

# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

## ITTO

### PROJECT PROPOSAL

TITLE	ENHANCING CONSERVATION AND SUSTAINABLE PRODUCTION OF INDONESIAN ROSEWOOD ( <i>Dalbergia</i> spp)
SERIAL NUMBER	PD 736/14 Rev.1 (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF INDONESIA
ORIGINAL LANGUAGE	ENGLISH

#### SUMMARY

Indonesia is one of the largest biodiversity countries with large number of timber tree species. Some of the species are from the genus *Dalbergia* spp, with common name as Indonesian Rosewood. Based on herbarium specimen collection, at least 10 species of *Dalbergia* are naturally found in Indonesia, ranges from small plants to large timber trees. Some well-known timber tree species are *Dalbergia latifolia* (known as *Sonokeling*) and *Dalbergia sisso* (known as *sonobritz.*). The species under this genus also grow in other continents for which some of well-known species are Malagasy Rosewood (*D nigra*), Brazillian Rosewoods. Problems with these species in Indonesia are the depletion and rapid decrease in its natural population, extremely limited natural regeneration for some species and unclear status of their current distribution and conservation status including harvest and replantation. Habitat encroachment, unsustainable harvest and slow growing are making limited progress in replantation of these species. In addition, the conservation of plant genetic resources of the species within this genus is unclear, the natural populations are not updated and extremely limited studies on their natural population status. The overall objective of this project is to contribute to conservation of plant genetic resources and sustainable management of Indonesian rosewood species (*Dalbergia sp.*). The expected outputs are (1) The natural population and conservation of this genus updated and improved and (2) The replantation of selected species accelerated.

EXECUTING  
AGENCY

CENTRE FOR FOREST BIOTECHNOLOGY AND TREE  
IMPROVEMENT RESEARCH (CFBTI)

DURATION

36 MONTHS

APPROXIMATE  
STARTING DATE

TO BE DETERMINED

BUDGET AND PROPOSED  
SOURCES OF FINANCE

Source	Contribution in US\$	Local Currency Equivalent
<b>ITTO</b>	<b>414,792</b>	
Gov't of Indonesia	79,753	(in kind)
<b>TOTAL</b>	<b>494,545</b>	

## PROJECT BRIEF

The richness of biological diversity in Indonesia has been facing various challenges. Unsound management, unsustainable methods of exploitation and other population and habitat disruption have caused rapid decrease in the population size, distribution, and regeneration capacity of most tropical species in Indonesia. This includes *Dalbergia* species, which locally known as rosewood. *D latifolia* and *D sisso* are two of Indonesian timber tree species which locally known as Indonesian rosewood. The other causes are the naturally poor regeneration capacity (for certain species) and still lack of realized conservation activities. Decreasing population size could also reduce potential natural regeneration, increased inbreeding possibilities, which in turn, cause various negative impact to the subsequent population. The recent meeting of World Conservation Monitoring Center (WCMC) has reported the serious population depletion of most tropical species caused by the above threat including trade.

This proposed project is formulated in response to the above concern. The overall objective of this project is to contribute to the conservation and plant genetic resources, sustainable management (harvest and plantation) and improve regeneration of the species within the genus. The expected outputs are (1) The natural population and conservation of this genus updated and improved, (2) The replantation of the selected species accelerated.

Primary beneficiaries of this proposed project are Directorate of Biodiversity Conservation (MoF), State Own-company (Perum Perhutani), Ministry of Environment, BAPPENAS, and Indonesian Institute of Science (LIPI), local government and local government. The benefits range from updated data and information on distribution, population and conservation status of the species within the genus, and regeneration capacity for and improved method of harvest. This proposed project will also contribute to the socio economic improvement of local community, small scale holders of forest utilization company. By conserving the plant genetic resources, improving method of harvest of these species and replantation, longterm contribution to community prosperity and livelihood will also be sustained. This includes future breeding program of *Dalbergia* species.

**This project will be executed and implemented by Center for Forest Biotechnology and Tree Improvement Research (CFBTI)-Yogyakarta, which is part of DG Forestry Research and Development Agency (FORDA)**

The project initiated activities (population and conservation status updated), regeneration and sustainable harvest method for some *Dalbergia* species will be handed over to Center for Biotechnology and Tree improvement as for their research priorities. Other findings and updated data and information will be widely disseminated to other relevant stakeholders, such as Directorate of Biodiversity Conservation, State Owned Company (Perum Perhutani), local government, Ministry of Environment and BAPPENAS.

The potential risk of this proposed project is the poor participation of stakeholders. This risk will be mitigated through the involvement of stakeholders from the beginning of the project implementation, and the choices of appropriate personnel and institutions.

To execute the project activities, needed resources must be secured. Funding contributions are expected from ITTO **US\$ 414.792**, and the Government of Indonesia **US\$79.753 (in kind) giving a total project budget of US\$ 494.545.**

### List of abbreviation and acronyms

BAPI	Biodiversity Action Plan for Indonesia
BAPPENAS	National Board for Planning and Development
CBD	Convention on Biodiversity
CFBTI (R)	Center for Forest Biotechnology and Tree Improvement Research and Development
CFNCRD	Center for Conservation and Rehabilitation R&D
CITES	Convention on International Trade in Endangered Species
EA	Executing Agency
FORDA	Forestry Research and Development Agency
IBSAB	Indonesian Biodiversity and Strategic Action Plan
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organization
KLN	Center for International Cooperation
LIPI	National Institute of Science
MoF	Ministry of Forestry
NC	National Consultant
WCMC	World Conservation Monitoring Center

## TABLE OF CONTENTS

<b>Summary</b>	
<b>Project brief</b>	<b>ii</b>
<b>List of abbreviation and acronyms</b>	<b>iii</b>
<b>Map of Project site</b>	<b>vi</b>
<b>Part 1: Project Context</b>	<b>1</b>
1.1 Origin	1
1.2 Relevance 1	
1.2.1 Conformity with ITTO objectives	1
1.2.2 Relevance to the policies of Indonesia	3
1.3 Target area	4
1.3.1 Geographical location	4
1.3.2 Social cultural, economic and environmental aspects	4
1.4 Expected outcomes at project completion	5
<b>Part 2: Project Rationale and Objectives</b>	<b>6</b>
2.1 Rationale	6
2.1.1 Institutional set-up and organizational issues	6
2.1.2 Stakeholder analysis	6
2.1.3 Problem analysis	7
2.1.4 Logical framework matrix	11
2.2 Objectives	11
2.2.1 Development objectives and impact indicators	11
2.2.2 Specific objectives and outcomes indicators	12
<b>Part 3: Description of Project Interventions</b>	<b>13</b>
3.1 Output and activities	13
3.1.1 Outputs	13
3.1.2 Activities	13
3.2 Implementation approaches and methods	14
3.3 Work plan	15
3.4 Budget	16
3.4.1 Master budget	16
3.4.2 Consolidated budget by component	19
3.4.3 ITTO budget by component	20
3.4.4 Executing agency budget by component	21
3.5 Assumptions, risks, and sustainability	22
3.5.1 Assumptions and risks	22
3.5.2 Sustainability	22
<b>Part 4: Implementation Arrangements</b>	<b>23</b>
4.1 Organization structure and stakeholders involvement mechanism	23
4.1.1 Executing agency and partners	23
4.1.2 Project management team	23
4.1.3 Project steering committee	24
4.1.4 Stakeholders involvement mechanisms	24
4.2 Monitoring, review, and evaluation	24
4.3 Dissemination and mainstreaming of project learning	25
4.3.1 Dissemination of project results	25
4.3.2 Mainstreaming project learning	25

<b>Annex 1: Profiles of the executing agencies</b>	<b>26</b>
<b>Annex 2: Tasks and responsibilities of key experts</b>	<b>27</b>
<b>Annex 3: Terms of references of personnel and consultants</b>	<b>28</b>

## Map of Project Site

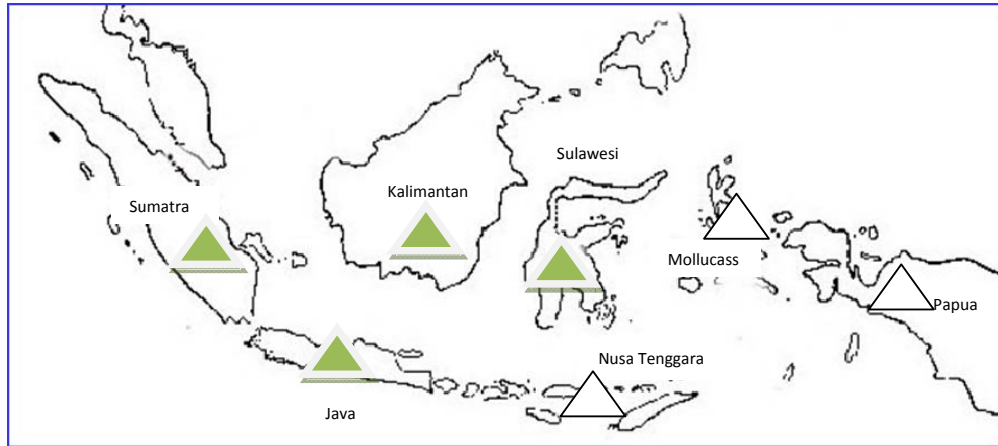


Figure 1. Geographical map of natural distribution of Indonesian rosewood with various species covers Sumatra, Java, Kalimantan, Sulawesi, Nusa Tenggara, Molluccas and Papua, indicated by triangle. The project sites covers only for Sumatra, Java, Kalimantan and Sulawesi as indicated by filled triangle. Different species may occur in different geographical sites.

## **PART 1. PROJECT CONTEXT**

### **1.1 Origin**

This proposed project is constructed originally from the recommendation made from national and regional workshop on biodiversity conservation. The workshops organized by Ministry of Forestry, Indonesian Institute of Science and National Board for Planning and Development (BAPPENAS), FORDA and Directorate of Biodiversity Conservation (MoF) confirmed the existing threats to the species not only those having high commercial value but also to those genetically and environmentally having barriers to survive and to regenerate. Directorate of Biodiversity Conservation (MoF) in 2008 has developed national strategy for plant and animal conservation as a response to this concern. However, the strategy and action plan need to be further elaborated for specific species, because (1) Until now, large number of plant species have been excessively harvested with no immediate action to restore and regenerate, (2) Many of excessively harvested species have been currently under serious threat, especially those having barrier in naturally regenerate, (3) The conservation, vulnerability status and potential regeneration of most of those species remain out of date.

Threat to species occurs to most areas, especially to those having insufficient regeneration capacity . In order to ensure the conservation and to achieve the conservation goal, the necessary actions are needed, which are:

- To immediately update data and information of the species, genetic diversity, vulnerability (natural regeneration capacity), and current habitat and environmental condition;
- To establish physical conservation areas of those selected species and;
- To improve local community prosperity including awareness on the importance of sustainable harvest of threatened species.

The contribution from various institutions, organizations and community is needed to ensure the conservation and the sustainability of the forest. In this proposed project, several interventions are proposed to prevent further threat to species extinction through (1) Re-identification and exploration of current population status and habitats conditions, (2) Putting priority species and priority action for physical establishment of conservation areas (*in-situ* and *ex-situ*) and potential regeneration and (3) Promotion of sustainable harvest and utilization.

In this proposed project, the issues are addressed to genus *Dalbergia*, which has been recorded as having natural distribution in Indonesia, which range from small size plant to relatively big trees.

### **1.2 Relevance**

#### **1.2.1 Conformity to the ITTO objectives**

##### **Relevance to ITTA 2006**

The proposed project is relevant to the objectives of ITTA 2006:

- Point *f*: promoting and supporting research and development with a view to improving forest management and efficiency of wood utilization, as well as increasing the capacity to conserve and enhance forest value in timber producing tropical forest.
- Point *j*: encouraging members to support and develop tropical forest reforestation, as well as rehabilitation and restoration of degraded forest land, with due regard for the interest of local communities dependent on forest resources.

- Point *m*: encouraging members to develop national policies aimed at sustainable utilization and conservation of timber producing forest, and maintaining ecological balance, in the context of tropical timber trade.
- Point *q*: promoting better understanding of the contribution of non-timber forest products and environmental services to the sustainable management of tropical forest , etc.
- Point *r*: encouraging members to recognize the role of forest-dependent indigenous and local communities in achieving sustainable forest management and develop strategies to enhance the capacity of these communities to sustainably manage tropical timber producing forest.

This proposed project supports:

- The contribution to the sustainable development of indigenous species in utilizing timber product and non-timber forest products, especially from the selected species.
- This proposed project is also relevant, because it carries R&D activities to support sustainable management and utilization efficiency of the concerned species.  
This point relevant with ITTA Objective point *f*.
- This proposed project is also relevant to the improvement of utilizing and conserving timber of tropical forest, which are previously exploited in traditional ways, such as on *D latifolia* and *D sisso* and other valuable timbers.  
This point also relevant with ITTA objective point *f* and *j*.
- The understanding of non-timber forest products contribution and environmental services in sustainable forest management is also improved through various awareness rising. Support and participation of local and indigenous people and other forest dependent communities on sustainable forest management are expected to increase after receiving training and awareness rising organized by the project.
- Promote and support research and development with focus to improve forest management and efficiency of forest utilization as well as increase the capacity to conserve and enhance other forest values in timber producing tropical forest and the promotion of research and development in forest management.

### **ITTO Strategic Action Plan 2013-2018**

This project is also relevant to the ITTO Strategic Action Plan 2013-2018 with specific to the following aspects:

ITTO Strategic Action Plan No. 3: enhancing the conservation and sustainable use of biodiversity in tropical producing countries,

- Most aspects of this project are addressing the conservation of tropical species, especially those having high economic values, endemic and restricted distribution areas. Some biological data which have been previously recorded, such as herbarium specimen will be further explored to ensure their conservations.

ITTO Strategic Action Plan No. 4: reduce tropical deforestation and forest degradation and enhance the provision of environmental services,

- This project addresses the high potential loss of species by over harvesting and unsustainable utilization of timber and non-timber forest products. Capacity building especially for local community and indigenous species will be carries out, primarily for wise use of forest



products and sustainable method of harvest. By improving capacity and awareness, over exploitation is expected to decrease, and efficiency of harvest and utilization will improve, the potential threat due to illegal harvest and over exploitation will reduce thus conservation of the species can be realized and achieved.

### **Relevance to ITTO/IUCN Guidelines for Biodiversity Conservation 2005**

The proposed project is highly relevant to ITTO/IUCN Guideline for the Conservation of Biological Diversity in Production Forest (ITTO Policy Development Series No. 5, 1993) and its revision (review and up-date the ITTO/IUCN Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forest, 2005). In guideline 2: Biodiversity goals and targets for tropical production forest should be developed with the involvement of all relevant stakeholders with particular attention to the needs and priorities of local communities.

### **Relevance to other global issues**

This proposed project is also relevant to the CBD 2010 and 2020 Target which is “to achieve significant reduction of the current rate of biodiversity loss at the national level”, and the CITES Strategic Plan which state that “No species of wild flora (fauna) subjected to unsustainable exploitation because of international trade”.

### **1.2.2 Relevance to the policies of Indonesia**

The outputs of this proposed project are to accelerate the conservation, the sustainable harvest and to improve natural and artificial regeneration of *Dalbergia* species. Therefore, this proposed project is highly relevant to the national priorities to conserve biological diversity, to achieve sustainable management of tropical forests, community development and to take part in addressing the current global issues (CBD and CITES).

The country’s priority programs of Ministry of Forestry (2010-2014) are to achieve the sustainable management of tropical forests, conservation and community development. There are three out of six MoF’s specific priority programs in which this project could contribute to:

- Biodiversity conservation,
- Revitalization of forest utilization and forest industries,
- Empowerment of forest local communities.

This proposed project is also relevant to the ultimate objective of conservation of biological diversity by Directorate of Biodiversity Conservation, Directorate General of Forest Protection and Nature Conservation (DG PHKA): to achieve self-sufficient management of conservation areas, conservation of biological diversity, ensuring state rights on state areas and forest products, and increasing state revenue and community income from conservation activities.

This proposed project is also relevant to the achievement of program under the Indonesian Biodiversity and Strategic Action Plan (IBSAP) 2003-2020 on the management of biological diversity, including all important lesser known species in Indonesia.

## 1.3 Target Area

### 1.3.1 Geographical location

The geographical area for this project is several islands in Indonesia such as Sumatra, Java, Kalimantan and Sulawesi (see Map of Project Site in the previous page). These islands lie from west to east of Indonesia. The islands have dry lowland until highland forest ecosystems. These islands have abundant species of flora and fauna in various habitats from coastal, peat swamp, lowland until hill-mountain forest. Recently, these islands are facing several conditions as follows:

- The existing forest resources are rich with biological diversity are facing serious threats due to various disturbance (conversion, fires, and illegal logging),
- The relatively high population density with increasing pressure to the natural resources,
- Most potential and commercially species have been heavily exploited,
- Some plant species have been predicted to be under serious threat,
- The selected species addressed in this proposed project are naturally distributed in Indonesia.

### 1.3.2 Social cultural, economic, and environmental aspects

#### (a) Social cultural aspects

The local community in Sumatra, Jawa, Kalimantan and Sulawesi are mostly farmers whose lives are mostly dependent on forest. *Dalbergia* species products valuable timber and traditional values to the community. The harvest of the species has given contribution not only to local but also to regional economy. Due to the excessive harvest in the past and other natural disturbances, the contribution to the community prosperity decreased, thus, urgent intervention is needed to conserve, protect and restore to original condition, through improving management practices, protection, field conservation action, and regeneration. This proposed project is intended to ensure their conservation and sustainable management of forest.

#### (b) Economic aspect

Economic value of the existing *Dalbergia* species has been recognized by local community. In the high value commercial timbers which have been cut several decades ago and used as fancy wood with highly strong hardwood. The uses of *Dalbergia* species in Indonesia are for furniture, carving and limited use for construction since the price is relatively expensive. Since they are limitedly traded, the information on the trade value and quantity is still lacking. **The collected information indicates the main producer of rosewood (*Dalbergia* spp) is Java island, especially Central Java (by State Owned Company-Perum Perhutani). The price of log starts from US\$500 per m<sup>3</sup>. The reported export destinations are China, Korea, Hong Kong, Taiwan, Japan and some European countries. The wood of Indonesian rosewood is used for fancy products, such as furniture, guitar, other fancy ornaments. The great reduction in population of these tree species has made significant reduction in both domestic and international trade which in turn reduce its contribution to the economy of local community and national.**

#### (c) Environmental context

Forest degradation, encroachment and conversion to other uses have resulted in great reduction on natural resources and forest quality. This rapid reduction influenced community prosperity, which also

resulted in increase of pressure to forest resources, especially the valuable species and genetically limited in reservation. This condition will intensify if no any necessary intervention is taken. This proposed project will improve environmental condition by maintaining the biodiversity and by enhancing the achievement of sustainable management and conservation of those plant species. The establishment of *in situ* and *ex situ* conservation, the improvement of forest stands by replantation will improve natural resources. By improving natural resources, the environmental quality will also improve significantly.

#### 1.4 Expected outcomes at project completion

At project completion, it is expected that several aspects below are achieved:

##### Immediate effects and benefits:

- The latest data and information on the status of the harvested, threatened and potentially threatened species of Indonesian rosewoods, including the use of IUCN Red List vulnerability criteria. The data also includes information on biological, ecological impact of excessive harvest and genetic (diversity and erosion).
- Improved capacity on harvest methods and increased awareness on species conservation and protection.
- Improves existing *In-situ* conservation for selected *Dalbergia* species.
- Initiated establishment for *ex-situ* conservation for selected *Dalbergia* species.
- Formulated conservation strategies for selected *Dalbergia* species.
- Improved regeneration capacity through the improvement of seed sources, plant propagation.
- Initiated establishment of plantation for selected *Dalbergia* species.
- **This project will also field test the IUCN Red List vulnerability criteria on Indonesian rosewood species, especially on the listing of *Dalbergia* species into CITES Appendix, as occurs to the African and Brazilian rosewoods.**
- **Through this project, immediate action could be taken accordingly to conserve and protect these species, as guided by ITTO-CITES, IUCN Red list vulnerability criteria.**

## **PART 2. PROJECT RATIONALE AND OBJECTIVES**

### **2.1 Rationale**

#### **2.1.1 Institutional Set-up and Organizational Issues**

Indonesia has ratified Convention of Biological Diversity (CBD). Implementation of this convention is coordinated under the Ministry of Environment and is supported by Ministry of Forestry and National Institute of Science and other relevant institutions. Directorate General of Forest Protection and Nature Conservation (MoF) has responsibilities to ensure the protection and conservation of natural forests including its biological diversity (ecosystems, habitats, species, and gene resources). Forestry Research and Development Agency (FORDA), also under MoF, has responsibility to provide updated scientific data and information on most aspects of biodiversity, to develop necessary techniques and methods to protect and conserve natural forests and its biological diversity, which assist the achievement of MoF programs on the conservation of biological diversity. To achieve the objectives of the program, FORDA work collaboratively with other relevant research institutions, universities, NGO, and local stakeholders.

In the implementation of these project activities, CFBTI shares the responsibilities to other collaborating agency, and comply with FORDA (MoF), national and ITTO rule and regulation, will also work closely with DG of Forest Protection and Nature Conservation, state and private companies, and other relevant institutions. The overall project findings and outputs are disseminated and coordinated by FORDA to primarily uses.

#### **2.1.2 Stakeholder analyses**

##### **Stakeholder identification and consultation**

Stakeholders involve in the implementation of this proposed project are Forestry Research and Development Agency (FORDA), Indonesian Institute of Sciences (LIPI) and Directorate of Biodiversity Conservation. Other relevant institutions include Ministry of Environment as focal point of CBD, National Board for Planning and Development (BAPPENAS), Universities and NGOs.

Consultation meeting organized by FORDA dated 23 September 2013 regarding the conservation of *Dalbergia* species confirmed the urgency for taking immediate intervention to protect, conserve and restore species population. Other meeting organized in Yogyakarta dated 29 November 2013, all stakeholders supported the submission of this proposal by providing all necessary documents, data and information. The involvement of local communities range from preparation of sites, exploration of seed sources and maintenance of project initiated activities.

**Table 1. The involvement of various stakeholders in the project implementation**

Stakeholders group	Characteristics	Problems, needs, interests	Potentials	Involvement in the project
<b>Primary stakeholders</b>				
1. Local communities	Users of forest resource for wider range of purposes	Lack of knowledge and skill in conservation of <i>Dalbergia</i> ssp.	- Sources of labors - Familiar with the sites and habitat	- <u>Involve in field plantation and conservation activities</u> - <u>Involve in seedling distribution</u> - <u>Participate in capacity building</u> - <u>Involve in seedsource identification and establishment.</u>
2. Provincial/ District forest services	Responsible for managing forest resources in their area	Lack of capacity in providing necessary data	Facilitate any implementation activities	Involve in coordinating the implementation of the activities
3. Regional forestry research institutes in Sumatra	- Responsible for supporting recent scientific data and information at regional level - Play an important role in conducting research and development at regional level	- Limited resources and capacity to execute field data collection of species in each area	Having facilities and research sites	Involve in implementing project activities and results
<b>Secondary stakeholders</b>				
4. Directorate of Biodiversity conservation	Promote strategies for long term conservation and sustainable utilization of various species	Limited capacity to collect and update data and information including on wild life protection and utilization	Disseminate data and information of the findings	Facilitate information dissemination
5. Indonesian Institute of Science, Center for plant conservation	Responsible for scientific assessment on natural resources including plant and animal species	Limited access to forest resources	- Scientific community - Assist in analysis of biological diversity	Involve in various scientific meetings and discussions
8. Ministry of Environment/ BAPPENAS	Involve in setting the national programs for conservation of biological diversity	Limited mandate to directly collect and update data and information	Facilitate the implementation of project findings	Involve in dissemination and analysis of findings
7. Universities	Involve in the R&D on forestry resources, capacity building and awareness raising	Limited access on R&D activities, awareness raising and capacity building	Having facilities and resources	Involve in scientific meetings and discussions
8. NGO	Facilitate community awareness raising and prosperity	Involve in information dissemination and communication with communities	Close collaboration with communities	Dissemination and other awareness raising

### 2.1.3 Problem analysis

Forest degradation is already in alarming rate. Significant decrease of forest cover and high rate of forest degradation have caused potential loss of forest resources including most of forest tree species. The decrease of forest covers and high rate of forest degradation have caused significant reduction of tree species population. Species from genus *Dalbergia* (major rosewood species) vary in population distribution and dominance. Vulnerable and sensitive species with extreme environmental condition will suffer and could die making the population

**drastically decrease. Change in population structure and decrease in size could cause detrimental effect to the regeneration success which also cause reduction in genetic diversity. Decrease in genetic diversity will make species more susceptible to pest and disease. In the long run, they will have high risk for lost, especially caused by limited in population size, limited capacity for natural regeneration and disrupted population structure. Reducing population will cause decrease in production and trade, which in turn, decrease in economic contribution of Indonesian rosewood.**

#### **Ineffective conservation measures**

Recorded herbarium specimens revealed that certain species are growing genetically and naturally in relatively small population size and reside in certain habitat types. There are at least 10 species of *Dalbergia* naturally found in Indonesian archipelago, with various tree sizes. Not all of the species have been recorded in herbarium specimens. The most widely known species, *Dalbergia latifolia* and *Dalbergia sisso*, have been predicted to face various problems. These species and other *Dalbergia* species are currently threatened by habitat disruption, encroachment and unsustainable harvest. Even though those species are under serious threats and having potential to extinct, no effective conservation measures have been taken to enhance the immediate protection and conservation. **This ineffective conservation measures are primarily due lack or extremely limited updated data and information on the population status of Indonesian rosewood species. The existing data and information are out of date and mostly inaccurate due significant change on land cover and forest status. In addition, research and development on the population biology, ecology, flowering phenology, including genetic diversity and genetic relationship between species are still lacking. Even though these types of data and information is crucial for long term conservation and future tree breeding.**

Lack of updated data and information on the current status of *Dalbergia* species has made it difficult to accurately formulate the conservation strategy of those species. The general guideline and action plan for plant conservation have been formulated by Directorate of Biodiversity Conservation (MoF). However, the general guideline and action plan have not been operationalized and not formulated specifically to rosewood. **This is primarily due to still limited or lack of updated and accurate data and information on most species of *Dalbergia*.**

**Lack of knowledge, understanding and awareness of local community and concerned stakeholders (including authority) on the importance of conservation, conservation of plant genetic resources on the physical establishment (conservation garden) has also contributed to this condition. Current conservation of those species still relies on the existing *in-situ* conservation in nature (wildlife) reserve, national park, and other type of conservation areas. Extended conservation effort through the establishment of *ex-situ* conservation is still limited. In summary, the above conditions could intensified the potential lost of certain rosewood species in Indonesia, if no immediate intervention, especially those distributes naturally in remote areas and exposed to severe deforestation activity.**

#### **Unsustainable Harvest**

Problem of unsustainable harvest, such as unbalanced between harvest and replantation, using unsound method of harvest), inefficient processing are among problems lead to decreasing population of Indonesian rosewood. In addition, the extraction of natural stands for the species which naturally small in population size also occurs. These all occur due to limited understanding and knowledge of the importance of sustainable harvest and conservation of the species for sustainable production and future uses. Technology used for processing remains traditional and inefficient causing lower value and high waste production. These issues are not well addressed for rosewood due to their small contribution to the timber supply in Indonesia. This issue on rosewood harvest, processing and timber supply is not specifically addressed in this proposed project but will

be accommodated in some activities, such as in the review of *in situ* and *ex situ* conservation of *Dalbergia* spp in Indonesia.

### **Insufficient regeneration and replantation**

The significant decrease in population size and potential loss is also caused by genetic or biological characteristics of each species. *Dalbergia latifolia* (locally known as sonokeling), as an example, is having problem in seed production where as *Dalbergia sisso* (locally known as Sonobritz) is having regular flowering and fruiting seasons with abundant seed production. Other than genetic and biological characteristics, external disturbance also influence seed production, such as disruption of population structure. Those species failed to produce large quantity of seeds due to significant decrease in population number, including seed trees, population structure and composition. On the other hand, until today, for most species, there are no areas, stands, and even mother trees have been sufficiently designed, legally stated their status as seed sources and seed production areas. Only *D sisso*, has the seed sources with sufficient number of stands and size for regular seed production. This species is only in Java island and managed by State-Owned Company, Perum Perhutani. The establishment of seed sources has been becoming important issue for the species followed by the formulation of guidelines for seed source management, stand management, seed handling and method for mass production of planting materials.

**In addition, currently there is no special value which interest community to plant and replant rosewood in various ways and scale, especially those which are not familiar by most local community. Therefore incentive schemes for conservation, plantation and replantation of these species are necessary.**

**Rehabilitation and plantation of forest tree species have been widely promoted by Ministry of Forestry, however, the scarcity of planting materials of most rosewood species has caused very limited plantation activities, both in Java and outside Java island. In some cases, plantation trials and replantation should be initiated and facilitated by concerned stakeholders in order to receive wide attentions and participation from many parties, especially local communities where the species is naturally growing. For species *D sisso*, the plantation is limited only in small areas in Java, where others are insignificant or extremely small size and limit in certain area. This proposed project therefore will address plantation trials and replantation in wide ranges of aspects.**

Figure 2. Problem tree

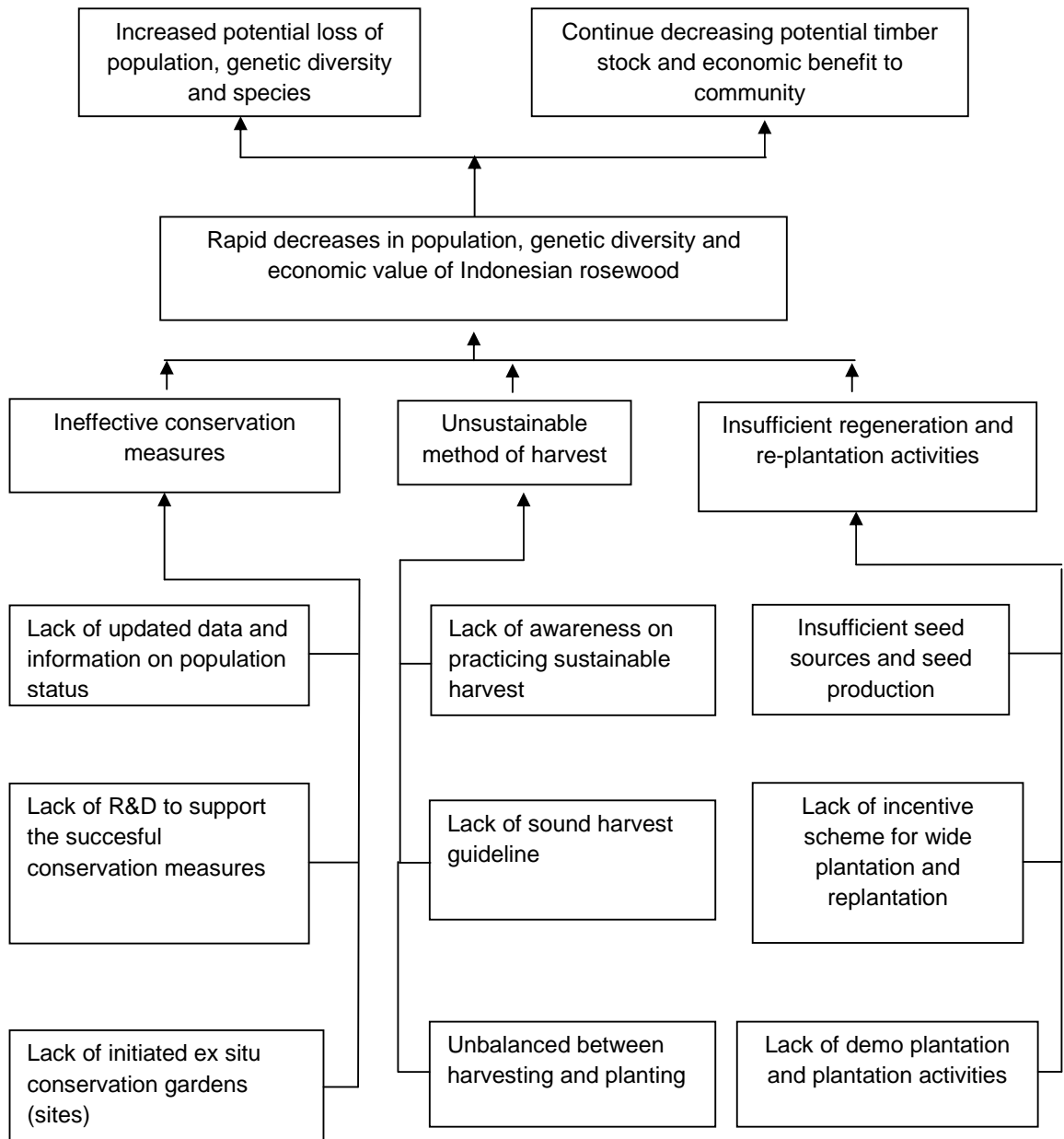
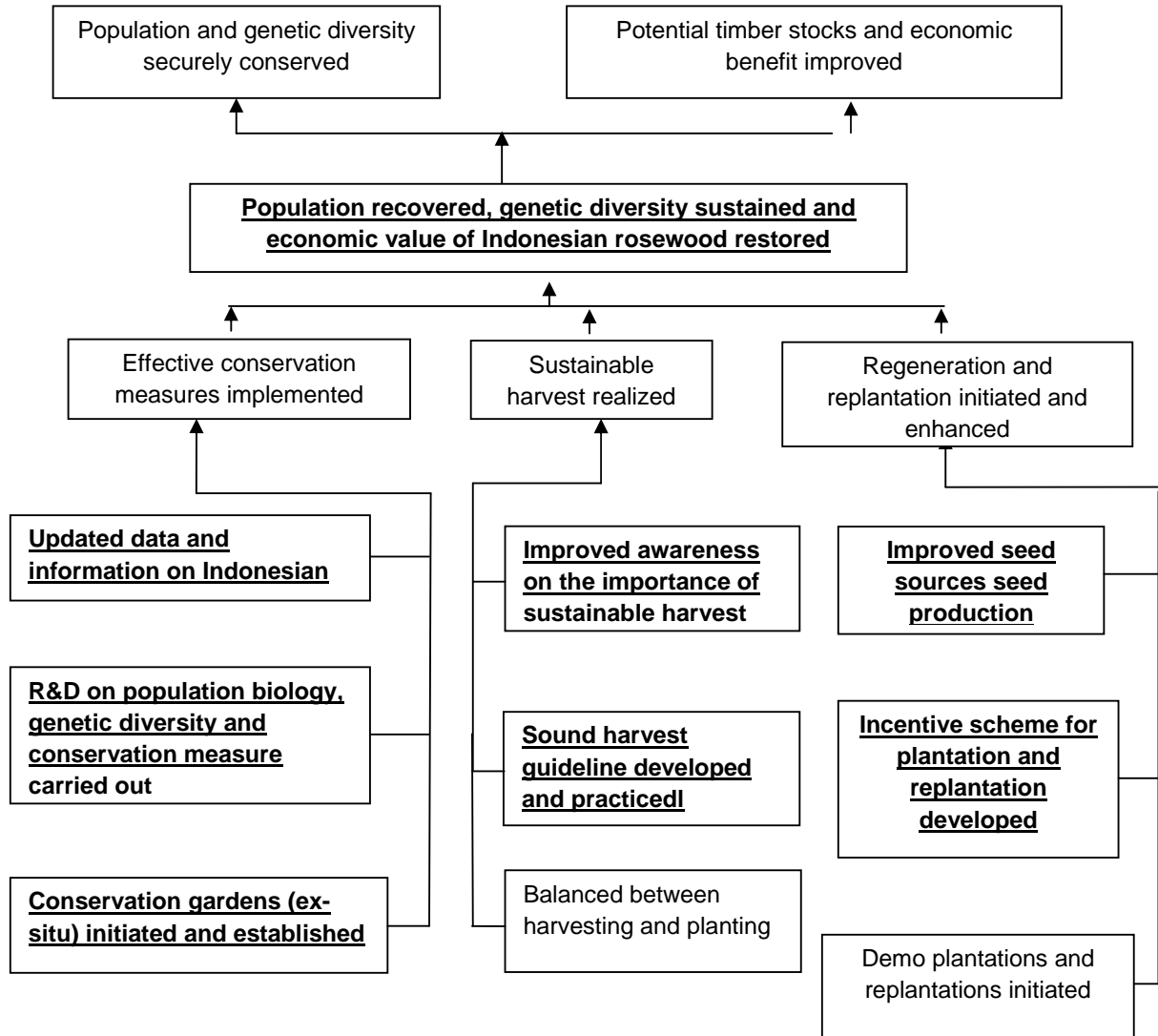




Figure 3. Objective (solution) tree



## 2.1.4 Logical framework matrix

Project Elements	Indicators	Means of verification	Assumption
<p><b>Development Objective:</b></p> <p>To contribute to the conservation and sustainable management of <i>Dalbergia</i> species in Indonesia.</p>	<ul style="list-style-type: none"> <li>- <b><u>Four ex-situ conservation, one for each selected species, established in the fourth year</u></b></li> <li>- <b><u>1-2 Seed sources of selected species established and well-managed in the year 4-5</u></b></li> <li>- <b><u>2 ha ex-situ conservation sites established in the year 3-4</u></b></li> <li>- <b><u>The harvest of the selected species is successfully controlled</u></b></li> </ul>	MoF Report, Provincial/District Report	Consistent support from concerned authorities for species conservation and strategies
<p><b>Specific objective:</b></p> <p>To enhance genetic conservation, replantation and economic contribution of Indonesian Rosewood (<i>Dalbergia</i>, spp).</p>	<ul style="list-style-type: none"> <li>- Four <i>ex-situ</i> conservation areas identified and initially established</li> <li>- Conservation guideline and measure formulated</li> <li>- Sound management guideline formulated and delivered</li> <li>- 1-2 seed source management guideline formulated</li> </ul>	<ul style="list-style-type: none"> <li>- Project report</li> <li>- FORDA report</li> <li>- MoF Report</li> </ul>	Relevant parties provide support
<p><b>Output 1.</b></p> <p>The natural population and conservation of this genus updated and improved</p>	<ul style="list-style-type: none"> <li>- 30 participants of training/awareness raising</li> <li>- Updated biological data/ information and tested IUCN Red list vulnerability criteria</li> <li>- 1 Formulated conservation strategies for each species</li> <li>- 2 ha <i>ex-situ</i> conservation of each species established</li> </ul>	<ul style="list-style-type: none"> <li>- Training report</li> <li>- Field report</li> <li>- Concept of conservation method/ strategies</li> </ul>	<ul style="list-style-type: none"> <li>- stakeholders are willing to participate</li> <li>- locations are accessible</li> </ul>
<p><b>Output 2.</b></p> <p>The replantation of selected species accelerated.</p>	<ul style="list-style-type: none"> <li>- 2-3 sites of seed sources for each species identified,</li> <li>- 1 developed handling guideline/method of seed and seedling</li> <li>- 1-2 improved seed sources/stand</li> <li>- 1-2 initiated nurseries for selected species</li> </ul>	<ul style="list-style-type: none"> <li>- Report of seed sources identification</li> <li>- Guideline/ method of seed handling</li> <li>- Field activity report</li> </ul>	seed/seedling materials are available

## 2.2 Objectives

### 2.2.1 Development objectives and impact indicators

**Development objectives:** To contribute to the conservation and sustainable management of *Dalbergia* species in Indonesia.

**Impact indicators:**

3-5 years after project completion:

- Four *ex-situ* conservation, one for each species, established,
- The harvest of the selected species is sustainably controlled,
- 1-2 Seed sources of selected species established and well-managed,

- The selected stands for future seed sources are intensively managed,
- Plantation for ex-situ conservation of selected species established as demo plot.

### **2.2.2 Specific objectives and outcomes indicators**

**Specific objective:** To enhance genetic conservation, replantation and economic contribution of Indonesian Rosewood (*Dalbergia*, spp).

#### **Outcomes indicators**

At project completion:

- Four *Ex-situ* conservation sites, one for each species, identified and initially established,
- Conservation guideline and measure for each selected species formulated,
- Sound management guideline for each species formulated and delivered,
- One seed source for each selected species are identified, legally managed and initially revitalized,
- Guideline for seed sources and seed handling of each species developed.

## PART 3. DESCRIPTION OF PROJECT INTERVENTION

### 3.1 Outputs and activities

#### 3.1.1 Outputs

**Output 1.** The natural population and conservation of this genus updated and improved

Indicators:

- Updated biological and genetical data/information on *Dalbergia* spp
- Conservation strategy for each species formulated
- Natural population of *Dalbergia* spp species updated

**Output 2.** The replantation of selected species accelerated.

Indicators:

- 2-3 sites of seed sources for each species identified
- 1 developed handling guideline/method of seed and seedling
- 4 *ex-situ* conservation sites, 2 ha each for selected species initiated as demo plots
- Technique for mass propagation developed

#### 3.1.2 Activities

**Output 1.** The natural population and conservation of this genus updated and improved

Activity 1.1. To explore natural population of *Dalbergia* spp.

Activity 1.2. To assess the genetic diversity of *Dalbergia* spp.

Activity 1.3. To review *in-situ* and *ex-situ* conservation of *Dalbergia* spp.

Activity 1.4. To improve capacity of stakeholders on sustainable management of *Dalbergia* spp forest .

**Output 2.** The replantation of selected species accelerated.

Activity 2.1. To develop seed sources of selected species.

Activity 2.2. To develop technique for mass propagation and incentive scheme for plantation.

Activity 2.3. To establish *ex-situ* conservation plots of selected species.

Activity 2.4. To develop plantation guidelines for *Dalbergia* spp .

### 3.2. Implementation approached and methods

This proposed project is intended to solve problems related to the weak conservation efforts of rosewood species and poor artificially and naturally regeneration capacity. It is expected that the

enhancement of conservation, sustainably and improved regeneration will be achieved. In order to achieve those objectives, several approach and methods will be taken as follows:

- To organize intensive discussions and scientific meetings involving concerned stakeholders and local community on taxonomical status, biology, harvesting methods/guidelines and conservation possibilities of selected species,
- To carry out field survey to identify and to revitalize existing *in-situ* and *ex-situ* conservation sites and seed sources,
- To carry out planting in some selected areas for conservation and seed sources,
- To enhance capacity of institutions and community through the development of guideline,
- To update biological and ecological data and information of all species,
- To identify personnel and sustainability measures for continuation of project initiated activities,
- To hold a preparatory meeting prior to implementation of activities to ensure the involvement of key stakeholders.

### 3.3 Work Plan

**Table 3. Work plan of the project**

Outputs/Activities	Responsible parties	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Output 1.</b> The natural population and conservation of this genus updated and improved													
Activity 1.1. To explore natural population of <i>Dalbergia</i> spp.	CCR-Bogor, CFBTIR-Yogya												
Activity 1.2. To assess the genetic diversity of <i>Dalbergia</i> spp.	CFBTIR-Yogya												
Activity 1.3. To review <i>in-situ</i> and <i>ex-situ</i> conservation of <i>Dalbergia</i> spp.	CCR-Bogor												
Activity 1.4. To improve capacity of stakeholders on sustainable management of <i>Dalbergia</i> spp forest.	CFBTIR-Yogya												
<b>Output 2.</b> The replantation of selected species accelerated.													
Activity 2.1 To develop seed sources of selected species.	CFBTIR-Yogya												
Activity 2.2 To develop technique for mass propagation and incentive scheme for plantation	CCR-Bogor,CFBTIR-Yogya												
Activity 2.3. To establish <i>ex-situ</i> conservation plots of selected species.	CFBTIR-yogya, CCR-Bogor												
Activity 2.4 To develop plantation guideline for <i>Dalbergia</i> spp.	CCR-bogor												

Abbreviations: CCR-Bogor (Center for Conservation and Rehabilitation R&D-Bogor) and CFBTI (Center for Forest Biotechnology and Tree Improvement R&D-Yogyakarta)

### 3.4 Budget

#### 3.4.1 Master Budget

Outputs and Activities	Description	Budget Component	Quantity			Units	Unit Cost	Total Cost	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
<b>Output 1.</b> The natural population and conservation of this genus updated and improved												
Activity 1.1. To explore natural population of <i>Dalbergia</i> spp.	1). National Expert	11.2	6	0	0	Person month	2.000	12.000	12.000	-	-	-
	2). Return Tickets	32	6	0	0	Participant	250	1.500	1.500	-	-	-
	3). Daily Subsistence Allowance	31	40	0	0	Participant	80	3.200	3.200	-	-	-
	4). Local Transport	33	40	0	0	Participant	150	6.000	6.000	-	-	-
	5). Fuel and Utilities	52	1	0	0	Package	1.500	1.500	1.500	-	-	-
	6). Consumable items	54	2	0	0	Package	1.000	2.000	2.000	-	-	-
	7). Other miscellaneous	67	2	0	0	Package	1.000	2.000	2.000	-	-	-
<b>Sub total Activity 1.1.</b>							<b>28.200</b>	<b>28.200</b>	-	-	-	-
Activity 1.2. To assess the genetic diversity of <i>Dalbergia</i> spp.	1). National Expert	11.2	0	6	0	Person-month	1.000	6.000	-	6.000	-	-
	2). Technician	12.2	0	4	0	Person-month	350	1.400	-	1.400	-	-
	3). Other labors	12.4	0	90	0	Person-day	15	1.350	-	1.350	-	-
	4). Local Transport	33	0	15	0	Trip	200	3.000	-	3.000	-	-
	5). Daily Subsistence Allowance	31	0	80	0	Person-day	80	6.400	-	6.400	-	-
	6). Office Supplies	53	0	1	0	Package	500	500	-	500	-	-
	7). Materials	51	0	1	0	Package	500	500	-	500	-	-
	8). Fuel and Utilities	52	0	1	0	Package	500	500	-	500	-	-
	9). Other consumable items	54	0	2	0	Package	500	1.000	-	1.000	-	-
	10). Printing report and editing	64	0	1	0	Package	1.500	1.500	-	1.500	-	-
	11). Other miscellaneous	67	0	1	0	Package	500	500	-	500	-	-
<b>Sub total Activity 1.2</b>							<b>22.650</b>	-	<b>22.650</b>	-	-	
Activity 1.3. To review <i>in-situ</i> and <i>ex-situ</i> conservation of <i>Dalbergia</i> spp.	1). National Expert	11.2	0	4	0	Person-month	2.500	10.000	-	10.000	-	-
	2). Laboratorist	12.3	0	6	0	Person-month	350	2.100	-	2.100	-	-
	3). Other labors	12.4	0	80	0	Person-day	15	1.200	-	1.200	-	-
	4). Return Tickets	32	0	6	0	Trip	250	1.500	-	1.500	-	-
	5). Local Transport	33	0	8	0	Trip	200	1.600	-	1.600	-	-
	6). Daily Subsistence Allowance	31	0	60	0	Person-day	80	4.800	-	4.800	-	-
	7). Office Supplies	53	0	1	0	Package	500	500	-	500	-	-
	8). Other consumable items	54	0	1	0	Package	500	500	-	500	-	-
	9). Other miscellaneous	67	0	1	0	Package	1.000	1.000	-	1.000	-	-
<b>Sub total Activity 1.3</b>							<b>23.200</b>	-	<b>23.200</b>	-	-	
Activity 1.4. To improve capacity of stakeholders on sustainable management of <i>Dalbergia</i> spp forest.	1). Speaker	63	10	0	0	Person-month	500	5.000	5.000	-	-	-
	2). Other labors	12.4	0	0	80	Person - day	15	1.200	-	-	1.200	-
	3). Return Tickets	32	0	0	20	Trip	200	4.000	-	-	4.000	-
	4). Local Transport	33	0	0	12	Trip	200	2.400	-	-	2.400	-

	5). Daily Subsistence Allowance	31	0	0	72	Person - day	80	5.760	-	-	5.760	-
	6). Office Supplies	53	0	0	1	Package	500	500	-	-	500	-
	7). Fuel and Utilities	52	0	0	1	Package	200	200	-	-	200	-
	8). Other consumable items	54	0	0	1	Package	500	500	-	-	500	-
	9). Printing report and editing	64	0	0	1	Package	1.500	1.500	-	-	1.500	-
	10). Other miscellaneous	67	0	0	1	Package	1.000	1.000	-	-	1.000	-
	<b>Sub total Activity 1.4</b>							<b>22.060</b>	<b>5.000</b>	-	<b>17.060</b>	-
	<b>Sub total Output 1</b>							<b>96.110</b>	<b>33.200</b>	<b>45.850</b>	<b>17.060</b>	-
	<b>Output 2. The replantation of selected species accelerated</b>											
Activity 2.1. To assess seed sources of selected species	1). National expert	11.2	4	0	0	Person-month	1.000	4.000	4.000	-	-	-
	2). Technician	12.2	4	0	0	Person-month	350	1.400	1.400	-	-	-
	3) Other Labors	12.4	120	0	0	Person-day	15	1.800	1.800	-	-	-
	4). Daily Subsistence Allowance	31	80	0	0	Person-day	80	6.400	6.400	-	-	-
	5). Returt Ticket	32	12	0	0	Trip	200	2.400	2.400	-	-	-
	6). Local transport	33	20	0	0	Trip	200	4.000	4.000	-	-	-
	7). Office Supplies	53	2	0	0	Package	500	1.000	1.000	-	-	-
	8). Other consumable items	54	2	0	0	Package	500	1.000	1.000	-	-	-
	9). Other Miscellaneous	67	3	0	0	Package	500	1.500	1.500	-	-	-
	<b>Sub-total 2.1.</b>							<b>23.500</b>	<b>23.500</b>	-	-	-
Activity 2.2 To develop technique for mass propagation and incentive scheme for plantation	1). National Experts	11.2	9	9	0	Person-month	500	9.000	4.500	4.500	-	-
	2). Technician	12.2	9	9	0	Person-month	300	5.400	2.700	2.700	-	-
	3). Other labors	12.4	0	120	0	Person - day	15	1.800	-	1.800	-	-
	4). Returt Ticket	32	0	10	0	Triip	200	2.000	-	2.000	-	-
	5). Local Transport	33	0	20	0	Trip	200	4.000	-	4.000	-	-
	6). Daily Subsistence Allowance	31	0	40	0	Person day	80	3.200	-	3.200	-	-
	7). Capital items (Nursery)	42	0	4	0	Package	2500	10.000	-	5.000	-	5.000
	8). Office Supplies	53	0	2	0	Package	500	1.000	-	1.000	-	-
	9). Materials	51	0	2	0	Package	1500	3.000	-	3.000	-	-
	10). Fuel and Utilities	52	0	2	0	Package	300	600	-	600	-	-
	11). Other Consumable items	54	0	2	0	Package	500	1.000	-	1.000	-	-
		12). Other Miscellaneous	67	0	2	0	Package	500	1.000	-	1.000	-
	<b>Sub-total 2.2.</b>							<b>42.000</b>	<b>7.200</b>	<b>29.800</b>	-	<b>5.000</b>
Activity 2.3. To establish <i>ex-situ</i> conservation plot of selected species.	1). National Experts	11.2	18	18	0	Person-month	500	18.000	9.000	9.000	-	-
	2). Technician	12.2	18	18	0	Person-month	200	7.200	3.600	3.600	-	-
	3). Other labors	12.4	0	120	0	Person - day	15	1.800	-	1.800	-	-
	4). Local Transport	33	0	20	0	Trip	200	4.000	-	4.000	-	-
	5). Daily Subsistence Allowance	31	0	80	0	Person day	80	6.400	-	6.400	-	-
	6). Office Supplies	53	0	2	0	Package	500	1.000	-	1.000	-	-
	7). Materials	51	0	2	0	Package	1000	2.000	-	2.000	-	-
	8). Fuel and Utilities	52	0	2	0	Package	300	600	-	600	-	-
	9). Other Consumable items	54	0	2	0	Package	500	1.000	-	1.000	-	-
		10). Other Miscellaneous	67	0	2	0	Package	500	1.000	-	1.000	-
	<b>Sub-total 2.3.</b>							<b>43.000</b>	<b>12.600</b>	<b>30.400</b>	-	-



Activity 2.4. To develop plantation guideline for <i>Dalbergia</i> spp	1). National Experts	11.2	0	2	0	Person-month	2,000	4,000	-	4,000	-	-
	2). Other labors	12.4	0	120	0	Person - day	15	1,800	-	1,800	-	-
	3). Local Transport	33	0	20	0	Trip	200	4,000	-	4,000	-	-
	4). Daily Subsistence Allowance	31	0	40	0	Person day	80	3,200	-	3,200	-	-
	5). Office Supplies	53	0	2	0	Package	500	1,000	-	1,000	-	-
	6). Materials	51	0	2	0	Package	1000	2,000	-	2,000	-	-
	7). Fuel and Utilities	52	0	2	0	Package	300	600	-	600	-	-
	8). Other Consumable items	54	0	2	0	Package	500	1,000	-	1,000	-	-
	9). Other Miscellaneous	67	0	2	0	Package	500	1,000	-	1,000	-	-
<b>Sub-total 2.4</b>							<b>18.600</b>	-	<b>18.600</b>	-	-	
<b>Sub Total Output 2.</b>							<b>127.100</b>	<b>43.300</b>	<b>78.800</b>	-	<b>5.000</b>	
<b>Non-activity Based Expenses</b>												
	1).Project coordinator	11.1	12	12	12	Person- month	2,000	72,000	24,000	24,000	24,000	-
	2). Project Secretary	11.3	12	12	12	Person- Month	500	18,000	6,000	6,000	6,000	-
	3). Assistance	12.1	12	12	12	Person- Month	300	10,800	3,600	3,600	3,600	-
	4). Daily Subsistence allowance	31	16	16	16	Person - day	80	3,840	1,280	1,280	1,280	-
	5). Return Ticket	32	5	5	5	Trip	250	3,750	1,250	1,250	1,250	-
	6). Local Transport	33	5	5	5	Trip	200	3,000	1,000	1,000	1,000	-
	7). Office space	41	1	1	1	Year	5,000	15,000	-	-	-	15,000
	8). Computer and pehiperals	43	1	0	0	Unit	2,500	2,500	2,500	-	-	-
	9). Fuels and utilities	52	2	2	2	Year	500	3,000	500	500	500	1,500
	10). Office supplies	53	2	2	2	Year	500	3,000	500	500	500	1,500
	11). Other consumable items	54	1	1	1	Year	500	1,500	500	500	500	-
	12). Sundry	61	1	1	1	Year	500	1,500	500	500	500	-
	13). Printing & editing	64	0	0	4		1,500	6,000	-	-	6,000	
	14) Audit cost	62	1	1	1	Year	1,500	4,500	1,500	1,500	1,500	-
	15). Steering commitee meeting (transport and organization)	65	1	1	1	Event	750	2,250	750	750	750	-
	16). Consultative meeting (transport and organization)	66	2	2	2	Event	500	3,000	1,000	1,000	1,000	-
	17). Other miscellaneous	67	1	1	1	Year	500	1,500	500	500	500	-
<b>Sub total Non-activity Based Expenses</b>							<b>155.140</b>	<b>45.380</b>	<b>42.880</b>	<b>48.880</b>	<b>18.000</b>	
<b>Total Budget</b>							<b>378.350</b>	<b>112.880</b>	<b>167.530</b>	<b>65.940</b>	<b>23.000</b>	

### 3.4.2 Consolidated budget by component

Category	Description	Total	Year 1	Year 2	Year 3
<b>10</b>	<b>Personnel</b>				
11	National Experts				
	11.1 Project Coordinator	72.000	24.000	24.000	24.000
	11.2 Experts	63.000	29.500	33.500	-
	11.3 Project Secretary	18.000	6.000	6.000	6.000
12	Other Personnel				
	12.1 Assistants	10.800	3.600	3.600	3.600
	12.2 Technicians	15.400	7.700	7.700	-
	12.3 Laboratorist	2.100	-	2.100	-
	12.4 Other labors	10.950	1.800	7.950	1.200
<b>19</b>	<b>Component Total</b>	<b>192.250</b>	<b>72.600</b>	<b>84.850</b>	<b>34.800</b>
<b>20</b>	<b>Sub-contracts</b>				
21	Sub contract 1	-	-	-	-
22	Sub contract 2	-	-	-	-
<b>29</b>	<b>Component Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>30</b>	<b>Travel</b>				
31	Daily subsistence allowance	43.200	10.880	25.280	7.040
32	Domestic air ticket /return ticket	15.150	5.150	4.750	5.250
33	Local Transport cost	32.000	11.000	17.600	3.400
<b>39</b>	<b>Component Total</b>	<b>90.350</b>	<b>27.030</b>	<b>47.630</b>	<b>15.690</b>
<b>40</b>	<b>Capital Items</b>				
41	Office space	15.000	5.000	5.000	5.000
42	Nursery	10.000	-	10.000	-
43	Capital Equipment				
	43.1 Computer Equipment (Notebook/PC/Printer)	2.500	2.500	-	-
<b>49</b>	<b>Component Total</b>	<b>27.500</b>	<b>7.500</b>	<b>15.000</b>	<b>5.000</b>
<b>50</b>	<b>Consumable Items</b>				
51	Raw Materials	7.500	-	7.500	-
52	Fuel and Utilities	7.000	2.500	3.300	1.200
53	Office Supplies	8.500	2.000	5.000	1.500
54	Other consumable items	9.500	3.500	5.000	1.000
<b>59</b>	<b>Component Total</b>	<b>32.500</b>	<b>8.000</b>	<b>20.800</b>	<b>3.700</b>
<b>60</b>	<b>Miscellaneous</b>				
61	Sundry	1.500	500	500	500
62	Audit Cost	4.500	1.500	1.500	1.500
63	Speaker	5.000	5.000	-	-
64	Printing report and editing	9.000	-	1.500	7.500
65	Steering committee meeting (transport and organization)	2.250	750	750	750
66	Consultative meeting (transport and organization)	3.000	1.000	1.000	1.000
67	Other miscellaneous	10.500	4.000	5.000	1.500
<b>69</b>	<b>Component total</b>	<b>35.750</b>	<b>12.750</b>	<b>10.250</b>	<b>12.750</b>
	<b>Sub total</b>	<b>378.350</b>	<b>127.880</b>	<b>178.530</b>	<b>71.940</b>
<b>70</b>	<b>National management costs</b>	56.753			
<b>80</b>	<b>Project Monitoring and administration</b>				
81	ITTO Monitoring and Review	8000			
82	ITTO ex-post evaluation	7000			
83	ITTO Program support cost (12% )	44.442			
89	Component Total	<b>59.442</b>			
	<b>Sub Total</b>	<b>494.545</b>			
<b>90</b>	Refund of pre-project costs	-			
	<b>Sub total</b>	<b>-</b>			

100	GRAND TOTAL	494.545			
-----	-------------	---------	--	--	--

### 3.4.3 ITTO Budget by component

Category	Description	Total	Year 1	Year 2	Year 3
<b>10</b>	<b>Personnel</b>				
11	National Experts				
	11.1 Project Coordinator	72.000	24.000	24.000	24.000
	11.2 Experts	63.000	29.500	33.500	-
	11.3 Project Secretary	18.000	6.000	6.000	6.000
12	Other Personnel				
	12.1 Assistants	10.800	3.600	3.600	3.600
	12.2 Technicians	15.400	7.700	7.700	-
	12.3 Laboratorist	2.100	-	2.100	-
	12.4 Other labors	10.950	1.800	7.950	1.200
<b>19</b>	<b>Component Total</b>	<b>192.250</b>	<b>72.600</b>	<b>84.850</b>	<b>34.800</b>
<b>20</b>	<b>Sub-contracts</b>				
21	Sub contract 1	-	-	-	-
22	Sub contract 2	-	-	-	-
<b>29</b>	<b>Component Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>30</b>	<b>Travel</b>				
31	Daily subsistence allowance	43.200	10.880	25.280	7.040
32	Domestic air ticket /return ticket	15.150	5.150	4.750	5.250
33	Local Transport cost	32.000	11.000	17.600	3.400
<b>39</b>	<b>Component Total</b>	<b>90.350</b>	<b>27.030</b>	<b>47.630</b>	<b>15.690</b>
<b>40</b>	<b>Capital Items</b>				
41	Office space	-	-	-	-
42	Nursery	5.000	-	5.000	-
43	Capital Equipment				
	43.1 Computer Equipment (Notebook/PC/Printer)	2.500	2.500	-	-
<b>49</b>	<b>Component Total</b>	<b>7.500</b>	<b>2.500</b>	<b>5.000</b>	<b>-</b>
<b>50</b>	<b>Consumable Items</b>				
51	Raw Materials	7.500	-	7.500	-
52	Fuel and Utilities	5.500	2.000	2.800	700
53	Office Supplies	7.000	1.500	4.500	1.000
54	Other consumable items	9.500	3.500	5.000	1.000
<b>59</b>	<b>Component Total</b>	<b>29.500</b>	<b>7.000</b>	<b>19.800</b>	<b>2.700</b>
<b>60</b>	<b>Miscellaneous</b>				
61	Sundry	1.500	500	500	500
62	Audit Cost	4.500	1.500	1.500	1.500
63	Speaker	5.000	5.000	-	-
64	Printing report and editing	9.000	-	1.500	7.500
65	Steering committee meeting (transport and organization)	2.250	750	750	750
66	Consultative meeting (transport and organization)	3.000	1.000	1.000	1.000
67	Other miscellaneous	10.500	4.000	5.000	1.500
<b>69</b>	<b>Component total</b>	<b>35.750</b>	<b>12.750</b>	<b>10.250</b>	<b>12.750</b>

		<b>Sub total</b>	<b>355.350</b>	<b>121.880</b>	<b>167.530</b>	<b>65.940</b>
<b>70</b>	<b>National management costs</b>		0			
<b>80</b>	<b>Project Monitoring and administration</b>					
81	ITTO Monitoring and Review		8000			
82	ITTO ex-post evaluation		7000			
83	ITTO Program support cost (12% )		44.442			
89	Component Total		<b>59.442</b>			
	<b>Sub Total</b>		<b>414.792</b>			
<b>90</b>	Refund of pre-project costs		-			
	<b>Sub total</b>		-			
<b>100</b>	<b>GRAND TOTAL</b>		<b>414.792</b>			

### 3.4.4 Executing agency budget by component

Category	Description	Total	Year 1	Year 2	Year 3	
<b>40</b>	<b>Capital Items</b>					
41	Office space	15.000	5.000	5.000	5.000	
42	Nursery	5.000	-	5.000	-	
<b>49</b>	<b>Component Total</b>		<b>20.000</b>	<b>5.000</b>	<b>10.000</b>	<b>5.000</b>
<b>50</b>	<b>Consumable Items</b>					
52	Fuel and Utilities	1.500	500	500	500	
53	Office Supplies	1.500	500	500	500	
<b>59</b>	<b>Component Total</b>		<b>3.000</b>	<b>1.000</b>	<b>1.000</b>	<b>1.000</b>
	<b>Sub total</b>		<b>23.000</b>	<b>6.000</b>	<b>11.000</b>	<b>6.000</b>
<b>70</b>	<b>National management costs</b>		<b>56.753</b>			
<b>80</b>	<b>Project Monitoring and administration</b>					
81	ITTO Monitoring and Review		0			
82	ITTO ex-post evaluation		0			
83	ITTO Program support cost (12% )		-			
89	Component Total		-			
	<b>Sub Total</b>		<b>79.753</b>			
<b>90</b>	Refund of pre-project costs		-			
	<b>Sub total</b>		-			
<b>100</b>	<b>GRAND TOTAL</b>		<b>79.753</b>			

### 3.5 Assumption, risks, and sustainability

#### 3.5.1 Assumption and risks

The purpose of this project is to enhance the conservation of *Dalbergia* species in Indonesia. These species are important and becoming a great interest for local community, local government and Ministry of Forestry. Since the project objectives is the interest of all stakeholders, it is likely that this project could be implemented smoothly and will receive support from all stakeholders. However, several activities could only be carried out if the necessary condition available, such as high accessibility to the target areas, the availability of planting materials (seeds and wildlings) and consistent support to establish *ex-situ* and *in-situ* conservation areas and seed sources. The availability of planting materials could also affect the implementation of some activities. The climate

change, habitat disturbance and stand structure affect seasonal change on reproductive phenology of some species. This may cause poor seed production. However, these could be mitigated by collecting vegetative cuttings (clones) and expanding the collection sites (areas). For some species, the collection of genetic materials could be expanded from other islands.

To anticipate the above potential risk, several necessary mitigation approaches will be taken:

- Establish close consultation with relevant institutions, especially DG PHKA and provincial forest services, prior to the implementation of project activities including appointing committed personnel.
- Explore as many as possible accessible areas as potential areas for conservation sites, stands, and seed sources.
- Early detection and determination of those areas for seed sources.
- Search as many as possible the potential seeds and planting materials for collection for enrichment planting and stand improvement.
- Early and wide dissemination of project mission and objective to wider stakeholders and communities in order to receive support.

### 3.5.2 Sustainability

Center for Forest Biotechnology and Tree Improvement Research (CFBTI) is an Implementing Agency and the proponent of this proposed project under the supervision of FORDA. This institution has been arranged to maintain and continue all project initiated activities, to safeguard the use of the guidelines and methods and to widely disseminate the updated data and information to the primary users.

- FORDA and DG PHKA ensure the provision of resources (financial support and human resource) for the continuation and maintenance of project initiated activities, especially on *in-situ* and *ex-situ* conservation sites.
- **CFBTI (under FORDA) will maintain and continue to grow genetic materials of selected rosewood species (in enrichment planting, and progeny trial) in the project initiated activities on both in situ and ex-situ conservation of rosewood species. CFBTI, as part of its main duty, will explore the potential –selected plants for future tree improvement program. FORDA and its Regional Research Centers have been arranged to support plant genetic conservation, including rosewood, by placing more genetic materials to be pooled in its research forests.**
- Regional office of DG PHKA will also involve in maintaining project initiated activities, as part of its mandate to achieve the objective of biodiversity conservation.
- Project determines the committed and interest personnel on the issue of species conservation.
- Project ensures the involvement of committed and interest personnel since early stage of the project implementation.
- Project determines the most accessible and secure sites for plot establishment to keep cost effective after project completion.
- Project provides and disseminates clear and attractive description of each species for conservation, utilization and economic potential and other project results and findings.

## PART 4. IMPLEMENTATION ARRANGEMENT

### 4.1 Organization structure and stakeholder involvement mechanism

#### 4.1.1 Executing/Implementing agency and partners

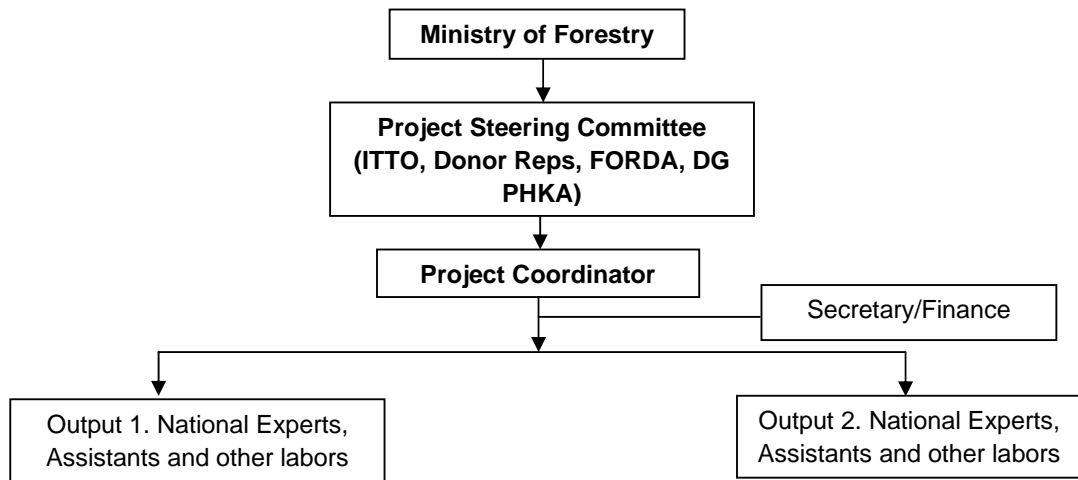
The Executing/Implementing Agency of this project is Center for Forest Biotechnology and Tree Improvement Research (CFBTI). This Center is under Directorate General of Forestry Research and Development Agency (DG FORDA), Ministry of Forestry. The Executing/Implementing Agency will be responsible for overall and operational activities (day to day management) of the project. DG FORDA will appoint the project coordinator and form Project Steering Committee. CFBTI will contract a project management team and appoint National Experts. Both FORDA and CFBTI will ensure that project operational activities comply with both national and ITTO rules and regulation and arrange the provision of office space and allocation of *in-kind* contribution to the project.

The CFBTI, which possess main duties to conduct research and development on forest genetic conservation and tree improvement program, has long experience and expertise in the execution of large size projects on forest genetic conservation and tree improvement, facilitated with complete biotechnology laboratories and research stations. Collaborating institutions of this project include Center for Conservation and Rehabilitation R&D(CCR) and Indonesian Institute of Science (LIPI) for assessing distribution, Regional Office of Forest Protection and Nature Conservation, Provincial and District Forest Services, State-Owned Company (Perum Perhutani) for establishing in-situ and ex-situ conservation and Faculty of Forestry for genetic study.

#### Project management team

Day to day management of the project operational activities will be carried out by a Project Management Team which consists of a Project Coordinator, Project Secretary (finance) and assistants and other qualified personnel required by the project. The Project Coordinator will be officially assigned by DG FORDA and the name is listed in the Appendix. Project Secretary (and finance), assistants (if any) and National Expert will be officially contracted by Project Coordinator from the involved personnel (project key personnel) as listed in ANNEX with the approval from ITTO. The National Experts appear in ANNEX 2 may be replaced with other staffs. Detail profiles of Executing Agency (FORDA) and CV's of Key Personnel are presented in ANNEX 1 and 2.

**Figure 4. Organization structure of project**



#### **4.1.2 Project steering committee**

The PSC will be officially formed by FORDA. The role of PSC is to guide, evaluate and to provide direction of the project implementation. The PSC also conducts reviews of the project budget and associated expenses, endorses the YPO and changes needed. The PSC will consist of a chair, members and observer from the Executing Agency, Forestry Research and Development Agency (FORDA), Directorate of Biodiversity Conservation, Center for International Cooperation (KLN) and Provincial Forest Services and other relevant institutions and representative of donor countries.

#### **4.1.3 Stakeholder involvement mechanism**

Prior to the operational activities of the project, a preparatory meeting will be organized. All relevant stakeholders and potential partners will be invited. Consultative and technical meetings will be regularly organized in order to ensure the smooth implementation of activities and involvement of necessary partners. The recommendation and views raised from the meetings will be accommodated to improve the project performance and the achievement of project objectives. A necessary additional mechanism for the involvement will also be formed during the consultation and preparatory meeting of the project.

#### **4.2 Monitoring, review and evaluation**

Several reports will be prepared in accordance with the ITTO reporting requirement as follows:

- **Inception report**

To be submitted after signing the agreement, confirmation of availability of office space, registered banking account, necessary changes if any, the first YPO and other necessary documents.

- **Yearly of operation**

To be submitted a year prior to the commencing with the operation for endorsement by PSC as appropriate, and by ITTO. The first YPO will be submitted together with the inception report. The YPO contains budget plan in accordance with work plan and necessary changes.

- **Project progress reports**

To be submitted bi-annually or upon requested by ITTO. This report contains information on the executed activities during the period covered by the report, the achieved outputs as appropriate, and inputs applied during that period.

- **Technical reports**

To be submitted in accordance with the schedule and at two months after project completion. The technical report contains technical and scientific data, analyses of data and the project results. A technical report may be derived from a single activity or a set of relevant activities, including proceedings.

- **Financial report**

To be submitted within three months after the end of the current financial report. Financial report will be prepared by a registered independent public accountant. Before auditing, the project will nominate and request for approval and endorsement from ITTO.

- **Completion report**

To be submitted within three months after project completion. This report contains summary of activities, inputs and expenditures, achieved outputs and objectives during the entire implementation phase. The report also highlights the most critical differences between planned and realized project elements based on the previously approved project document as primary references. This report also contains lessons learned from the implementation of the projects.

### **Monitoring and review**

Review, monitoring and evaluation of the project will also be conducted using ITTO procedures. PSC meeting could be used to review and evaluate the project implementation. Independent monitoring could also be executed by ITTO and other stakeholders.

## **4.3 Dissemination and mainstreaming of project learning**

### **4.3.1 Dissemination of project results**

Project learning will be disseminated using various media and channels, during the implementation phase and after project completion.

- **Brochures and technical documents.** Contains overall project objectives, activities, and the importance of each species description with easy reading materials will be disseminated through various events and moments.
- **Technical reports.** The technical report which contains scientific data, information and any other important information will be disseminated to relevant institutions, such as research institutions, universities, NGOs, and Directorate of Biodiversity Conservation.
- **National workshops and internal meetings.** Events in national workshop and internal meeting will be used to disseminate various project findings and results as in addition to other methods of dissemination.
- **Completion report.** This complete information of project implementation, results and findings will be submitted to ITTO for wider uses and dissemination, including to donor countries.

### **4.3.2 Mainstreaming of project results**

The primary users of the findings and results of this project are local community, local government, DG Forest Protection and Nature Conservation, and scientific communities. The updated biological and ecological data and information resulted from this project, the current status of the existing *in-situ* and *ex-situ* conservation will be summarized and further synthesized. The summary and the synthesis will be forwarded to DG PHKA which could be used for review on management plan and policy on the conservation of biological diversity in Indonesia. This review could be used for CBD and IUCN. Through wide application and uses of the project findings and results, the expected impacts of this project will also be realized in conservation and breeding program of *Dalbergia* spp. in Indonesia.



## ANNEX 1. Profile of the Executing Agency/ Implementing Agency

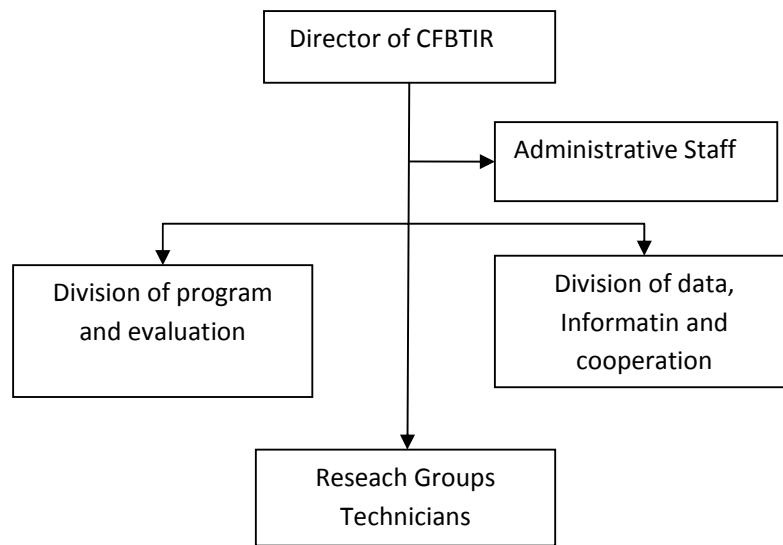
The Centre's main focuses of research are developing improved genetic material through breeding, conduct genetic conservation and genetic study, and apply biotechnology in forest resources conservation and utilization. The Centre is experienced in conducting genetic conservation activities for several indigenous tree species in Indonesia, including establishment of ex-situ and in-situ conservation plots.

This institution (CFBTIR) is supported by 147 staff with 68 administrative staff, 99 reseach staff, technicians reseach staff and technicians consist of 8 phds, 32 master, 35 BSC and after degree.

This CFBTIR is managing anual budget of Rp 16.000.000.000 (sixteen billions rupiah) or approximately US \$ 1,6 Millions. CFBTIR is equipped with modern lab and other facilities for Biotechnology reseach and applicable reseach in the field .

### International Cooperation

Other than with domestic cooperation, CFBTIR has a long experience working with other institutions such as JICA (1992-2005), ACIAR ( 2011-2012) and other international organization.



## ANNEX 2. Task and Responsibilities of key personnel

No.	Name/Designation	Education/Experties	Roles in project Implementation
1.	M. Charomaini/Center fot Forest BTIR-Yogya	BSc. In Forestry, MSU in Forestry	Project Coordinator, Co-Formulator
1.	Tajudin Edy Komar/Center for Conservation and Rehabilitation	Master- University of Victoria, BC,Canada/Forest Biology, Biodiversity and Silviculture	Supervisor in Project Formulation/National Expert of Activity 1.3 (and Activity 1.1)
2.	AYPBC Widiyatmoko/Center for FBTIR-Yogya	PhD - Kyusu University,Japan/ Biotechnology and Forest Genetics	National Expert and team leader for Activity 1.2
4.	Kade Sidiyasa/Forest Research Institute of Samboja, Balikpapan	PhD, Wageningen/ Plant Taxonomist	National Expert/Asisstant for the implementation and execution of Activity 1.1
5.	Atok Subiakto/CCR-Bogor	MSc. Forestry	National Expert and team leader for Activity 2.1
6.	Yelnititis/CFBTIR-Yogya	Biology	National Expert for Activity 2.2.

### **ANNEX 3. TERM OF REFERENCES OF PERSONNEL AND CONSULTANTS FUNDED BY ITTO**

#### **1. Term of references for Project Coordinator**

Project Coordinator (PC) will run the project and coordinate the operational activities.

**Responsibilities:** PC will be responsible for the day to day management of the project. PC will be responsible for coordinating and supervising all activities and ensuring that the overall objectives are achieved. PC will work closely with all parties and personnel involved in the project, integrating all activities of the project, managing and responsible for the fund applied to the project and for the preparation of all reports.

**Qualification, duration of contract and payment:**

- Postgraduate degree in forestry science (expertise in forest ecology, conservation, or silviculture is preferable)
- Possess good English, both oral and written
- Possess good understanding and broad knowledge on biodiversity and conservation, and current situation of the selected species.
- PC will be hired for duration of contract of 36 months
- The rate of payment is US\$ 2,000 per month

#### **2. Term of references for Project secretary/finance**

Secretary will be hired to assist the PC, particularly in administrative issues and dissemination of project results.

**Responsibilities:** Secretary will be responsible in handling administrative issue, financial issue, reporting, publication, and dissemination of project results. He or she will work closely to all parties and personnel involved in the project, particularly with PC and experts. Secretary will report to PC.

**Qualification, duration of contract and payment:**

- Graduate degree from any discipline with minimum 2 years of working experience is preferable
- Possess good English, both oral and written
- Familiar and have good knowledge on Microsoft Word
- Having good understanding and broad knowledge of conservation, environment, and rural community issues is preferable
- Having experience in organizing training/workshop and dissemination practices is preferable
- Willing to work full time for the project is preferable
- Duration of contract is 36 months with annual evaluation of his/her working performance. The extension of contract will be determined based on this annual evaluation.
- The rate of payment is US\$ 500 per month

#### **3. Term of references for National Expert (s)/Consultant (s)**

National expert/consultant will be assigned in activities 1.1; 1.2; 1.3; 1.4; 2.1;2; 2,2; 2.3; 2.4. The expert (s) must hold expertise and knowledge in related field.

**Responsibilities:** the expert will responsible to search and collect all required data and information to develop diagnostic reports which will help the project to properly design the best approaches in achieving all outputs and outcomes in related activities. Expert will prepare one or

more technical report related with the assigned activity. These reports and other database must be presented in the meetings held by the projects.

**Qualification, duration of contract and payment:**

- Postgraduate degree and has expertise in related field (conservation, ecology, silviculture, tree physiology, biotechnology/tree improvement, etc.)
- Possess good English, oral and written.
- Broad knowledge on current situation of the selected species
- The project expert (s) or Consultant (s) will be hired for duration of contract for each activity.
- The rate of payment starts from US\$ 1,500 per month

#### Annex 4. Recommendation of the 47th Expert Panel and the Respective modifications

No.	Specific Recommendation	Modifications made	Locus section/page
1	Provide a map clearly showing the location of the project sites and the distribution of Indonesian Rosewood	Has been improved	Map, p. vi
2.	Further elaborate the expected outcomes at project completion in connection with IUCN Red List vulnerability criteria as well as CITES listing of timber species which has been assisted by ITTO;	Has been elaborated in Section 1.4	Section 1.4, p.5
3.	Provide more information on the economic aspects of Indonesian Rosewood	Has been elaborated in Section 1.3.2	Section 1.3.2 (b), p. 4
4.	Further elaborate the expected participation of local communities in project implementation in the stakeholder analysis	Has been elaborated	Table1. p. 7
5.	Refine the key problem's description in the problem tree by focusing on rapid decreases in population and genetic diversity. Improve the identification of underlying causes and sub-causes based on the refined key problem. Based on the refined problem tree, the objective tree should be amended accordingly	Description of key problem has been elaborated	Section 2.1.3, p.7-8 And problem/objective tree p.10-11
6.	Improve the indicators for the development objective in the logical framework matrix in a SMART (Specific, Measurable, Appropriate, Realistic and Time-bound) way and make a consistent presentation on the concerned species' number;	Some indications have been elaborated	Section 2.1.4 Logical Framework matrix, p. 12
7.	Further elaborate the sustainability of the project by specifying whether institutional arrangements have been made to ensure the further development of the activities initiated by the project;	Institutional arrangements has been improved	Section 3.5.2, p. 23
8.	Nominate a single executing agency undertaking the overall responsibility of project management and implementation while ensuring the engagement of collaborating agencies to facilitate specific researches specified in the project document	Single EA has been nominated	Cover page/ Section 4.1.1, p.24
9.	Improve the organizational chart by placing the Ministry of Forestry on the top of PSC in a vertical hierarchical way	Chart has been improved	Section 4.1.1, p.24