation; good note taking
<b>Interview (professionals, semi-professionals)</b>	Interview 5-6 people per nursery / programme on current seed sourcing practices and capacities. Visit facilities for observation (Cambodia and Lao only)	2 people	2 days per programme (3 prog. per country)	Good knowledge about seed supply chains; ability to identify follow-up questions based on interview and observation
<b>Community meeting and Free and Prior Informed Consent</b>	Organise community meeting, explain the purpose of the project, ask interest to participate, answer questions	2-3 people	1 day per community	Good understanding of the project, ability to create trust
<b>Household survey</b>	interview male and female household heads in 40 households per community; data entry to computer	2-3 people (men and women)	8-10 days per community	Find respondents and ask questions according to survey; ideally interview skills
<b>Interview (community members and local stakeholders)</b>	interview 20 people in each community/area about good practices and challenges in conservation, seed collection, marketing and collaboration among community members	2-3 people (men and women)	8-10 days per community	Good knowledge about local issues; ability to identify follow-up questions based on interview and observation; good notetaking
<b>Participatory methods</b>	Organise and facilitate 6-8 group discussions using participatory tools (by gender groups)	2-4 people (men and women)	3-4 days per community	Good group facilitation skills, good understanding of local issues, ability to identify follow up questions; good notetaking
<b>Observation (communities)</b>	Visit seed collection sites, planting sites, nurseries to observe practices	2-3 people (men and women)	2-3 days per community	Good understanding of local issues, ability to identify follow up questions

**Table 7.** Draft work plan for data collection presented at the workshop

Month	Activity	Who
<b>Sept</b>	<ul style="list-style-type: none"> <li>• Work planning, back ground information</li> <li>• Literature review</li> <li>• Develop data collection instruments (1<sup>st</sup> draft)</li> </ul>	All Bioversity Bioversity
<b>Oct</b>	<ul style="list-style-type: none"> <li>• Develop data collection instruments</li> <li>• Identify sample</li> <li>• Identify enumerators + facilitators</li> <li>• Develop detailed budget for fieldwork</li> </ul>	All All Partners, Biov Partners, Biov
<b>Nov</b>	Translate questionnaires Train teams	Partners Bioversity
<b>Dec</b>	Train teams Data collection + entry	Bioversity Partners
<b>Jan</b>	Data collection + entry	Partners
<b>Feb</b>	Data collection + entry Data analysis (preliminary)	Partners Bioversity
<b>Mar</b>	Data analysis and interpretation	All

## Session 6: Propagation research

**Dr So Thea**, Deputy Director, Institute of Forest and Wildlife Research and Development of Cambodia, presented about recent research on vegetative propagation of *Dalbergia* in his country. According to a literature review, *Dalbergia sissoo*, *D. congestiflora*, and *D. retusa* have been studied for vegetative propagation with good success. *Dalbergia cochinchinensis* is the most important species for seedling production in Cambodia: 1,100,000 seedlings were produced in 2015. An initial experiment was conducted in 2015 at IRD’s research nursery to test vegetative propagation of the species. After 30 days, 64% of *D. cochinchinensis* cuttings had developed roots, and survival rate was 66%. Under the current project, vegetative propagation will be tested at two sites: a community nursery, and a research centre. Growth conditions (controlled vs community nursery conditions) and industrial and home-made rooting hormones (NAA and aspirin) will be compared. Training will be provided to community members for conducting the experiment.

### Discussion

- Number of clones used for vegetative propagation is important. Awareness raising on this should be included in the training.
- Vegetatively propagated seedlings do not develop tap roots, which may lead to slower growth and windfall on moist soils. However, *Dalbergia* spp generally don’t develop tap roots from seedlings anyway. Good matching species to sites is important for root development.
- Production costs needs to be monitored to ensure economic viability

## Session 7: Data management

David Boshier introduced the session by considering the different types of data that might be collected under the varied activities during the project, issues of continuity, updating and access to data. Participants then worked through these issues in country groups on worksheets identifying those that were of relevance to their institute and work programme.

## Session 8: Seed collections and provenance trials

### Seed collections

Participants discussed priorities for seed collections, based on available data on species occurrences through the APFORGIS project, and studies on the species' genetic structure (e.g. Hartvig et al. 2017). A spreadsheet was circulated for compiling lists of a) published molecular studies of any of the target species and b) past or existing provenance or progeny trials of the target species. Indicator 2.3 requires at least 15 new, coordinated seed collections. Maps of predicted species distributions based on distribution modelling will be available in January 2019, and can be compared with existing collections to identify gaps. However, *Dalbergia cochinchinensis* and *Dalbergia oliveri* are fruiting in October-November, and November-December, respectively, and it would be possible to already collect some seed before the distribution maps are ready. Participants indicated their tentative priorities on maps.

### Discussion:

- Criteria for prioritising collections are needed and should include level of threat to the populations, existing collections, seed zones and known planned collection missions.
- *Dalbergia cochinchinensis* is not a high elevation species, nor likely in the Mekong delta. Occurrence data for the species in the northern part of the sub-region and in the South on Mekong delta may be incorrect.
- The occurrence of *D. cultrata* in southern China (Yunan – Chinese Atlas of Woody Plants) was discussed with respect to its apparent absence from the north of Vietnam

### Provenance trials

Country partners discussed the benefits and possibilities of establishing a regional provenance trial on *Dalbergia cochinchinensis* rather than trials within each country that just establish provenance from within that country. The following points were made:

- In Vietnam National Biodiversity Law allows seed exchange.
- In Cambodia, more information is needed on the specific regulations for seed exchange, but it may be possible. Seed has been previously shared with other countries for research purposes.
- According to Lao participants, a clear Memorandum of Understanding is important and if in place, seed exchange is possible. Without that it is difficult.
- Thailand has previously shared seed with Millennium Seed Bank and Kew Botanical Gardens. Experiences show that developing a MOU takes approximately one year. After that,

necessary documents can be obtained from CITES. Once the formalities are in place, seed exchange is not a problem.

- MOU should be developed for at least 5 years, so that future projects and collaborations can benefit from it. British embassies could facilitate seed exchange given previous collaborations with British agencies.
- Concerns about local adaptation were expressed. Scale of local adaptation is not well understood. Research has mainly been done on temperate trees, and results are not directly applicable to tropical species. Many provenance trials in the tropics are of exotic species, or when native species are used, there is often no 'local provenance established.' Regional provenance trial will help understand the scale of local adaptation.

In conclusion, participants agreed that it is worth trying for a regional provenance trial. Project span is long enough to develop the MOU and meet other formalities.

**Table 8.** Existing provenance/progeny trials of *Dalbergia* species in the region

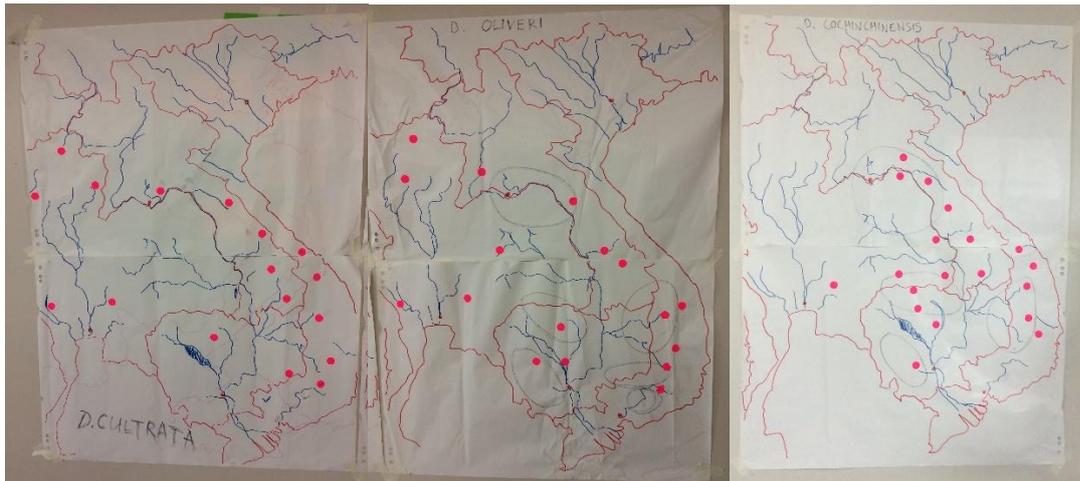
Species	Country	No. provs.	No. families	No. sites	Provenance coverage	Site location (approx)	Planted	Status	Source
<i>D. cochinchinensis</i>	Thailand	7	85	1	East Thailand	Khao-Yai Field Station	1988	?	Soonhuae 1994
<i>D. cochinchinensis</i>	Vietnam	2	100	1		Chumomray NP & buffer zone	2003	Good growth & survival	Tran Ti Hoa
<i>D. oliveri</i>	Vietnam	2	100	1		Cat Tien NP	2003		Tran Ti Hoa
<i>D. cochinchinensis</i>	Cambodia	4(7)	100	2	4 provinces in Cambodia	Siem Reap province	2016	Good growth & survival	So Thea

## Genetic studies

A sub-group of participants discussed genetic research questions for the project. Group participants were David Boshier, Suchitra Changtragoon, Zheng Yongqi, Tin Hang Hung (Henry), Ida Hartvig and John MacKay (via skype). The following topics were identified:

- Genetic bottlenecks in community nurseries and seed collections that affect seed germination, seedling survival and growth
- Impact of fragmentation on outcrossing (evidence of negative impacts exists for *Dalbergia cochinchinensis*) that reduces seed production and seed viability
- Adaptive variation among *Dalbergia* populations

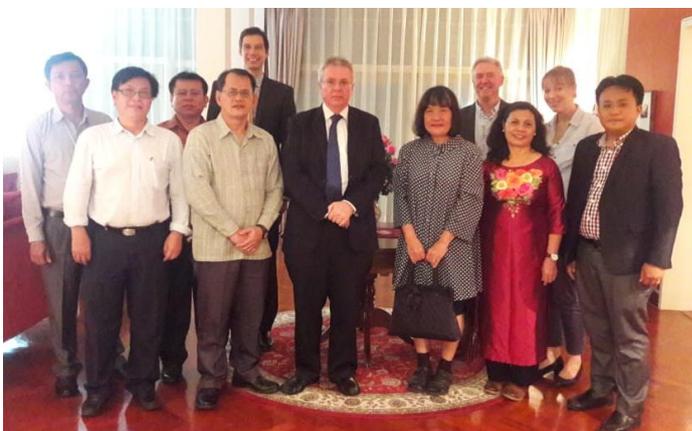
Country partners collectively identified the first topic as a priority for them. The other topics can be explored via collaboration with other research teams and matching funding opportunities.



**Figure 7.** Possible areas for additional seed collections during the project, prioritised by participants by country.

Plenary discussion:

- Genetic bottlenecks should be studied also in commercial nurseries. An important selling point in improving community participation in seedling production is that community members would be able to produce high-quality seedlings of comparable or better quality than that currently found in commercial nurseries.
- Can compare genetic bottlenecks before and after the project, to show impact. Forest Research Center in Lao PDR test germination of seed purchased from communities, and seed collected by project communities can be compared with other communities who would not have received training in collection.
- To study adaptive variation, thousands of genes would need to be looked at. John MacKay and Henry are narrowing down the species to *D. cochinchinensis* and *D. oliveri* to do this.
- The project team has received an offer from Alex Widmer, ETH Zurich, to finance sequencing samples of Dalbergia at his laboratory to assist in species identification. However, molecular markers and DNA barcodes already exist for the project's target species, and identification is easy. Focus is now on intra-specific variation and identification of population origin. Developing new markers can assist in conducting such studies.



**Figure 8.** His Excellency Hugh Evans, British Ambassador to Lao PDR, hosted a dinner for workshop participants on 12 September. Mr Evans and guests discussed similarities between illegal Rosewood trade and illegal animal trade within IWT, a priority for the British Government. Curbing these forms of illegal trade requires similar capacities, forensic methods, and regional collaboration. Discussions also covered training possibilities under the Chevening Scholarships programme.

## Day 4

### Field trip to Forest Science Research Center

Forest Research Center is situated 49 km North of Vientiane. Participants were welcomed by the Director General of FRC, Mr Vongvilay, who gave a brief introduction to the Center and its research areas. The FRC has a collection of 2200 plant species in its herbarium, and it maintains 5 seed sources with a total 347 mother trees over an area of 14 ha. This includes 33 mother trees of *Dalbergia* spp., and other valuable timber species such as *Pterocarpus* spp., *Alstonia scholaris* and *Xylia xylocarpa*. The FRC sells 100,000 seedlings of non-timber forest species every year. The FRC collaborates closely with the Department of Forestry and the Provincial Agriculture and Forestry Offices, each of which has their own forestry section.



All participants were invited to plant a seedling of *Dalbergia cochinchinensis* to commemorate the visit. Thereafter, participants visited FRC's nursery, herbarium, seed storage and qualification testing facilities, and two *Dalbergia cochinchinensis* seed sources established in 1980s. One of the sources had been destroyed by illegal logging, illustrating the severe pressure on the species. Participants measured dbh of some trees of the plot planted in 1981.

## Day 5

### Stakeholder forum

On the last day of the workshop, national, regional and international organisations based in Lao PDR were invited to a stakeholder forum to hear about the project's objectives and planned activities in the country, and to identify potential synergies and collaboration opportunities with the project. List of participants is provided in Annex 3.

**Mr Bansa Thammavong**, Deputy Director of Forest Science Research Center, welcomed participants and explained about the project's objectives and activities in Lao PDR. David Boshier and Riina Jalonen presented the project's approaches and targets related to the regional species conservation assessment and fostering participation of local communities in tree seed supply.

Topics of the ensuing discussion included:

- Biodiversity surveys conducted in several provinces can provide information on species distributions for distribution modelling
- Difficulty of identifying species in the field and matching local and scientific names.
- Previous experiences show that there is a delicate balance between market supply and demand for planting material of high value species. There are examples where market prices have collapsed after a successful start, due to market saturation.
- Regulations on plantation establishment and timber harvests are currently a disincentive for tree planting. Governments are in the position to change these. In Lao PDR, a new forestry law is being drafted, and changes to royalties and taxation are possible.
- The Centre for people and Forests (RECOFCT) has several community forestry projects in Lao, including a new project 'FLOURISH' funded by the Government of Germany and the International Climate Initiative

**Dr Chansamone Phongoudoume**, Deputy Director of NAFRI, offered closing remarks and encouraged the project partners to collaborate closely together. He highlighted the importance of research in guiding policy formulation. He also pointed out that sharing materials for DNA analyses between the four partner countries would be feasible, as long as the analyses would be done in one of the participating countries. Lastly, he encouraged the project team to reach out to national stakeholders and interest groups, including private sector, non-governmental organisations and previous projects funded by the UK Darwin Initiative.

## Annex 1: Workshop Programme

### Programme for Inception workshop

Vientiane Capital, Lao PDR 10-14<sup>th</sup> September, 2018

Date/time	Activity	Objectives	Venue	Who
<b>Sun. 9 Sept</b>	<i>Arrival of participants - transfer to Vansana Riverside Hotel</i>		Vansana Riverside Hotel	All
<b>Mon.10 Sept</b>	<b>Opening and Output 1: Regional assessment of conservation status of <i>D. cochinchinensis</i>, <i>D. oliveri</i>, <i>D. cultrate</i></b>		Hotel meeting room	
10:00-10:45	Official opening project/workshop. Short formal inauguration (speeches by DG of NAFRI, British Ambassador to Lao PDR)		"	All
10:45-11:30	<i>Coffee break/photos</i>	<i>Interact</i>	"	All
11:30-11:45	Outline workshop objectives, process and expected outputs		"	David
11:45-12:30	i) Why/how to develop regional assessment of conservation status, what information needs? ii) Conservation assessments /opportunities from other countries iii) APFORGIS - Database structure	<i>Presentations</i>	"	David Hannes Riina
12:30-13:00	Using the Dalbergia Regional Conservation status database/mapping results – group discussion	<i>identify how countries may use results (e.g. integrate into specific national plans/strategies)</i>		All-group
13:00-14:00	<i>Lunch</i>	<i>Refuel and refresh</i>	"	All
13:30-15:00	Georeferenced data collection - species occurrence, seed zones, forest cover, genetic diversity, climate predictions, existing <i>in situ</i> reserves & <i>ex situ</i> collections	<i>Identify existing sources (baseline data), gaps (include use of/need for genetic data). Agree database structure Develop strategy for data collection</i>	"	All
15:00-15:45	Report back and agree responsibilities/work to achieve activities 1.2-1.6	<i>Develop detailed work plan</i>	"	All
15:45-16:15	<i>Break</i>	<i>Refresh - interact</i>	"	All

16:15-17:00	Project Monitoring and Evaluation – <i>presentation and discussion of proposal</i>	<i>Agree a plan that will facilitate M&amp;E requirements from donor</i>	“	Riina All
17:00	<i>Finish</i>			
	<i>Welcome Dinner</i>	<i>Refuel-interact-enjoy</i>	To be decided	All

<b>Tue. 11 Sept</b>	<b>Taking stock of past conservation and seed sourcing initiatives for planning detailed data collection</b>	<i>Today’s Objectives: work plan for activities 1.7 (conservation), 3.4 (current seed sourcing public/ private), 3.5 (community involvement barriers)</i>	Hotel meeting room	
08:30-08:40	Recap of day 1	<i>Summarise progress</i>	“	David
08:40-09:10	Introduction to today’s theme: Taking stock of past conservation and seed sourcing initiatives for planning detailed data collection	<i>Introduce topics &amp; types of data: documents/literature, household survey, interviews, focus groups</i>	“	Riina
09:10-10:30	Strengths & weaknesses of past conservation initiatives	<i>Identify main strengths and weaknesses for planning detailed data collection. Develop list of information sources (documents, interviewees etc). Countries share and gain information from each other</i>	“	Riina All-group work
10:30-11:00	<i>Coffee break</i>	<i>Refresh - interact</i>	“	All
11:00-11:30	Main strengths and weaknesses of past conservation initiatives: <i>Reporting back</i>		“	All
11:30-11:45	Seed and seedling supply chains for tree planting programmes	<i>Introduce topic, approaches to analysis, frame the questions for our project</i>	“	Riina
11:30-12:15	Seed and seedling supply chains for tree planting programmes: group work	<i>Describe current seed supply chains (with % &amp; \$ estimates for channels) by country. Identify existing information &amp; gaps. Process to evaluate past work/ household surveys (income from forest related activities)</i>	“	All- group work

12:15-13:00	Seed and seedling supply chains for tree planting programmes: reporting back	<i>Make observations on diversity, levels, &amp; detail of information of supply chains. Identify differences in chains by programmes/countries/actors (community/public/private) &amp; community roles/entry points. Identify needs for detailed analysis &amp; who will collect baseline data</i>	“	All Riina
13:00-14:00	<i>Lunch</i>	<i>Refuel and refresh</i>		All
14:00-14:15	Barriers to community involvement in seed production: introduction	<i>Gain broad view of strengths/weaknesses, covering current seed collection practices, market linkages, community-level institutions, capacities</i>	Hotel Meeting room	Riina
14.15-15.00	Barriers to community involvement in seed production: group discussions	<i>Develop plan to identify barriers and existing good practices by sector/country; develop list of information sources for detailed data collection</i>	“	All-group work
15:00-15:30	Barriers to community involvement in seed production: reporting back		“	All Riina
15:30-16:00	<i>Break</i>	<i>Refresh – interact</i>	“	All
16:00-17:00	Project Management (steering committee), accounting & reporting procedures and timelines according to Darwin requirements	<i>Agree composition and meeting procedure for steering committee Ensure timely submission of reports /accounts to Darwin requirements</i>	“	David/All
<b>Wed. 12 Sept</b>	<b>Provenance trials, propagation and communication</b>		Hotel meeting room	
08:30-09:45	Recap day 2 and complete associated work plan process	<i>Finalise work plan for activities 1.7 (conservation), 3.4 (current seed sourcing-public/private), 3.5 (barriers to community involvement)</i>	“	Riina

09:45-10:30	Capacity building	<i>Identify most important needs, whose capacities, type of training (format), needed to help project, student options</i>	“	Riina All
10:30-11:00	<i>Coffee break</i>	<i>Refresh – interact</i>	“	All
11:00-11:30	Provenance trials: introduction and discussion	<i>Cover past initiatives, problems with trials. Understand partners interests</i>	“	David All
11:30-13:00	Provenance trials: seed collection	<i>Agree sampling strategy for seed collections. Explore options for exchange among partners (incl. genetic studies, institutional arrangements, timing, MTA)</i>	“	All-group
13:00-14:00	<i>Lunch</i>	<i>Refuel and refresh</i>	“	All
14:00-14:45	Data sharing, database management and updating	<i>Ensure continuity &amp; confidentiality where relevant (FPIC in communities) – activity 1.1</i>		David Riina All
14:45-15:30	Propagation research in Cambodia: past and proposed – <i>presentation and discussion (incl. other countries experiences)</i>	<i>Understand programme for developing vegetative propagation technique</i>	“	So Thea All
15:30-16:00	<i>Break</i>	<i>Refresh – interact</i>	“	All
16:00-17:00	Project communication strategy	<i>Decide on means to communicate/promote project news/information</i>	“	David All
<b>Thur. 13 Sept</b>	<b>Field visit to <i>Dalbergia</i> planting sites</b>	<i>Learn about FRC, see Dalbergia work, exchange experiences with FRC staff</i>	Forest Research Center	NAFRI All
08:30 – 10:00	<i>Travel to Forest Research Center (FRC) 49 km to north of Vientiane, 1.5-2 hours by bus/car</i>		VTN-FRC	
10:00 - 10:20	Brief introduction to FRC		FRC meeting room	
10:20 - 10:45	Tree planting ceremony (1 sapling per participant)		FRC Planting site	All
10:45 - 11:10	Visit propagation area		Nursery	
11:10 - 11:30	Visit seed storage and qualification testing room		Tree seed testing unit	
11:30 - 12:00	Visit herbarium		Herbarium	
12:00 – 13:00	<i>Lunch</i>	<i>Refuel and interact</i>	Understorey <i>D. cochinchinensis</i>	

13:00 – 14:00	Visit <i>D. cochinchinensis</i> germplasm collection to discuss experience/importance of local participation in forest management. Measure dbh of trees		Germplasm collection. <i>D. cochinchinensis</i> plot	
14:00 – 15:30	Visit germplasm collection of <i>D. cochinchinensis</i> and <i>Dalbergia</i> species ( <i>ex-situ</i> site)		Candidate site for Bot. garden development	
15:30 – 15:45	Wrap up			
15:45	<i>Return to Vientiane</i>			
<b>Fri. 14 Sept</b>	<b>Stakeholder engagement and scaling up and out</b>		Hotel large meeting room	
09:00 – 11:00	Outreach Workshop - DG NAFRI Chair Project personnel, Lao stakeholder organizations NAFRI present project activities in Lao PDR	<i>Inform wider audience about project and provide forum for stakeholder input – incl. discussion of scaling out project impact/ involvement</i>	Hotel large meeting room	All +orgs e.g. Recoft, CIAT
11:00-11:30	<i>Coffee</i>	<i>Interact</i>		All
11:30-13:00	Project members only - discuss feedback wrt the morning stakeholder session within Lao and across project region. Any other business – close of workshop	<i>Understand stakeholder differences by country</i> <i>Modify communication strategy</i>	Hotel large meeting room	David All
13:00 – 14:00	<i>Lunch</i>	<i>Refuel and refresh</i>		
14:00 – 17:00	Vientiane tour - all participants check out from hotel in morning		Thatluang, Patouxay, Horphakeo, etc	depends on workshop progress
18:00 – 21:00	<i>Departure of participants (also 15<sup>th</sup> Sept am)</i>			

## Annex 2: List of Participants

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## Annex 3: Media coverage in Lao PDR

A report of the workshop was published in Vientiane times on 12 September 2018.

2 | Home news | Wednesday September 12, 2018



Participants gather at a meeting in Vientiane to discuss the conservation of rosewood diversity.

### Forestry experts discuss rosewood conservation

**Times Reporters**

Lao officials and representatives of international organisations are meeting in Vientiane to discuss the conservation of genetic diversity in rosewood, towards more resilient livelihoods in the Mekong region.

The meeting is taking place from September 10-14. The opening ceremony on Monday was attended by Director General of the National Agriculture and Forestry Research Institute (NAFRI), Dr Bounthong Bouahome, and British Ambassador to Laos Mr Hugh Evans.

Workshop sessions are planned to discuss and agree plans to carry out activities to ensure project outputs; develop a detailed work plan for the first year of the project; develop trust and a working relationship between partners; explore/clarify collaborations with other *Dalbergia* genetic resources projects and more broadly conservation/management/restoration projects and programmes in these countries; and link and contribute to other ongoing initiatives to ensure complementarity and mutual benefits.

Speaking at the meeting, Dr Bounthong said NAFRI was a leading institution for agriculture and forestry research. It consists of 14 research centres and two divisions, including the Forest Research Centre. NAFRI is equivalent to technical departments under the Ministry of Agriculture and Forestry.

To accelerate forest genetic resource conservation, NAFRI works with both local and international organisations to identify suitable solutions and efficient methodologies of conservation.

With assistance from various advanced organisations in the exchange of technologies, knowledge, experiences and support, NAFRI will be able to upgrade its capacity to develop the forest research sector.

Forest genetic resource conservation activities in Laos are still new compared to other countries in the Asia-Pacific region.

Priority species for forest genetic resources conservation and management can be classified into 13 prohibited tree species; 31 priority tree species; 15 additional priority tree species; 114 selected tree species assessed for conservation status; 24 tree species not assessed for conservation status; eight bamboo species; and 20 rattan species.

Both in-situ and ex-situ conservation efforts are rare in Laos and there is hardly any data on the distribution of forest genetic resources. More information should be extracted from, for example, existing provenance trials and demonstration plots to develop plans for the conservation of forest genetic resources.

In-situ conservation was established in 2002 in 76 places including 29 trees species at the headquarters site and other demonstration plots.

Ex-situ conservation species include *Dalbergia cochinchinensis*, *Dalbergia cultrata*; *Dalbergia oliveri*, *Dalbergia adorata*, *Erythrophoeum fordii*, *Aquilaria crassna*, and *Pterocarpus macrocarpus*.

Dr Bounthong said he was pleased to have the attendance of lecturers and experts from universities, research institute and other partners, who would give presentations on key study areas related to the project context.

He said the meeting was an important opportunity for participants to understand more details of the project. He encouraged everyone to openly make comments and ask questions about project activities and future plans, as well as project management, to ensure the project ran smoothly and achieved its objectives.

## Annex 4: Workshop evaluation

Conserving Rosewood genetic diversity for resilient livelihoods in the Mekong

Inception Workshop, Vansana Riverside Hotel, Vientiane, Laos, 10-14 September 2018

### Workshop evaluation

This is a summary of the evaluation survey that was distributed at the end of the workshop. Eleven participants responded to it. Figure 1 shows the results of the close-ended questions. The workshop met well the expectations of 55% of the participants and exceeded the expectations of 36% of them.

All of the participants (100%) rated their overall experience as being either good or excellent.

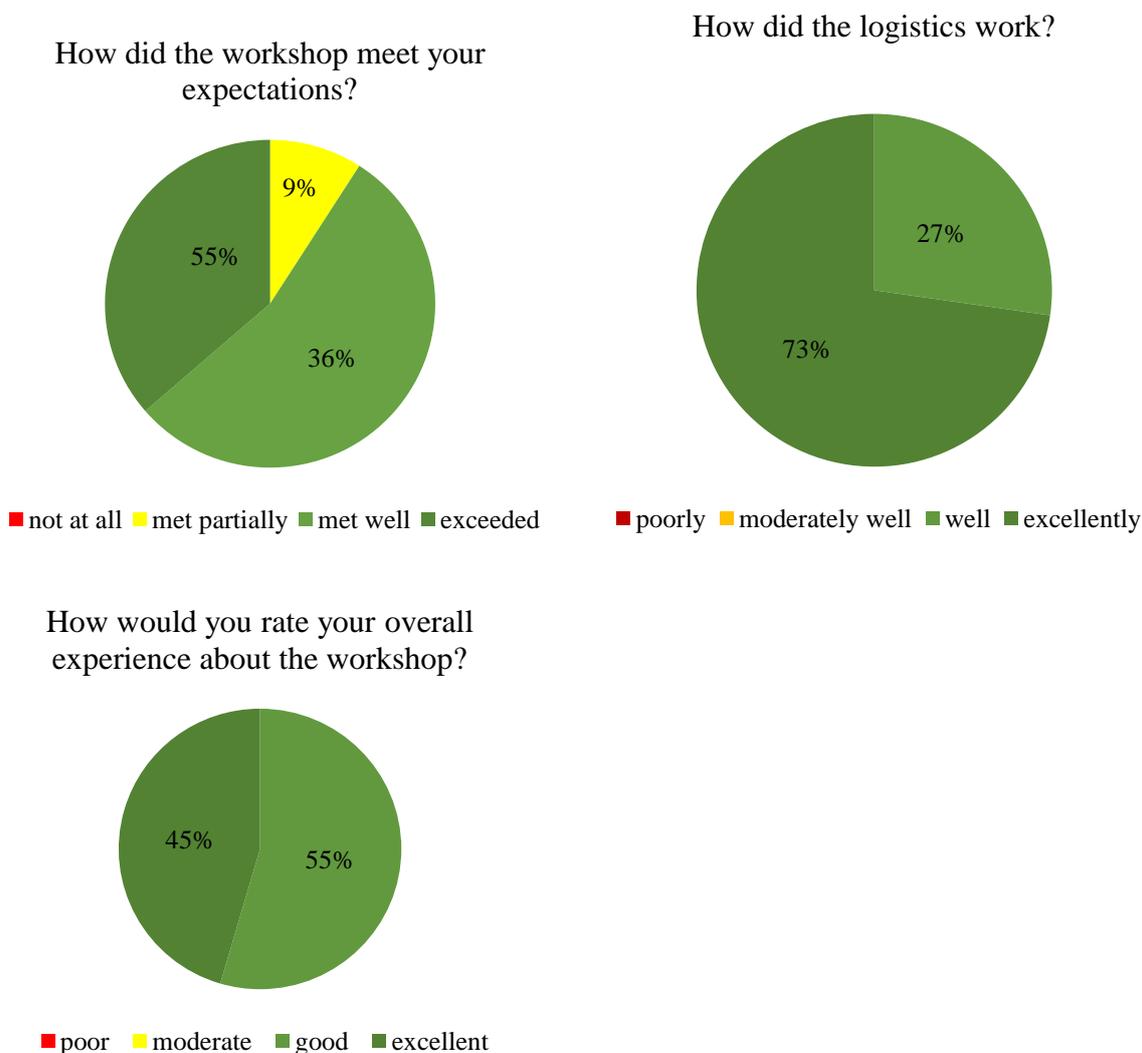


Figure 1: Participants' opinions about the inception workshop (close-ended questions, 11 respondents)

### **What participants said they liked the most:**

*The most appreciated aspect of the workshop was the opportunity it created for partners to meet each other and share experiences. It was also seen as an opportunity for them to learn in detail the activities that will be developed during the project. The field trip was also highlighted.*

- Meeting and sharing experiences with partners (5)
- Details and explanation of the project's activities and methodology (3)
- Seedling collection information, and other related contents (1)
- Group work and the collaborative spirit (1)
- The exercises proposed (2)
- Field trip (2)
- Location, hotel, food (1)

No response: 1

### **What participants said they liked the least:**

*The meeting room, bad WIFI connection at the hotel, and the breakfast were the least appreciated aspects of the workshop.*

- Location, hotel, food (3)
- Individual discussions (1)
- Financial management (1)
- Relevance of the content (1)
- Not having enough time to discuss project management's issues such as agreement and invoicing (1)

No response: 4

### **What participants said about the time allocation:**

Could have spent less time on:

- Individual discussions (1)
- Worksheet (1)
- Time to complete tasks (1)

No response: 8

Could have spent more time on:

- Discussions (4)
- Group work (1)
- Improving the relationship between partners (1)
- Planning future work in more detail, e.g. seed collection (1)
- Detailed explanation /discussion on each activity (1)
- Discussion about methodology and monitoring (1)
- The topic of conservation (1)

No response: 3

**Participants comments, ideas or suggestions for improvement:**

Below are listed the comments, ideas and suggestions made by participants. However, the majority of the people left this part of the survey blank.

- Find a way for everyone to participate more actively. Participants have many insight and knowledge but often too shy to share.
- Should spend more time for explain field report and finance report of project.
- Site visit should focus on natural forest...
- Should have participants for full workshop time, e.g. avoid to miss the workshop query.