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INFORMATION GAPS TOWARD SUSTAINABLE MANAGEMENT AND CONSERVATION OF RAMIN

Tajudin Edy Komar Ani Mardiastuti



Ministry of Forestry Forestry Research and Development Agency in Cooperation with ITTO – CITES Project Bogor 2009





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IN COOPERATION WITH

ITTO – CITES PROJECT

Bogor - Indonesia 2009



Workshop Report "Information Gaps Toward Sustainable Management and Conservation of Ramin"

INDONESIA'S WORK PROGRAMME FOR 2008 ITTO CITES PROJECT "ENSURING INTERNATIONAL TRADE IN CITES – LISTED TIMBER SPECIES IS CONSISTENT WITH THEIR SUSTAINABLE MANAGEMENT AND CONSERVATION"

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PREFACE

Conservation has become the main issue lately since the excessive logging has been taking place for several decades. This conservation issue includes some tropical species threatened by international trade such as ramin (*Gonystylus* spp). In order to ensure the conservation of this species, Government of Indonesia has imposed logging moratorium since 2001 and in the same year ramin was also listed into CITES Appendix, by which its international trade should ensure the non detrimental effects to its population and habitat.

To ensure the effectiveness of logging moratorium and the inclusion into CITES Appendix, barriers and information gaps for SFM and conservation of ramin are needed to be continously identified and removed. This national workshop *"Identification of information gaps toward the SFM and conservation on ramin and the thematic program to be included into 2009 and 2010 workprogram of ITTO-CITES Project"* held in Bogor, 21-22 January 2009, is intended to address the above objectives. This National workshop was carried out with financial assistance from ITTO-CITES Project and the Government of Indonesia through Forestry Research and Development Agency (FORDA), Ministry of Forestry. This document is complementary to the Proceeding of the National Workshop which has been published in Indonesia.

ACKNOWLEDGEMENT

The organizer of workshop gratefully thanks to DG of FORDA, Indonesia CITES Management Authority and Center for International Cooperation (KLN) for support to the workshop organization. Special thanks are due to Prof. Ani Mardiastuti, National Expert for the Workshop and Dr. Hiras Sidabutar, member of scientific committee for assistance in the workshop arrangement and comments to this report. Valuable contribution from the chairs of the session, rapporteurs and other committee members are also greatly appreciated. Finally, a great appreciation is also addressed to all participants who have given their time and efforts to the achievement of the workshop objectives and goals.

The author of this report would like to thank to Dr. Hiras Sidabutar, member of scientific committee for input and comments to this report.

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OPENING REMARKS

A. Summary of Opening Remarks by DG FORDA, Dr. Tachrir Fathoni

DG FORDA expressed his gratitude to ITTO-CITES Project for giving FORDA opportunity to take part in the implementation of several activities to ensure the sustainable management and conservation of ramin, the only timber tree species in Asia to be listed into CITES Appendix. DG FORDA also informed the workshop several problems and barriers related to the managament of ramin, such as:

- 1. Management of ramin and other threatened species has not yet been handled appropriately in accordance with the principles of sustainability. This is especially related to the practice of logging and the illegal logging and trade.
- 2. The frequent fire occuring in peat swamp forest in both Sumatra and Kalimantan.
- 3. Slow growth and poor natural regeneration of species naturally found in peat swamp forest including ramin.
- 4. Lack or limited successful ramin plantation due to insufficient planting materials and plantation technology.

Some barriers in the SFM on ramin include the limited and unreliable biological and ecological data, lack of long term ecological studies on population dynamics, undeveloped technology for seedling propagation and plantation and the poor awareness on the importance of peat swamp forest ecosystem function.

B. Summary of the Opening Remark by Regional Coordinator of Asia, ITTO-CITES Project, Mr. Thang Hooi Chiew

The overall objective of the project is to ensure that continuing international trade in CITES-listed timber species is consistent with their sustainable management and conservation. The specific objective is to assist national authorities to meet the scientific, administrative and legal requirements for managing and regulating trade in *Pericopsis elata* (Afrormosia) found in Central Africa, *Swietenia macrophylla* (Bigleaf mahogany) found in Latin America, and *Gonystylus* species (ramin) found in Southeast Asia and, in particular, to develop guidance to ensure that their utilization is not detrimental to the survival of CITES-listed timber species.

In this regard, the activities that could be considered for support and funding by ITTO in Asia under the project would include the following:

- 1. More in-depth information on the location, distribution, stocking and the management and protection status of ramin, including forest inventory designs and the use of global positioning system (GPS) and geographical information system (GIS) in tree location mapping;
- 2. Growth and yield studies of ramin, stand dynamic and their responses to silvicultural interventions, including plantation performance;
- 3. Non-detriment findings, including forest management plans that document the data and criteria used in setting export quotas and levels of sustainable use, both for domestic and export;
- 4. Cost-effective monitoring and tracking systems, including the use of deoxyribonucleic acid (DNA) identification techniques, for all ramin products, other than seed, seedlings and genetic material;
- Holding of national and or Regional Working Groups to create greater awareness among all stakeholders on the importance of sustainable use of ramin and the possible consequences of loss of the species, including assisting in convening meetings of the Tri-National Task Force on Trade in Ramin;
- 6. Conducting training workshops for relevant staff and capacity-building in key CITES compliance areas, including Customs personnel;
- 7. Preparing 'outreach materials' including technical guides and materials constituting a "tool box" for range states and trading partners; and
- 8. Developing an integrated website to disseminate project outputs and findings.

The direct beneficiaries of the project are the public authorities and private sector in the main range states where the CITES-listed timber species occur, namely, Cameroon, Congo, Democratic Republic of Congo, Bolivia, Brazil, Peru, Indonesia, and Malaysia, where the expected benefits are:

- 1. Improved management and regulations of trade of the CITES-listed species;
- 2. Improved management and conservation of the CITES-listed species;
- 3. Increased regional cooperation in research, silviculture and compliance; and
- 4. Enhanced coherent policy framework through integration of knowledge on sustainable management and species conservation.

For other countries that are parties to CITES, especially countries where these CITES-listed species occur and/or trade in these species, they will benefit from improved capacity to manage and regulate trade in CITESlisted species, and an increased in awareness of and a greater capacity for compliance with CITES, as well as participation in workshops and seminars.

I. INTRODUCTION

A. Background

Continued and excessive exploitation of ramin timber has caused significant decrease in population and severe degradation of its habitats. To prevent further lost of the population and degradation of the habitats, significant efforts should be made through the promotion of conservation and restoration of habitats and ecosystem. The existing ITTO-CITES project *"Ensuring international trade in CITES-listed timber species is consistent with their sustainable management and conservation"* is aimed to ensure the achievement of sustainable management and conservation of CITES-listed timber resource through the improvement of planning and management activities.

The improvement of planning and management activities could only be made based on scientific assessment, administrative, other legal provision including the involvement of relevant stakeholders, which vary between range states. This workshop is, therefore, aimed to address the above issues through the identification of information gaps and management options to achieve sustainable management and conservation of ramin (*G. bancanus*).

B. Objectives

- To identify information gaps on resources base, production and trade of ramin to contribute to the achievement of the inclusion of ramin species into CITES Appendix;
- 2. To identify administrative and legal requirement and other enabling condition to achieve sustainable management of ramin;
- 3. To identify thematic programs for ramin to be included in the 2009 and 2010 Workprogram of ITTO-CITES project;
- 4. To prepare long term strategy and recommended actions for SFM of ramin species;
- 5. To ensure all relevant stakeholders involve in the formulation of the long term strategy and recommended action for sustainable management of ramin.

C. Outputs

- 1. Identified information gaps on resource base, production and trade of *G. bancanus*;
- 2. Administrative, and legal provision and other enabling conditions for achieving sustainable management of ramin;
- 3. Long term strategy and recommended immediate actions for conservation and sustainable management of ramin;
- 4. Thematic programs to be included in the 2009 and 2010 Workprogram of ITTO-CITES project.



Figure 1. Habitat distribution of ramin in Sumatra (Riau, Jambi and South Sumatra) and Kalimantan (West and Central Kalimantan). The habitat gradually decreases from time to time due to various uses (Maps modified).

II. IDENTIFIED INFORMATION GAPS ON BIOLOGY, ECOLOGY AND SILVICULTURE AND ITS LONG TERM STRATEGY

A. Paper Presentation

1. Review on ecology and site requirement: Plantation Trials of Ramin by Prof. Dr. Abdurrani Muin, University of Tanjungpura, Pontianak, West Kalimantan

Present decreasing of ramin (Gonystylus bancanus (Mig.) Kurz) population in nature should be overcome by planting ramin in its natural habitats in peat swamp forest, including by enrichment planting. To carry out the plantation, it is critical to obtain information on site ecology and characteristics required for better growing. One of the environment factors is light intensity that supports plant growth. Ramin is semi-tolerant type species which requires certain level of light intensity in its developmental stage. To test site requirement for ramin growth, plantation trials need to be carried out. One of the trials was carried out in a logged over forest with several treatments including infestation with mycorrizha. The trials using mycorrhizal inoculated seedlings were planted under the canopy with several levels of shade intensity: closed, medium, open area. Trial results indicated that ramin seedlings that inoculated with mycorrhizas shown a faster growth with 100% survival. The trial also showed that ramin grew better in open area. Seedlings inoculated with mycorrhiza also showed faster growth than non-inoculated seedlings. The overall results of this trial suggested that for better growth, ramin seedlings require the presence of mycorrhiza and sufficient light intensity.

2. Review on silvicultural and harvest aspects of ramin by Dr. Istomo, Senior Lecturer, Faculty of Forestry, IPB, Bogor

In the beginning, the exploitation of peat swamp forest in Indonesia was due to the presence of ramin (*G bancanus*), which later become popular and high economic value species. This species grows naturally only in peat swamp forest ecosystem in Sumatra and Kalimantan. Ramin was exploited applying Indonesia Selective Cutting (TPI) silvicultural system with diameter limit since 1970s. In

1972, the system changed to Indonesian Selective Cutting and Planting system (Tebang Pilih Tanam Indonesia-TPTI). Later, 1989 and 1996, the system was improved further in terms of diameter limit and cutting cycle. Using the assumption that diameter increment of 0.5 cm per year, diameter limit for cutting changed to a minimum of 40 cm at dbh with cutting cycle of 40 years. Using this diameter limit and cutting cycle, it is expected that pre-selected residual mother trees (core trees) with diameter of 20-39 cm will have become more than 40 cm and therefore ready to be harvested in the next cutting cycle. However, other important aspects that influence the sustainable management of ramin, in addition to the silvicultural system and harvesting method, is the implementation of the rules and regulation and the practice of the system. Weak of government supervision and handling of illegal logging have contributed to over-exploitation of ramin and damage of the habitats, which will result in unsustainable forest management.

3. Potency and distribution of ramin (*Gonystylus* spp) based on TSP/PSP data by Dr. Hermawan Indrabudi, Director Forest Inventory and Mapping, MoF, Jakarta

Natural Forest Inventory (NFI) has been conducted between 1989-1996 with the assistance of World Bank and FAO. The inventory was carried out by observing the existing temporary and permanent sample plots established in every grid with the distance between grid of 20 x 20 km throughout Indonesia. The number of TSP/PSP observed 2,735 clusters. The primary results of the inventory were the baseline data of forest resources in Indonesia. The inventory results were made based on the analysis of digital landsat photography, geographical information system and field data system analysis. Following the termination of the NFI in 1996, MoF continues collecting data from some of the TSP/PSPs. Potency of ramin not only G. bancanus but also G. velutinus and G. macrophylla has been recorded, especially based on the observation of the PSPs (1996-2004) in Riau, Jambi, West Sumatra, South Sumatra and Lampung (Sumatra) and all Province of Kalimantan. However, from the inventory and data collection, it is still difficult to obtain more accurate estimate of ramin potency. This is primarily due to the difficulty in obtaining the actual and current area of ramin habitats as a result of over exploitation, conversion, encroachment and forest fire.

4. Conservation strategy, legal and administrative requirement by Prof. Herujono Hadisuparto, University of Tanjungpura, Pontianak, West Kalimantan

It is an urgent need to formulate a conservation strategy for ramin forest in Indonesia, since peat swamp forest as ramin habitat is currently under serious threat due to various disturbance. Ramin forest has been degraded by both legal and illegal logging since late sixties up to the presence. The degradation has been worsened by forest conversion to other uses primarily for oil-palm estates and other commodities and settlement. The illegal logging is taking place not only in production forest but also in the protection and conservation forests. Restoration activity and management of the existing loggedover peat swamp forests with natural regeneration of ramin may have become alternative solutions to the recovery of peat swamp forest and its ecosystem including ramin population.

B. Information Gaps and Strategy (Results of Working Group A)

Working Group A discussed on biology, ecology and silvicultural aspects of ramin. Eight information gaps related to the successful management and conservation of ramin were identified and intensively discussed as below. Strategies and potential parties involved in the solution to fill the information gaps toward the SFM and conservation of ramin are presented in Table 1.

1. Data base

Data and information on ramin is still scattered in various organizations and research institutions. These unaccessible data and information have made various duplication and inefficiency to be used in decision making process. The data and information need to be collected, collated and managed in a good database system in order to be optimally utilized and easily accessed by users. The Management of information system needs to be developed, regularly updated and utilized.

2. Silviculture system and sound harvest method

Characteristic of peat swamp forest is unique, different from dryland areas and therefore silviculture system used in peat swamp forest need to be modified from that of dryland tropical forest. Harvest method is also uniquely different from that in dryland forest areas, especially for log transportation, it requires many poles and saplings to make a long wooden sledge for log transportation. In order to reduce impact from logging and enable the recovery of peat swamp forest vegetation, a sound method of harvest needs to be consistently developed.

In addition, knowledge on population dynamics of peat swamp forest population including ramin is still limited to formulate more suitable silvicultural system and conservation of species in peat swamp forest. Therefore, long term ecological study sites are necessary to be established.



Figure 2. Tract for log transportation in PSF.



Figure 3. Illegal logging in Peat Swamp Forest in Central Kalimantan (2005). Illegal logging is one of the serious threats to the population of ramin in Peat Swamp Forest.

3. Genetic diversity

Research on genetic variation of ramin is a critical important for conservation purposes, especially for conservation of plant genetic resources (germplasm), which is currently under serious threat by various human intervention. Some distinct populations may be found as a result of long evolutionary process of ramin population in both Sumatra and Kalimantan. Future breeding program of ramin will also require information on genetic diversity of ramin.



Figure 4. Peat Swamp Forest fire in Sebangau National Park (2005). Frequent and repeated forest fire is also the other serious threat to existing populations of ramin both in Sumatra and Kalimantan. Slash and burn is still a common way of land preparation before plantation. The fire is frequently becoming out of control during the dry season.



Figure 5. Major characteristic of PSF is the poor accessibility causing the high cost of transportation from and into the base camp. Walking tract made of poles is normally built in the area if regular monitoring will be carried out. Post harvest monitoring is nearly impractical to be carried out in PSF.

4. Plantation trials

Scattered plantation trials have been conducted. However, scale up and replicated trials have not been established for ramin. In the future, this scaled up and replicated plantation trials are required as an expansion from the previous trials to assure the technology. The expansion is not only the size of the trials but also the diversity of the sites within the natural habitats of ramin. This scale up and replicated plantation is very useful for obtaining the most appropriate plantation technology and also for plant genetic resource conservation and rehabilitation.

5. Seed sources, seeds and seedling availability

Currently, the most critical problem for ramin regeneration is the unavailability of seeds. Some references mentioned that in earlier stages, where ramin population was densely found, abundant seed production and natural seedlings were found. This was supported by the similar record that in that stage, ramin flowers and fruits annually. The success of both natural



Figure 6. Ramin artificial planting in PSF. A great challenge for ramin plantation trial in PSF comes from the presence of excess water during the wet season and extreme dry during the dry season.

and artificial regeneration will depend highly on the availability of seeds and seedlings and therefore the alternative method for seedling propagation is needed to be explored, in addition to the protection of existing remnant populations as source of seeds and seedlings.



Figure 7. Identification of ramin seed source in Kalimantan (2007). One of critical barriers in the regeneration of ramin is the scarcity of planting material. In order to ensure sufficient seed production, identification and maintenance of seed source are important. Initial seed source identification has been carried out for Sumatra and Kalimantan.

6. Setting harvest quota

One of the requirements for the species listed in CITES Appendix is setting a quota. For ramin, constraint in setting the quota is the standard methodology to achieve balance between conservation



Figure 8. Last ramin tree standing in PSF conversion area in Riau, Sumatra (2007). Since 2001, ramin harvest has been banned temporarily and only PT Diamond Raya Timber in Riau is allowed to harvest this species with the supervision of CITES authorities. Land clearing of convertible PSF in Riau has left ramin trees in standing position. This tree is not allowed to be cut under current logging ban policy causing many commercially valuable stems left deteriorated.

and economic consideration. National quota for ramin in Indonesia is relatively low since only one concession company is allowed to harvest ramin, PT Diamond Raya Timber, in Riau. The methodology which is currently applied needs to being further improved in order to achieve sustainable forest management and conservation as set by CITES overall objective.

7. Capacity building and awareness raising

Peat swamp forest is widely distributed and awareness on the its ecosystem function is still poor. Capacity building and awareness raising are, therefore, still needed to promote rehabilitation, conservation and

CITES implementation, such as for the identification of ramin finished products, such as frames, dowels, blinds and other furniture parts. The training is directed to the custom and port officers in the Seaport and other places regularly used for export of ramin.

8. Conservation

The conservation of ramin is an urgent need, especially to conserve its genetic sources (germplasm) to avoid further degradation and lost due to the various threats, especially by conversion and fire. The existing conservation schemes are reliant on the existing population in conservation areas, such as national parks, protection forests, nature reserves, which is considered insufficient. High Conservation Value Forest (HCVF) is another option to conserve ramin in its natural habitat.



Figure 9. Ramin seedlings

- A. Ramin seedlings grown from seeds in a conventional nursery, Palembang-South Sumatra
- B. Three year old ramin in a small scale trial in dry land of Kemampo, South Sumatra
- C. Newly emerged shoots of ramin. The orthotropic shoot is used as source for vegetative propagation . Sprouting ability of ramin is relative poor. The number of emerging shoot from one stem is normally one.

Table 1. Information gaps, strategy to solve and potential parties to be
involved on the aspects of biology, ecology and silviculture on
ramin.

Information Gaps	Strategy	Parties
1. Data Base	 Up-date ramin resource base data from existing areas especially on growing stock potency and distribution, seed sources and other necessary information 	 DG Forest Production Management (BPK) DG Planology Regional Forest offices University and Research Institutions
	 Develop Management of Information System (MIS) on ramin which possible to be regularly updated 	
 Silviculture system and sound harvest method 	 Conduct evaluation on the concepts, rules, regulation and the practices of current silvicultural system including identification of other most environmentally sound technology for ramin harvest 	 DG Forest Production Management (BPK) Universities, Research institution
3. Genetic diversity	 Assess genetic diversity of ramin across its geographical range of distribution in order to enable the formulation of effective conservation strategy 	 National Research Institutions Universities
4. Plantation trials	 Scale-up field plantation trials to support the development of plantation technology, conservation and restoration of ramin habitat and population. 	 Universities and Research Institutions Regional Forest Offices including provincial and district forest service
5. Seed sources, seed and seedling availability	 Further explore potential seed sources of ramin, protect the existing seed sources and searching alternative source of ramin planting materials to secure continues provision of planting materials. 	- Universities and Research Institutions

6. Setting harvest quota	 Encourage concessionaires to implement SFM and obtain certificate of SFM and harvest permit for ramin. Apply the most suitable method for setting harvest quota. 	 Scientific Authority (WG) Management Authority (MoF) Directorate General of Forest Production Management
7. Capacity building and awareness raising	 Conduct several training to improve capacity for SFM and conservation. Develop manual and guidelines for the implementation of CITES and harvest. 	 Universities and research institution Education and Training Institutions
8. Conservation	 Promote conservation strategy and conservation of ramin plant genetic resources in its natural habitat and distribution. Restore the degraded peat swamp forest ecosystem. 	 DG. Forest Protection and Nature Forest Universities and Research Institutions Provincial and district forest service

III. IDENTIFIED INFORMATION GAPS ON POLICY, TRADE, AND CITES IMPLEMENTATION AND ITS LONG TERM STRATEGY

A. Paper Presentation

1. Review policy on peat swamp forest management: Study case on ramin forest management (*Gonystylus bancanus* Miq.) by Dr. Retno Maryani, Senior Researcher FORDA

Peat swamp forest is a type of forest ecosystem in Indonesia where ramin is naturally found. Conditions of the forests have been reported to be severely degraded at the alarming rate causing ramin, an economically valuable species, is facing serious threat to extinction. Illegal logging and conversion of forest areas into non-forest areas are suspected to worsen this degraded condition. Decentralization of forest management is said to have given contribution to mismanagement of state forests caused by the emergence of various conflicts between different actors. This paper aims to understand on how far the changes of forest condition and forest management could contribute to the achievement of SFM and conservation of ramin by analyzing existing policies. This paper focuses on legal status of the forests and their functions, system of silviculture, organization and institutions involved in the preservation of ramin woods as well as to maintain its production. The paper proposes to put restoration of peat swamp forest as priority action in order to save ramin, followed by various efforts to enhance regeneration of ramin population in its habitat. The effort should involve various interest parties, especially in field level.

2. Review on CITES implementation and trade in ramin by Dr. Tonny Soehartono, Director of Biodiversity Conservation, MoF, Jakarta

Ramin (*Gonystylus* spp.) has been listed into CITES Appendix III in 2001 and up-listed into Appendix II in 2004 and effective 15 January 2005. Since its inclusion, it appeared that the listing of ramin into CITES Appendix has not given significant contribution to improve the global trade of Indonesian ramin as other country did not provide NDF

for the harvest. The listing also did not give significant contribution to stop the practice of illegal logging and its associate trade. A regional forum to reduce illegal trade of ramin has been established in 2005 between Indonesia, Malaysia, and Singapore, called as "Tri National Task Force on Trade on Ramin". This forum is expected to contribute to eliminate illegal trade through several measures, such as (1). Exchange of data and information on trade, (2). The improvement of Harmonized System (HS) code to ease trade data monitoring, and (3). The dissemination of export, import and re-export data and (4). Clarification of the discrepancy of statistical trade data between the three countries. The Singapore meeting of the Tri National Task Force in 2007 has decided that the annual meeting of the Task Force be temporarily suspended until the urgent issues to be discussed have been identified.

3. Trade data statistics and monitoring system on ramin by Mr. Zulfikar Adil, Executive Director, Agency of Forest Industry Revitalization, Jakarta

According to regulation by Ministry of Trade No. 20/M-DAG/PER/5/ 2008 and Decree of Ministry of Trade No. 405/M-DAG/KEP/7/2008, Central Government has given the authority to BRIK (Agency for Revitalization of Forest Industry) to provide endorsement for the export of timber products categorized in certain HS Code. Based on the export data under the HS Code in 2007 the export of woodworking approximately 431,000 cu meters with the value of US \$ 1.25 billion. The export of panel in 2008 was estimated 2.6 million m³ with the value of US \$ 1.2 billion and woodworking 1.6 million m³ with the value US \$ 1.1 billion. The above figures were not specific to ramin. Ramin export in 2005 was 2.698 m³ and decrease yearly and for 2007 only 1.480m³ with the value only US \$ 1.1 million. Until now, the main exported products of ramin are moulding, laminated wood and louvre doors. Product trade monitoring of ramin is still difficult to be executed since HS Code for ramin is still mixed with other species. In the future it is recommended that the special HS Code of ramin be developed.

4. Long-term strategy for the sustainable management and conservation of ramin forest resources by Dr. Hiras Sidabutar, Workshop Scientific Committee

Understanding the conceptual framework is critical important toward the formulation of long term strategy including for ramin SFM and

conservation. By definition the strategy is the choices of most effective ways or approach/activities to achieve the expected condition (goals) by modifying the existing condition and resource, such as policy, resource condition and time constraint. For ramin, current policy include logging ban throughout the country and listing of ramin into CITES Appendix to ensure ramin sustainable management and conservation. However, those policies may not be sufficient to achieve the SFM and conservation unless other supporting conditions are provided. Those supporting conditions include capacity building, reducing reforestation/ degradation rate, plantation-rehabilitation and other condition necessary to achieve them. Accurate baseline data and resources allocation, service and technology are also important supporting factors. Current policies toward the SFM and conservation of ramin have not been well defined, including resource allocation and capacity building. Therefore, it is suggested that to ensure the SFM and conservation, several aspects need to be improved, such as (1). Re-defining the ultimate goal, the policy need, the concept and its implementation, (2). Promoting rehabilitation/plantation program through the provision of necessary condition.

B. Information Gaps and Strategy (Results of Working Group B)

Working Group B discussed on policy, trade and CITES implementation on ramin. Ten gaps were identified and intensively discussed:

1. Up-dated data on species, growing stock, distribution, and location

Data of 1983 showed the estimate of peat swamp forest in Indonesia was nearly 20 millions ha, consisted of 13.7 million ha non-forest land, and 6.3 million ha of forest land including production forest, protection forest and conservation forest. There are no reliable data on the percentage of areas where ramin can be naturally found. *Gonystylus* consists of approximately 30 species and in Indonesia only *Gonystylus bancanus* has been extensively studied and commercially utilized. Other species within the genus remain unknown on their status of growing stocks, distribution and other biological aspects. The general distribution of ramin in Indonesia is basically along the east coast of Sumatra island and in the southern half of Kalimantan (West Kalimantan, Central Kalimantan, and South Kalimantan Provinces). The exact sites where ramin can be found need further verified. 2. Actual distribution and production of ramin

The National Forest Inventory (NFI) has been carried out in the period of 1989 to 1996. The NFI has provided the country with relatively more accurate estimation of the national timber distribution and production. Due to some reasons, only small number of the permanent sample plots are regularly and currently monitored and field visited for data up-dating. Current data and information may no longer accurate and sufficient to be used for taking management decision.

3. Forest Management Authority

Indonesia has implemented decentralized government, including forest management since early 2000. In many cases, the rules and regulation related to the decentralization have been misinterpretation and or disorientation of the authority causing the detrimental effects to the natural resources management, including forestry. This problem needs to be corrected through the elaboration and re-formulation of the decentralization of the authority.

4. Land use policy at provincial and district level

The decentralization reform has also resulted in the creation of new local district government within the province. This has implicated to the land use policy which keeps changing, along with the expansion and relocation of new district government. Harmonization and coordination accross sectors are needed to obtain the most suitbale landuse planning.

5. Economic and financial feasibility

The fact that natural distribution of ramin is mostly singly and sparse in a relatively vast areas in peat swamp forest making the management of this species is not economically feasible. To promote long term management, economic insentive to promote management of this species and PSF needs to be further developed.

6. Market and demand

Ramin has been very popular in various countries, including Japan, Taiwan, USA, Italy, UK, Germany, and Denmark. The selling price listed for Indonesian ramin is considered to be too low compared to that from other exporting countries. Most ramin products imported from Indonesia (73%) are simple moulding, such as S4S, finger joints, E2E, moulding profiles, dowels), and only small portion (15%) are end-products, such as louvre door. This indicates the added value gained by Indonesia is considerably low.

7. Harmonized System (HS) code

Under current HS code, effective from January 2007, wood products are classified based on processing system from raw material up to finished products and not by species names. Under this HS code, it is impossible to sort out trade data of ramin. This HS code, therefore, needs to be further developed in order to enable trade monitoring on ramin.

8. Understanding CITES and CITES mechanism

Many plant species have been included into CITES Appendix. Those plant species include various orchids, agarwood, fern and timber species. The inclusion of a species into CITES Appendix mostly resulted in misperception by traders as trade prohibition. CITES only requires the producing country to set harvest quota and NDF assessment in order to ensure SFM and conservation of the species. To reduce misunderstanding on the inclusion of species into CITES Appendix, awareness raising should be continuously carried out.

9. Effectivity of law and regulation related to CITES

The inclusion of ramin into CITES Appendix has been followed by the issuance of law and regulation. Review on the effectivity of law and regulation, including the involvement of relevant stakeholders has not been conducted. This review is important in order to improve implementation in the ground. Law enforcement in general still needs to be carried out in order to obtain effective implementation.

10. Advantages and disadvantages of CITES mechanism

It has been widely expected that the inclusion of ramin into CITES Appendix II will lead to the sustainable use of this timber species through effective control of harvest and international trade. Until the present day, the inclusion of ramin into CITES Appendix still does not provide significant contribution to control illegal logging and illegal trade of ramin.

Table 2. Information gaps, strategy and potential parties to improve policy, trade and CITES implementation on ramin

Information Gaps	Strategy	Parties
1. Updated data on species, growing stock, distribution and location	Conduct a comprehensive re- inventory of ramin distribution and growing stock inside and outside production forest area	 Provincial and district forest services Universities Research institutions
2. Actual distribution and production	Conduct regular monitoring and develop effective monitoring system	 Provincial and district forest services DG Forest Production Management (BPK) Universities and Research institutions
3. Authority of management	Further elaborate management authority of forest resources at provincial and district level	 Ministry of Forestry, Ministry of Internal Affairs Universities
 Land use policy at districts level 	Promote harmonization of integrated Landuse planning and boundary	 DG Planology National landuse agency (BPN) Provincial and district level government
5. Economic and financial feasibility	Make assessment on economic and financial aspects of ramin forest management	 DG Forest Production Management (BPK) Universities and research institutions
6. Market and demand	Make regular monitoring on market of ramin in importing countries and analyze demand preference to create added values	 Associations Universities and Research institutions
7. Harmonized System (HS) code	Improve existing Harmonizing System code that make possible for ramin trade monitoring	 DG Forest Production Management (BPK) Associations Ministry of industry Ministry of Trade
8. Understanding CITES and CITES Mechanism	Further community awareness raising on CITES rules and regulation including its implementation	- CITES MA (PHKA, MoF) - CITES SA (LIPI) - Universities

Information Gaps	Strategy	Parties
9. Effectivity of rules and regulation related to CITES	Remove barriers in the implementation including Law enforcement	 CITES MA (PHKA, MoF) CITES SA (LIPI) Universities
10. Advantages and disadvantages of CITES mechanism	Carry out an assessment (evaluation) on the advantage of the inclusion of ramin into CITES Appendix, remove the existing barriers in its implementation and continue carrying out capacity building and awareness raising.	 CITES MA (PHKA, MoF) CITES SA (LIPI) Universities and research institutions



IV. ADMINISTRATIVE AND LEGAL PROVISION

Indonesia has ratified CITES in 1978 through the Presidential Decree No. 43/1978. Following the ratification, a set of administrative and legal instruments (National Legislation) to support the SFM and conservation of natural resources, including ramin have been elaborated. These administrative and instruments should have met the requirement by CITES in order to ensure the conservation of listed species.

The historical development of National Legislation related to CITES implementation is as follows (Rapat Kerja dan Sosialisasi CITES by CITES MA, 2007-2008):

The First Phase (before 1999)

In this period only one source of legislation used to support CITES implementation, Law No. 5/1999 (UU No.5/1999). This Law was used as primary basis for CITES implementation in Indonesia. However, this Law did not cover the following aspects:

- Categorization of protected and non protected species.
- Penalties are clearly and sufficiently described only for protected species.
- For not protected species, the penalties are not described and therefore many CITES listed species are not under protection.

Article VIII of CITES states that the National legislation should accommodate penalties (sanction) against all species if violation occurs. Due to this deficiency, Indonesian legislation was considered as still insufficient to fully implement CITES and required to provide further elaboration of the legislation to meet CITES requirement.

The Second Phase (1999 – 2003)

In this period, Indonesia issued Government Regulation No. 7/1999 which regulates the conservation of Wild Flora and Fauna (WFF) and Government Regulation No. 8 (PP No. 8/1999) regarding the utilization of Wild Flora and Fauna (WFF). Several rules required to regulate the non-protected WFF have been accommodated in these regulations including penalties (sanction). CITES requirement has been generally

accommodated in PP No. 8/1999. More technical arrangements have been elaborated in Ministerial Decrees or Presidential decrees. By this elaboration, Indonesian legislation is considered improved but still contain some weaknesses to fully implement CITES requirement.

PP No. 8/1999 also contains the appointment of Management and Scientific Authorities. The National Institute of Science (LIPI) was appointed to be CITES Scientific Authority, Ministry of Forestry is appointed as CITES Management Authority. Decision Letter of Chief of LIPI No. 1973/2002 has further appointed Center for Research in Biology is the responsible party for Scientific Authority representing LIPI and Ministry of Forestry through the Minister Decision No. 104/Kpts – II/2003, has designated Directorate General of Forest Protection and Nature Conservation (PHKA) as executor for CITES Management Authority representing Ministry of Forestry.

The Improvement Phase (2003 – and beyond)

In this period there have been three more elaborations related to the regulation on Wild Flora and Fauna (WFF) as listed below:

- Ministerial Regulation No. 447/2003 (Permenhut No. 447/2003) which regulates the procedures on the harvest or collection and distribution of wild flora and fauna.
- Ministerial Regulation No.19/2005 (Permenhut No. 19/2005) regulates the propagation of the wild flora and fauna.
- Ministerial Decree No. 479/Kpts II/ 1998 (Kepmenhut No. 479/ Kpts – II / 98) which regulates the institutions involved in conservation.

By adding these three legal instruments, all CITES rules and regulations could have been implemented without any barriers at the legislation level. Harmonization and coordination among all involved parties in its implementation, however, is still needed to be further improved in order to ensure the achievement of the objectives of the inclusion of ramin into CITES Appendix.

V. RECOMMENDED ACTIVITIES TO BE INCLUDED INTO 2009-2010 WORKPROGRAM

As discussed in the workshop, the term *thematic programs to be included into 2009-2010 workprogram of ITTO-CITES* project as presented in earlier document including in the title of the workshop, has been changed to *Recommended Activities to be included into 2009-2010 workprogram of ITTO-CITES project.* This is because the ITTO-CITES project itself is a thematic program of ITTO.

From the six pre-identified proposed activities presented in the workshop, the two first proposed activities *The development of mass propagation technique for ramin by utilizing Fogging Nursery System and Establishing Hedge Orchards and Assessing the status of plant genetic resource conservation and genetic diversity of ramin (G. bancanus)* have been endorsed by the workshop participants to be included into ITTO-CITES workprogram. The third pre-identified activity was also recommended to be submitted by keeping only ramin, instead of two species ramin and gaharu.

The forth presented proposed activity "Review on the Term of Reference for Tri-National Task Force on Trade on ramin, trade monitoring and tracking system for ramin" was recommended to be broken down into two activities "Review on the Term of Reference for Tri-National Task Force on Trade on ramin and Review on the trade monitoring and tracking system for ramin". However, since substantially there are related and no strong justification to be broken down into two, it is decided to keep the original proposed activity, which is: "Review on the Term of Reference for Tri-National Task Force on Trade on ramin, trade monitoring and tracking system for ramin".

The fifth presented proposed activity "National Workshops on the Strategy and Action Plan for conservation and sustainable management of ramin based on the findings of ITTO, ITTO-CITES Projects on ramin" received several comments. It is strongly recommended that the project findings be widely disseminated and distributed to wider stakeholders throughout the country by using all means. One proposal to achieve this objective is the establishment of Ramin Center. However, since ramin project has developed ramin website (www.forda-mof.org/ramin), the ramin

center is no longer required and instead the existing website is strongly urged to be more accessible and user friendly.

In addition to the re-vitalization of existing ramin website for wider distribution and dissemination of project findings, the above "National Workshops on the Strategy and Action Plan for conservation and sustainable management of ramin based on the findings of ITTO, ITTO-CITES Projects on ramin" is still valid to be submitted into workprogram. The other proposal is to elaborate both national and regional workshop which could be held at the same time by inviting participants from Malaysia who also receives funding from ITTO-CITES Project. If the proposal is agreeable, then the execution of the workshop will consist of 1-2 day national workshop and then followed by Regional Workshop by inviting Malaysia, CITES and ITTO. The title could be modified to be "National and Regional Workshop for SFM and conservation based on finding of ITTO-CITES Project on ramin"

The sixth presented proposed activity *Global workshop on the application of Sustainable Management and Conservation of CITES-listed species: Lesson learned from three regions Asia, Africa and Latin America* was proposed to be lifted from the list and put as special request by National Focal Point, once all necessary requirements are met and supported by the Ministry of Forestry. The workshop recommended that National Focal Point could make observation regarding the possibility to hold the global workshop by communicating with other two regions, Africa and Latin America. Letter of interest to host the global workshop needs to be submitted as soon as possible once the consideration has been taken.

Based on the elaboration during the workshop session and separate Technical Meeting held on 30 January 2009, the priority list of "recommended activities" to be included into 2009-2010 workprogram of ITTO-CITES project is presented below:

1. The development of mass propagation technique for ramin by utilizing Fogging Nursery System and Establishing Hedge Orchards

Efforts to enhance rehabilitation and plantation of *Gonystylus bancanus* in Indonesia have been taken through various activities. This includes the identification of ramin seed sources, collection of seeds and seedling and the establishment of plantation trials in peat

swamp forests in Sumatra and Kalimantan. Based on the findings from previous activities, the crucial issues in the promotion of plantation of ramin is the insufficiency in the provision of ramin planting materials. The primary causes are the interval flowering, low seed production, short storability and lack of natural seedling available for collection. One of the solutions to the scarcity of planting materials for ramin plantation is the development of mass propagation technique using macro and micro-propagation.

Both macro-and micro-propagation techniques have been explored in the previous activities of ramin project. Macro propagation using stem/ shoot cutting in combination with fogging nursery system has been giving excellent result in the production of seedlings and having high potential success for mass seedling production. This proposed project, is therefore aimed to develop technique and to enhance mass production of planting materials through the utilization of fogging nursery system and the establishment of Hedge Orchards as source of stem/shoot cuttings.

The objective of the proposed project is to provide mass production of ramin planting materials through the establishment of Hedge Orchard as source of stem/shoot and developing stem/shoot cuttings technique using Fogging Nursery system. The expected outputs of the project are (1) Mass propagation technique and (2) Hedge Orchards for the sources of stem/shoots.

Deliverables: (1). Propagation technique, (2). Two Hedge Orchards (Kayu Agung-South Sumatra and Tumbang Nusa-Central Kalimantan) as two production centers for Ramin vegetatively propagated seedlings.

2. Assessing the status of plant genetic resource conservation and genetic diversity of ramin (*G. bancanus*)

Ramin, *G. bancanus*, is growing naturally in peat swamp forest area in Sumatra and Kalimantan. This species distributes in clusters following its natural regeneration pattern and sometime found in clamp as a result of logging. In order to secure plant genetic resources of this species, the government has issued a policy to maintain and conserve species diversity in production forest areas called as "plant genetic resources area". Under this policy, the concession company has made and allocated certain portion of the virgin and intact forests to be the plant genetic resources area in every five year cutting plan.

After several decades of harvesting and due to illegal logging and forest fires, population of ramin has decreased significantly, especially in the production forests. In order to ensure the successful conservation of species from extinction, the information regarding the status of plant genetic resources area and breeding system which will influence genetic diversity is a critical importance for long term conservation of the species. The objective of this activity is to obtain information on the status of plant genetic resource conservation, breeding and recommended action to ensure the achievement of conservation on ramin. The expected outputs are (1) Status of plant genetic resources areas and (2) Information on breeding system and (3) Recommended Action.

Deliverables: (1) Review status of plant genetic resources of ramin in Sumatra and Kalimantan, and (2) Information on ramin breeding system and its implication to genetic diversity.

3. The training workshop on the implementation of Non-Detriment Finding (NDF) for ramin

Overall objective of the inclusion of species into CITES Appendix is to ensure the sustainable management and conservation of the species through international trade regulation. The regulation includes the requirement that the harvest is not in contravention with national rules and regulation and the harvest does not cause detrimental effect on the survival of species, population and habitat. Theoretically, the determination of harvest quota is aimed to minimize the detrimental effect of the harvest. Understanding on the basis for the inclusion of species into CITES-Appendix, determination of harvest quota and Non-Detrimental Finding (NDF) are still limited for most field officers of CITES Management Authority and other relevant stakeholders such as plant quarantine, customs officers and the officers of Customs and Excise offices.

This proposed training workshop is expected to improve institutional and human resource capacity and improve the implementation of CITES rules and regulation, especially on the harvest quota and NDF determination. The expected outputs are (1). Improve understanding on the basis for the inclusion of species into CITES Appendix, (2). Improve human resource and institutional capacity on CITES implementation, (3). Improve coordination amongst stakeholders.

Deliverables: (1). Workshop materials (manual and guideline) and (2). List of participant.

4. Review on the Term of Reference for Tri-National Task Force on Trade on ramin, trade monitoring and tracking system for ramin (Wp2009)

Indonesia, Malaysia and Singapore has established a regional forum to tackle the illegal trade of ramin since 2003/2004, called as Tri-National Task Force on Trade on Ramin. In 2006/2007, the meeting of the Task Force has been temporarily suspended until there is a new insight found that the Task Force will be giving significant contribution to combating illegal logging and illegal trade of ramin. Other issues may also challenge, such as the poor trade monitoring and tracking system not only for ramin but also other CITES-listed species. The poor trade monitoring has also resulted in data variation and inconsistency which will have implication to forest management, taxes and revenue.

The National workshop carried out 24 July 2007 on the evaluation of CITES implementation has also questioned regarding the pricing of ramin for both domestic and international trade. This workshop recommended that a closer look on data collection mechanism, monitoring and export control of forest products including ramin needed to be carried out. The proposed project is therefore to address the above issues, with specific to ramin and other CITES listed species including big leaf mahagony. The expected outputs are (1) Reinforced the existing TOR for Tri-National Task Force on Trade on ramin between the three nations, (2) Review on trade data monitoring system and (3) Review on the effective Tracking system for timber trade.

5. National and Regional Workshop for SFM and conservation based on finding of ITTO-CITES Project on ramin

This proposed activity will be a final evaluation on the current status of ramin sustainable management and conservation in Indonesia and

contribution of project activities toward the achievement of sustainable management. ITTO and ITTO-CITES project have facilitated the identification of problems and information gaps, facilitated in the solution of certain critical problems, especially on the biological and ecological aspects, management aspects and necessary condition toward the achievement of rehabilitation and plantation (enrichment planting) of ramin in its natural habitats, including developing technologies required for the propagation of planting materials through the field plantation in Sumatra and Kalimantan. From this workshop concrete recommendation and action plan to maintain the spirit of rehabilitation and conservation of ramin and its habitat will be handed over to the relevants stakeholders in the Ministry of Forestry, Provincial and District level government and other stakeholders including universities and NGO.

Based on the current status, at least two immediate action plans need to be elaborated, namely (1) The provision of mass planting materials to be used for planting ramin and (2) Required policy to support the application of technologies and restoration of ramin population in its natural habitats. By these two immediate action plan, lack of planting materials which is the main barrier in the plantation of ramin could be solved and the policy to support the plantation is implemented.

Deliverables: (1). Workshop materials, (2) Recommendation, (3). List of participant.

6. National workshops on the strategy and action plan for conservation and sustainable management of ramin based on the findings of ITTO, ITTO-CITES Projects on ramin

All aspects of ramin sustainable management and conservation, including the evaluation of CITES implementation have been covered in the Projects of ramin since 2005. All findings have been widely disseminated to the target beneficiaries and to the relevant stakeholders. Recommendations have been made to solve the problems and barriers in the achievement of the SFM and conservation. In order to guide the long term strategy to achieve the goal in the management, the national strategy and Action Plan is required as general guidance for the management and the conservation to be used by central government and local authorities. These national strategy and Action Plan are very useful for the

planners, the policy makers and also the field officers. This proposed activity is aimed to formulate adopted and applicable National Long Term Strategy and Action Plan for sustainable management and conservation.

The outputs of this proposed project are (1). Long Term Strategy on the management and conservation of ramin (2). The applicable Action Plan.

Deliverables: (1). Applicable Long Term Strategy and Action Plan, (2). Workshop proceeding.

TO BE SUBMITTED SEPARATELY BY NATIONAL FOCAL POINT (Biro KLN)

7. Global workshop on the application of sustainable management and conservation of CITES-listed species: Lesson learned from three regions Asia, Africa and Latin America

Each region has its own characteristic on the problems and barrier in the management and conservation of the CITES-listed Timber species, such as Ramin (*Gonystylus* spp) for Asia, Big leaf mahagony (*Swietenia macrophylla*) for Latin America and Afrormosia (*Pericopsis elata*) for Africa. The problem and characteristics are explored from a wide range of aspects, such as governance, biological characteristics, trade and external influence which will enrich the knowledge and lessons learned to be used to achieve the global objective in the ITTO-CITES project which is to ensure the achievement of sustainable management and conservation of the listed species.

This workshop is therefore aimed to bring all the experienced parties in the management and conservation of those species in a global workshop and exchange of experience, knowledge and skill including lesson learned from the project levels and wider level of forest management.

VI. CONCLUDING REMARKS

Ramin, *Gonytylus bancanus*, grows naturally in peat swamp forest areas in Sumatra and Kalimantan. The natural distribution of this species decreases due to various causes, such as illegal logging and other unsustainable logging, conversion into other uses and repeated forest fires. Repeated fires occuring in peat swamp forest may have also forced the small remnant and or depleted population of ramin to natural succesion which may cause disappearance of ramin population in those areas. In early stage of ramin harvesting period, ramin was found abundant in some areas in Sumatra and based on recent report the population has been scarcely found in that area. Similar situation also occurs in Kalimantan.

The national policies of ramin, temporary logging ban and inclusion into CITES Appendix in 2001, have been marked as important efforts toward the sustainable management and conservation of ramin. However, as found in the workshop, several necessary measures and urgent steps are still needed to make those efforts more effective and give significant results. Those measures include the more collection of baseline data and scientific assessment on resource base, administrative and legal requirements and longterm strategy and recommended immediate action to be taken before severe reduction of ramin population takes place. International contribution to promote and enhance the achievement of sustainable management and conservation of ramin is still critically important at least for the short and immediate term.

Appendix 1. Documentation



Opening session of the national workshop

Welcoming remark by Mr. Tejudin Edy Komer (Cheir of Scientific Committee) Opening remark by Dr. Tachrir Fathoni (DG of FORDA) and Mr. Thang Hooi Chiew (Regional Project Coordinator for Project ITTO CITES)





Participants of the national workshop

Sessions of the national workshop

Session 2: Chaired by Mr. Anwar Purwoto; Session 3: Chaired by Mr. Sulistyo A. Siran; Both sessions are reported by Dr. Murniati

Session 4: Lead by Prof. Dr. Ani Mardiastuti; Session 5: Chaired by Dr. Teguh Rahardja; Both sessions are reported by Mrs. Sri Ratnaningsih



Group 1: Ecology and Silviculture Lead by Dr. Istomo

Group 2: Policy, CITES Implementation, and Trade Lead by Dr. Teguh Rahardja

Working Group Discussions

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