

Appendices

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions
5. Cost Estimation Borne by the Recipient Country
6. Other Relevant Data

Appendices

1. Member List of the Study Team

List of the members of the Study Team

Official members

Study I

- (1) Leader/ Planning Management Emiko Mutsuyoshi
Senior Officer, Grant Aid Management Dept., JICA
- (2) Technical Adviser Yasuo Iijima
Senior Officer of Conservation Division, Private Forest Department,
Forestry Agency

Study II

- (1) Leader Yoshikazu Yamada
Director, Third Project Management Division, Grant Aid
Management Department, JICA
- (2) Technical Adviser Akira Sakai
National Forest Planning Division, National Forest Department,
Forestry Agency
- (3) Planning Management Shigeru Otake
First Project Management Division, Grant Aid Management, JICA

Study III

- (1) Leader Shigeru Otake
First Project Management Division, Grant Aid Management, JICA
- (2) Technical Adviser Shozo Kitamura
National Forest Department, Forestry Agency

Consultant

- (1) Chief Consultant/ Operation and Maintenance Kinya Nakamura
Senior Advisor, Overseas Operations Department,
Kokusai Kogyo Co., Ltd.
- (2) Afforestation Planning Tadayoshi Shimofusa
Kokusai Kogyo Co., Ltd.
- (3) Land use survey/ GIS Kenichi Shibata
Kokusai Kogyo Co., Ltd.
- (4) Social survey/ Participation Planning Yukiko Yoshida
Kokusai Kogyo Co., Ltd.
- (5) Facility & Equipment Planning Hideto Yamazaki
Kokusai Kogyo Co., Ltd.
- (6) Water resource survey Toshiyuki Matsumoto
Kokusai Kogyo Co., Ltd.
- (7) Coordinator Yumiko Asari
Kokusai Kogyo Co., Ltd.

2. Study Schedule

Study Schedule I

Study I

14 May 2001 (Mon) ~ 2 July 2001 (Mon)	Shibata
22 May 2001 (Tue) ~ 2 June 2001 (Thu)	Official members (Mutsuyoshi, Iijima)
22 May 2001 (Tue) ~ 20 July 2001 (Fri)	Nakamura, Shimofusa, Asari
1 June 2001 (Fri) ~ 20 July 2001 (Fri)	Yoshida
21 June 2001 (Thu) ~ 20 July 2001 (Fri)	Matsumoto

No.	Date	Movement/ Accommodation	Activities				
			Official members Mutsuyoshi Iijima	Consultant members			
				Nakamura Shimofusa Asari	Shibata	Yoshida	Matsumoto
1	5/14 Mon	Yangon			TKO-YGN		
2	5/15 Tue	Yangon			Meeting with local consult.		
3	5/16 Wed	Yangon			-ditto-		
4	5/17 Thu	Yangon			-ditto-		
5	5/18 Fri	Yangon			-ditto-		
6	5/19 Sat	Yangon			-ditto-		
7	5/20 Sun	Yangon			-ditto-		
8	5/21 Mon	Yangon			-ditto-		
9	5/22 Tue	Yangon	TKO-YGN	TKO-YGN	-ditto-		
10	5/23 Wed	Yangon	JICA, JPN Em, FERD, FD,DZGD		-ditto-		
11	5/24 Thu	Bagan	Yangon-Mandalay (6T-401) DZGD Mandalay-Nyaung Oo (by car)		-ditto-		
12	5/25 Fri	Bagan	DZGD, Myaythindwin, Yomiuri site		-ditto-		
13	5/26 Sat	Bagan	OISCA Plantation Site		-ditto-		
14	5/27 Sun	Yangon	Nyaung Oo - Yangon (6T-401)				
15	5/28 Mon	Yangon	Meeting JPN sides				
16	5/29 Tue	Yangon	Meeting FD & DZGD				
17	5/30 Wed	Yangon	Meeting FD & DZGD				
18	5/31 Thu	Yangon	10:00 Signing of M/M. 11:00 JICA 14:30 JPN Em.				
19	6/ 1 Fri	Yangon	YGN-BKK	Collection of data in FD	TKO-YGN		
20	6/ 2 Sat	Yangon	BKK-TKO	Meeting Meeting with ECODEF			

No.	Date	Movement/ Accommodation	Activities			
			Shimofusa Shibata	Nakamura Yoshida Aasri	Matsumoto	
21	6/ 3 Sun	Yangon	Meeting with team			
22	6/ 4 Mon	Mandalay/Yangon	06:30 Yangon Mandalay (by plane)	Local consult.(Baseline survey, RRA)		
23	6/ 5 Tue	Yezin/Yangon	Mandalay FRI (by car)	-ditto-		
24	6/ 6 Wed	Yezin/Yangon	FRI, Seed Center	-ditto-		
25	6/ 7 Thu	Mandalay/Yangon	FRI Mandalay (by car)	-ditto-		
26	6/ 8 Fri	Mandalay		06:30 Yangon Mandalay (by plane)		
			Meeting with DZGD			
27	6/ 9 Sat	Nyaung Oo	Meeting with DZGD Mandalay Nyaung Oo (by car)			
28	6/10 Sun	Nyaung Oo	Meeting with team			
29	6/11 Mon	Nyaung Oo	Sites survey (Sites sy)	Sites sy		
30	6/12 Tue	FRI/ Nyaung Oo	Sites sy	Sites sy		
31	6/13 Wed	Nyaung Oo	Sites sy	Sites sy		
32	6/14 Thu	Nyaung Oo	Sites sy	Sites sy		
33	6/15 Fri	Nyaung Oo	Sites sy	Sites sy		
34	6/16 Sat	Nyaung Oo	Sites sy	Sites sy		
35	6/17 Sun	Nyaung Oo/Mandalay	Sites sy	Yoshida	Nakamura / Asari	
				Sites sy	Nyaung Oo Mandalay (by car)	
36	6/18 Mon	Nyaung Oo/Mandalay	Sites sy	Sites sy	DZGD/Irrigation Dpt.	
37	6/19 Tue	Nyaung Oo/Mandalay	Sites sy	Sites sy	DZGD/Irrigation Dpt.	
38	6/20 Wed	Nyaung Oo/Yangon	Sites sy	Sites sy	Mandalay Yangon (by plane)	
39	6/21 Thu	Nyaung Oo /Yangon	Sites sy	Sites sy	Irrigation Dpt./Water Supply Dpt.	TKO-YGN
40	6/22 Fri	Nyaung Oo /Yangon	Sites sy	Sites sy	Data collection	
41	6/23 Sat	Nyaung Oo	Sites sy	Sites sy	Yangon Nyaung Oo (by plane)	
42	6/24 Sun	Nyaung Oo	Meeting with team			

No.	Date	Movement/ Accommodation	Activities			
			Shimofusa Shibata		Nakamura Yoshida Aasri	Matsumoto
43	6/25 Mon	Nyaung Oo	Sites sy		Yoshida/Asari	Nakamura/Matsu moto
					Sites sy	Sites sy
44	6/26 Tue	Nyaung Oo	Sites sy		Sites sy	Sites sy
45	6/27 Wed	Nyaung Oo /Yangon	Shibata	Shimofu sa	Sites sy	Sites sy
			Nyaung Oo Yangon (by plane)	Sites sy	Sites sy	Sites sy
46	6/28 Thu	Nyaung Oo /Yangon	Local consulta nt	Sites sy	Sites sy	Sites sy
47	6/29 Fri	Nyaung Oo /Yangon	-ditto-	Sites sy	Sites sy	Sites sy
48	6/30 Sat	Nyaung Oo /Yangon	-ditto-	Sites sy	Sites sy	Sites sy
49	7/1 Sun	Nyaung Oo /Movilizing to Bangkok	YGN-B KK	Meeting with team		
50	7/2 Mon	Nyaung Oo	BKK-TY O	Sites sy	Sites sy	Sites sy
51	7/3 Tue	Nyaung Oo	Sites sy		Sites sy	Sites sy
52	7/4 Wed	Nyaung Oo	Sites sy		Sites sy	Sites sy
53	7/5 Thu	Nyaung Oo	Sites sy		Sites sy	Sites sy
54	7/6 Fri	Nyaung Oo	Sites sy		Sites sy	Sites sy
55	7/7 Sat	Nyaung Oo	Sites sy		Sites sy	Sites sy
56	7/8 Sun	Nyaung Oo	Sites sy		Sites sy	Sites sy
57	7/9 Mon	Nyaung Oo	Sites sy		Sites sy	Sites sy
58	7/10 Tue	Nyaung Oo	Sites sy		Sites sy	Sites sy
59	7/11 Wed	Nyaung Oo	Meeting with the Study team members			
60	7/12 Thu	Mandalay	Nyaung Oo Mandalay (by car)			
61	7/13 Fri	Mandalay	Meeting with DZGD			
62	7/14 Sat	Yangon	Mandalay Yangon			
63	7/15 Sun	Yangon	Data collection			
64	7/16 Mon	Yangon	Meeting with Local Consultant			
65	7/17 Tue	Yangon	Meeting with FD			
66	7/18 Wed	Yangon	JICA, JPN Em. and FD			
67	7/19 Thu	Mobilizing to Bkk	YGN BKK			
68	7/20 Fri	to TKO	6:20 Arriving Narita in the morning			

Study Schedule II

Study II

1 Oct 2001 (Mon)	~ 9 Nov 2001 (Fri)	Nakamura, Shimofusa, Yamazaki, Asari
3 Oct 2001 (Wed)	~ 20 Oct 2001 (Sat)	Yoshida
10 Oct 2001 (Wed)	~ 29 Oct 2001 (Mon)	Shibata
28 Oct 2001 (Sun)	~ 8 Nov 2001 (Thu)	Official members (Sakai, Otake)
4 Nov 2001 (Sun)	~ (8 Nov 2001 (Thu))	Official member (Yamada)

No.	Date	Movement/ Accommodation	Activities			
			Consultant members			Official members Yamada, Sakai, Otake
			Nakamura/ Shimofusa/ Yamazaki/ Asari	Yoshida	Shibata	
1	10/1	Yangon	Tokyo Yangon			
2	10/2	Yangon	JICA,JPN Em			
3	10/3	Yangon	FD,DZGD	Tokyo Yangon		
4	10/4	Mandalay	(am) Yangon Mandalay (pm) FD,DZGD			
5	10/5	Naung Oo	(am) FD,DZGD (pm) Mandalay Naung Oo			
6	10/6	Naung Oo	Sites sy	Sites sy		
7	10/7	Naung Oo	"	"		
8	10/8	Naung Oo	"	"		
9	10/9	Naung Oo	Naung Oo Yangon,survey for materials (Yamazaki) Sites sy (others)	"		
10	10/10	Naung Oo	Yangon Naung Oo (Yamazaki) Sites sy	"	Tokyo Yangon	
11	10/11	Naung Oo	"	"	Yangon Naung Oo	
12	10/12	Naung Oo	"	"	Sites sy	
13	10/13	Naung Oo	"	"	"	
14	10/14	Naung Oo	"	"	"	
15	10/15	Naung Oo	"	"	"	
16	10/16	Naung Oo	"	"	"	
17	10/17	Naung Oo	Naung Oo Mandalay,Meeting DZGD (Nakamura) Sites sy (others)	"	"	

No.	Date	Movement/ Accommodation	Activities			
			Consultant members			Official members Yamada, Sakai, Otake
			Nakamura/ Shimofusa/ Yamazaki/ Asari	Yoshida	Shibata	
18	10/18	Naung Oo	MEETING DZGD,Mandalay Naung Oo(Nakamura) Sites sy (others)	Naung Oo/Yangon	"	
19	10/19	Naung Oo/Yangon	Sites sy	Yangon Bangkok	"	
20	10/20	Naung Oo/Bangkok	"	Tokyo	"	
21	10/21	Naung Oo	Naung Oo Yangon,MEETING DZGD,survey for materials (Nakamura,Yamazaki) Sites sy (others)	/	"	
22	10/22	Naung Oo	MEETING DZGD,survey for materials (Nakamura,Yamazaki) Sites sy (others)		"	
23	10/23	Naung Oo	Yangon Naung Oo(Nakamura,Yamazaki) Sites sy (others)		"	
24	10/24	Naung Oo	Sites sy		"	
25	10/25	Naung Oo	"		"	
26	10/26	Naung Oo	"		"	
27	10/27	Naung Oo	"		Naung Oo Yangon	
28	10/28	Naung Oo	Naung Oo Yangon (Nakamura) Sites sy (others)		Yangon Bangkok	Tokyo Yangon (Sakai,Otake)
29	10/29	Yangon	MEETING DZGD (Nakamura) Sites sy (others)		Tokyo	MEETING DZGD
30	10/30	Yangon	MEETING DZGD (Nakamura) Sites sy (others)		/	MEETING DZGD
31	10/31	Yangon	Yangon Naung Oo (Sakai,Otake,Nakamura) Sites sy			
32	11/1	Yangon	Sites sy			
33	11/2	Yangon	MEETING with DZGD			
34	11/3	Yangon	Meeting with team			
35	11/4	Yangon	Meeting with team Tokyo Yangon (Yamada)			

No.	Date	Movement/ Accomodation	Activities			
			Consultant members			Official members Yamada, Sakai, Otake
			Nakamura/ Shimofusa/ Yamazaki/ Asari	Yoshida	Shibata	
36	11/5	Yangon	MEETING with DZGD			
37	11/6	Yangon	MEETING with DZGD			
38	11/7	Yangon	Signing of M/M,JICA,JPN Em Yangon Bangkok (Sakai,Otake)			
39	11/8	Bangkok	Yangon Bangkok (consultant)			Tokyo (Sakai,Otake)
40	11/9	Tokyo	Bangkok Tokyo (consultant)			

Study Schedule III

Study III

26 Feb 2002 (Tue) ~ 9 Mar 2002 (Sat)

Nakamura, Shimofusa, Yamazaki

3 Mar 2002 (Sun) ~ 9 Mar 2002 (Sat)

Official Members (Otake, Kitamura)

No.	Date	Movement/ Accommodation	Activities	
			Consultant members Nakamura/ Shimofusa/ Yamazaki	Official members Otake, Kitamura
1	2/26	Yangon	Tokyo Yangon	
2	2/27	Yangon	9:00 JICA 11:00 Japan Embassy 14:00 FD, DZGD	
3	2/28	Yangon	(AM) Yangon Mandalay (PM) FD,DZGD	
4	3/1	Mandalay	MEETING with DZGD	
5	3/2	Naung Oo	Preparation of Report	
6	3/3	Naung Oo	Mandalay Yangon	Tokyo Yangon
7	3/4	Naung Oo	Meeting with JICA Meeting with FD, DZGD	
8	3/5	Naung Oo	CFTDC	
9	3/6	Naung Oo	Meeting with FD, DZGD	
10	3/7	Naung Oo	Meeting with FD, DZGD	
11	3/8	Naung Oo	10:00 Signing on M/M 11:00 JICA 14:00 Japan Embassy Yangon Bangkok	
12	3/9	Naung Oo	Bangkok Tokyo	Tokyo

3. List of Parties Concerned in the Recipient Country

List of Parties Concerned in the Recipient Country

- (1) Embassy of Japan in Myanmar
 Naoki Ito Councillor
 Kazuhiro Furukawa Second Secretary (Economic)
 Masamichi Hashimoto Second Secretary
- (2) JICA Myanmar Office
 Toshimichi Aoki Resident Representatives of JICA, Technical Cooperation Section
 Eiji Kozuka Assistant Resident Representatives of JICA, Technical Cooperation Section
 Toshiya Sato Assistant Resident Representatives of JICA, Technical Cooperation Section
 Masayuki Kitaki Project Formulation Advisor
 U Kyaw Lwin Oo Programme Assistant
- (3) Ministry of Forestry
 U Soe Tint Director General, Planning and statistics Dept
 U Hla Htwe Director, Planning and Statistics Dept.
 U Kyaw Win Deputy Director, Planning and statistics Dept
 U Tin New Assistant Director, Planning and statistics Dept
- (4) Dry Zone Greening Department (DZGD)
【 Yangon 】
 U Thiri Tin Deputy Director
 U Maung Maung Kyans Deputy Director
 U Min Aung Min Assistant Director
 U San Myint Tun Range Officer
【 Mandalay 】
 U Tun Tun Director General
 U Hla Myint Deputy Director General
 U Soe Myint Ex-Deputy Director General
 U Maung Maung Htwe Director (Planning)
 U Tin Aye Deputy Director, Director General Office
 U Myint Swe Director, Engineer
 U Zaw Win Director, Mandalay Div.
 U Kyi Han Director (ADMIN)
 U Tun Myint Assistant Director, Planning
 U Aung Kyaw Staff Officer
 U Moe Thu Range Officer
【 Nyaung Oo 】
 U Mya Assistant Director
 U Way Myo Hla Staff Officer
 U Bo Bo Winn Staff Officer
 U Tun Nyunt Tin Range Officer
 U Myint Win Thu Range Officer
 U Aung Maw Oo Range Officer
 Saw Si La Range Officer
 U Win Bo Range Officer

- 【Others】**
- U Than Soe District Officer, Pakkoku District
U Aung Kyaw Lin Township Officer, Yezagyo Township
- (5) Nyaung Oo Township
U Kyaw Tint Chairman of township officer
- (6) Forest Department (FD)
U Shwe Kyaw Director General
U Soe Win Hlaing Deputy Director General
U Kyi Maung Director, Planning & Statistics Div.
U Saw Eh Dah Director, Training & Research Development Div.
U Oakkar Staff Officer, DG's Office
U Thein Win Deputy Director, Planning and Statistics Div
U Zaw Win Township Officer, Nyaung Oo Township
U Chit Hlaing Director, Watershed Management
- (7) FERD
Daw Myat Myat So Director
U Khin Naung Htay Ass. Director
U Soe Lin Director General
- (8) National Commission for Environmental Affairs (NCEA)
Daw Yin Yin Lay Director
U Kyi Thin Joint Secretary
U Nay Win Head of Branch
- (9) Water Resource Utilization Department, Ministry of Agriculture and Irrigation (WRUD)
【Yangon】
U Hla Myint Maung Deputy Director General
U Myint Than Deputy-Director, Ground water
【Nyaung Oo】
U Myint Thein Senior Assistant Engineer
U Mya Nyut Member of WRUD, Pumping Station 3, Letpande
- (10) Land Record and Settlement Department (Nyaung Oo)
U Thein Luin Staff Officer
- (11) Department of Developments Affairs, Ministry of Progress of Border areas and National Races and Development Affairs (DDA)
Daw Phyu Phyu Sein Staff Officer, DDA Nyaung Oo
- (12) Forest Research Institute (FRI) (Yezin)
U Win Kyi Director
U Khin Maung Oo AD, Forest Department Division
U Win Maung AD, Forest Management & Silviculture sub Div
U Htun Wai AD, Forest Resource sub Division
Daw Yin Yin Kyi Assistant Director, Forest Botany and Tree Improvement sub Division
Daw Wai Wai Than Forest Pathologist
Daw Thein Kyi Seed Laboratory, Forest Management & Silviculture sub Division

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|------|---|---|
| | U Thein Htwe | Staff Officer, Silviculture Section |
| | U Aung Aung Myint | Staff Officer, Forest Management & Silviculture Section |
| | U Myint Lwin | Staff Officer, Forest Management & Silviculture Section |
| | U Myint Lwin | Staff Officer, Natural Resources |
| (13) | Institute of Forestry (Yezin) | |
| | U Win Kyi | Pro-Rector |
| | U San Lwin | Pro-Rector |
| | U Zaw Win | Professor |
| | U Ohn Win | Professor |
| | U Min Thant Zin | Assistant Lecturer |
| (14) | OISCA International | |
| | Ikuo Okamura | Director OISCA I.D.M. to Myanmar |
| | Chika Mizuguchi | Technical staff |
| (15) | FAO (Environmentally Suitable Food Security and Micro-income Opportunities in the Dry Zone) | |
| | David G. Kahan | Agency Project Manager |
| (16) | UNDP | |
| | U David Dallah | Programme Manager |
| | Hla Myint Hpu | Programme Manager |
| | Khin Maung Wynn | Administrative Officer |
| (17) | JICA Study Team for water supply (Mandalay) | |
| | Masayuki Taguchi | Manager, International Department, Kyowa Engineering Consultants Co., Ltd. |
| | Gonohe Nobuyuki | Pacific Consultants International/Registered Consulting Engineer (Water Supply and Sewerage) Project Manager Environmental Management Department, Consulting division |
| | Haruo Harada | Project Manager, Resources Research Department, Mineral Resources Division, Mitsui Mineral Development Engineering Co., LTD. |
| (18) | Preparatory Study Team / Experts of Central Dry Zone Greening Project in Myanmar | |
| | Katsuro Saito | LEADER/ Director, Forestry and Environment Division, Forestry and Natural Environment Department, JICA |
| | Shunji Shimizu | COOPERATION POLICY/ Assistant Director, Technical Cooperation Division, Economic Cooperation Bureau, Ministry of Foreign Affairs |
| | Takayuki Satoh | TRAINING PLANNING/ Assistant Division Chief, Information System Office, National Forest Department, Forest Agency, Ministry of Agriculture, Forestry and Fisheries (MAFF) |
| | Daigo Koga | COOPERATION PLANNING/ Project Officer, Forestry and Environment Division, Forestry and Natural Environment Department, JICA |
| | Shinji Tanabe | DRY ZONE FORESTATION/Councilor, Overseas Division, Japan Forest Technology Association |
| | Hideo Sakamoto | PLANNING ANALYSIS/ Senior Consultant, PADECO |
| | Akira Sakai | Expert (Leader) |

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| | Akira Sato | Expert |
| | Nobuyuki Iseri | Expert |
| (19) | BAJ (Bridge Asia Japan) | |
| | 【Yangon Office】 | |
| | Masahiro Araishi | Secretary General |
| | Ken-ichi Minoda | Country Representative |
| | Yoko Ujiie | Assistant Coordinator |
| | 【Nyaung Oo Office】 | |
| | Yasufumi Tsukamura | Senior Program Officer |
| | U Win Tun | Administrator |
| | Myo Min Htun | Well-drilling Co-ordinator |
| | Hlaing Hlaing | Secretary |
| (20) | SUNTAC Technologies | |
| | U Maung Maung Khin | Director, Technical and Business Development |
| (21) | ECODEV Group | |
| | U Win Myo Thu | Senior Strategist |
| (22) | FREDA(Forest Resource Environment Development and Conservation Association) | |
| | U Sein Maung Wint | Chairman |
| | U Ohn | General Secretary |
| | U Myint Than | Secretary |
| (23) | KARAMOSIA International | |
| | Michiko Ito | Resident Coordinator |

4. Minutes of Discussions

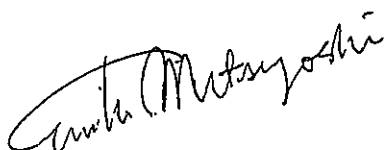
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR AFFORESTATION
IN CENTRAL DRY ZONE
IN THE UNION OF MYANMAR

Based on the results of the Preparatory Study, the Government of Japan decided to conduct a Basic Design Study on the Project for Afforestation in Central Dry Zone (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent the Basic Design Study Team (hereinafter referred to as "the Team") to the Union of Myanmar, which is headed by Ms. Emiko Mutsuyoshi, First Project Management Division, Grant Aid Management Department, JICA, and is scheduled to stay in the country from May 22 to July 20, 2001.

The Team held discussions with the officials concerned of the Government of Myanmar and conducted a field survey in the study area.

As a result of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.



Ms. Emiko Mutsuyoshi
Leader
Basic Design Study Team
Japan International Cooperation Agency



Yangon, May 31

For U Tun Tun, Director General
U Soe Myint
Deputy Director General
Dry Zone Greening Department
Ministry of Forestry



For U Kyaw Tint, Director General
U Saw Eh Dah
Director, Training and Research
Development Division
Forest Department
Ministry of Forestry

ATTACHMENT

1. Objective of the Project

The objective of the Project is to establish model plantations to support the Dry Zone Integrated Plan that aims at greening, enhancing soil productivity, restoring the environmental services, and providing basic needs for local people in the Dry Zone Area in the Central Myanmar.

2. Project Area

The project area is located in and around the Myethindwin Protected Public Forest area, Nyaung Oo District, Mandalay Division and indicated as Annex-1.

3. Responsible and Implementing Agency

Dry Zone Greening Department (DZGD) is responsible as implementing agency for establishment, maintenance and protection of the plantations under the Project until the plantations are transferred to Forest Department (FD). Forest Department, in collaboration with DZGD, will take responsibility for the future management of the plantations.

4. Main Items Requested by the Government of Myanmar

After discussions with the Team, the items described in 4-1 and 4-2 below were confirmed as the request. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

4-1. Plantation Establishment

Raising of seedlings, planting and tending works are requested for the establishment of the plantations approximately 3,000 ha.

4-2. Facilities and Equipment

Main facilities and equipment necessary for the establishment of the plantations, maintenance and management are indicated as Annex-2.

5. Japan's Grant Aid Scheme

5-1. Japan's Grant Aid Scheme

Myanmar side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3.

5-2. Major Undertakings to be Taken by Each Government

Both sides agreed that each government would take the necessary measures as described in Annex-4 for smooth implementation of the Project, as a condition for the Japan's Grant Aid implementation.

6. Schedule of the Study

6-1. The consultant members of the Team will proceed to further studies as Field

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[Signature]

[Signature]

Survey I in Myanmar until July 20, 2001 .

- 6-2. Based on the study results, JICA will prepare the interim report in English and dispatch the study team in order to explain the results of Field Survey I and to conduct further study as Field Survey II in September, 2001.
- 6-3. Based on the study results, JICA will prepare the draft report of the Basic Design Study in English and dispatch a mission in order to explain its contents in January 2002.
- 6-4. In case that the contents of the report is accepted in principle by the Government of Myanmar, JICA will complete the final report and send it to the Government of Myanmar by April 2002.

7. Other Relevant Issues

7-1. Selection of Plantation Sites

Based on the map of the project area shown in Annex-1, the Team will conduct survey to select appropriate plantation sites within the project area. Those area which are adjacent to and situated out side the boundary of the Myethindwin Protected Public Forest land will also be considered to be taken in selection of plantation sites according to the terrain and land use status to be more effective in land acquisition for plantation establishment.

7-2. Planning of Plantation Area

(1) Land Classification

It is important to make land classification in planning plantation area in the Myethindwin Protected Public Forest land. The categories should include Protection Forests, multipurpose forests, grazing land and permanent cultivation. The planning will be done to include the formation of the protection forests with the objective of greening and soil conservation. The multipurpose forests will also be established to provide fuelwood for the local people. The pasture land will be demarcated for the permanent grazing as well as grazing forest. Some part of cultivation land will be formed for the agroforestry practices.

(2) Criteria for site selection according to land use status

The following classes of land will be excluded from selection of sites for plantation.

- a. Residential area
- b. Cultivated land which are permitted by the authority concerned
- c. The certain portion of pasture land which would be set aside for continuous use as grazing area

The newly established plantation area will be closed from grazing for a certain period during which, if necessary, DZGD will take responsibility to provide the local

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people with the alternative pasture land with the consultation of the villagers concerned.

(3) Community Forestry Development

The multipurpose plantations which would be established under the project must be formed as community forests to provide the basic needs of the rural community according to the Community Forest Instructions (CFI). The user groups will be formed as the potential candidate to implement the community forestry activities in collaboration with DZGD so as to have opportunities for capacity building in management of forest resources as well as taking responsibility in application of CFI. The user groups should be formed with the potential users of forest resources including landless households and livestock farmers. The community forestry practices should be introduced as early as possible to give the user groups the opportunity in the participation of the plantation establishment and capacity building.

(4) The Potential Villages

The following villages will be considered to take part in the planning process of multipurpose forest formation. These are Aungtha of the Se village tract, Chaukkan of the Chaukkan village tract, Letpande, Myethindwin, and Zio of the Myethindwin village tract, Nyaunggyi of the Kabani village tract, and Wetlu of the Kannigyi village tract.

7-3. Strengthening of DZGD

The organization of DZGD is necessary to be strengthened for effective management for the Project, in terms of nursery operation, planting, patrolling, and extension services including training of local residents.

7-4. Maintenance and Management of the Plantations

(1) Staff Assignment

The project staff from DZGD should be assigned with special duties exclusively for the project area. The staffs with the rank of forest guard should also be assigned to the villages which are included in the project area as the extension workers.

(2) CFI

It is desirable to practice the CFI activities so as to be able to formulate the management plans by the user groups in cooperation with the department concerned for the long time management of plantations and participation in formulation of demonstration forests and provision of forestry extension services for model forests.

7-5. Soft Component

Both sides agreed that "the Soft Component" under the Japan's Grant Aid is

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necessary to support DZGD for effective maintenance and management of the plantations such as formulation of the Action Plan and activities based on the plan in extension services and training of DZGD staffs and local residents.

7-6. Facilities

The following facilities are considered to be important for the effective implementation of the project activities:

- (1) Forest Nurseries which can raise the quality seedlings to the sufficient quantity
- (2) The establishment of water supply system
- (3) The construction of fencing for the protection of plantation

The details for the locations and functions of the facilities will be planned after due consideration of various factors such as participation of residents, distance from the plantation areas, conditions of the village infrastructures, and water availability. DZGD will obtain the permit for use of the existing tube wells for water supply to nursery and plantation areas, after consultation with local residents and other authority concerned.

7-7. Survival rate

DZGD will collect and inform the Basic Design Study team of the record of survival rate of the planted seedlings in December and May in the forest area in the dry zone. It is necessary to estimate seedlings requirement in planning of plantation for the Project.

7-8. Cooperation with the Project Type Technical Assistance

For strengthening extension services in community forestry, it is considered to be important that the Project collaborate with the Project Type Technical Assistance which is under planning.

7-9. Activities Implemented Jointly (AIJ)

Both side agreed that DZGD, as the implementing agency of the Project, would coordinate concerned government offices in order to recognize the Project under Activities Implemented Jointly (AIJ) and to initiate a process for a mutual approval to be reported to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) at the earliest convenience.

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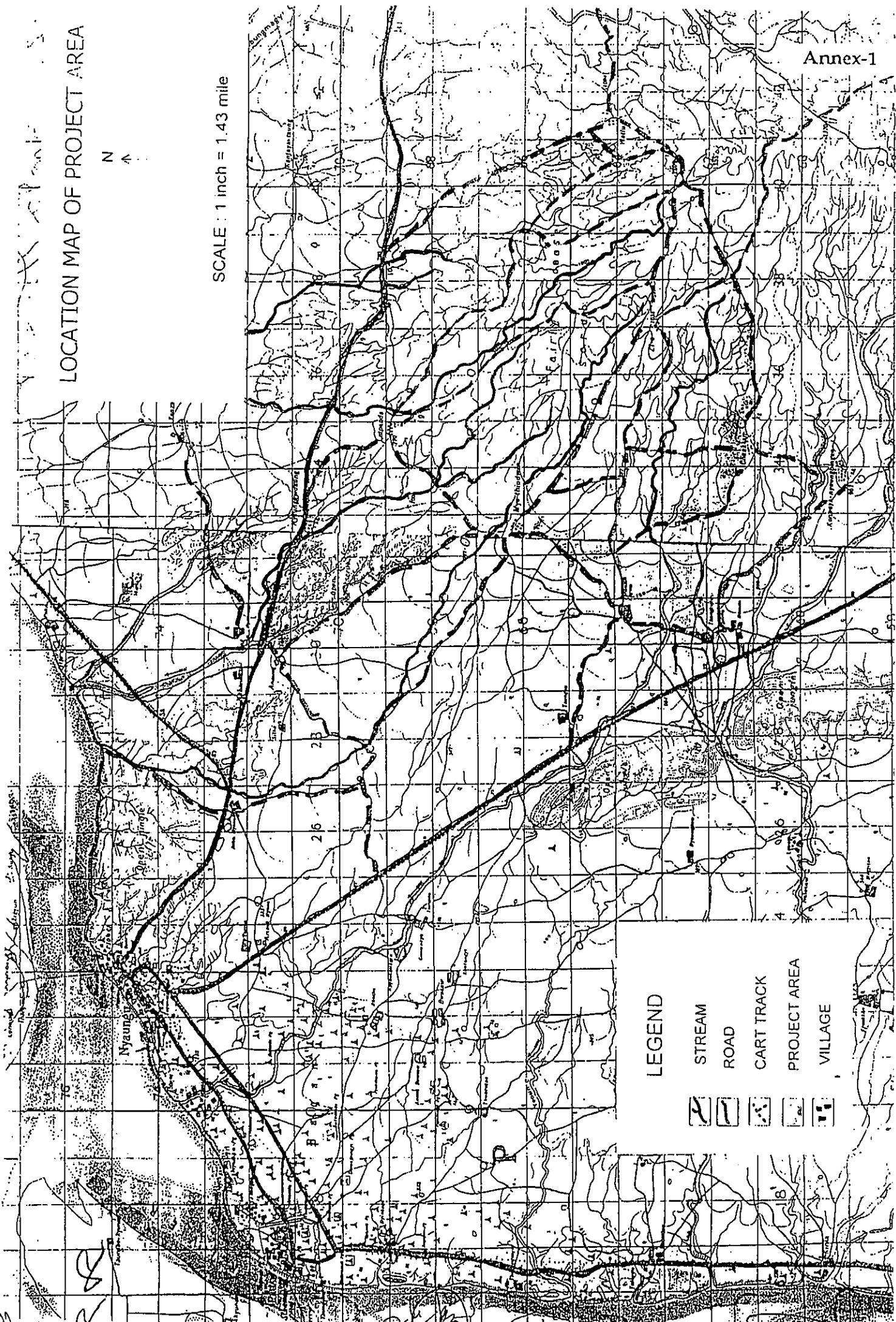
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LOCATION MAP OF PROJECT AREA






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SCALE : 1 inch = 1.43 mile

Annex-1



LEGEND

-  STREAM
-  ROAD
-  CART TRACK
-  PROJECT AREA
-  VILLAGE

**LIST OF MAIN FACILITIES AND EQUIPMENT
NECESSARY FOR THE ESTABLISHMENT OF
PLANTATION AND EXTENSION WORKS**

	Description	Quantity
1	Nursery Works	
	Water pump 4 H.P.	20
	Generator	20
	Compressor	10
	Sprinkler set with pipe and nozzle	20
2	Plantation Works	
	Water bowser (1200 Gal)	3
	Utility track (6.5t)	2
	Fuel bowser	2
	Seedling container track	5
	Fire fighting equipment & Accessories	4
	Farm tractor with accessories	10
	Crawler tractor(160 H.P)	2
	Dump track (5t)	4
	Inspection vehicles(4X4)	5
3	Camp Construction	
	Generator (5 Kv/ A)	10
	Water pump (4 H.P)	10
	Spare Parts for Heavy Machine	1 lot
4	Buildings	
	Permanent nursery office	
	Staff Office	
	Rest house	
5	Extension Works	
	Audio visual equipment	
	Field survey equipment	
	Water supply system	

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JAPAN'S GRANT AID SCHEME

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

- Application: Request made by a recipient country
- Study: Basic Design Study conducted by JICA
- Appraisal & Approval: Appraisal by the Government of Japan and Approval by Cabinet
- Determination of Implementation: The Notes exchanged between the Governments of Japan and the recipient country

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also

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institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

d) Preparation of a basic design of the Project

e) Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) What is Grant Aid ?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant

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laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior

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to commencement of the construction.

(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

(3) To secure buildings prior to the procurement in case the installation of the equipment.

(4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.

(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

(9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

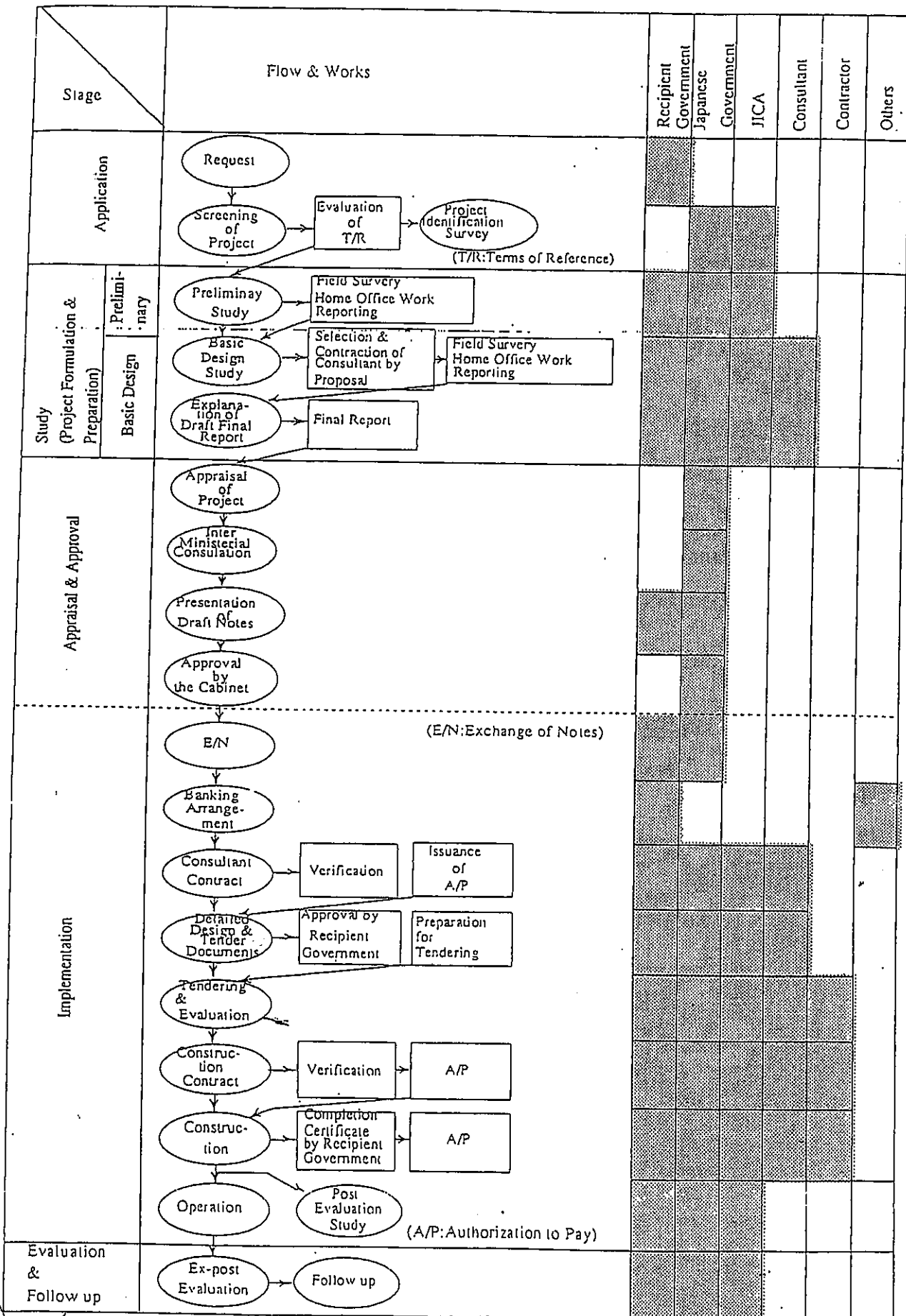
b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

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Flow Chart of Japan's Grant Aid Procedures



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MAJOR UNDERTAKINGS TO BE TAKEN BY EACH GOVERNMENT

No	Items	To be covered by Japanese side	To be covered by Myanmar side
1	To secure land for afforestation, nursery, and other facilities under the project.		X
2	To bear the cost for planting works	X	
3	To bear the cost for nursing works including production and purchase of planting stocks	X	
4	To bear the cost for tending works	(X)	(X)
5	To bear the cost for maintenance and management, of the established plantation and extension activities		X
6	To bear the cost for access roads 1) Construction of operation roads inside of the project area 2) Maintenance of the existing roads to access the project area	X	X
7	To bear the following commissions to a bank of Japan for the banking services based upon the Banking Arrangement (B/A) 1) Advising commission of the Authorization to Pay (A/P) 2) Payment commission		X X
8	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country 1) Marine(Air) transportation of the products from Japan to the recipient country 2) Tax exemption and customs clearance of the products at the port of disembarkation 3) Internal transportation from the port of disembarkation to the project site	X (X)	 X (X)
9	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		X
10	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		X
11	To bear all the expenses necessary for the project implementation, other than those to be borne by the Grant Aid		X

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR AFFORESTATION
IN CENTRAL DRY ZONE
IN THE UNION OF MYANMAR

Based on the results of the Preparatory Study, the Government of Japan decided to conduct a Basic Design Study on the Project for Afforestation in Central Dry Zone (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

In May 2001, JICA sent the Basic Design Study Team (Field Survey I) to the Union of Myanmar. JICA sent the Basic Design Study Team (Field Survey II) (hereinafter referred to as "the Team") to the Union of Myanmar, which is headed by Mr. Yoshikazu Yamada, Director of Third Project Management Division, Grant Aid Management Department, JICA, and is scheduled to stay in the country from October 1 to November 9, 2001.

The Team held discussions with the officials concerned of the Government of Myanmar and conducted a field survey in the study area.

In the course of discussions on the Interim Basic Design Study Report and field survey, both parties noted the main items described on the attached sheets. The Team will proceed to further works and prepare the Draft Final Basic Design Study Report.

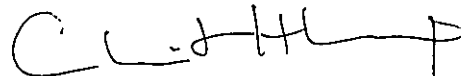
Yangon, November 7, 2001



Mr. Yoshikazu Yamada
Leader
Basic Design Study Team
Japan International Cooperation Agency



For Director General
U Soe Myint
Deputy Director General
Dry Zone Greening Department
Ministry of Forestry



For Director General
U Chit Hlaing
Director, Watershed Management Division
Forest Department
Ministry of Forestry

ATTACHMENT

1. Components of the Interim Report

The Government of the Union of Myanmar (GOM) agreed and accepted in principle the components of the interim report explained by the Team.

2. Selection of Afforestation Area

(1) Land Classification

Both sides agreed that the afforestation area in the Myethindwin Protected Public Forest Land shall be classified into two main categories. The categories should include multipurpose forests and community forest (CFI forest). The multipurpose forest consist of the protection forest, the fuel wood forest and the common grazing forest (silvo-pastorial forest).

(2) Project site

Both sides agreed that the following territory will be considered to be the project site.

These are Aungtha, Letpande, Myethindwin, Zio, Nyaunggyi, Wetlu, Indaing and Yanzan.

Chaukan is excluded from the project because of having only registered cultivated land.

3. Items requested by the GOM

After discussions with the Team, the following items were finally requested by the Myanmar side.

However, plantation area and final items to be constructed and procured under Japan's Grant Aid will be decided after further studies in Japan

(1) Plantation

- | | |
|---------------------|---------------|
| - Protection forest | approx. 750ha |
| - Fuel wood forest | approx. 750ha |
| | Total 1,500ha |

The plantation area in respective village is attached in Annex1.

Silvo-pastorial forest is excluded. In total, actual planting area will be estimated less than 1,500ha, because river, road, residential areas, etc. are to be excluded.

(2) Construction of the facilities

- Administration and extension office, workshop and storage (Myethindwin)
- Temporary nurseries (Myethindwin and Lepande)

- Tube well and elevated water basin (Myethindwin and Lepande)
- Rehabilitation of the existing cart road

(3) Procurement of the equipment

Details of Items are listed in Annex 2.

(4) Local community participatory and extension services

Myanmar side requested the technical assistance for the establishment of the community forest of 65ha and extension service for DZGD Nyaung Oo district office and local community participation. Community forest will be established according to CFI.

(5) Establishment for common grazing forest

Myanmar side agreed that common grazing forest which will be situated in the area where villagers of surrounding villages totally used for free grazing the whole year around on which the plantations will be established by DZGD only in the 6th year after commencement of the project implementation. Myanmar side also requested the facilities and equipment necessary for the establishment of common grazing forest (silvo-pastorial forest).

4. Japan's Grant Aid Scheme

Myanmar side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3 of the Minutes of Discussions signed by both parties on May 31, 2001.

Myanmar side understood the necessary measures to be taken by the GOM as described in Annex-4 of the Minutes of Discussions signed by both parties on May 31, 2001 for smooth implementation of the Project, as a condition for the Japan's Grant Aid implementation.

5. Schedule of the Study

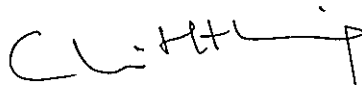
5-1. Based on the study results, JICA will prepare the draft report of the Basic Design Study in English and dispatch a mission in order to explain its contents in February 2002.

5-2. In case that the contents of the report is accepted in principle by the GOM, JICA will complete the final report and send it to the GOM by April 2002.

6. Other Relevant Issues

6-1. Request of the additional equipment

Myanmar side requested additional equipment to the Japanese side as shown in Annex 2. The operational plan of heavy machine was submitted as shown in Annex 3.



6-2. Soft Component program

Both sides understood that soft component program is necessary concerning with the request for the technical assistance for the establishment of the community forest and the extension service for formulating Action Plan to be extended to Nyaung Oo district office and local community participatory.

Both sides also agreed that the coordination is necessary in order to make clear of the demarcation between this project and the Project-type Technical Cooperation Project.

6-3 Necessary Measures to be taken by the Myanmar side

1) Explanation of the Component of the Project

DZGD will hold the workshop and/or seminar for the capacity building of the organization concerned and local people for promotion of effective participation after receiving the final report.

2) Clarification of boundary

Demarcation of boundaries between the project area and the land owned by the individual farmer by the legal issuance of cultivation permit from Settlement and Land Record Department shall be conducted by DZGD in the presence of concerned villagers. Plantation sites shall be free from restriction and compensation.

3) Condition of the local people access to the protection forest and fuel wood forest

DZGD will restrict the access to the protection forest by the local people. The condition of the access to the fuel wood forest will be set according to the consensus gained by mutual agreement between DZGD and villagers.

4) Coordination and cooperation among the ministries concerned of the GOM

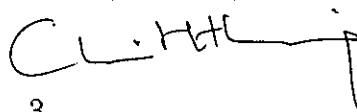
Ministry of Forestry will coordinate the Government Ministries concerned, especially Ministry of National Planning and Economic Development, Ministry of Finance and Revenue, Ministry of Foreign Affairs, Ministry of Border Area and National Races and Development Affairs, Ministry of Agriculture and Irrigation and Ministry of Commerce for the implementation of the project.

5) Project Management

DZGD will assign the staff for the implementation, operation and maintenance for the Project as shown in Annex 4.

6) Committee for the multipurpose forest

Myanmar side will establish the committee (Annex 4) for the coordination with the



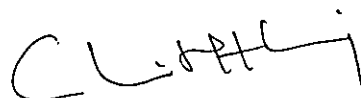


organizations concerned and the rural communities in the project area in order to operate and maintain the multipurpose forest. After the completion of the project, the multipurpose forests established under the project will be managed by the committee in accordance with the Action Plan for the long term effective management.

7) Undertaking by Ministry of Forestry

On condition that the Grant Aid Program by the Government of Japan is extended to the project, Ministry of Forestry shall be responsible for promptly securing the following necessary permissions from authorities concerned for the implementation of the project.

- a) Permission for afforestation of the project site
- b) Permission for construction of all facilities (Administration and extension office in Myethindwin, Nursery and tube well in Myethindwin and Lepande, road rehabilitation in the project site)
- c) Permission for importing equipment from Japan and the third country, and exemption of tax, custom duties and other duties may be levied on importing equipment
- d) Tax and duties exemption on Japanese consultant and Japanese contractor engaged in the project
- e) Acquisition and permission of borrow pit near by the project site and acquisition of necessary place for construction materials to be put in the sites
- f) Permission for transportation of equipment and materials from port to the project site



Annex 1.

The Plantation Area

(ha)

Village Name	Village Area	Multipurpose Forest				CFI	Total
		Protect/ F	Silvo-pastorial/ F	Fuel-w/ F	Sub-Ttl	Com./ F	
Myethindwin	700.49	0	0	0	0	15	15
Zio	1128.52	143	0	237	380	0	380
Letpande	1979.81	212	334	319	865	13	878
Aungtha	462.01	0	0	139	139	0	139
Wetlu	336.28	0	0	0	0	12	12
Nyaunggyi	165.59	0	0	28	28	25	53
Indaing	855.40	302	47	0	349	0	349
Yanzan	613.73	92	100	0	192	0	192
Total	6241.83	749	481	723	1,953	65	2,018
Plantation		749	0	723	1,472	65	1,537

Note: Silvo-pastorial forest is excluded. In total, actual planting area will be estimated less than 1,500ha, because river, road, residential areas, etc. are to be excluded.

Annex 2.

List of Equipment to be procured

No.	Item	Mandalay	Nyaung Oo	Myethindwin	Total
A	For Nursery Works				
A-1	Water Pump (submergible)			1	1
A-2	Generator			1	1
A-3	Compressor		1		1
B	For Plantation Works				
B-1	Water Bowser			1	1
B-2	Truck			3	3
B-3	Fuel Bowser		1		1
B-4	Backpack shooter			30	30
B-5	Hand tools for fir fighting			15	15
B-6	Farm Tractor with trailer			9	9
B-7	Crawler tractor			2	2
B-8	Pick up		1	1	2
B-9	Wagon type 4X4		1		1
C	For Camp Construction				
C-1	Generator		5	5	10
C-2	Water pump		5	5	10
D	For Extension Works				
D-1	Television		1		1
D-2	Video		1		1
D-3	Video camera		1		1
D-4	Pocket compass		2		2
D-5	Pole		5		5
D-6	Tape measure		2		2
D-7	Portable GPS		1		1
D-8	Audio Video Van		1		1
E	Additional Request				
E-1	Weather observation set			1 set	1 set
E-2	Personal computer	1	1	1	3
E-3	Printer	1	1	1	3
E-4	Portable water tank 2m3			7	7
E-5	Portable water tank 8m3			3	3
E-6	Seedling container			120	120
E-7	Shovel (small)			50	50
E-8	Shovel (medium)			50	50
E-9	Hoe			30	30
E-10	Watering Pot			40	40
E-11	Water bucket			20	20
E-12	Portable radio communication system		2	2	4
E-13	Locker			1	1
E-14	Back hoe		1		1
E-15	Bulldozer with ripper			1	1
E-16	Nursery net			1 set	1 set
E-17	Seedling Vinyl pot (small)			250,000	250,000
E-18	Seedling Vinyl pot (large)			50,000	50,000
E-19	Facsimile	1 (Yangon Branch)	1		2
E-20	Knock-Down Nursery for 400m ²			1 set	1 set
E-21	Motor Cycle		1	2	3

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The Operation and Maintenance Plan of heavy Machinery

The DZGD prepares the operation and maintenance plan of heavy machinery provided by the JICA project to be used in the rehabilitation and restoration activities of the dry zone environment .

1 . The list of heavy machinery to be used are as follow;-

a . Bulldozer with ripper	1 no.
b . Back hoe	1 no.
c . Crawler tractor	2 no.
d . Farm tractor with trailer	9 no.
e . Fuel bowser	1 no.
f . Water bowser	1 no.
g . Truck .	3 no.
h . Pick up	2 no.

2 . The Project Area

The project area will be situated inside Mandalay Division where the Dry Zone Afforestation project is going to be carried out .

3 . The Project Activities

The DZGD had formulated and adopted the 30 years comprehensive plan to realize the four main tasks such as the plantation establishment , the protection and rehabilitation of the degraded natural forests, development of woodfuel substitutes and development of water resources .

The plan will be phased out with six 5 years short term plans.

Basing on these four main tasks , the following activities will be carried out during the first five years plan.

1. Plantation establishment	10000 ha
2. Natural forest protection	360000 ha
3. Construction of pond	245 no
4. Construction of check dam	400 no
5. Road construction	416 km
6. Fire line construction	500 km

5. The Annual Plan of Operation

The annual plan will be carried out as follow;-

work	unit	y 1	y2	y3	y4	y5
plantation	ha	2000	2000	2000	2000	2000
natural forest prot.	ha	72000	72000	72000	72000	72000
pond construction	no	49	49	49	49	49
check dam	no	80	80	80	80	80
road construction	km	85	85	85	85	76
fire line construction	km	100	100	100	100	100

6. The Use of Machinery

Machine type	work	duration
Bulldozer Crawler tractor	Ground surface breaking and trench making , road up grading and maintenance, construction of outer and inner fire brake lines	the whole year
Back hoe	Trench construction	December to March
Farm tractor	Transport of seedlings , labour and materials	May to August
Water bowser	Transport of water to plantations and nurseries	the whole year

Fuel bowser	Transport of diesel and M.S from depot to project site	the whole year
Truck	Transport of seedlings , labour , soil and materials	the whole year

7. The maintenance of machinery

The long term viability of the machinery is to be prioritised by implementation of the maintenance procedures and instructions . So the following procedures are to be followed .

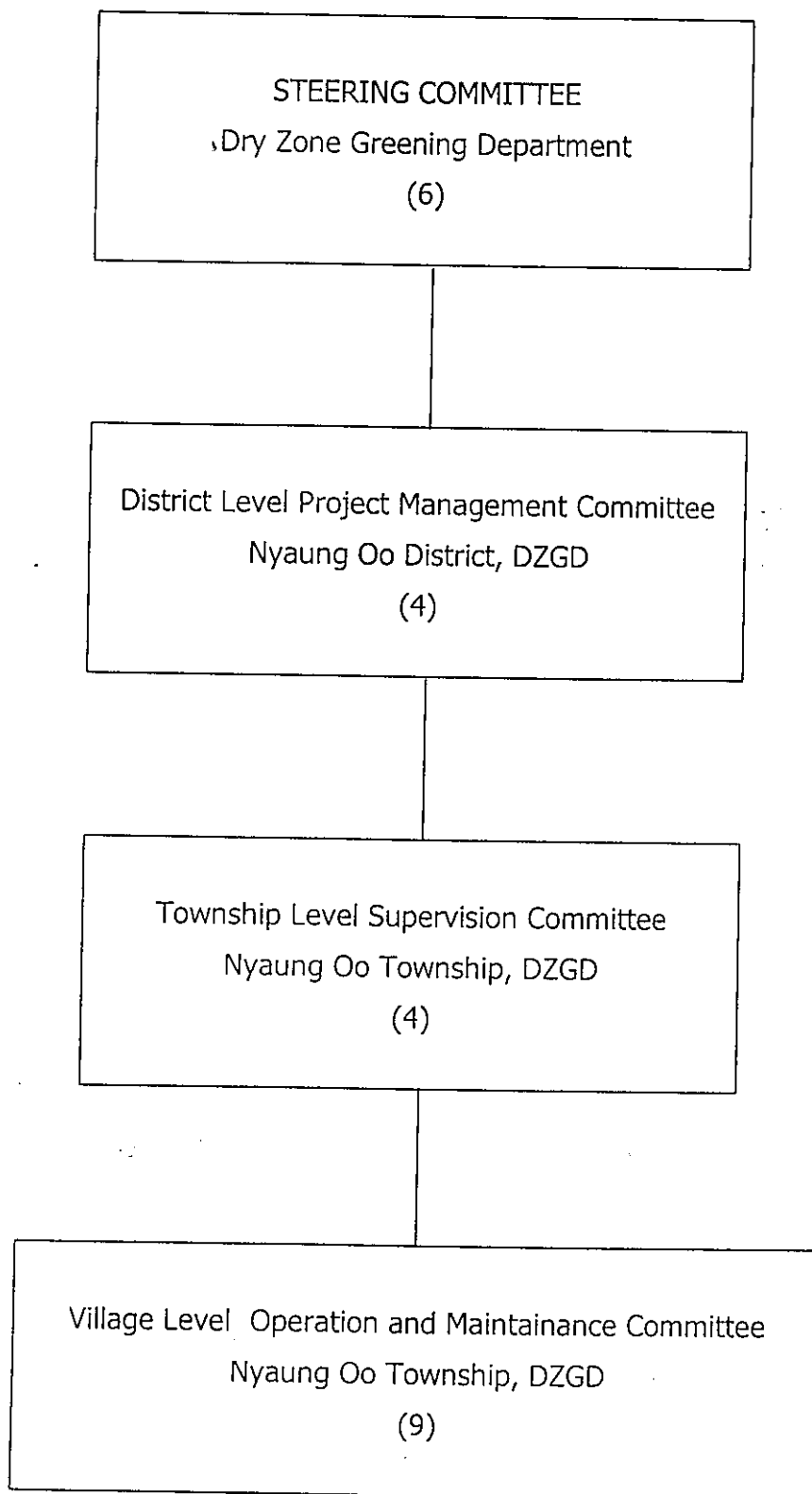
1. The skilled and qualified machinists will be hired for regular maintenance and repair works.
2. The regular maintenance day will be adopted and practised.
3. The procedure and instructions will be formulated and adopted.
4. The maintenance team headed by a foreman will be formed to carry out the instructions .
5. The regular inspection of the viability of machinery will be done by the responsible official .
6. The work shop facility will be set up at the project site .

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**ORGANIZATIONAL FRAME WORK OF DRY ZONE AFFORESTATION PROJECT
MANAGEMENT**



Member lists of different committee, here attached with.

¹
Chitthi

Steering Committee

<u>Serial No:</u>	<u>Desination</u>	<u>Position</u>
1.	Director General	Chairman
2.	Deputy Director General	Vice- Chairman
3.	Director (Admin)	Member
4.	Director (Engineer)	Member
5.	Director (pLanning)	Secretary
6.	Director (Mandalay Division)	Joint Secretary

District Level Project Management Committee

1.	Assistant Director (Nyaung Oo District)	Chairman
2.	Assistant Director (Mandalay Division)	Member
3.	Staff Officer (Project)	Member
4.	Staff Officer (Township)	Secretary

Township Level Supervision Committee

1.	Staff Officer (Project)	Chairman
2.	Range Officer (1)	Member
3.	Range Officer (2)	Member
4.	Range Officer (3)	Secretary

Village Level Operation and Maintainance Committee

1.	Range Officer (DZGD)	Chairman
2.	Village Representatives (One from each Village)	(7) Members
3.	Range Officer (FD)	Secretary

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MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT FOR AFFORESTATION
IN CENTRAL DRY ZONE
IN THE UNION OF MYANMAR
(EXPLANATION ON DRAFT REPORT)

In May 2001, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team (Field Survey I) to the Union of Myanmar (hereinafter referred to as "Myanmar") and in November 2001, JICA dispatched the Basic Design Study Team (Field Survey II) to Myanmar. And through discussion, field survey and technical examination of the results in Japan, JICA prepared a draft report of the study.

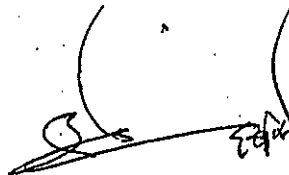
In order to explain and to consult the Myanmar on the components of the draft report, JICA sent to Myanmar the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Shigeru Otake, staff, First Project Management Division, Grant Aid Management Department, JICA, from 26 February to 8 March, 2002.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Yangon, March 8, 2002

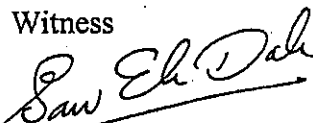
大竹 茂

Mr. Shigeru Otake
Leader
Draft Explanation Report Team
Japan International Cooperation Agency



For Director General
U Hla Myint
Deputy Director General
Dry Zone Greening Department
Ministry of Forestry

Witness



U Saw Eh Dah
Director, Training and Research
Development Division
Forest Department
Ministry of Forestry

ATTACHMENT

1. Components of the Draft Report

The Myanmar side agreed and accepted in principle the components of the draft report explained by the Team.

2. Japan's Grant Aid Scheme

The Myanmar side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Myanmar as explained by the Team and described in Annex 3 and Annex 4 of the Minutes of Discussions signed by both parties on 31 May 2001.

3. Schedule of the Study

JICA will complete the Final Report in accordance with the confirmed items and send it to the Government of Myanmar by the beginning of April, 2002.

4. Other Relevant Issues

4-1. Outline of the Project

(1) Plantation

- Protection forest approx. 750ha
- Fuel wood forest approx. 750ha
- Total 1,500ha

(2) Construction of the facilities

- Administration and extension office, workshop and storage (Myethindwin)
- Temporary nursery
- Tube wells and elevated water basins (Myethindwin and Lepande)
- Rehabilitation of the existing cart roads

(3) Procurement of the equipment

- Necessary equipment for operation and maintenance of afforestation site

(4) Soft component program

- Technical assistance for the establishment of the community forest of 65ha
- Technical assistance to establish the operation and maintenance system for the areas forested by the Project

Both sides agreed the purpose, output, activities and inputs of soft component program as shown in Annex 1.

However, plantation area and final items to be constructed and procured under Japan's Grant Aid will be decided after further studies in Japan

4-2. Clarification of boundary

DZGD will hold the meetings or seminars with the organizations concerned and local people for better understanding of the project and promotion of effective participation by the end of May, 2002. Then demarcation of boundaries between the project area and the land owned by the individual local people by the legal insurance of cultivation permit from Settlement and Land Record Department shall be conducted by DZGD in the presence of concerned villagers by the beginning of October, 2002. Plantation sites shall be free from restriction and compensation.

4-3. Establishment of Committees

Myanmar side will establish the committees described in Annex 4 of the Minutes of Discussions signed by both parties on 7 November 2001 in order to operate and maintain the multipurpose forests by the beginning of October, 2002.

4-4. Title of the Project

Regarding the title of the Project; "The Project for Afforestation in Central Dry Zone", Myanmar side explained that "Central Dry zone" is not appropriate, because they usually use "Dry Zone". Myanmar side requested that the title

would be "the Project for Afforestation in the Dry Zone".

The Team understood and agreed to convey the request from Myanmar side to the Japanese authorities concerned and to inform the title of the Project to Myanmar side before implementation of the Project.

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Project Design Matrix for the Soft Component Program

Name of the project : The Project for Afforestation in the Dry Zone in the Union of Myanmar Term : 5 years
 Target area : Afforestation site for the project Target group : Staff of DZGD and the people around the project site

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumptions
Overall Goal To afforest the target area (fuel wood forest, protected forest, community forest) and ensure adequate O&M* by DZGD of the afforested area upon completion of the project.	Illegal logging in afforested areas ceases.	Records of trees in afforested areas	The Greening Policy in the central dry zone is not revised.
Project Purpose To establish an O&M system for the areas forested by the project.	All of the concerned staff and residents understand afforested land management	Records of activities.	There is no change in the basic strategy of afforested land management.
Outputs 1. The formation and implementation of an Action Plan for the O&M of fuel wood and protected forests. 2. The establishment and effective maintenance of community forest (65ha). 3. The training of DZGD staff and residents in the skills required to effectively maintain fuel wood forest, protected forest and community forest. 4. A reduction in the demand for forest resources.	<ul style="list-style-type: none"> Greater understanding by DZGD and the residents in the region of the Action Plan 65 ha of community forest is established. All of staff and residents concerned the project will understand the skills required to effectively maintain fuel wood forest, protected forest and community forest. Fuel wood demand is cut by 10 % 	<ul style="list-style-type: none"> Action Plan Area of community forest Records of logging Records of training 	The residents in the region cooperate in management of afforested land.
Activities 0-1. <u>DZGD will establish a Central Committee, a District Level Project Management Committee, and an Action Plan Control Committee. (After Minutes are recorded, before project implementation)</u> 0-2. <u>Upon receiving the report, DZGD will hold a meeting for the residents to explain the project. (After Minutes are recorded, before project implementation)</u> 0-3. <u>DZGD will organize village committees. (Year 1)</u> 1-1. <u>DZGD and the residents will form and effectively implement an Action Plan for fuel wood forest.</u> 1-1-1. DZGD and the residents will form an Action Plan. (Year 1) 1-1-1-1. Guidelines will be established for residents' use of fuel wood, based on their opinions obtained through DZGD workshops, and will be incorporated in the Action Plan. 1-1-1-2. The village committees will form a management plan for O&M of fuel wood and incorporate it in the Action Plan. 1-1-2. DZGD and the residents will implement the Action Plan. (From Year 2) 1-1-2-1. DZGD will put rules for fuel wood forest use into effect and conduct monitoring. 1-1-2-2. The village committees will implement the plan and conduct monitoring. 1-2. <u>DZGD will form and effectively implement an Action Plan for protected forest.</u> 1-2-1. DZGD will form an Action Plan. (The Year 1) 1-2-2. DZGD will implement the Action Plan. (From Year 2) 1-2-2-1. DZGD will make sure residents have an understanding of O&M of protected forests. 1-2-2-2. DZGD will monitor O&M of protected forests. 2-1. <u>The User Group (Residents) will form a forest management plan for the community forest and carry out CFI** registration. (Year 1)</u> 2-1-1. DZGD will explain to the residents about CFI. 2-1-2. Residents will form a User Group along with selecting an area for the community forest. 2-1-3. The User Groups will form a CFI forest management plan. DZGD will give technical guidance. 2-1-4. The User Groups will make a CFI request. DZGD will give guidance on the required documentation. 2-2. <u>The User Groups will sufficiently manage the community forest. (From Year 2)</u> 2-2-1. The Users will build the community forests. 2-2-2. The User Groups will implement the forest management plan and conduct monitoring. 3-1. <u>DZGD staff will receive training in the Resident Participatory Development Approach (Combined with project type technical cooperation training. (Year 1)</u> 3-1-1. DZGD will form a Resident Participatory Development Approach Manual. 3-1-2. DZGD will introduce the Resident Participatory Development Approach in the workshops. 3-2. <u>Residents will receive technical training in nursery management, tree planting, forest management, etc. (Year 1)</u> 3-2-1. DZGD will make pamphlets for the residents on forest management. 3-2-2. DZGD will instruct residents on methods of nursery management. 3-2-3. DZGD will instruct residents on cultivating saplings 3-2-4. DZGD will instruct residents on tree planting 4-1. <u>Improved stoves will be popularized. (Year 1)</u> 4-2. <u>Residents will be instructed on agroforestry (Year 1)</u>	Inputs Japanese Side [Personnel] Consultant (Participatory Management) :5M/M×2yrs (Years 1,2) :2M/M×2yrs (Years 3,4) Consultant (Afforestry) : 6.5M/M×2yrs (Years 1,2) : 2M/M×2yrs (Years 3,4) [Costs] Japanese consultant/DZGD staff activities Training of DZGD staff/residents Local NGO services [Materials] Materials and equipment for community forest Materials for activities and training Improved stove Saplings for agroforestry [Project Type Technical Cooperation] Training Myanmar Side [Personnel] Central committee, District Level Project Management Committee, Activities Committee, Township Control Committee, and Village Committee members (DZGD and FD staff, etc.) Staff from Nyaung Oo District Offices DZGD will cover the following costs: Meeting to explain the Project Workshops Creation of activities materials Personnel training Personnel Miscellaneous		
			Preconditions: Residents in the region do not oppose afforestation activities

*O&M: Operation and Maintenance
 **CFI: Community Forest Instruction

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*5. Cost Estimation Borne
by the Recipient Country*

The cost estimation boned by the recipient country

Unit : Kyat

Activities	Unit price	Plan	Estimated cost
Workshop	350,000 / time	15times / year × 2years	10,500,000
Documentation	70,000 / time	15times / year × 2years	2,100,000
Allowance	35,000 / time	15times / year × 2years	1,050,000
Sera lies	70,000 / month	12months × 4years	3,360,000
Miscellaneous	210,000 / month	12months × 4years	10,080,000
Total			27,090,000

6. Other Relevant Data

Other Relevant Data

Rehabilitation and Maintenance of the Natural Environment

This project is expected to contribute to the reduction of carbon dioxide, which is a major factor of the Greenhouse Effect, as a part of CDM (Clean Development Mechanism) and/or AIJ (Activities Implemented Jointly).

Although the method to measure carbon dioxide absorption in the forest project has not been established, the computation indicated in “Manual for Greenhouse Gas Emission and Absorption: Global Environment Centre Foundation, 1999” is as follows:

1. Carbon is stored in biomass (on and under the ground), organic sediments and soil in the forest ecosystem. Basically carbon storage of each of the above will be estimated.
2. The quantity, uses and carbon absorption/emission, etc. of forest products will need to be checked in some projects.
3. The amount of carbon stored in biomass will be calculated as follows:

$$\text{Carbon storage} = \text{Biomass volume (dry weight)} \times \text{Carbon content}$$

In the case of a forest project, the annual carbon storage amount can be substituted by the annual tree growth rate and the carbon content can be substituted by the annual accumulation rate of planted biomass. However, the values shown in the IPCC guideline (refer to Table 1 and Table 2) will be used in this project because of the unavailability of sufficient data.

According to the guideline, the annual tree growth rate is 4 tons/ha within 20 years in the case of planted trees and the annual average accumulation of biomass represented by acacias is 15.0 ton/ha.

Table 1 Annual Average Growth Rate of Ground Biomass (Tropical) (ton/ha)

Zone	Tropical Rain Forest		Broad-Leaved Forest		Dry Forest	
	0 – 20	20 -100	0 - 20	20 – 100	0 – 20	20 – 100
America	8	0.9	5	0.5	4	0.25
Africa	11	1	7	0.5	4	0.25
Asia	11	1	7	0.7	4	0.25

Note: Densities of vegetation are assumed 70 % and 100 % of the forest during 0 – 20 years and 20 – 100 years, respectively.

Sources: IPCC Guideline

Table 2 Annual Average Accumulation Rate of Planted Biomass (Tropical)

Planted Species	Annual Accumulation Rate of Biomass (ton-dm/ha)
Acacias	15.0
Eucalypti	14.5
Teaks	8.0
Pines	11.5
Pinus Caribaea	10.0
Mixed Hardwoods	6.8
Mixed-Fast-Growing Hardwoods	12.5
Mixed Softwoods	14.5

Source: IPCC Guideline

Since Acacias represents 90 % of the total planted species in the study area (about 2,000 ha), the ground biomass is assumed 15.0 tons/ha/yr.

The carbon absorption rate will be calculated based on the planting plan, using the above value and the effect of the planting will be evaluated as follows:

Annual carbon absorption in biomass

= Project area x (Annual biomass growth rate x Carbon absorption in biomass)

= Yearly planting area x 4 (ton/ha) x 15.0 (ton/ha)

The yearly planting areas in this project are 210.2 ha for the first year, 441.5 ha for second year, 399.5 ha for third year and 421.3 ha for fourth year, a total of 1,472 ha. With the formula above, carbon absorption will increase as shown in the following figure. Absorption by the existing forest, emission during the planting periods and emission by fuel wood are not included.

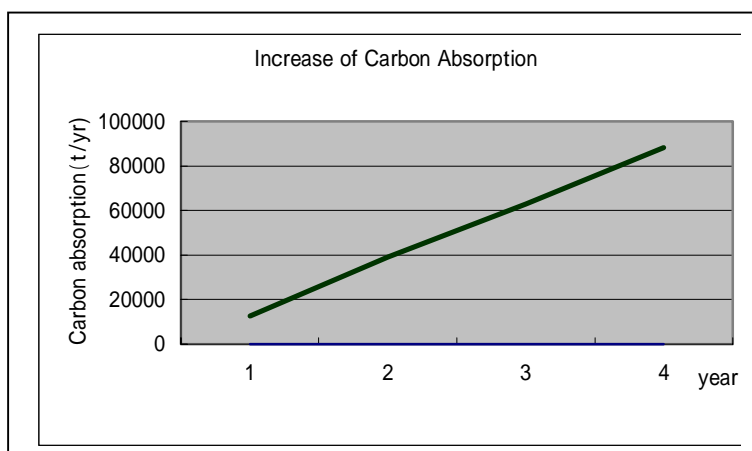


Figure 1 Increase of Carbon Absorption