

Activity Document I

PROJECT ABSTRACT

Title Improving inventory design to estimate growing stock of ramin (*Gonystylus bancanus*) in Indonesia.

Summary

Effort to improve management practices of *Gonystylus bancanus* in Indonesia have been taken through various activities. This includes efforts by the Ministry of Forestry to issue various policies on ramin, especially those related to logging activities. Since 2001, the logging moratorium on ramin has been imposed to provide space and time for ramin, especially in logged-over areas to recover. In the same year, ramin was also listed in CITES Appendix III, meaning that the harvest of ramin should received a prior harvest permit from a Management Authority of CITES, which is the Ministry of Forestry. Both the logging moratorium and listing of ramin in the CITES Appendix are aimed to assist the control of both domestic and international trade in ramin.

Previous ITTO (pre-Project) has revealed several findings related to the problems on the management practice of ramin both in Sumatra and Kalimantan. Due to some considerations, only some of these findings have been accommodated into the current ITTO project PD 426/06 Rev. 1 (F), which is currently implemented by FORDA. In order to obtain comprehensive information regarding the management practice of ramin, this project is submitted to the ITTO project on "Ensuring International Trade in CITES-listed Timber Species is Consistent with their Sustainable Management and Conservation" so as to complement FORDA's previous and current ITTO projects. The project will focus on the development of an inventory design for estimating standing stock of ramin, as well as the other species found growing in peat swamp forests. The expected outputs of the project are (i) an inventory design to estimate standing stock of species in peat swamp forests, and (ii) estimated standing stock of ramin.

Executing/Implementing Agency

Southeast Asian Ministers of Education Organization, Regional Center for Tropical Biology (SEAMEO-BIOTROP), Jalan Raya Tajur Km 6, Bogor, INDONESIA.
Telp./Fax: 0251-323-848, 0251-326-851.

Collaborating Agency

Forestry Research and Development Agency, Center for Forest and Nature Conservation Research and Development (CFNCRD), Jalan Gunung Batu No.5, Bogor, INDONESIA.
Telp./Fax: 0251-633-234, 0251-638-111.

Duration 12 months.

Starting date Upon receiving funding for the project.

Budget	ITTO	US\$ 111,900
	GOI (in-kind contribution)	US\$ 17,935
	Grand Total	US\$ 129,835

This activity is submitted to ITTO for consideration under its Work Program activity "Ensuring international trade in CITES-listed timber species is consistent with their sustainable management and conservation," with primary funding provided by the European Commission and additional support from the USA, Japan, New Zealand and Norway.

PART I. CONTEXT

Origin/Background

Obtaining accurate and reliable data is always a difficult problem in forest management. For specific forest ecosystem like the peat swamp forests (PSF), there are some limitations in obtaining the data not only on the availability to utilize current modern technology, but also the readiness of human resource in forestry to capture and utilize the technology for collecting field data. The unavailability of accurate data frequently causes misleading information and mismanagement of the PSF. For example, ITTO PPD 87/03 Rev.2 (F) – *Identification of Gonystylus spp. (Ramin), Potency, Distribution, Conservation and Plantation Barrier* has made estimation on the standing stock of ramin in 2005 where the data may be under-estimated or over-estimated due to limited access to use more reliable technology. The estimation was mostly based on the results of pre-inventory cruising carried out by each company. Additional data were the result of interpolation from growth data from other sources. These data, however, bear some fundamental weaknesses primarily due to lack of appropriate inventory methods, extremely low sampling intensity, poor supervision and lack of cross-checks. The estimation by utilizing satellite images (technology) is predicted to be more cost-effective and able to obtain more accurate data for peat swamp forests with specific characteristics of poor accessibility.

PART II. THE PROJECT

1. Project Objective

The objective of the project is to develop an inventory design for ramin in peat swamp forest areas in Sumatra and Kalimantan for estimating the standing stock of ramin.

Peat swamp forest is a unique ecosystem characterized by vegetation, peat and excess of water for long period of time causing poor accessibility in most parts of the area. This poor accessibility has caused the pre-harvest inventory carried out by forest concession companies to be least optimal and this has led to, perhaps, under- or over-estimates of the standing stock. For CITES-listed species like ramin, this will influence harvest quota and the non-detriment findings (NDF). Selection of stems to be cut and core trees in this area take more time than that in dryland forests, such as in the lowland forest areas. The project is, therefore, aimed to develop an inventory design by utilizing satellite technology to obtain relatively more accurate data and information on the standing stock of ramin.

2. Justification

2.1. Problems to be Addressed

Ramin (*G. bancanus*) is found growing in peat swamp forests in Sumatra and Kalimantan. The habitat is characterized by relatively poor accessibility compared to the dryland forests, such as lowland forests and even hill forest habitats. Before logging, under the current silvicultural system, the Selective Cutting with Enrichment Planting (TPTI), it is required to carry out a pre-harvest inventory (cruising) to estimate the standing stock, not only for ramin but also for the other species found growing in the forest. The critical problem in carrying out the inventory in PSF, not only for harvest but also to estimate the overall standing stock, is the accessibility, which is mostly poor as described earlier. This poor accessibility has

caused inventory in PSF to be costly and laborious. Large amount of resources spent for field inventory has resulted, in practice, only small portion (very small sampling intensity) of the target area being sampled. Collection of data from very low sampling intensity will produce less accurate and/or unreliable data, either under-estimated or over-estimated standing stock. For ramin, this condition is more critical, since ramin is growing in scattered clumps and not homogenously distributed in the forest area

2.2. Intended Situation after Project Completion

The project is expected to produce an acceptable inventory design (method) to estimate standing stock for ramin (*G. bancanus*) growing in PSF in Sumatra and Kalimantan. By reviewing all the existing methods for inventory (pre-harvest inventory), stakeholder consultation and exploration of technology (satellite imagery or remote sensing), the relatively low cost and more accurate method or design will be obtained. The project is also expected to produce relatively more accurate estimation of the current standing stock of ramin in most of the production forest areas in Sumatra and Kalimantan.

The inventory design (method) and its related technology are also expected to be useful for estimating the standing stock of the other species having relatively similar botanical characteristics with ramin. Forest concessionaire, whose working areas are in peat swamp forest, is expected to gain the benefit from this inventory design.

2.3. Target Beneficiaries

The benefit of the project is the development of a cost-effective inventory design to estimate standing stock of ramin in peat swamp forests in Sumatra and Kalimantan. The beneficiaries are forest companies, CITES Management and Scientific Authority, Directorate of Forest Production (MOF), Directorate of Forestry Planning, Provincial and District Forest Services, and Universities.

2.4. Risks

The project activities bear several minor risks which are mostly related to the weather and the availability of satellite images. However, based on current information, the satellite images and their apparatus are available commercially in the market, and therefore, the risk could be anticipated and minimized.

3. Outputs

The expected outputs of the project are:

Output 1.1: An inventory design to estimate standing stock of ramin in peat swamp forest.

Output 1.2: Estimated standing stock of ramin.

4. Activities

Output 1.1: An inventory design to estimate standing stock of ramin in peat swamp forest.

Activity 1.1.1. Review of the existing methods for ramin inventory in PSF.

Existing methods of forest inventory, including pre-harvest inventory, will be reviewed. Results of the review will be discussed in a meeting involving all relevant stakeholders,

including stakeholders dealing with CITES-listed timber species and wildlife species. The meeting will identify the most appropriate method to be further developed and used for ramin inventory using satellite technology.

Activity 1.1.2. Selection of methods, provision of satellites images and interpretation.

Methods will be selected by utilizing all possible technologies related to satellite technology and their interpretation. A cost-effective method will be further discussed and selected for further exploration.

Activity 1.1.3. Ground checks of selected sites.

Ground checks are carried out to obtain ground data related to the botanical characteristics of the species concerned, such as stem diameter, crown characteristics and density. These data will be used for further analyses and in the re-formulation (adjustment) of the inventory design.

Activity 1.1.4. Re-interpretation of the method.

This activity is basically involved with the analyses of both satellite images (interpretation) and their corresponding ground data.

Output 1.2: Estimated standing stock of ramin.

Activity 1.2.1. Application of the inventory method to estimate ramin standing stock.

This activity is to further test the method (design) and to apply the method to other sites in addition to the sites chosen during the development of the method in the previous activities, that is, validation of the inventory method (design).

Activity 1.2.2 Stakeholder consultation on the estimated standing stock of ramin.

Stakeholder consultation is aimed to obtain final inputs from relevant stakeholders, especially the users and regulators, to ensure that the method (design) is reliable, cost-effective and acceptable to both users and regulators. The meeting will be carried out either in Sumatra or Kalimantan so as to ensure more and better participation from forest companies, the Forest Services and other stakeholders.

5. Work Plan

Outputs and Activities	Responsible Party	Schedule (in months)											
		1	2	3	4	5	6	7	8	9	10	11	12
Output 1.1 An inventory design to estimate standing stock of ramin in peat swamp forest													
Activity 1.1.1. Review of the existing methods for ramin inventory in PSF	CFNCRD/BIOTROP	■	■	■									
Activity 1.1.2. Selection of methods, provision of satellite images and interpretation	CFNCRD/BIOTROP	■	■	■	■	■	■						
Activity 1.1.3. Ground checks of selected sites	CFNCRD/BIOTROP				■	■	■						
Activity 1.1.4. Re-interpretation of the method	CFNCRD/BIOTROP				■	■	■	■	■				
Output 1.2. Estimated standing stock of ramin													
Activity 1.2.1. Application of the inventory method to estimate ramin standing stock	CFNCRD/BIOTROP							■	■	■	■	■	■
Activity 1.2.2. Stakeholder consultation on the estimated standing stock of ramin	CFNCRD/BIOTROP										■	■	■

Note: *CFNCRD – Center for Forest and Nature Conservation Research and Development, and BIOTROP – Regional Center for Tropical Biology.

6. Budget

6.1. Worksheet and Budget Components

Outputs and Activities	Inputs			Unit Cost	Quarter Year	Budget Component	Total	
	Units and quality	No					ITTO	(GOI)
		ITTO	GOI					
Output 1.1. An inventory design to estimate standing stock of ramin in peat swamp forest								
Activity 1.1.1. Review of the existing methods for ramin inventory in PSF	1). MM. National expert ⁺	0	0	1,500	Q1	11	-	-
	2). Days - daily sub-allowance	10	0	60		31	600	-
	3). Local Transport	2	0	150		33	300	-
	4). Capital equipment (computer notebook)	1	0	2000		41	2,000	-
	5). Fuel and Utilities	4	0	250		52	1,000	-
	6). Other consumable items	2	0	250		54	500	-
	7). Sundry	1	0	250		61	250	-
	8). Other miscellaneous	2	0	250		64	500	-
Sub total Activity 1.1.1						5,150		-
Activity 1.1.2. Selection of methods, provision of satellite images and interpretation	1). MM. National expert ⁺	2	0	1,500	Q1 - Q2	11	3,000	-
	2). Days - daily sub-allowance	20	0	60		31	1,200	-
	3). Local Transport	6	0	150		33	900	-
	4). Materials ¹	8	0	2500		51	20,000	-
	5). Fuel and Utilities	4	0	250		52	1,000	-
	6). Other consumable items	1	0	1000		54	1,000	-
	7). Sundry	2	0	250		61	500	-
	8). Other miscellaneous	1	0	1000		64	1,000	-
Sub total Activity 1.1.2						28,600		-
Activity 1.1.3. Ground checks of selected sites	1). Other labor	200	0	15	Q2	12	3,000	-
	2). Return ticket	8	0	200		32	1,600	-
	3). Days - daily sub-allowance	200	0	60		31	12,000	-
	3). Local Transport	20	0	150		33	3,000	-
	4). Materials	1	0	2000		51	2,000	-
	5). Fuel and Utilities	2	0	250		52	500	-
	6). Other consumable items	2	0	1000		54	2,000	-
	7). Sundry	1	0	250		61	250	-
8). Other miscellaneous	2	0	1000	64	2,000	-		
Sub total Activity 1.1.3						26,350		-

¹ Satellite images and accompanying materials.

Outputs and Activities	Inputs			Unit Cost	Quarter Year	Budget Component	Total			
	Units and quality	No					ITTO	GOI	ITTO	(GOI)
Activity 1.1.4. Re-interpretation of the method	1). Return ticket	2	0	200	Q2 - Q3	32	400	-		
	2). Days - daily sub-allowance	20	0	60		31	1,200	-		
	3). Local Transport	2	0	150		33	300	-		
	4). Materials	2	0	1000		51	2,000	-		
	5). Fuel and Utilities	4	0	250		52	1,000	-		
	6). Other consumable items	4	0	250		54	1,000	-		
	7). Sundry	2	0	250		61	500	-		
	8). Other miscellaneous	4	0	250		64	1,000	-		
Sub total Activity 1.1.4						7,400		-		
Sub total Output 1.1.						67,500				
Output 1.2. Estimated standing stock of ramin										
Activity 1.2.1. Application of the inventory method to estimate ramin standing stock	1). Other labor	80	0	15	Q3 - Q4	12	1,200	-		
	2). Return ticket	4	0	200		32	800	-		
	3). Days - daily sub-allowance	80	0	60		31	4,800	-		
	4). Local Transport	10	0	150		33	1,500	-		
	5). Materials	2	0	2000		51	4,000			
	6). Fuel and Utilities	2	0	250		52	500	-		
	7). Other consumable items	4	0	250		54	1,000	-		
	8). Sundry	1	0	250		61	250	-		
	9). Other miscellaneous	4	0	250		64	1,000	-		
Sub total Activity 1.2.1.						15,050		-		
Activity 1.2.2. Stakeholder consultation on the estimated standing stock of ramin	1). Package of workshop meeting	1	0	10,000	Q4	63	10,000	-		
Sub total Activity 1.2.2.						10,000		-		
Sub total Output 1.2.						25,050		-		
Non-activity Based Expenses										
	1). MM Team Leader ⁺	12	0	500	Q1 - Q4	13	6,000	-		
	2). MM Project Secretary	12	0	250		14	3,000	-		
	3). MM Project Finance	12	0	100		15	1,200	-		
	4). Days - daily sub-allowance	10	0	60		31	600	-		
	5). Return Ticket	2	0	200		32	400	-		
	6). Local Transport	2	0	150		33	300	-		
	7). Office space	0	1	1,000		42	0	1,000		
	8). Fuels and utilities	1	0	250		52	250	-		
	9). Office supplies	1	0	100		53	100	-		
	10). Sundry	1	0	250		61	250	-		
	11). Printing report and editing	2	0	3,500		62	7,000	-		
	12). Other miscellaneous	1	0	250		64	250	-		
Sub total Non-activity Based Expenses						19,350	1,000			
Total Budget						111,900	1,000			

Note: ⁺Refer to **Annex 1** for the Terms of Reference.

6.2. Overall Project Budget by Activity

Outputs and Activities	Budget Components															
	10. Project Personnel		20. Sub-contract		30 Duty Travel		40. Capital Items		50. Consumable Items		60. Miscellaneous		Quarter Year	Grand Total		
	ITTO	GOI	ITTO	GOI	ITTO	GOI	ITTO	GOI	ITTO	GOI	ITTO	GOI		ITTO	GOI	
Output 1.1. An inventory design to estimate standing stock of ramin in peat swamp forest																
Activity 1.1.1. Review of the existing methods for ramin inventory in PSF	-	-	-	-	900	-	2,000	-	1,500	-	750	-	Q1	5,150	-	
Activity 1.1.2. Selection of methods, provision of satellite images and interpretation	3,000	-	-	-	2,100	-	-	-	22,000	-	1,500	-	Q1 - Q2	28,600	-	
Activity 1.1.3. Ground checks of selected sites	3,000	-	-	-	16,600	-	-	-	4,500	-	2,250	-	Q2	26,350	-	
Activity 1.1.4. Re-interpretation of the method	-	-	-	-	1,900	-	-	-	4,000	-	1,500	-	Q2 - Q3	7,400	-	
Sub total	6,000	-	-	-	21,500	-	2,000	-	32,000	-	6,000	-		67,500	-	
Output 1.2. Estimated standing stock of ramin																
Activity 1.2.1. Application of the inventory method to estimate ramin standing stock	1,200	-	-	-	7,100	-	-	-	5,500	-	1,250	-	Q3 - Q4	15,050	-	
Activity 1.2.2. Stakeholder consultation on the estimated standing stock of ramin	-	-	-	-	-	-	-	-	-	-	10,000	-	Q4	10,000	-	
Sub total	1,200	-	-	-	7,100	-	-	-	5,500	-	11,250	-		25,050	-	
Non-activity Based Expenses																
Activity Coordination	10,200	-	-	-	1,300	-	-	1,000	350	-	7,500	-	Q1 - Q4	19,350	1,000	
Sub total Non-activity Based Expenses	10,200	-	-	-	1,300	-	-	1,000	350	-	7,500	-		19,350	1,000	
GRAND TOTAL	17,400	-	-	-	29,900	-	2,000	1,000	37,850	-	24,750	-		111,900	1,000	

6.3. Total Project Budget

Budget Components		ITTO	GOI	Total
10. Project Personnel				
	11. National Expert	3,000	-	3,000
	12. Other labor	4,200	-	4,200
	13. Project Team Leader	6,000	-	6,000
	14. Project Secretary	3,000	-	3,000
	15. Project Finance	1,200	-	1,200
	19. Component Total	17,400	-	17,400
20. Sub-contract				
	21. Sub-contract	-	-	-
	29. Component Total	-	-	-
30. Duty Travel				
	31. DSA	20,400	-	20,400
	32. Return Ticket	3,200	-	3,200
	33. Local transport	6,300	-	6,300
	39. Component Total	29,900	-	29,900
40. Capital Items				
	41. Office Space	-	1,000	1,000
	42. Capital Equipment (computer notebook)	2,000	-	2,000
	49. Component Total	2,000	1,000	3,000
50. Consumable Items				
	51. Materials	28,000	-	28,000
	52. Fuels and utilities	4,250	-	4,250
	53. Office Supplies	100	-	100
	54. Other consumable items	5,500	-	5,500
	55. Component Total	37,850	-	37,850
60. Miscellaneous				
	61. Sundry	2,000	-	2,000
	62. Printing and editing	7,000	-	7,000
	63. Workshop package	10,000	-	10,000
	64. Other miscellaneous	5,750	-	5,750
	69. Component Total	24,750	-	24,750
Total Budget by Component		111,900	1,000	112,900
70. Non-activity Based Expenses Executing Agency Management				
	Executing Agency Management costs (15% of Total of Overall Project Budget by Activity)	-	16,935	16,935
	79. Component Total	-	16,935	16,935
Grand Total		111,900	17,935	129,835

6.4. Project Budget by Source

Budget Components	Source		Total
	ITTO	GOI (in-kind)	
10. Project Personnel	17,400	-	17,400
20. Sub-contract	-	-	-
30. Duty travel	29,900	-	29,900
40. Capital Items	2,000	1,000	3,000
50. Consumable Items	37,850	-	37,850
60. Miscellaneous	24,750	-	24,750
70. Executing agency Management Cost	-	16,935	16,935
Total	111,900	17,935	129,835

PART III. OPERATIONAL ARRANGEMENTS

1. Management Structure

This project is treated as an addition to the ITTO Project PD 426/06 Rev. 1 (F). The implementing agency is SEAMEO-Biotrop in cooperation with the Center for Forest and Nature Conservation Research and Development (CFNCRD-FORDA).

Members of the Technical Advisory Committee (TAC) will consist of (i) Director of SEAMEO-Biotrop, (ii) Director of CFNCRD, (iii) Director of Forestry Planning, (iv) Director of Natural Forest (BPK), (v) Head of the Division for Research Cooperation and Information (FORDA), and (vi) Project Coordinator PD426/06 Rev.1. Team leader and members of the team to implement all project activities comprising researchers from SEAMEO-Biotrop and CFNCRD (FORDA) are as follows:

Team Leader : Dr. Ir. Hilman Affandi, MSc. (SEAMEO-Biotrop)
Project Secretary : Ir. Dian Tita Rosita
Project Finance : Denhas Yuni (SEAMEO-Biotrop)

Members of the Team

- (i) Ir. Ujang C. Irawan (Forest Ecology, SEAMEO-Biotrop)
- (ii) Drs. Arif Nuryadin (Remote Sensing, SEAMEO-Biotrop)
- (iii) Researcher from FORDA (to be determined)
- (iv) Researcher from FORDA (to be determined)
- (v) Researcher from FORDA (to be determined)

The Team Leader is responsible for carrying out all operational activities of the project and the decisions made by the TAC. The TAC has the responsibility and authority to endorse the Work Plan, to evaluate operational activities and to approve final reports (technical reports and the completion report of the project). The TAC meeting will be held at the beginning and close to the end of the project period.

2. Monitoring, Reporting and Evaluation

(i) Monthly Project Progress Reports

The monthly project progress report will be prepared based on the achievement of project activities/outputs as described in the Work Plan.

(ii) Project Technical Reports

The technical reports, at least one technical report for each Output, will be prepared, in addition to the brief report prepared for each activity. The completion and submission of the reports will be in accordance with the schedule of activities.

Language of the report could be in Indonesian so as to achieve a wider range of readers in Indonesia and the executive summary will be presented in English.

(iii) A Project Completion Report

A Project Completion Report will be submitted within two months of the project completion.

TERMS OF REFERENCE (TOR)

1. National Expert

Position: National Experts who will be assigned should have expertise and have been working at least 2 years on forest inventory and or satellite images interpretation with sufficient knowledge on forest botany, taxonomy and ecology.

Responsibilities: The expert(s) will be responsible to carry out activities assigned (Activities 1.1.1 and 1.1.2), with agreed team work and or collaborative institution. Detail work description is provided based on each activity (assignment). The expert(s) prepares one technical report in accordance with the activity concerned. The submission of the technical report, final draft of technical report is within the period of assignment based on agreement normally within 2 months. The technical report must be presented in the meeting held by the project or concurrently with other meetings.

Qualification, time and payment: Hold at least a Master degree with 2-3 years experience as described above, good understanding in English both oral and written. Expert will carry out activity concerned within time allocated by the project (1 – 4 months). Rate of payment is in accordance with the budget allocated as appear in the Budget Worksheet and the experience of the expert.

2. Team Leader

A Team Leader will be hired to lead operational activities under this project. The hiring is based either on individual activity or a set of activities in the project. The team leader will be determined and assigned by Project Coordinator PD 426/06 Rev.1 (F), as this project is considered as Complimentary to project PD 426/06 Rev.1 (F), and based on his qualification, time availability and the recommendation (approval) of the Technical Advisory Committee.

Responsibilities: Lead operational field activities as assigned and work closely with parties and personnel involved in the project team, and responsible to Project Coordinator as above and prepare progress and final technical reports under the direction of the Project Coordinator.

The Team Leader and members of the team, along with their CVs, will be decided and included into Inception Report/Work Plan of the Project. If necessary, the name of Team Leader will be forwarded to ITTO for obtaining the 'No Objection Letter' (NOL). Nominated team leader and its members have been provided in the section on Management Structure.

3. Project Coordinator and Project Secretary

Project Coordinator and Project Secretary are as in ITTO PD 426/06 Rev.1 (F). This is to ensure that small projects under ITTO-CITES are as an integral part to the current ITTO Project on ramin in Indonesia (see Management Structure).

In addition to the above arrangement internal project finance and secretary will be hired and placed in project secretariat, SEAMEO – BIOTROP (Implementing Agency), whose location is separated from the secretariat of PD 426/06 Rev. 1 (F).