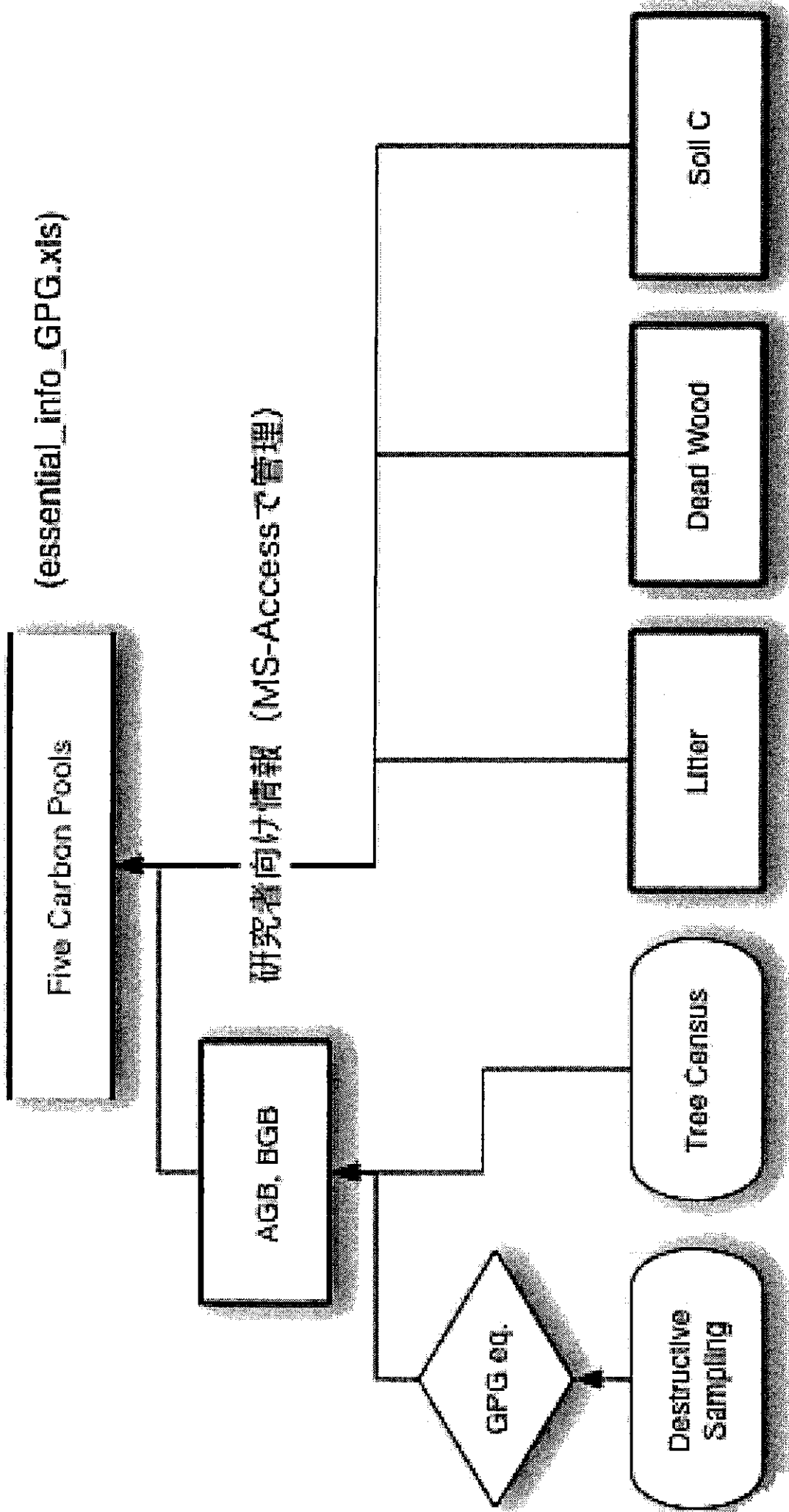


ユーザー向け情報



Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Prog. reass.	Remarks	
		2001	2002	2003	2004	2005		Indonesian side	Japanese side			
<p><1> Methodologies for estimation of carbon fixation; benefits of plantation forests developed></p>												
1.a	Measurement and analysis of carbon content in newly established plantation						JE<Silviculture> >Kalo					
1)	Establishment of plantation in West Java	↕					-do-	<ul style="list-style-type: none"> • CP<Silviculture> • Facilities • Field 	<ul style="list-style-type: none"> • SE<Biomass survey method> • Equipments: Equipments for establishing the plantations • CP training 	A	In total, three plantations (i.e. experimental plots for biomass and soil measurement) were established by the end of FY 2002: one for <i>Acacia mangium</i> in Maribaya, one for <i>Shorea leprosula</i> in Ngasuh, and the other one for <i>Pinus merkusii</i> in Cianten.	
2)	Measurement of carbon contents in West Java						-do-					
2)-a	Biomass	↕					-do-	<ul style="list-style-type: none"> • CP<Silviculture> • Facilities • Field 	<ul style="list-style-type: none"> • SE<Biomass survey method, Biomass measurement method> • Equipments: NC analyzer, Oven etc. • CP training 	A	To clarify carbon stocks and its annual changes in newly established plantations, field measurements have been carried out every year. The methodology was transferred to CP and technicians. Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates for specific sites.	
2)-b	Soil and litter	↕					-do-	<ul style="list-style-type: none"> • CP<Silviculture> • Facilities • Field 	<ul style="list-style-type: none"> • SE<Forest soil, Forest soil data analysis> • Equipments: NC analyzer, Oven etc. • CP training 	A	Soil/litter samplings have been carried out in newly established plantations every year. The methodology was transferred to CP and technicians. Some valuable results for monitoring soil carbon stocks were obtained; variability and the required number of soil samples in three major soil types in tropics. Annual changes of carbon stocks after planting will be revealed by November 2005.	
1-b	Measurement and analysis of carbon content in existing plantations						JE<Silviculture> >Kalo					
1)	Java						-do-					Existing plantations with different tree species and ages have been selected as survey sites for estimation biomass: <i>Acacia mangium</i> in Maribaya, <i>Shorea leprosula</i> in Leuwiliang, <i>Pinus merkusii</i> in G. Bundar/Cianten, <i>Tectona grandis</i> in Madtun. The measurement have been carried out in a plot of Maribaya site every year.

Progress : A=already completed, B1=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed D=not able to start (Annex2-3)

Activities	Expected results/Indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks
		2001	2002	2003	2004	2005		Indonesian side	Japanese side		
1)-a Biomass	a) Carbon stocks in tree biomass and its changes are measured. b) Parameters and equations for estimating biomass are obtained.	↔	↔	↔	↔	↔	-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> SE < Biomass survey method, Biomass measurement method > Equipments: NC analyzer, Oven etc. CP training Local consultant 	A	*ターゲットに対しての実績及び終了時における見込み。促進・阻害要因。その他特記事項 To clarify carbon stocks and its annual changes in newly established plantations, field measurements have been carried out every year. The methodology was transferred to CP and technicians. Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates at specific sites.
1)-b Soil and litter	a) Carbon stocks in soil and litter, and its changes are measured. b) Field methodology are developed.	↔	↔	↔	↔	↔	-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> SE < Forest soil, Forest soil data analysis > Equipments: NC analyzer, Oven etc. CP training Local consultant 	A	Soil/litter samplings have been carried out in existing plantations every year. The methodology was transferred to CP and technicians. Some valuable results for monitoring soil carbon stocks were obtained: variability and the required number of soil samples in three major soil types in tropics. Annual changes of carbon stocks after planting will be revealed by November 2005.
2) Sumatra							-do-				Existing plantations with different ages has been selected as a survey site in South Sumatra.
2)-a Biomass	a) Carbon stocks in tree biomass are measured. b) Parameters and equations for estimating biomass are obtained.	↔	↔	↔	↔	↔	-do-	<ul style="list-style-type: none"> SE < Biomass survey method, Biomass measurement method > Equipments: NC analyzer, Oven etc. CP training Local consultant 	<ul style="list-style-type: none"> SE < Biomass survey method, Biomass measurement method > Equipments: NC analyzer, Oven etc. CP training Local consultant 	A	Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates for specific sites.
2)-b Soil and litter	Carbon stocks in soil and litter are measured.	↔	↔	↔	↔	↔	-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> CP training Local consultant 	A	Data concerning soil carbon stocks and litter were collected.
1-c Measurement and analysis of carbon content in controlled plots (i.e. baseline)							JE < Silviculture > Kato				
1) Java							-do-				Secondary forests have been selected as survey sites in Maribaya, Ngasuh and Cianjen.
a Biomass	a) Carbon stocks in tree biomass and its changes are measured. b) Parameters and equations for estimating biomass are obtained.	↔	↔	↔	↔	↔	-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> SE < Biomass survey method, Biomass measurement method > Equipments: NC analyzer, Oven etc. CP training 	A	To clarify carbon stocks and its annual changes in baseline vegetations, field measurements have been carried out every year. The methodology was transferred to CP and technicians. Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates at specific sites.

Progress : A=already completed, B1=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed D=not able to start (Annex2-4)

PO at the time of final evaluation and the progress of the activities

Activities	Expected results/indicators	Schedule (Japanese FY)				Person in charge	Other Major Inputs		Prog ress	Remarks
		2001	2002	2003	2004		2005	Indonesian side		
b) Soil and litter	a) Carbon stocks in soil and litter are measured. b) Field methodology are developed.					-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> SE < Forest soil, Forest soil data analysis > Equipments: NC analyzer, Oven etc. CP training 	A	*ターゲットに対しての実績及び終了時における見込み。促進・阻害要因。その他特記事項 Soil/litter samplings have been carried out in secondary forests every year. The methodology was transferred to CP and technicians. Some valuable results for monitoring soil carbon stocks were obtained: variability and the required number of soil samples in three major soil types in tropics. Annual changes of carbon stocks after planting will be revealed by November 2005.
2)						-do-				Secondary forests, agro-forests and jungle rubber forests have been selected as survey sites in South Sumatra, Jambi and Lampung.
a) Biomass	a) Carbon stocks in tree biomass are measured. b) Parameters and equations for estimating biomass are obtained.					-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> SE < Biomass survey methods, Biomass measurement methods, Biomass measurement > CP training Local consultant 	A	Carbon stocks of above- and below-ground biomass were summarized for different land-use types. Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates for specific sites.
b) Soil and litter	a) Carbon stocks in soil and litter are measured.					-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> CP training Local consultant 	A	Carbon stocks of soil and litter were summarized for different land-use types.
3)						-do-				Secondary forests and peat swamp forests have been selected as survey sites in West and Central Kalimantan.
a) Biomass	a) Carbon stocks in tree biomass are measured. b) Parameters and equations for estimating biomass are obtained.					-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> CP training Local consultant 	A	Carbon stocks of above- and below-ground biomass were summarized for different land-use types. Parameters for predicting biomass were collected based on GPG. Allometric equations were derived for biomass estimates for specific sites.
b) Soil and litter	a) Carbon stocks in soil and litter are measured.					-do-	<ul style="list-style-type: none"> CP < Silviculture > Facilities Field 	<ul style="list-style-type: none"> CP training Local consultant 	A	Carbon stocks of soil and litter were summarized for different land-use types.
1-d)	a) Database structure is constructed b) Data are organized					JE < Silviculture > Kato	<ul style="list-style-type: none"> Facilities 	<ul style="list-style-type: none"> SE < Database technique > Equipments: Software, Networking equipments 	B	Structure of database was constructed in September 2005. The data obtained from the surveys and analyses have been entered and will be continued to update until the end of the Project.

Progress : A=already completed, B1=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed D=not able to start (Annex2-5)

Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks			
		2001		2002		2003		2004				2005		
		2001	2002	2003	2004	2005		Indonesian side	Japanese side					
1-e	Development of methodologies to estimate carbon contents in various land-use types						-do-	<ul style="list-style-type: none"> CP <Silviculture> Facilities 	<ul style="list-style-type: none"> SE <Database technique, Biomass measurement method, Biomass measurement> Equipments: Software, Networking equipments 	B	Parameters for estimating biomass based on GPG, and allometric equations were summarized for various land-use types. All relevant information not only on parameters and equations but also on sites, soil types and climates were compiled into the database.			
1-f	Preparation of manuals for survey and analysis methodologies						JE <Silviculture> Kato	<ul style="list-style-type: none"> CP <Silviculture> Facilities 	<ul style="list-style-type: none"> SE <Biomass survey method, Biomass measurement method, Biomass measurement> CP training 	B	Two manuals have been produced: one is "Measurement of carbon storage in soil" (in Feb. 2002) and the other "Measurement of biomass in forests (in May 2002). In addition to these two, the Project has decided to prepare two manuals which ensure reliable estimation for carbon stocks in tree biomass and soils based on GPG and statistics.			
1-g	Preparation of scientific and research papers						JE <Silviculture> Kato	<ul style="list-style-type: none"> CP <Silviculture> Facilities 	<ul style="list-style-type: none"> SE <Biomass survey method, Biomass measurement method, Biomass measurement, Forest soil, Forest soil data analysis> Equipments: Software CP training 	B	In total, six scientific papers are planned in the fields of Biomass and Soil; of which three papers have been submitted to the journals and one paper accepted by the Journal of Forest Planning. It is expected that three more papers will be prepared and submitted to journals by the end of the Project.			
<p><2> New technology for charcoal-applied plantation to maintain and enhance carbon fixation potential is developed</p>														
2-a	Measurement of effects of charcoal input into newly established plantations						JE <Forest Management> Nakama							
1)	West Java						JE <Forest Management> Nakama							
1)-a	Establishment of experimental plots						-do-	<ul style="list-style-type: none"> CP <Forest management> Facilities Field 	<ul style="list-style-type: none"> SE <Charcoal application technique> Equipments: Equipments for establishing plantations CP training 	A	Three experimental plots were established at the newly established plantation sites in West Java by the end of FY 2001. One for <i>Acacia mangium</i> in Maribaya, one for <i>Shorea leprosula</i> in Ngasuh, and the other one for <i>Pinus merkusii</i> in Cianten. The sites will be maintained by FORDA after the project finished.			
1)-b	Measurement of effects of charcoal input						-do-	<ul style="list-style-type: none"> CP <Forest management> Facilities Field 	<ul style="list-style-type: none"> SE <Charcoal application technique, Charcoal production and application technique> Equipments CP training 	A	Charcoal application effects were measured on growth of the planted trees and the soil components during March 2002-February 2005 at the 3 experimental plots in West Java. The measurements will be continued by FORDA after the project finished.			

Progress : A=already completed, B1=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed D=not able to start (Annex2-6)

Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks	
		2002		2003		2004		2005	Indonesian side			Japanese side
		2001	2002	2003	2004	2005						
1)-c Data analysis and development of techniques for charcoal applied plantation	Data of techniques for charcoal applied plantation are analyzed and developed.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Field 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments CP training 	B	It was observed that growth of the <i>Acacia mangium</i> of 26 months was improved significantly by 10% charcoal application. Technique of charcoal application was developed.	
2) Kalimantan							-do.-					
2)-a Establishment of experimental plots	Experimental plots are established.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Field 	<ul style="list-style-type: none"> SE (Charcoal application techniques) Equipments CP training Local consultant 	A	One experimental plot at the newly established plantation site of <i>Shorea leprosula</i> and <i>Shorea macrophylla</i> was established in West Kalimantan in November 2002.	
2)-b Measurement of effects of charcoal input	Effects of charcoal input are measured.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Field 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments CP training Local consultants 	A	Charcoal application effects were measured on growth of the planted trees and the soil components between December 2002-January 2005 at the experimental plot in West Kalimantan.	
2)-c Data analysis and development of techniques for charcoal applied plantation	Data of techniques for charcoal applied plantation are analyzed and developed.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Field 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments CP training 	B	It was observed that growth of the <i>Shorea macrophylla</i> of 25 months was improved by charcoal application but not significantly.	
2-b Experiment on effects of charcoal input into pot seedling							-do.-					
1) Design of experiment and measurement on effects of charcoal input into pot seedling	Experiments of charcoal input into pot seedling are designed and the effects are measured		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Nursery 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments:Oven CP training 	A	In total, four experiments were designed and carried out at the nursery in Bogor. Charcoal application effects were measured on growth and the soil components of the pot seedlings. Tree species are <i>Acacia mangium</i> , <i>Shorea leprosula</i> , <i>Pinus merkusii</i> and <i>Michelia montana</i>	
2) Data analysis and development of techniques for charcoal input into pot seedling	Data are analyzed and techniques are developed.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities Nursery 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments:Oven CP training 	A	It was observed that growth of the <i>Acacia mangium</i> seedling of 6 months was improved significantly by 5% charcoal application. Technique of charcoal application was developed.	
2-c Preparation of research papers	Research papers are presented at scientific meetings, etc.		↕				-do.-	<ul style="list-style-type: none"> CP (Forest management) Facilities 	<ul style="list-style-type: none"> SE (Charcoal application technique, Charcoal production and application techniques) Equipments CP training 	B	<ul style="list-style-type: none"> It is expected that one scientific paper will be prepared and submitted to Journal by the end of the Project in the field of charcoal application. So far, 6 research papers were presented at the scientific meetings, seminars and workshops. It is expected that 3 more presentations will be made by the end of the Project. 	

Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks	
		2001	2002	2003	2004	2005		Indonesian side	Japanese side			
2-d	Organization of the data obtained from the surveys and analyses				↔		-do-	<ul style="list-style-type: none"> CP <Forest management> Facilities 	<ul style="list-style-type: none"> SE <Charcoal production and application techniques> Equipments CP training 	B	*ターゲットに対しての集積及び終了時における見込み。促進・阻害要因。その他特記事項 The data obtained from the surveys and analyses will be organized and presented at the final workshop. A scientific paper will be submitted to journal.	
23 More effective technology for charcoal production developed												
3-a	Development of cost effective technology for charcoal production						J/E: <Forest Management> Nakama					
1)	Experiments on types of kiln		↔				-do-	<ul style="list-style-type: none"> CP <Charcoal production> Facilities Field 	<ul style="list-style-type: none"> SE <Charcoal production methods, Charcoal production and application techniques> Equipments CP training 	A	Four kinds of kiln (6 types of kilns) were experimented. That are Nonpermanent kiln (Earth pit kiln, Modified earth pit kiln and Sawdust mound kiln), Movable kiln (Drum kiln), Permanent kiln and Flat kiln for sawdust.	
2)	Data collection and analysis for development of cost-effective technology		↔				-do-	<ul style="list-style-type: none"> CP <Charcoal production> Facilities Field 	<ul style="list-style-type: none"> SE <Charcoal production methods, Charcoal production and application techniques> Equipments: Desicator, Charcoal hardness meter, Tensometer etc. CP training 	A	Data on the productivity and efficiency of the kilns were collected and analyzed. Most cost-effective kiln was the earth pit kiln. The technologies were developed.	
3-b	Quantification of charcoal production upon land preparation						-do-					
1)	Data collection and analysis on amount of the produced charcoal with the remaining wood materials in the process of land preparation		↔				-do-	<ul style="list-style-type: none"> CP <Charcoal production> Facilities Field 	<ul style="list-style-type: none"> SE <Charcoal production methods, Charcoal production and application techniques> Equipments CP training 	A	Data on amount of the produced charcoal with the remaining wood materials in the process of land preparation were collected and analyzed. Around 18%-32% of carbon of remaining wood materials were sequestered in charcoal.	
3-c	Preparation of research papers		↔				-do-	<ul style="list-style-type: none"> CP <Charcoal production> Facilities 	<ul style="list-style-type: none"> SE <Charcoal production methods, Charcoal production and application techniques> Equipments CP training 	A	So far, 4 research papers have been presented at the scientific meetings, seminars and workshops. In addition, one more presentation will be made at the International Symposium (IAWPS2005) in November 2005.	
3-d	Organization of the data obtained from the surveys and analyses		↔				-do-	<ul style="list-style-type: none"> CP <Charcoal production> Facilities 	<ul style="list-style-type: none"> SE <Charcoal production methods, Charcoal production and application techniques> Equipments CP training 	A	The data obtained from the surveys and analyses were organized. The report has been published on the web site of CFFMP. CP <Charcoal production> got Ph.D. by Bogor Agricultural University (IPB) in Indonesia.	

Progress : A=already completed, B=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed D=not able to start (Annex2-8)

Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks
		2001	2002	2003	2004	2005		Indonesian side	Japanese side		
<p><4. Cost and revenue of carbon fixing plantations estimated></p>											
4-a	Development of CDM plantation model						J/E: <Forest Management> Nakama			A	Four tree plantation models for AR-CDM in Indonesia have been developed based on the studies (4-b). That are Industrial tree plantation, Environmental tree plantation, Participatory tree plantation management by State Forest cooperation and Agro-forestry by small stakeholders.
4-b	Study and data collection on CDM related plantations						-do.-	<ul style="list-style-type: none"> CP <Forest management> Facilities Field 	<ul style="list-style-type: none"> SE <Financial analysis, Forest management analysis, Clean Development Mechanism in forest sector, CDM plantation and community, CDM related cost and valuation analysis> Equipments: Computer etc. CP training 	A	As many as 8 surveys have been carried out on cost and revenue of the tree plantation activities for AR-CDM projects. That are Industrial tree plantation (1), Environmental tree plantation (1), Participatory tree plantation management by State Forest cooperation (1), Agro-forestry by small stakeholders (2), socio-economic survey (2) and silvicultural techniques & plantation promoting policies (1).
4-c	Data analysis and estimation on cost and revenue of carbon fixing plantation						-do.-	<ul style="list-style-type: none"> CP <Forest management> Facilities 	<ul style="list-style-type: none"> SE <Forest management analysis, Clean Development Mechanism in forest sector, CDM plantation and community, CDM related cost and valuation analysis> Equipments: Computer, GIS software etc. CP training 	B	The data collected in 4-b were analyzed and estimation on cost and revenue of the 4 plantation models under AR-CDM scheme are on-going. It is expected that it will be completed and contributed to the Manual by the end of October 2005 and will be presented at the workshop held on November 2005.
4-d	Preparation of research papers						-do.-	<ul style="list-style-type: none"> CP <Forest management> Facilities 	<ul style="list-style-type: none"> SE <Forest management analysis, Clean Development Mechanism in forest sector, CDM plantation and community, CDM related cost and valuation analysis> Equipments: Computer CP training Local consultant 	B	-So far, 9 research papers have been prepared and presented at the scientific meetings, seminars and workshops on cost and revenue analysis for AR-CDM projects. It is expected that 3 more papers will be made and presented by the end of the Project. -In addition, one scientific paper has been submitted to journal and will be accepted by the end of the project in the field of cost and revenue analysis for AR-CDM projects
4-e	Organization of the data obtained from the surveys and analyses							<ul style="list-style-type: none"> CP <Forest management> Facilities 	<ul style="list-style-type: none"> SE <Forest management analysis, Clean Development Mechanism in forest sector, CDM plantation and community, CDM related cost and valuation analysis> Equipments CP training 	B	Organization of the data obtained from the surveys and analyses are on-going. It is expected that it will be completed and contributed to the Manual by the end of October 2005 and will be presented at the workshop held on November 2005.

Progress : A=already completed, B1=on schedule/expected to be completed by end of the Project, B2=behind the schedule but expected to be completed, C=not expected to be completed, D=not able to start (Annex2-9)

Activities	Expected results/indicators	Schedule (Japanese FY)					Person in charge	Other Major Inputs		Progress	Remarks
		2001	2002	2003	2004	2005		Indonesian side	Japanese side		
<p>< 5.A manual for carbon fixing forest management is prepared ></p>											
5-a	Development of the structure of the manual					J/E <Chief Advisor> Ando				A	<p>The activities related to manual preparation started in 2004. The structure of the manual ("Manual for the Implementation of AR-CDM project activities in Indonesia") was determined by August 2004.</p>
5-b	Writing of the manual, utilizing the data and information collected through the Project activities.					J/E <Chief Advisor> Ando				B1	<p>Preparation of a "Manual for the preparation and implementation of AR-CDM project activities in Indonesia", targeting AR-CDM investors and developers in Indonesia and Japan, are on-going (Chapter I and II almost completed). An attached manual on estimating and monitoring carbon stock is also ongoing. They are written in English. It is expected that they will be completed by the end of October 2005 and will be presented at the workshop held on November 2005. As many as 2 papers have been published as general information on the Project activities.</p>
5-c	Publish the manual both offline and on the web					J/E <Chief Advisor>				B1	<p>At least 100 copies of Manuals with more than 200 pages per each will be printed in color and distributed to as many as people showing the interest in AR-CDM. Power-point presentation material is also considered as a summary of manuals. It is planned that they will be distributed in December 2005.</p> <p>The manual will be uploaded on the website launched by the Project in February 2005 in November of December in the same year.</p>

Answer to Questionnaire for the Japanese Experts (Ver2)

This questionnaire has been prepared to collect basic information for the final evaluation of the Carbon Fixing Forest Management Project. The main purpose of the evaluation is to improve the operation and management for the remaining period and after the project; and to draw useful lessons for other similar projects, rather than looking for mistakes or criticizing. In order to conduct the evaluation study efficiently and effectively, it is important for the evaluation team to have your views and comments on the following questions in advance. Please fill out (in English) and submit a computer file to the JICA headquarters not later than 12:00pm, 5 September 2005(in Japan). Thank you very much for your esteemed cooperation in advance.

Date : 5 September, 2005

Names: Kazuya Ando (Chief advisor)

Please read before you start answering

The questionnaire consists of questions, which have answers for your selection.

Please

1. Choose your answer by putting an underline on the item you choose.
2. Write your comment (reasons for your judgment, etc.) in the space on the right-hand side.
3. If you do not have any idea for any question due to lack of information, etc., do not answer. And indicate “I do not have information”, etc. in the space on the right-hand side.

Example:

(1) Are there any linkages with other Japanese projects?	<u>Yes</u> No	(For example, list the relevant projects and describe briefly how they are linked with this Project)
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Part I

Q1. Implementation Process

Please state the reasons for your judgment.

Q1.1 Monitoring Process

(1) Has the Project monitoring (i.e. JCC, progress report, etc.) been conducted as planned?	<u>Yes</u> No	JCC, quarterly report, and activity report, etc. have been produced as planned
(2) Has the Project developed any internal monitoring system (eg. regular meetings, etc.)?	<u>Yes</u> No	Quarterly meetings have been conducted several times
(3) Have the issues pointed out in the monitoring process been addressed properly? (including the coordination with the JICA Indonesia office and the headquarters)	<u>Yes</u> No	Close coordination with JICA Indonesia office and if necessary with JICA headquarter has been made
(4) Have the issues pointed out in the monitoring process been addressed properly?	<u>Yes</u> No	Ditto
(5) Have the gap between envisaged and agreed modalities of AR-CDM procedures, etc. reflected in the Project activities?	<u>Yes</u> No	Some is reflected, but some is not reflected

Q1.2 Communication

(1) Has the communication within the Project been appropriate in implementing the activities? If the answer is <u>No</u> , what were the negative impacts on the Project?	<u>Yes</u> No	Communication has been maintained through concerned C/Ps
(2) Has the Project taken any measures to promote communication? If yes, please explain.	Yes <u>No</u>	No specific measures are necessary

Part II

Q1. Relevance of the Project

If the answer is Yes, please state the reasons for your judgment.

Q1.1 Necessities

(1) Relevance with the needs of Indonesia : Does the Overall Goal still agree with the needs of Indonesia?	Yes	Indonesia still needs the technology and methodology developed by the project such as monitoring methodology and charcoal application technique
	No	
(2) Relevance with the needs of the potential CDM participants : Is the Project Purpose of the Project still consistent with the needs of potential CDM participants?	Yes	The technology and methodology including manual are useful for the potential CDM participants
	No	

Q1.2 Appropriateness as Means

(1) Technological Advantage of Japan : Does Japan have technical advantage in the field of carbon fixing forest management?	Yes	Japan's long history and experience in tropical forest has been accumulated and useful for carbon fixing forest management
	No	

Q2. EFFECTIVENESS of the Project

If the answer is Yes, please state the reasons for your judgment (if any). If the answer is No, what are the obstacles, the negative impacts on the achievement of the Outputs and the measures taken (or to be taken)?

Q2.1 Achievement level of Project Purpose

(1) To what extent has the Project Purpose been achieved so far?	Fully · Mostly · Partly · Not at all	The project achieved the monitoring methodology and database, but still needs more technology for AR-CDM
(2) To what extent is the Project Purpose expected to be achieved by the end of the Project?	Fully · Mostly · Partly · Not at all	Ditto
(3) Are the Outputs of the PDM appropriate in achieving the Project Purpose?	Fully · Mostly · Partly · Not at all	There are some items other than project outputs for this purpose such as community approach

Q2.3 Facilitating and hampering factors

(1) Are there any factors that have facilitated the achievement of the Project Purpose?	Yes No	Cooperation with outside organizations
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Questionnaire for the Final Evaluation

(2) Are there any factors that have negative impacts on the achievement of the Project Purpose?	Yes No	Constraints in time
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Q3. EFFICIENCY of the Project:

-If the answer is Yes, please state the reasons. If the answer is No what are the reasons, the negative impacts on the achievement of the Outputs and the measures taken (or to be taken)?

Q3.1 Japanese Inputs: Have the following Japanese inputs been appropriate to achieve the Outputs?

-If the answer is appropriate(A) or mostly appropriate(MA), please state the reasons for your judgment. If the answer is hardly appropriate(HA) or not appropriate at all(NA), what are the reasons, the negative impacts on the achievement of the Outputs of PDM and the measures taken (or to be taken)?

(1) Long-term experts

(a) Timing of the dispatch	A · <u>MA</u> · HA · NA	Three experts were changed in the same time
(b) Duration of the dispatch	A · <u>MA</u> · HA · NA	For some cases the duration is not enough
(c) Number of the experts	A · <u>MA</u> · HA · NA	Database techniques is necessary
(d) Quality of the experts	<u>A</u> · MA · HA · NA	
(e) Specialties of the experts	<u>A</u> · MA · HA · NA	
(f) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	It is difficult to achieve outputs without long-term EPs

(2) Short-term experts

(a) Timing of the dispatch	A · <u>MA</u> · HA · NA	In some cases, the several SEs are dispatched in the same period
(b) Duration of the dispatch	A · <u>MA</u> · HA · NA	In some cases, the duration is too short to perform the activities
(c) Number of the experts	A · <u>MA</u> · HA · NA	It is desirable to reduce the number of SEs
(d) Quality of the experts	<u>A</u> · MA · HA · NA	
(e) Specialties of the experts	<u>A</u> · MA · HA · NA	
(f) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	SEs have contributed to the output of the project to a considerable degree

(3) C/P training

(a) Timing of the training	<u>A</u> · MA · NA	The timing is good for the project
(b) Duration of the training	<u>A</u> · MA · NA	The duration is not short and not long
(c) Number of C/P dispatched	<u>A</u> · MA · NA	All C/Ps experienced C/P trainings
(d) Quality of the training	<u>A</u> · MA · HA · NA	Training provided the excellent experience to C/Ps
(e) Contents and fields	A · <u>MA</u> · HA · NA	Contents and fields are required to include more

Questionnaire for the Final Evaluation

(f) Utilization of the acquired techniques/knowledge, etc. in the Project activities	A · <u>MA</u> · HA · NA	Much of techniques can be applied in the AR-CDM plantations
(g) Degree of contribution to the achievement of the Outputs	Large · <u>Medium</u> · Small	Some of techniques are not directly influenced to the project outputs

(4) Equipment

(a) Quality	A · <u>MA</u> · HA · NA	NC analyzer is not easy to maintain
(b) Timing of provision	A · <u>MA</u> · HA · NA	Timely provision is secured to smooth activities
(c) Items	<u>A</u> · MA · HA · NA	All necessary items are supplied
(d) Specifications	A · <u>MA</u> · HA · NA	English manuals are necessary
(e) Quantity	<u>A</u> · MA · HA · NA	Satisfactory except for English manuals (not available)
(f) Utilization of the provided machinery and equipment	<u>A</u> · MA · HA · NA	All machineries & equipments are utilized to the maximum
(g) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	All machineries and equipments have contributed to the output achievement

(4) Running expenses

(a) Timing of the provision	A · <u>MA</u> · HA · NA	Urgent expense is sometimes required
(b) Quantity	<u>A</u> · MA · HA · NA	Enough supplied especially for surveys
(c) Utilization	<u>A</u> · MA · HA · NA	Effectively utilized for the smooth activities
(d) Management	<u>A</u> · MA · HA · NA	Satisfactorily managed
(e) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	All expense has contributed to the project outputs to a great degree

Q3.2 Indonesian inputs: Have the following inputs been appropriate in achieving the Outputs?

-If the answer is appropriate(A) or mostly appropriate(MA), please state the reasons (if any). If the answer is hardly appropriate(HA) or not appropriate at all(NA), what are the reasons, the negative impacts on the achievement of the Outputs and the measures taken (or to be taken)?

(1) Counterpart (CP) personnel

(a) Timing of assignment	A · <u>MA</u> · HA · NA	Frequently project managers are changed
(b) Duration	A · <u>MA</u> · HA · NA	ditto
(c) Number of the C/P	<u>A</u> · MA · HA · NA	Suitable number is assigned
(d) Technical level of the C/P	<u>A</u> · MA · HA · NA	Level of C/Ps is appropriate
(e) Specialties of the C/P	<u>A</u> · MA · HA · NA	Specialties of C/Ps is appropriate
(f) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	All C/Ps have contributed to the project activities to a great degree

(2) Administrative staff

Questionnaire for the Final Evaluation

(a) Timing of assignment	<u>A</u> · MA · HA · NA	Timely assigned
(b) Duration	A · <u>MA</u> · HA · NA	Some are not enough long to contribute
(c) Number of the C/P -AS	A · <u>MA</u> · HA · NA	Enough
(d) Technical level of the C/P	A · <u>MA</u> · HA · NA	Some are not enough level
(e) Specialties of the C/P	A · <u>MA</u> · HA · NA	ditto
(f) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	Their contribution is very expected and great

(3) Land , building and other facilities for the Project

(a) Timing of the provision	A · <u>MA</u> · HA · NA	Some are not timely supplied
(b) Quality	A · <u>MA</u> · HA · NA	Infrastructure is not enough
(c) Utilization	<u>A</u> · MA · HA · NA	To the maximum they are utilized
(d) Management	A · <u>MA</u> · HA · NA	Experimental sites have limitation to the management
(e) Degree of contribution to the achievement of the Outputs	<u>Large</u> · Medium · Small	They have been essential for the project

(4) Running expenses

(a) Timing of the provision	A · MA · <u>HA</u> · NA	Too late to be distributed
(b) Quantity	A · MA · <u>HA</u> · NA	Financial difficulty are always distinct
(c) Utilization	A · MA · HA · <u>NA</u>	It is difficult to answer
(d) Management	A · MA · HA · <u>NA</u>	ditto
(e) Degree of contribution to the achievement of the Outputs	Large · <u>Medium</u> · Small	It is difficult to answer ,but mostly shouldered by JICA

Q 3.3 Coordination with other Japanese and International Projects

(1) Has there been any coordination with other Japanese Projects?	<u>Yes</u> No	Forest Fire Project, Gunung Halimun Project, and so-called Komatsu project are in close collaboration
(3) Has there been any coordination with other international projects?	<u>Yes</u> No	ADB project, AICIR Project, and CIFOR projects are examples of the collaboration

Q3.4 Facilitating and hampering factors

(1) Are there any factors that have facilitated the achievement of the Outputs? (If Yes, please list the major ones)	<u>Yes</u> No	Surveys implemented jointly by the project and outside organizations such as IPB and UGM
(2) Are there any factors that have negative impacts on the achievement of the Outputs? (If Yes, please list the major ones)	<u>Yes</u> No	Difficulty to maintain the equipments for analysis and poor infrastructure

Q4 IMPACT of the Project

Have you noticed any positive or negative organizational, technical, environmental or economic impacts caused and/or foreseen to be caused by the Project? (for example, impacts on the capacity of C/P, other researchers,

Questionnaire for the Final Evaluation

potential CDM participants, FORDA, etc.) -*If the answer is "Yes", please explain*

(1) Positive impacts	<u>Yes</u> No	a. Capacity of C/Ps, researchers in universities and international organizations, potential AR-CDM participants, Ministry of Forestry, Perhutani b. Local community c. Local governments d. Charcoal application technique
(2) Negative impacts	Yes <u>No</u>	

Q5. SUSTAINABILITY of the Project

Q5.1 Institutional Sustainability-If the answer is Yes, please state the reasons for your judgment. If the answer is No, what are the obstacles and the required actions?

(1) Policy support

(a) Is it likely that current policy supports for the activities of the FORDA and AR-CDM likely to continue?	Yes No	The current policy is represented by CDM-LULUCF Team in the MoF
(b) Is it likely that current policy supports for carbon fixing forest management likely to continue?	Yes No	The policy for CDM is positively enforced with the on-going foreign assistance such as CFFM

(2) Assignment of CP Personnel

(a) Is it likely that the C/P personnel trained through the Project remain with FORDA?	Yes No	Most of C/P will be continued to work for CDM
(b) Is it likely that the C/P personnel trained through the Project be posted in appropriate position to sustain the project effects?	Yes No	It is highly possible that most of C/Ps will be assigned to the related posts to CDM after the project

(3) Institutional and management capacity of FORDA

(a) Does FORDA have enough institutional and management capacity to continue the related activities after the end of the Project?	Yes No	FORDA can continue to study the monitoring and new technology for CDM. But it is expected to extend the activities to the entire organization of MoF
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(4) Coordination with other organizations

(a) Are there any coordination with relevant organizations (ministries and agencies, universities and research institutes, potential CDM participants such as private enterprises and NGOs, etc.) ?	Yes No	Even now FORDA is working with relevant organizations and institutions
(b) If the answer of (a) is Yes, is it likely that the coordination will be ensured after the end of the Project?	/	The coordination with other organizations will be surely continued
(c) If the answer of (a) is No, are there any plans to establish/ensure the coordination?	/	

Q5.2 Financial sustainability -If your answer is "Yes", explain how the budget would be secured . If your answer is "No", explain the reasons and the required actions.

Is it likely that the budget necessary to carry out the relevant activities will be secured (including salaries of staff, operation and maintenance costs, material costs, etc.) after the termination of the Project?	Yes No	Since MoF is recognizing the importance of CDM scheme, the budget will be secured to a certain level
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Q5.3 Technical sustainability -If the answer is Yes, please state the reasons for your judgment. If the answer is No, what are the reasons and the measures that need to be taken.

Questionnaire for the Final Evaluation

<p>(1) Technical capacity of the C/P : Has the C/P acquired enough skills and knowledge to sustain the effect of the Project? (For example, will they be able to plan and conduct the relevant activities/research by themselves? Will they be able to cope with new research needs in the relevant fields?)</p>	<p><u>Yes</u> No</p>	<p>Technical transfer has been implemented and as a result, C/Ps can manage the activities such as those of the project in the field of biomass soil monitoring, charcoal technique, and forest management</p>
<p>(2) Utilization and dissemination of technologies, methodologies, etc: a) Are the technologies, etc. developed by appropriate in terms of the technical level of Indonesia, needs of potential CDM participants, etc.? b) Does FORDA have (or has they developed) any strategies/system to utilize and disseminate the technologies, etc. developed by the Project?</p>	<p>a) <u>Yes</u> No b) <u>Yes</u> No</p>	<p>a) Developed technologies such as monitoring methodologies and charcoal are applicable to the CDM project development b) MoF has CDM-LULUCF Study team inside the organization already</p>
<p>(3) Utilization of machinery and equipment: Would the provided machinery and equipment be utilized effectively and efficiently after termination of the Project (especially in terms of technical capacity and system of operation and maintenance, availability of spare parts and consumables, etc.)?</p>	<p><u>Yes</u> No</p>	<p>Supplied equipments and machineries such as computer, NC analyzer and vehicles will be highly utilized by FORDA since the continuation of the similar research needs those machineries and equipments. Budget allocation for this purpose is essential.</p>

Q6. Others

Q6.1 Recommendation

<p>(1) Do you have any recommendations for the improvement of the Project in the remaining period? If <u>Yes</u>, please list the major ones.</p>	<p><u>Yes</u> No</p>	<p>-Assignment of database staff -Completion of paper making -Designing of future management of three experimental sites in West Java -Preparation of workshop</p>
<p>(2) Do you have any recommendations to Indonesian and/or Japanese sides after termination of the Project?</p>	<p><u>Yes</u> No</p>	<p>-Preparation of budget for the activities -Assignment of the current C/Ps in the same work -Continued cooperation with other organizations</p>

Q6.2 Lessons learned

<p>Are there any lessons learned which can be applied to similar projects? If <u>Yes</u>, please list the major ones.</p>	<p><u>Yes</u> No</p>	<p>-To avoid the duplication of the content of work -To check the contractors carefully -To maintain the close cooperation with C/Ps</p>
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6.3 Any other comments

None

Thank you very much for your kind cooperation. We really appreciate your patience and effort.

バイオマス、土壌炭素測定試験地、調査地一覧 2005.4.13 成

場所		タイプ	造林年/プロット設置年	期待する成果
州名	所在地			
西ジャワ	マリバヤ	新植 (<i>Acacia mangium</i>)	2001.11~12	A,B,S
	ナスー	新植 (<i>Shorea leprosula</i>)	同上	A,B,S
	チアンテン	新植 (<i>Pinus merkusii</i>)	2002.1	A,B,S
	マリバヤ	既存造林地 (<i>A. mangium</i>)	91,93,95,98	A,B,S
	ルイリアン	既存造林地 (<i>S.leprosula</i>)	97,98	同上
	グヌンダール	既存造林地 (<i>P. merkusii</i>)	78,91,97	同上
	チアンテン	既存造林地 (<i>P. merkusii</i>)	83	同上
	マリバヤ	二次林植生	2001	同上
	ナスー	二次林調査	2001	同上
	チアンテン	二次林調査	2001	同上
東ジャワ	マディウン	既存造林地(<i>T. grandis</i>)	2003	同上
	同上	草地植生	2004	B,S
ジャンビ	ブンゴ/テボ	アランアラン植生	2003	同上
	同上	伐採跡地	2003	A,B,S
	同上	二次林 (ジャングルラバー)	2003	同上
南スマトラ	スバンジェリジ	伐採跡地	2002	同上
	／ブナカット			
	スバンジェリジ	既存造林地 (<i>A. mangium</i>)	92,94,97,00	同上
	ブナカット/スバンジェリジ	アランアラン植生	2002	B,S
ランプン	クルイ	アグロ (<i>Shorea javanica</i>)	2003	同上*
西カリ	サンタラム湖	湿地植生	2003	A,B,S *
		二次林	2004	同上 *
		アランアラン植生	2003	B,S *
中央カリ	パラカラヤ	泥炭湿地	2003	A,B,S *
		二次林	2004	同上 *
マレーシア	チクス	既存造林地 (<i>S.leprosula</i>)	92,95	A,B

注：A: 相対成長式 B: バイオマス (地上部、地下部、枯死木、リター) S: 土壌

赤字：測定年 青字：植栽年

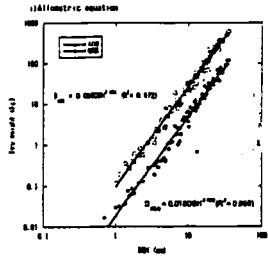
*地下部は測定していない



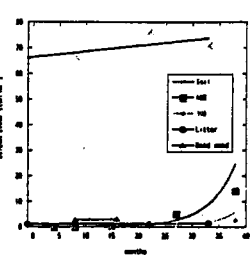
Maribaya Experimental Site Carbon Fixing Forest Management Project



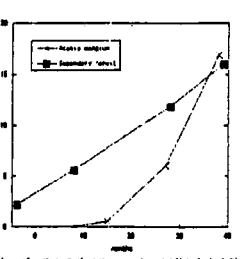
I. Biomass Estimations (Acacia mangium)



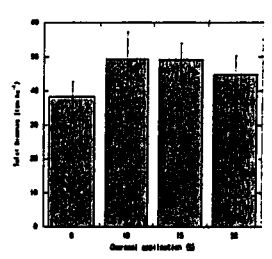
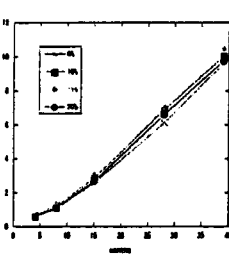
II. Five carbon pools



III. Plantation vs. Secondary forest



IV. Effects of charcoal application



Species	DBH (cm)	Wood density (kg m ⁻³)	DBH ²	H (m)	Volume (m ³)	Volume × Wood Density
1	10	0.7	100	20	0.7	0.7
2	15	0.8	225	30	2.25	2.25
3	20	0.9	400	40	4.0	4.0
4	25	1.0	625	50	6.25	6.25
5	30	1.1	900	60	9.0	9.0
6	35	1.2	1225	70	12.25	12.25
7	40	1.3	1600	80	16.0	16.0
8	45	1.4	2025	90	20.25	20.25
9	50	1.5	2500	100	25.0	25.0
10	55	1.6	3025	110	30.25	30.25

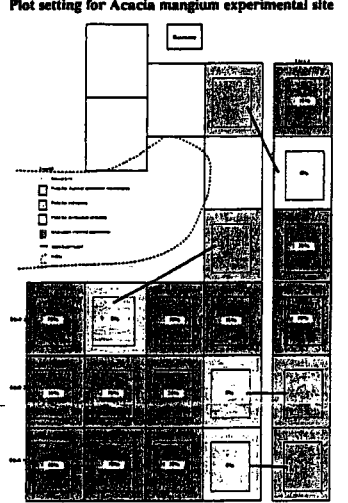
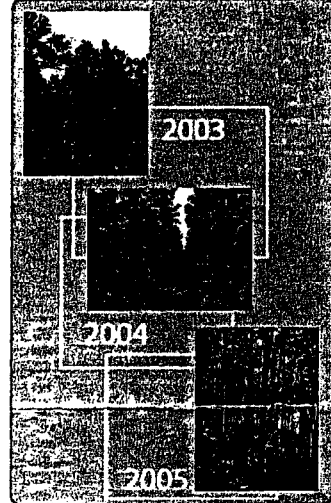
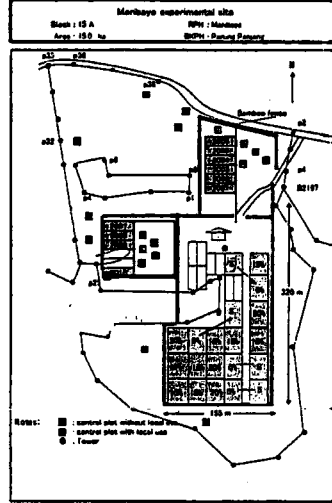


Introduction

- The 3rd Conference of the Parties (COP3) of United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto recognized that afforestation and reforestation (A/R) could be counted as sinks and used for achieving green house gas emission reduction commitment in 1997. Project participants of A/R project under the Clean Development Mechanism must measure and monitor all significant changes in the five carbon pools within the project boundary: above-ground biomass, below-ground biomass, litter, dead wood, and soil organic matter. At present, considerable interest is in methods to estimate the biomass and carbon sequestration incurred by a forest plantation. However, estimation of the biomass by a representative sample of trees can be very difficult and expensive.
- The newly planted sites in West Java are established with the experimental design not only for development of techniques to estimate biomass and soil carbon storage but also for effect of charcoal application to planted trees.

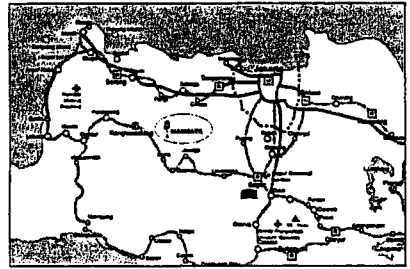
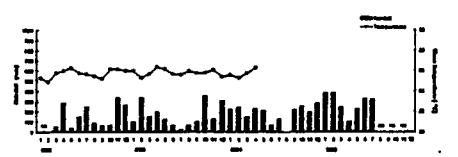
Objectives

- allometric equations, parameters for GPP
- Changes of carbon stocks in five carbon pools: above- and below-ground biomass, soil, litter and dead wood.
- Comparison of carbon stocks: newly established plantations vs. baseline vegetation
- Effects of charcoal application: height growth, biomass



Progress of Work and Planning (as of 20 Jun 2005)

Location	Task	Start	End	Status
Primary Site 1	Planting	Jul-01	Mar-02	Completed
	Measurement	Jul-02	Mar-03	Completed
	Charcoal application	Jul-03	Mar-04	Completed
	Measurement	Jul-04	Mar-05	Completed
Primary Site 2	Planting	Jul-01	Mar-02	Completed
	Measurement	Jul-02	Mar-03	Completed
	Charcoal application	Jul-03	Mar-04	Completed
	Measurement	Jul-04	Mar-05	Completed
Secondary Forest	Measurement	Jul-02	Mar-03	Completed
	Charcoal application	Jul-03	Mar-04	Completed
	Measurement	Jul-04	Mar-05	Completed
	Charcoal application	Jul-05	Mar-06	Planned



Methods

- Establishment of plantations
- Tree census
- Defoliated tree sampling
- Soil Sampling
- Soil Sampling

Conclusion

- Allometric equations and parameters for estimation tree biomass were obtained. In case of using allometric equations, DBH will be the best predictor of above- and below-ground biomass.
- Soil, litter, dead wood + emission
- Newly established plantations exceeded secondary forests in total biomass (three years after planting).
- Charcoal application may be effective in height growth and tree biomass.

Table 1. Cost & carbon stock of newly established plantation at Maribaya experimental site in West Java (July 2001 – March 2005)
1 USD = 9,000 Rp

No.	component	Maribaya Acacia mangium	
		cost 5ha ⁻¹ (USD)	cost ha ⁻¹ (USD)
I Plantation establishment			
1	Boundary measuring and fencing	100	20
2	Seedling/cutting procurement	2,222	444
3	Brushing/land preparation	1,163	233
4	Hole digging	536	107
5	Seedling/cutting transportation	0	0
6	Planting	336	67
7	Charcoal	422	84
Sub-total I		4,779	956
II Plantation maintenance & protection			
1	Weeding	2,605	521
2	Replanting	427	85
3	Fertilizer application and other maintenance	37	7
4	Patrol work	5,540	1,108
Sub-total II		8,609	1,722
Grand-total (I+II)		13,388	2,678
Cost for carbon stock (cost/tCO2)		43.2	43.2
Cost for carbon stock without patrol work (cost/tCO2)		25.3	25.3

Carbon stock (tCO2) as of February 2005 (3.2 years after planted)

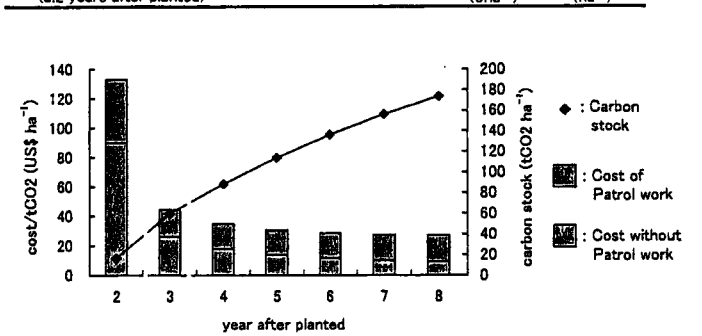


Figure 1. Carbon stock & cost of newly established plantation at Maribaya experimental site in West Java (The values after year-4 are only estimation)

* In this table and figure, cost is only direct cost not included infrastructure cost.

As of 09 September 2005

LIBRARY	
TOTAL (a+b+c)	902
INDONESIA LANGUAGE	113
ENGLISH LANGUAGE	186
JOURNAL	416
OUTPUT PROJECT	187

CATEGORY	BOOK	JOURNAL	OUTPUT PROJECT
	(a)	(b)	(c)
ALLOMETRY		8	
ARTICLE	3		
BIOMASS & SOIL	24	46	45
CARBON & CARBON SEQUESTRATION		33	
CARBON SEQUESTRATION	2		
CHARCOAL	2	1	
CHARCOAL APPLICATION			17
CHARCOAL PRODUCTION			9
COMPUTER PROGRAMME	6		
COST & REVENUE ANALYSIS OF CDM PLANTATIONS			27
FOREST FIRE	10		
FOREST MANAGEMENT	7	151	
GENERAL INTRODUCTION			2
LAND USE		14	
LOGGING		58	
OTHERS	201	90	87
PROCEEDING	7		
REPORT	20		
STATISTICAL ANALYSIS		15	
STATISTICAL BOOK	16		
THESIS	1		
TOTAL	299	416	187

Manual for the preparation and implementation of AR-CDM project activities in Indonesia

I Kyoto Mechanism and AR-CDM

1. History and decision of COP meeting
- 2 Modalities and procedures of AR-CDM project activities in the first commitment period

II Background information on Indonesian forest and investment to Indonesia

1. Situation of forest (Policy, Regulations, Plantation techniques, others)
2. Progress towards the implementation of AR-CDM projects in Indonesia

III Monitoring methodologies of carbon pools (Detail is described in an attached manual)

Brief description on biomass and soil carbon measurement methodologies
(Chapter IV Good Practice Guidance for Land Use, Land-Use Change and Forestry 2003 , IPCC, and approved methodologies if any)

IV AR-CDM models suitable in Indonesia (Described in an attached manual)

- (1) Industrial plantation
- (2) Environmental plantation
- (3) Teak plantation
- (4) Agro-forestry
(Introduced by the experiences from the Project activities)

V Proposed/approved new methodologies for A/R project activities : monitoring and baseline (CDM-AR-NMM and CDM-AR-NMB)

← **VI Glossary**

← **VII Reference**

Annex (part of Annex)

- **Check-list for the PDD making**
- **AR-CDM-PDD form, AR-CDM-NMM Form, AR-CDM-NMB and guideline**
- **SS AR-CDM-PDD format and guideline**
- **Procedure for application**
- **List of Indonesian laws and regulations**
- **Default values developed by IPCC and the EB of UNFCCC**

Note : . This manual is made in English only for investors

I Kyoto Mechanism and AR-CDM

1. History and content of COP discussion

2. Modalities and procedures of AR-CDM project activities in the first commitment period

- (1) General**
- (2) Definitions of forest, afforestation and reforestation**
- (3) Project boundary**
- (4) Definition of carbon pools**
- (5) Removal by sinks**
- (6) Timing of verification and certification**
- (7) Non permanence of AR-CDM project**
- (8) Crediting period**
- (9) Participation requirements**
- (10) Additionality**
- (11) Baseline**
- (12) Monitoring**
- (13) Leakage**
- (14) Socio-economic and environmental impact**
- (15) Validation requirements**
- (16) Small-scale AR-CDM**
- (17) Invasive alien species and genetically modified organizations**
- (18) Procedure for validation, registration, monitoring, verification and certification of AR-CDM project activities**

II Background information on Indonesian forest and investment to Indonesia

- 1. Situation of forest and matters related to AR-CDM implementation**
 - (1) Current situation of forest area, deforestation and rehabilitation**
 - (2) Forestry Policy (such as GERHAN)**
 - (3) Regulations for the implementation of AR-CDM in Indonesia**
 - (4) Administration**
 - (5) Silvicultural techniques in Indonesia**

- 2. Progress towards the implementation of AR-CDM projects in Indonesia**
 - (1). Ratification**
 - (2). Designated National Authority(DNA)**
 - (3). Definition of forest and others necessary for AR-CDM**
 - (4). Procedures to apply for AR-CDM projects in Indonesia**
 - (5). Potential areas for AR-CDM**
 - (6). Foreign assisted projects & activities**
 - (7). Research and capacity building**
 - (8). Institutions and NGOs related to AR-CDM in Indonesia and potential A/R CDM investors in Japan**

September 7, 2005

Update of CFFMP Website

Tanaka

- | | |
|-------------------|---|
| 1 February, 2005 | Release the CFFMP website (English, Bahasa Indonesia, Japanese) |
| 17 February, 2005 | <ul style="list-style-type: none">• Touch and correction of project background.• Addition of the update record. |
| 2 May, 2005 | <ul style="list-style-type: none">• Addition of links• Insert the proceeding of 2nd workshop |
| 3 June, 2005 | <ul style="list-style-type: none">• Addition of link• Update of “Hot information from the project site”, especially, insert the visit of Dr.Kiyono, short-term expert of Biomass measurement, the visit of Dr.Matsumura, short-term expert of Forest management analysis, the visit of Mr.Yokota, short-term expert of CDM plantation and community and the schedule of JCC. |
| 7 July, 2005 | Update of the survey information from three experimental sites and insert the photos of destructive sampling. Update of “Hot information from the project site”. Delete the information of the visit of Dr.Kiyono and Dr.Matsumura. |
| 20 July, 2005 | Update of “Hot information from the project site”, especially JCC meeting, JICA environment sector meeting and the technical seminar of Mr.Yokota. Delete the information of the visit of Mr.Yokota and the schedule of JCC. |
| 29 July, 2005 | Update of “Hot information from the project site”, especially the visit of Mr.Ishikawa, short-term expert of “ “, schedule of the final evaluation mission from JICA HQ, the visit of Dr.Ota, short-term expert of Forest soil data analysis, the 3 rd |

workshop, the visit of a short-term expert of Charcoal application and production technique, the visit of Dr.Matsumura, short-term expert of Forest management analysis and the termination date of the project.

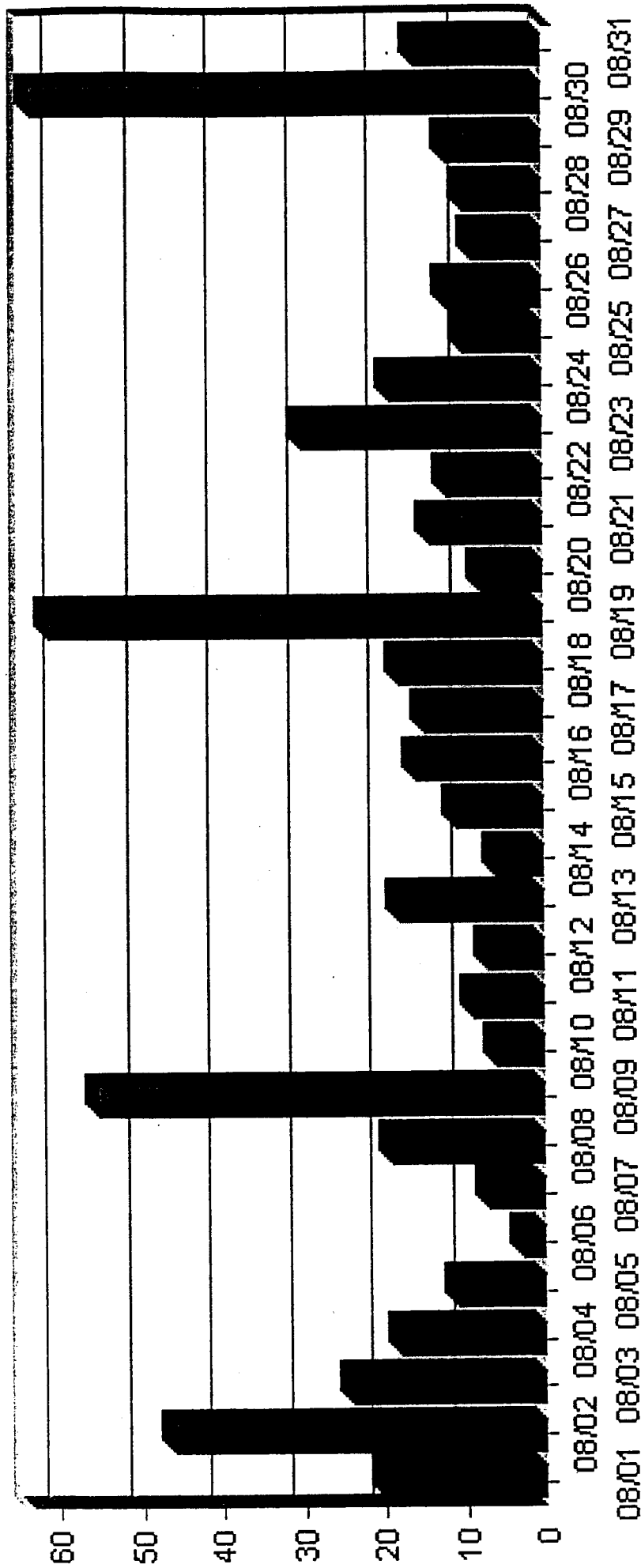
6 August, 2006

Insert the CFFMP pamphlet.

27 August, 2006

Update of "Hot information from the project site", especially the information of the technical seminar of Mr.Ishikawa.

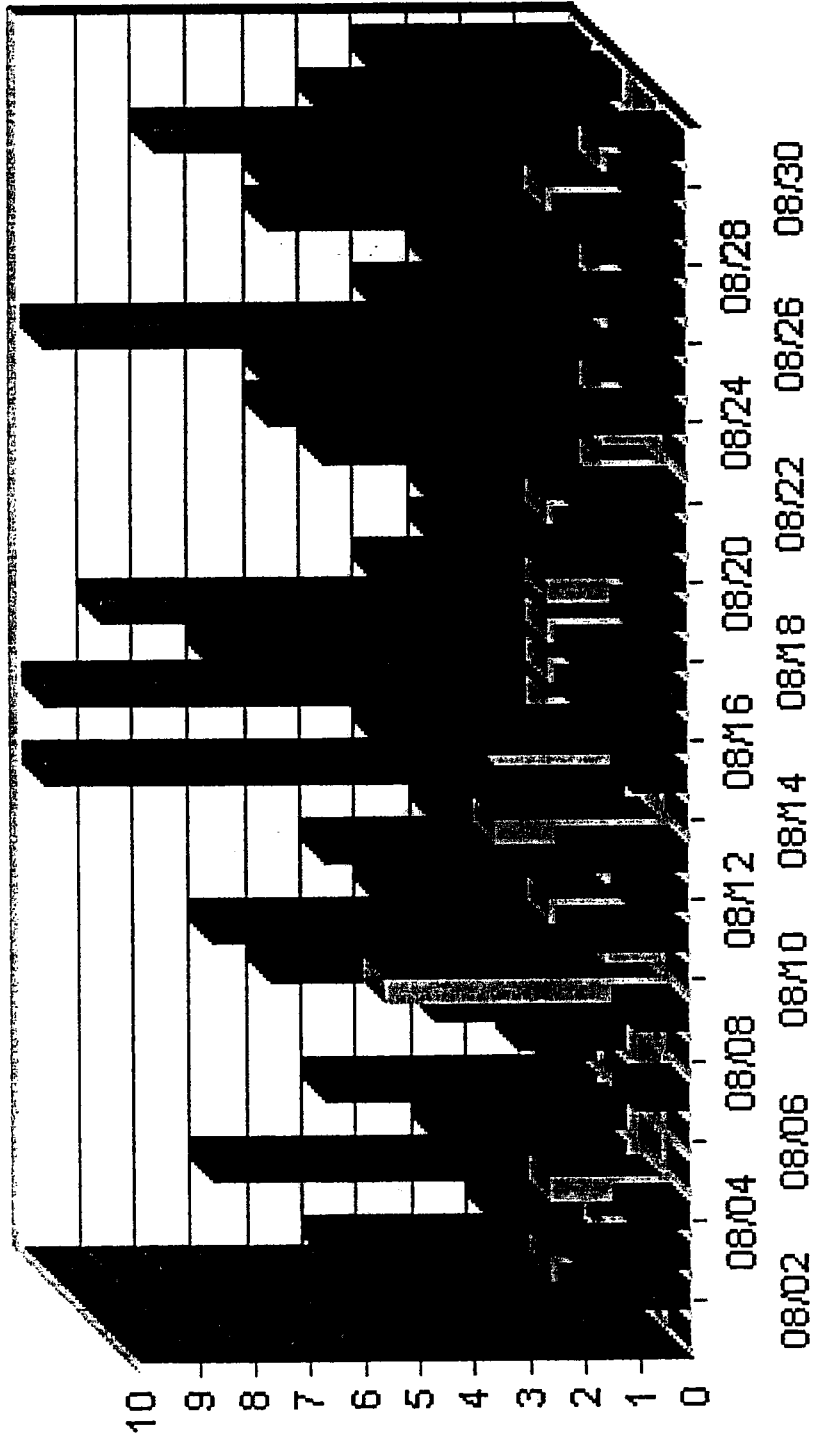
Visits



Mon 08/01/2005 - Wed 08/31/2005 (1 Month Scale)

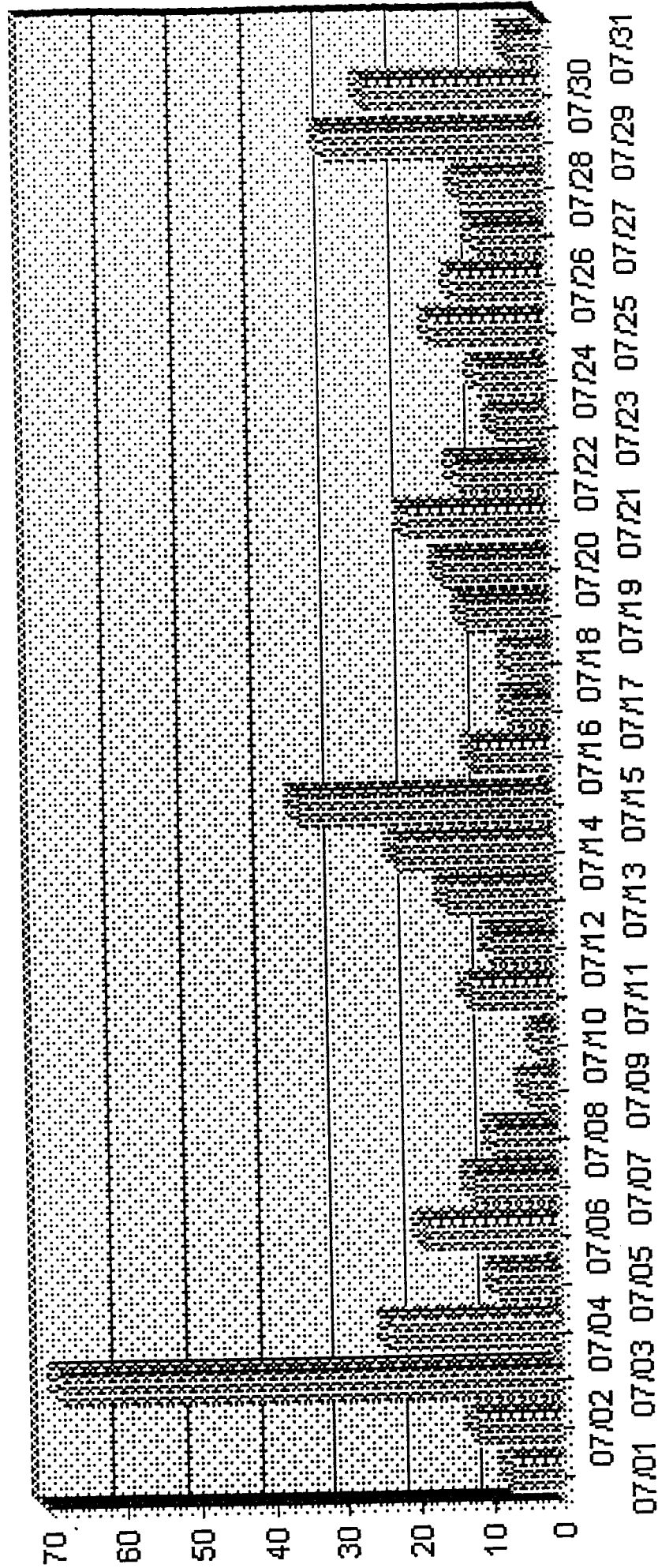
Top Documents

- info.htm
- outline.htm
- ipof
- www.cffmp.org/



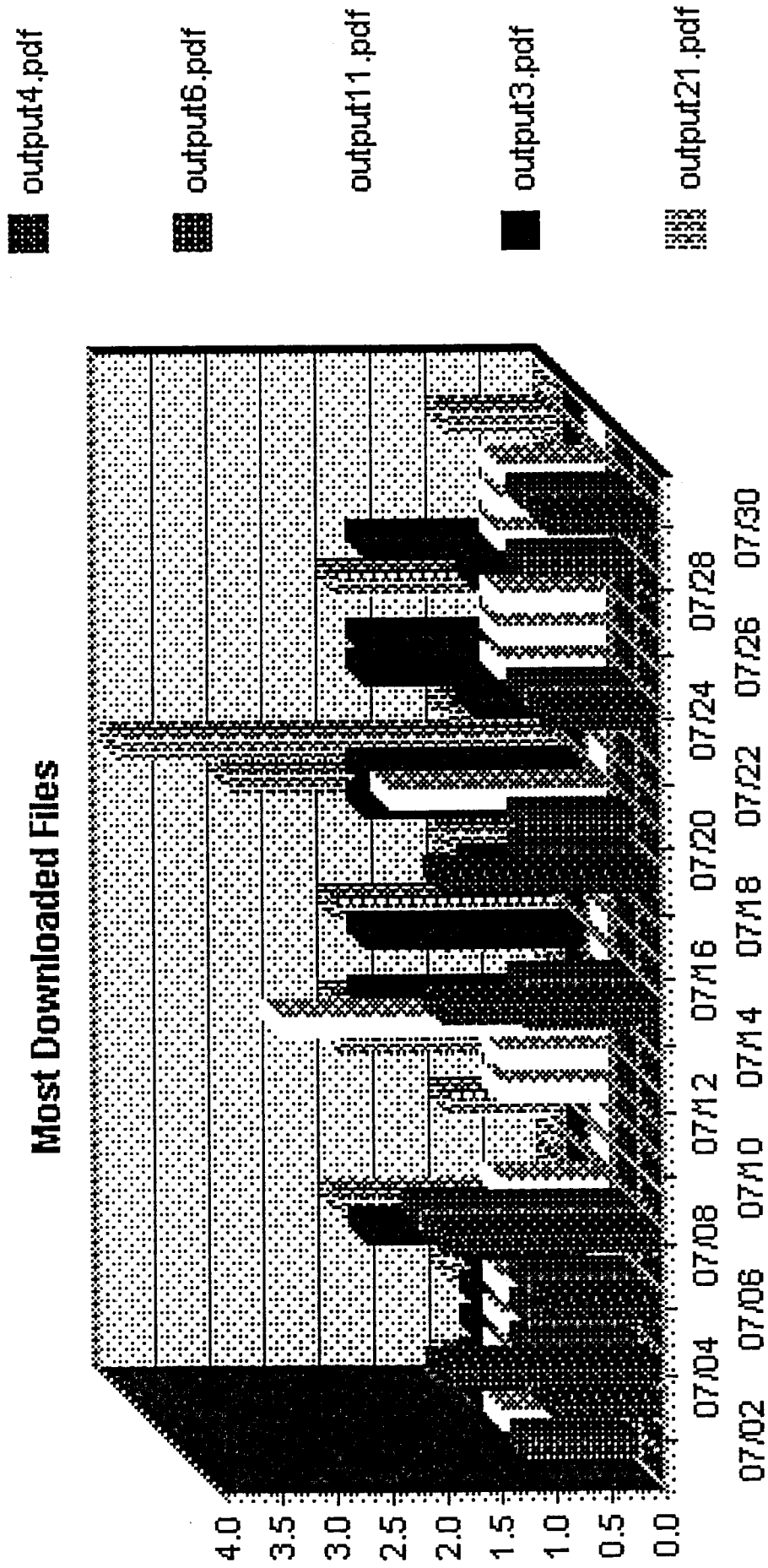
Mon 08/01/2005 - Wed 08/31/2005 (1 Month Scale)

Visits



Fri 07/01/2005 - Sun 07/31/2005 (1 Month Scale)

Most Downloaded Files



Fri 07/01/2005 - Sun 07/31/2005 (1 Month Scale)

Technical seminars by short-term experts (SE)

Name of SE	Field	Fiscal Year	Title	Others
N. Matsumura	Forest management analysis	2002	Growth analysis and management planning of indigenous fast growing tree species =Case study of multi-stories forest management project in Malaysia	
K. Miyakuni	Charcoal application/production	2002	Utilization of charcoal as a soil conditioner	
Y. Kiyono	Biomass measurement	2003		
N. Matsumura	Forest management analysis	2003	Conventional management model and CDM related options	
K. Miyakuni	Charcoal application/production	2003	Charcoal production techniques for carbon sequestration	
M. Amano	CDM plantation	2003	Latest situation on A/R CDM	21
N. Matsumura	Forest management analysis	2004	Procedures of A/R project and basic design of financial analysis	
I. Noda	Database technique	2004	Basic data for A/R CDM project and the design of relational database management	
K. Miyakuni	Biomass measurement-West Java	2004	Allometric equations and other parameters for estimating biomass amount of plantation forests	
K. Harada	CDM plantation and community	2004	Exploring CDM plantation projects in Indonesia: benefits for local people	
Y. Kiyono	Biomass measurement	2004	Tropical grassland ecology and CDM-AR, and Report of SE	
I. Noda	Database technique	2004	Report of database techniques	
M. Amano	CDM plantation	2004	Latest situation on A/R CDM	
Y. Yokota	CDM plantation and community	2005	A/R CDM management with local people and leakage	
M. Ishikawa	CDM related cost and validation analysis	2005	Latest development of CDM implementation	23 (participants list attached)

Total 16

Participation at workshop, seminars and relevant, which were held by outside organizations

1. CDM-LULUCF meeting

Organizer: Ministry of Forestry

Date: June, 2003

Venue: Jakarta

Participants: Ando

Presentation: none

2. BIO-REFOR Workshop

Organizer: BIOTROP

Date: December, 2003

Venue: Yogyakarta

Participation: Dr. Chairil

Presentation: "Carbon stock estimates for Acacia mangium, Pinus merkusii and Shorea leprosula plantations in West JAva"

3. Planning Officers meeting

Organizer: Perm Perhutani

Date: January, 2004

Venue: Bandung

Participants: Ando, Ika

Presentation: Project activities and output

4. International Workshop on better utilization of forest biomass for local community and environments

Organizer: JIFPRO

Date: March, 2004

Venue: Bogor

Participants: Dr. Miyakuni, Dr. Nugroho (Not c/p)

Presentation: "Method of charcoal production to enhance carbon sequestration (Part 2)"
(Dr. Miyakuni)

"Status and prospects of charcoal in Indonesia" (Dr. Nugroho)

5. Seminar on capacity building of CDM plantation

Organizer: JIFPRO

Date: March, 2004

Venue: Bukitingi, West Sumatra

Participants: Dr. Fauzi, Ando

Presentation: "Estimation of carbon stock of Acacia mangium and Shorea leprosula

plantation in Indonesia” (Dr. Fauzi)

6. International Symposium on Energy & Agriculture carbon utilization

Organizer: University of Georgia

Date: June, 2004

Venue: Athen USA

Participants: Dr. Chairil, Ando

Presentation: “Effect of charcoal application to early growth stage of *Acacia mangium*”
(Dr. Chairil)

“Trials on some of charcoal production methods for carbon sequestration
in Indonesia” (Ando)

7. International Symposium on the role of forests for coming generations

Organizer: Utsunomiya University

Date: October, 2004

Venue: Utsunomiya, Japan

Participants: Dr. Taulana, Mr. Rinaldi, Ando

Presentation: “Cost & benefit analysis of AR-CDM plantations - Case study in Indonesia”
(Ando)

8. Seminar on Environmental impact of AR-CDM plantation activities to biodiversity

Organizer: FFPRI

Date: December, 2004

Venue: Bogor

Participants: Ando, Nakama

Presentation: none

9. Workshop on carbon sequestration and sustainable livelihoods

Organizer: CIFOR

Date: February, 2005

Venue: Bogor

Participants: All experts

Presentation: none

10. CDM socialization workshop

Organizer: Ministry of Forestry

Date: March, 2005

Venue: Jakarta

Participants: Ando

Presentation: none

11. Workshop on financing modalities of CDM

Organizer: IGES

Date: June, 2005

Venue: Jakarta

Participants: Ando, Sato

Presentation: none

12. IUFRO World Congress

Organizer: IUFRO

Date: August, 2005

Venue: Brisbane, Australia

Participants: Dr. Chairil, Kato

Presentation: “Estimation of biomass and sequestered carbon of a young teak plantation with participatory forest management in East Java” (Kato)

“Effect of charcoal application on growth of Acacia mangium” (Chairil)

****It should be noted that there are more cases that experts or counterparts have participated as the project activities.**

Project Related to AR-CDM in Indonesia

付属資料7(6)

As of July 25, 2005

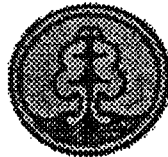
付属資料7.(8) インドネシア国内におけるAR-CDM関連プロジェクト一覧

Funding Organization	Title	Period	Implementing organization/ Funding organization	Budget (USD)	Objectives & activities	Output	Contact person
ACIAR	ACIAR Project ASEM Economic Potential Of Land Use Change and Forestry for Carbon sequestration and poverty Program	July 2003 - June 2005 Project Extension July 205 - June 2006	FORDA, Ministry of Forestry/ ACIAR	\$400,000.00	<ul style="list-style-type: none"> - Farm level analysis - Parameter values for modeling different LUCF system (30 tree species, 3 site in Indonesia, 1 site in Australia) - Bioeconomic models of different LUCF system in Indonesia and Australia - Transaction Cost and project design - Estimating carbon sequestration monitoring costs for smallholders - Estimates of the trade between accuracy of carbon sequestration, measurement and payment level - Estimates of benefit and cost of alternate project design in selected locations, and distribution of benefit 	<ul style="list-style-type: none"> - 24 different Indonesian agroforestry systems have been identified and described in detail - Three types of bioeconomic models of LUCF systems have been developed - Estimates of the costs of measuring biomass carbon in Indonesian agroforestry system have been obtained - Four working paper (available on the internet) - Four journal papers 	<p>Dr. Kirsilant Ginoga Research and Development Centre for Social Culture and Forestry Economics Jl. Gunung Batu No. 5 Bogor Tel: +62-251-832762 scslca@indo.nsl.id</p> <p>Dr. Oscar Caccho ACIAR Project Leader ocaccho@poboz.uinc.edu.au http://www.acsiar.gov.au/web.nsf/ides/ACIA-692DU3</p>
ADB	Carbon sequestration through Clean Development Mechanism	September 2003- March 2005	Ministry of Environment/ADE/ CIDA	USD 700k	<ul style="list-style-type: none"> - To provide technical assistance to the government - To assist the government in piloting a carbon sequestration project under CDM to help Indonesian stakeholder understand the process, implications and potential application of CDM 	<ul style="list-style-type: none"> - Review of previous studies & synthesis of lesson learned on CDM-carbon sequestration - Preparation of (Project Design Documents) PDDs & obtaining CER approval from the CDM executive board 	<p>S.Sahjannanthan South East Asia Department ADB 6 ADB Avenue Mandaluyong City, 0401 Metro Manila Philippines Tel: 63-2-6324444 Fax: 63-2-6324444 information@adb.org http://www.adb.org/Documents/TARe/NOTar_ino_38675.pdf</p>
CIDA	Climate change, Forest and Peatland in Indonesia (CCFPI)	August 2001 - March 2005	Welland International Indonesia Programme/ CIDA, GEF	\$3,900,000 Cnd	<ul style="list-style-type: none"> - Practical community based management approached for Peatland forest - Pilot projects in peatland areas under different resources management regimes, including : protected areas, community managed area, parts of the ex-novo rice project and national park - Completion of peatland management practices 	<ul style="list-style-type: none"> - A replicable model for community-based Clean Development Mechanism in peatland forest environment in Indonesia - Maintenance of carbon storage through avoidance of deforestation/land loss, afforestation and reduced incidence of fire 	<p>Yus Ruelita Moor Project Coordinator Wellands International-Indonesia P.O. Box 254/BPR, Bogor 16002 Jl. Jend. Sudirman Kav. 53 Bogor Tel: +62 251 312 184 Fax: +62 251 325 785 ca_csd@wellands.or.id http://www.acdi-cida.gc.ca/cida/web/webcountry.nsf/VLUDocEn/Indonesia-Projects#</p>
CIDA	Forest Resource Management for Carbon Sequestration (FORMACS)	2002-2005	Care Indonesia/ CIDA	\$ 2.6,000,000 Cnd	<ul style="list-style-type: none"> - To achieve household livelihood security that maintains carbon stocks and increases carbon sequestration. - To promote the adoption of village-based natural resource management system in selected villages. 	<ul style="list-style-type: none"> - A replicable model for community based forest resource management that leads to carbon storage maintained in forests and increased carbon sequestration on degraded land 	<p>Angela Keller-Herzog Field Representative Embassy Of Canada World Trade Center, 6th Floor Jl. Jend. Sudirman Kav. 29-31 P.O. Box 8324/JKS MP Jakarta 12920, Indonesia Tel.: (62-21) 2550-7889 Fax: (62-21) 2550-7813 angela.keller.herzog@dfait-maecd.gc.ca</p> <p>Garry Shea CARE Indonesia E-mail: gamshea@pali.wasantiana.net.id Nessy Rosdiana Project Manager (62-556) 21542 (Numukan) (62-541) 741194 (Samainda) http://www.acdi-cida.gc.ca/cida/web/webcountry.nsf/VLUDocEn/Indonesia-Projects#</p>

Project Related to AR-CDM in Indonesia

Funding Organization	Title	Period	Implementing organization	Budget (USD)	Objectives & activities	Output	Contact person
JIFFPRO	Indonesia and Japan Friendship afforestation Project - Phase I (Lombok, Nusa Tenggara Barat)	Phase I (1996-2001)	RLPS- Ministry of Forestry	Rp 1.7 Trillion	- To improve environment condition through reforestation - Empowerment of local people	- Reforestation area 350 ha	Mr. Yudi RLPS Manggala wanabekti Blok I-12th Floor Jl Gatot subroto, Senayan Jakarta Telp: 62-21-5730106 difi@n.us@jg@subt.cbn.us@id
JIFFPRO	Indonesia and Japan Friendship afforestation Project - Phase II (Lombok, Nusa Tenggara Barat)	Phase II (2002-2006)	RLPS- Ministry of Forestry	Rp 950 Million	- To improve environment condition through reforestation - Empowerment of local people	- Reforestation area 130 ha	Mr. Yudi RLPS Manggala wanabekti Blok I-12th Floor Jl Gatot subroto, Senayan Jakarta Telp: 62-21-5730106 difi@n.us@jg@subt.cbn.us@id
JIFFPRO, EPSON	Reforestation Project "An EPSON Eco-friendly forest for the future" (South Kalimantan)	Nov 2000 - Oct 2005	RLPS-Ministry of Forestry	Rp 2.4 Trillion	- To improve the local natural environment condition - Empowerment of local people - To contribute global warming mitigation and global environment conservation	- Reforestation area : 300 ha	Mr. Yudi RLPS Manggala wanabekti Blok I-12th Floor Jl Gatot subroto, Senayan Jakarta Telp: 62-21-5730106 difi@n.us@jg@subt.cbn.us@id

Measures to be Taken After Termination of The CFFM Project (FORDA)

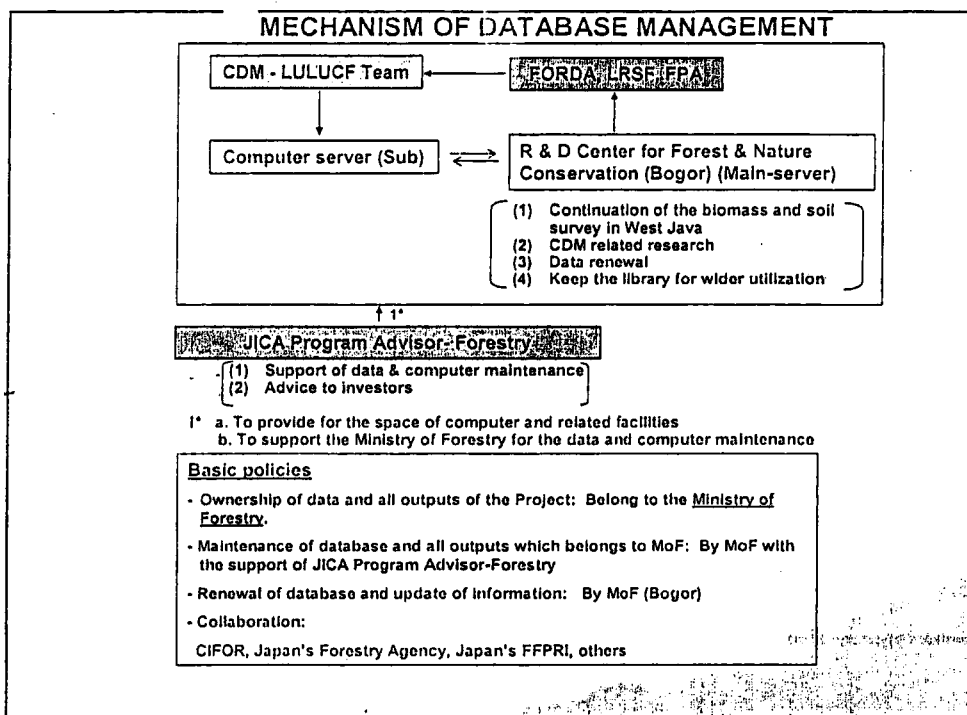


Jakarta, September 16, 2005

1. **Experimental Site:**
 - Field research site: maintained by cooperation of FORDA and PERUM PERHUTANI
 - Data collection: by FNCRDC's researchers
2. **Data for Carbon Estimate**
 - Data collection: continued by researcher (FORDA)
 - **Data:**
 - ✓ *Tree height*
 - ✓ *Dbh*
 - ✓ *Above ground biomass*
 - ✓ *Below ground biomass*
 - ✓ *Soil Carbon*
 - ✓ *Organic litter*
 - ✓ *Necromass*
 - ✓ *Formulate Allometric equation*
 - ✓ *Charcoal application*
3. **Scientific papers, Research papers, Presentation :**
 - Maintained and continued by research team

4. **Research Team:**
- Maintained and updated
 - Coordinator : Dr. Chairil Anwar Siregar, MSc (Soil chemistry)
 - Researcher:
 - ✓ Rinaldi Imanudin, S.Hut (Forest mensuration)
 - ✓ Nur Muhamad Heriyanto, S.Hut (Forest management)
 - ✓ Harris Herman Siringo-ringo, MS (Chemistry)
 - ✓ I Wayan Susi Dharmawan, S.Hut, MSi (will be assigned as Database management)
5. **Manuals for The Potential AR-CDM Participants:**
- Updated by FORDA – National Secretariat of Forestry CDM, MoF
 - Disseminated by FORDA – National Secretariat of Forestry CDM, MoF

6. **Database on Biomass and Soil for The Potential CDM Participants:**
- Carried out by FORDA:
 - ✓ Uploading
 - ✓ Updating
 - Place of computer server:
 - ✓ main server : FNCRDC office in Bogor
 - ✓ sub server : office of JICA Program Advisor in MoF
 - Staff for maintenance:
 - ✓ main server : FORDA staff with support of JICA Program Advisor
 - ✓ sub server : JICA staff
 - Maintenance cost (cost provider and service)
 - ✓ MoF with support of JICA



7. Website on AR-CDM in Indonesia:

- <http://www.cffmp.org> will be put under FORDA's website
- Website (FORDA) will be linked with AR-CDM (managed by MOF), and State Ministry for Env.
- Results will be shared with related organizations:
 - ✓ NGO
 - ✓ State Ministry for Environment
 - ✓ Local Government Agencies
 - ✓ Universities
 - ✓ Prospective Corporations

8. Literature, references:

- Maintained and updated by FORDA
- Special room will be allocated at Research Centre

9. **Equipment:**
 - **Maintained by FNCRDC to support carbon related research team within the Center**
10. **Provision of Information to Potential Investors and Researchers**
 - **Will be coordinated with Forest Planning Agency, Bureau of International Cooperation and Investment, JICA Programm Advisor-Forestry**
11. **Provision of the Institutional and Financial Arrangement for the above mentioned Measures**
 - **Will be arranged according to National Budget System**