

(3) 討議議事録 (2010年12月14日)

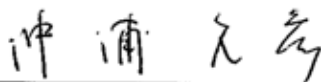
MINUTES OF DISCUSSIONS  
ON  
THE PREPARATORY SURVEY  
ON  
THE PROVISION OF EQUIPMENT FOR RURAL WATER SUPPLY PROJECT  
IN THE CENTRAL DRY ZONE  
IN THE UNION OF MYANMAR  
(EXPLANATION ON DRAFT FINAL REPORT)

In May 2010, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Team on the Provision of Equipment for Rural Water Supply Project in the Central Dry Zone (hereinafter referred to as "the Project") and entrusted the survey to the Government of the Union of Myanmar (hereinafter referred to as "Myanmar") and through discussion, field survey and technical evaluation of the result in Japan, JICA prepared a draft final report of the survey.

In order to explain and to consult with the Government of Myanmar on the component of the draft final report, JICA dispatched to Myanmar the Draft Final Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Fumihiko Okiura, Director, Water Resources Management Division I, Water Resources and Disaster Management Group, Global Environment Department, JICA from 8th to 16<sup>th</sup> December, 2010.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Nay Pyi Taw, December 14, 2010



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Fumihiko Okiura  
Leader  
Draft Final Report Explanation Team  
Japan International Cooperation Agency  
Japan



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U Soe Ko Ko  
Director General  
Department of Development Affairs  
Ministry of Progress of Border Areas  
and National Races and Development Affairs  
The Union of Myanmar

## ATTACHMENT

**1. Component of the Draft Final Report**

The Myanmar side agreed and accepted in principle the component of the draft final report explained by the Team. The Project sites map and components of the Project are respectively shown in **Annex-1** and **Annex-2**.

**2. Responsible and Implementation Agency**

2-1 The responsible agency is Ministry of Progress of Border Areas and National Races and Development Affairs.

2-2 The Implementing Agency is Department of Development Affairs (hereinafter referred to as "DDA"). The organization chart of DDA is shown in **Annex-3**.

**3. Japan's Grant Aid Scheme**

3-1 The Myanmar side understands the Japan's Grant Aid Scheme explained by the Team, as described **Annex-4**.

3-2 The both sides will take necessary measures, as described in **Annex-5**, for smooth implementation of the Project, as condition for the Japan's Grant Aid to be implemented.

**4. Schedule of the Survey**

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Myanmar by March 2011.

**5. Other Relevant Issues****5-1) Components of the Project**

The Myanmar side agreed the component of the Project shown in **Annex-2**

The related issues to the components are shown as below.

## 1) Target villages

The both sides confirmed that the number of the target village for the Project will be 87 villages as shown in **Annex-6** considering the possibility of the successful well construction regarding the water quality and quantity based on the result of field survey and analysis in Japan.

## 2) Pick-Up Truck

The both sides agreed that the pick-up trucks are excluded from the components of the Project as two numbers of pick up truck have been already provided to DDA through "Project on Rural water Supply Technology in the Central Dry Zone" conducted between JICA and DDA from 2006 to 2009, and DDA have a number of vehicles which can be used for transportation on operation and maintenance of installed facilities so that implementation

of the Project would be available.

#### **5-2) Project Cost Estimate**

The Team explained to the Myanmar side the Project Cost Estimate as described in **Annex-7**. It is provisional estimate and would be further examined by the Government of Japan for the approval of the Grant. The Myanmar side understood that the Project Cost Estimate is not final and subject to be modified. Both sides agreed that the Project Cost Estimate should never be duplicated or released to any outside parties until signing of all the contract(s) for the Project.

#### **5-3) Soft Component of the Project**

The soft component of the Project would be conducted to strengthen and to enhance the accuracy of water analysis system of DDA, so that they will be able to measure the water quality of the installed deep tube wells accurately and to prevent the negative impact to the villagers caused by contamination of drinking water.

#### **5-4) Undertakings by the Myanmar Side**

In case the request is approved by the Japanese Government, the Myanmar side agreed to undertake following issues in addition to the general undertaking shown in **Annex-5**.

##### **1) Implementation structure of deep tube well construction by the Myanmar side**

The both sides confirmed that the construction works of the deep tube wells in the Project shall be executed by the Myanmar side with its full responsibility:

- DDA will assign appropriate number of staffs who have experience and skill of drilling deep tube wells. The staff allocation plan is shown in **Annex-8**.
- DDA will secure the necessary budget timely.

##### **2) Operation and Maintenance of Facilities, Equipment and Materials**

The water supply facilities constructed by the Myanmar side shall be properly operated and maintained by the target villages with support from DDA. The equipment and materials procured through the Project shall be properly operated and maintained by DDA.

##### **3) Semiannual Report**

Semiannual report of progress of the deep tube well construction work will be submitted by DDA to JICA Myanmar Office. Following items should be included in the report.

- Progress of the well construction
- Stock of procured well construction materials
- Utilization record of procured equipment

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- Others (water quality issues, etc)

4) Travel Allowance and Daily Allowance for the Training of DDA Staff for the Soft Component

DDA will bear the necessary expenses for travel and daily allowances which are necessary for the training of DDA staff implemented in the soft component of the Project.

5) Staff Allocation for Soft Component

DDA will timely assign appropriate number of qualified staffs for implementing soft component of the Project.

**5-5) Shortages or Surplus of Procured Materials for Well Construction**

The Myanmar side will complete the construction of deep tube wells for targeted 87 villages even in case of the shortage of the materials for well construction procured by the Project due to failure of well installation, though 5% of extra materials will be procured by the Project.

In case surplus materials remain after the construction of wells for the targeted 87 villages the Myanmar side will utilize the materials procured by the Project for the other villages listed in "Plan on Adequate Provision of Rural Water Supply in the Central Dry Zone".

**5-6) Tax Exemption**

The tax exemption, custom duty, and any other taxes and fiscal levies in Myanmar which is to be arisen from the Project activities will be ensured by DDA. DDA will take any procedures necessary for tax exemption.

**5-7) Overlapping with Other Projects**

The Myanmar side explained that the Project would not be overlapped with any other projects supported by other donor agencies, NGOs, and Myanmar official organizations.

**5-8) Visibility of the Project**

The Team explained that the visibility of the Project should be ensured as a token of cooperation from the Japanese people if the Project is realized. The Myanmar side explained the following ideas to enhance publicity of the Project:

- (a) To prepare brochures
- (b) To publicize the Project in the mass media, and
- (c) Commemoration panels

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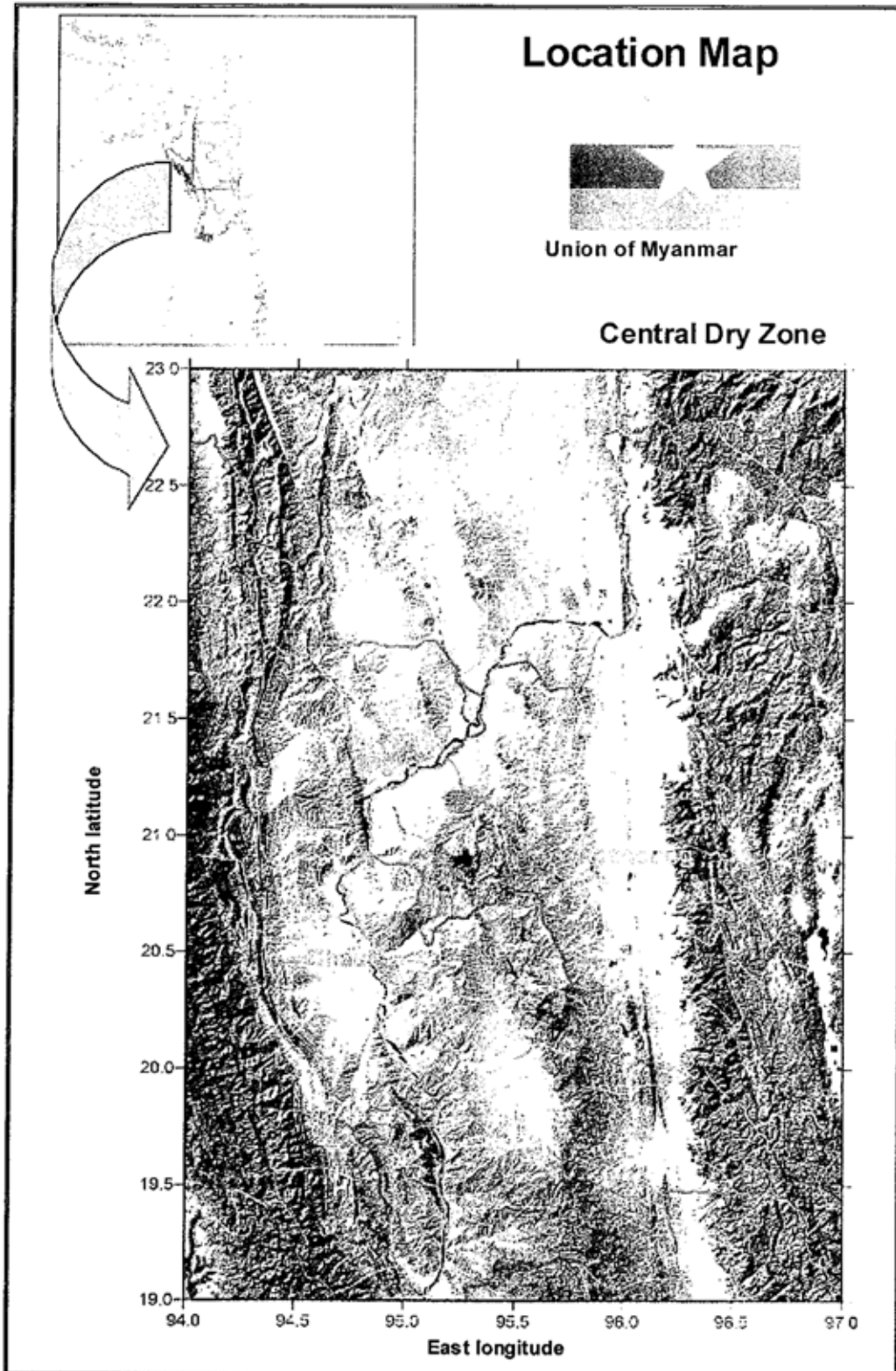
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Annex-1	Project Sites Map
Annex-2	Components of the Project
Annex-3	Organization Chart of DDA
Annex-4	Japan's Grant Aid Scheme
Annex-5	Major Undertakings to be taken by Each Government
Annex-6	List of Target Villages
Annex-7	Project Cost Estimate
Annex-8	Allocation Plan of DDA Staffs

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Annex-1 Project Sites Map



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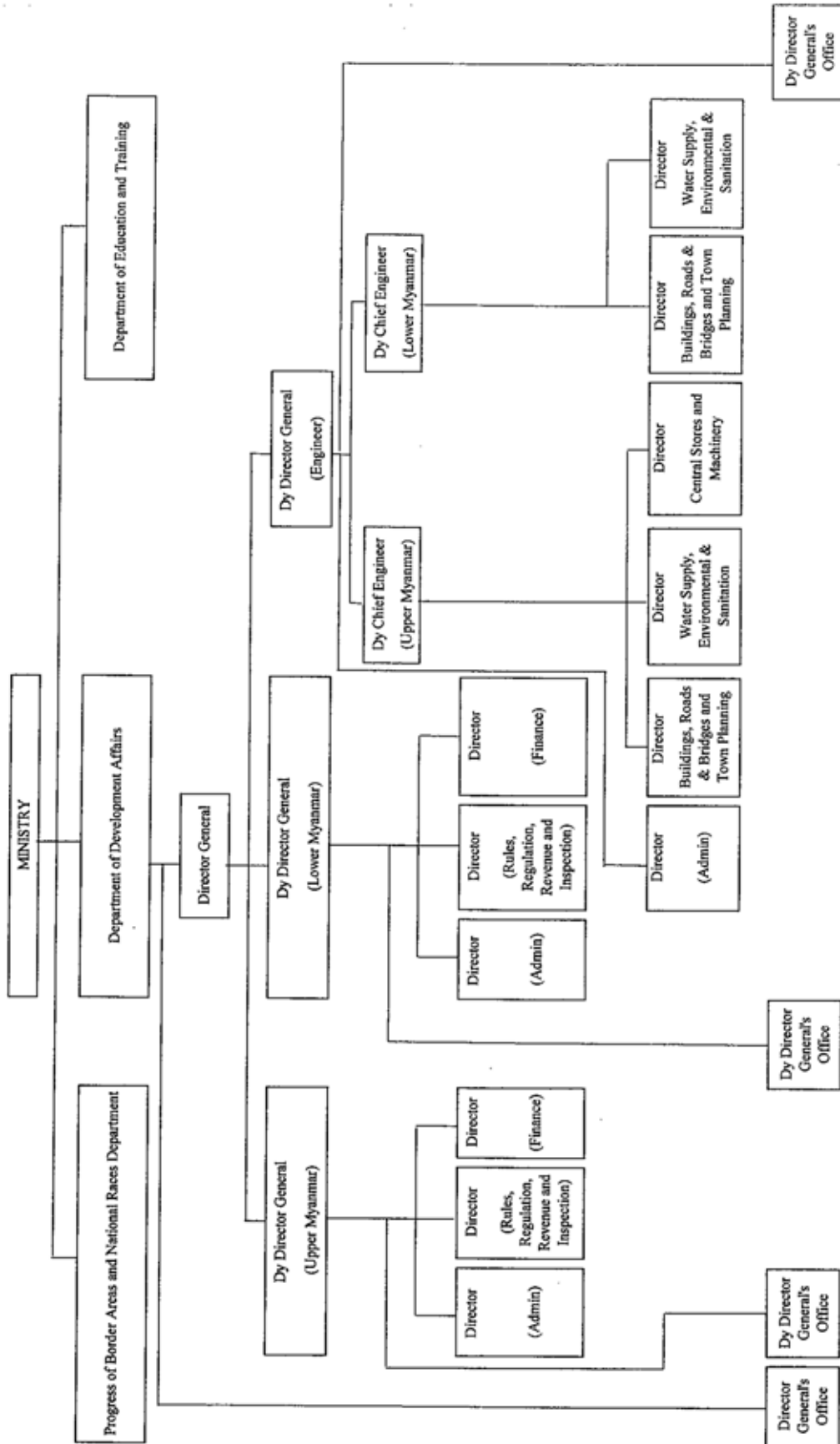
**Annex-2 Components of The Project**

Category	No.	Item	Q'ty
A. Equipment for well drilling	A-1	Drilling rig mounted on truck and accessories	
	A-1-1	For 400 m deep drilling	1 unit
	A-1-2	For 300 m deep drilling	1 unit
	A-2	Drilling agent (Bentonite, CMC)	1 set
	A-3	Equipment for air lift pumping and pumping test	1 set
	A-4	Air compressor	1 unit
	A-5	Cargo truck with crane	2 units
B. Equipment and materials for well construction	B-1	Casing pipes for deep well (for 87 wells)	
	B-1-1	Casing pipes for deep well (4-inch)	3,250 units
	B-1-2	Casing pipes for deep well (10-inch)	350 units
	B-2	Screen pipe, Bottom plug (for 87 wells)	
	B-2-1	Screen pipes for deep well	170 units
	B-2-2	Bottom plugs	95 units
	B-3	Submersible motor pump and diesel engine generator with accessories (for 87 villages)	
	B-3-1	Type I (T. D. H. 300 m)	9 sets
	B-3-2	Type II (T. D. H. 250 m)	18 sets
	B-3-3	Type III (T. D. H. 200 m)	22 sets
	B-3-4	Type IV (T. D. H. 150 m)	31 sets
	B-3-5	Type V (T. D. H. 100 m)	7 sets
C. Equipment for water quality inspection	C-1	Spectrophotometer	1 unit
	C-2	Water still	1 unit

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Annex-3 Organization Chart of DDA





#### Annex-4 JAPAN'S GRANT AID SCHEME

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as part of this realignment, JICA was reborn on October 1, 2008. Following the decision of the GOJ, Grant Aid for General Project is extended by JICA.

Grant Aid is non-reimbursable fund to a recipient country 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 laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

##### 1. Grant Aid Procedures (Attachment 1)

Japanese Grant Aid is conducted as follows-

- Preparatory Survey (hereinafter referred to as "the Survey")
  - The Survey conducted by JICA
- Appraisal & Approval
  - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Determination of Implementation
  - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
  - Agreement concluded between JICA and a recipient country
- Implementation
  - Implementation of the Project on the basis of the G/A

##### 2. Preparatory Survey

###### (1) Contents of the Survey

The aim of the Survey is to provide a basic document necessary for the appraisal of the Project by JICA and the GOJ. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country 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 the Japan's Grant Aid scheme.

JICA 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.

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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 Survey, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

The Report on the Survey is reviewed by JICA, and after the appropriateness of the Project is confirmed, JICA recommends the GOJ to appraise the implementation of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the E/N will be signed between the GOJ and the Government of the recipient country to make a plea for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

The consultant firm(s) used for the Survey will be recommended by JICA to the recipient country to also work on the Project's implementation after the E/N and the G/A, in order to maintain technical consistency.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority 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, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) 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 JICA. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Major undertakings to be taken by 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 Attachment 1.

(6) Proper Use

The Government of recipient country is required to maintain and use the facilities constructed and the

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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.

(7) Export and Re-export

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

(8) 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"). JICA 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 JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(10) Social and Environmental Considerations

A recipient country must ensure the social and environmental considerations for the Project and must follow the environmental regulation of the recipient country and JICA environmental and social considerations guideline.

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Attachment 1 for Annex-4

FLOW CHART OF JAPAN'S GRANT AID PROCEDURES

Stage	Flow & Works	Recipient Government	Japanese Government	JICA	Consultant	Contractor	Others
Application	Request	✓					
	Screening of Project → Evaluation of T/R → Project Identification Survey (T/R : Terms of Reference)		✓	✓			
Project Formulation & Preparation	Preparatory Survey → Field Survey Home Office Work Reporting	✓	✓	✓			
	Preparatory Survey 2 (Basic Design) → Selection & Contracting of Consultant by Proposal → Field Survey Home Office Work Reporting	✓	✓	✓	✓		
	Explanation of Draft Final Report → Final Report	✓	✓	✓	✓		
Appraisal & Approval	Appraisal of Project		✓				
	Inter Ministerial Consultation		✓				
	Presentation of Draft Notes	✓	✓				
	Approval by the Cabinet		✓				
Implementation	E/N & G/A (E/N : Exchange of Notes, G/A : Grant Agreement)	✓	✓	✓			
	Banking Arrangement	✓					✓
	Consultant Contract → Verification → Issuance of A/P	✓		✓	✓		
	Detailed Design & Tender Documents → Approval by Recipient Government → Preparation for Tendering	✓		✓	✓		
	Tendering & Evaluation	✓		✓	✓	✓	
	Procurement / Construction Contract → Verification → A/P	✓		✓	✓	✓	
	Construction → Completion Certificate by Recipient Government → A/P	✓		✓	✓	✓	
	Operation → Post Evaluation Study (A/P : Authorization to Pay)	✓		✓			
	Ex-post Evaluation	✓		✓			
	Follow up						

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**Annex-5: Major Undertakings to be taken by Each Government**

NO	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country and to assist internal transportation of the products		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●) Port to Yangon DDA Workshop	(●) Yangon DDA workshop to the Project Site
3	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		●
4	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		●
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●
7	To give due environmental and social consideration in the implementation of the Project		●

(B/A: Banking Arrangement, A/P: Authorization to Pay)

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## Annex-6 List of Target Villages

## VILLAGES' INFORMATION (MANDALAY REGION)

Sr. No.	Code No.	Township	Village Tract	Village	Household	Population
1	MA-01	Kyauk Pa Daung	Sebauk	Sebauk	248	1,237
2	MA-02	Kyauk Pa Daung	Taungzin	Aleywar	40	200
3	MA-03	Kyauk Pa Daung	Bemyar	Seyinsu	81	400
4	MA-04	Kyauk Pa Daung	Tagama	Tagama	97	527
5	MA-05	Kyauk Pa Daung	Theegone	Myoukgone	382	2,240
6	MA-06	Kyauk Pa Daung	Khin Mon	Phonthar Ywarthit	52	267
7	MA-07	Kyauk Pa Daung	Tangakan	Tangakan (Ywarthit)	98	550
8	MA-08	Kyauk Pa Daung	Tangakan	Ywardenshay	226	1,200
9	MA-09	Kyauk Pa Daung	Sindaingkan	Kyansou	187	1,005
10	MA-10	Kyauk Pa Daung	Kyauksitkan	Kyauksitkan	363	1,872
11	MA-11	Kyauk Pa Daung	Gwetaukkone	Leyar (N)	230	1,230
12	MA-12	Kyauk Pa Daung	Amyaungkan	Inbinsan	156	870
13	MA-13	Kyauk Pa Daung	Leyar (S)	Leyar (S)	275	1,186
14	MA-14	Nyaung U	Kannigyi	Kannigyi	283	1,564
15	MA-15	Nyaung U	Kantein	Kantein	254	1,320
16	MA-16	Nyaung U	Yansun	Yansun	238	1,350
17	MA-17	Nyaung U	Myaenegyi	Myaenegyi	160	880
18	MA-18	Nyaung U	Taungzin	Magyizauk	195	889
19	MA-19	Nyaung U	Kuywa	Taungkwin	110	554
20	MA-20	Nyaung U	Kudaw	Kudaw	508	2,687
21	MA-21	Nyaung U	Chaunggwa	Ngalinpoak	180	915
22	MA-22	Pyaw Bwe	Moekaung	Aukshitpin	92	467
23	MA-23	Pyaw Bwe	Phaungtaw	Phaungtaw	225	1,050
24	MA-24	Nwa Hto Gyi	Pyinse	Pyinse	777	3,391
25	MA-25	Nwa Hto Gyi	Khatlan	Khatlan	265	1,785
26	MA-26	Nwa Hto Gyi	Zaydate	Tetse	235	1,168
27	MA-27	Taung Tha	Theegone	Kyaukpau	299	1,729
28	MA-28	Taung Tha	Chaunggwa	Twinpyar (Zeepinkan Tawtike)	332	1,861
29	MA-29	Taung Tha	Pudauksarkone	Pudauksarkone	365	1,900
30	MA-30	Taung Tha	Katin	Katin	230	1,197
31	MA-31	Taung Tha	Paukaing	Sargyin (S)	125	981

Total 27 villages



4 villages

The eliminated village(s), where the water level may be quite low due to the small amount of intake from a thin aquifer, or the water quality may be poor (high saline content), or the water supply facility may be ineffective because of a low water level.

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Annex-6 List of Target Villages

VILLAGES' INFORMATION (MAGWAY REGION)

Sr. No.	Code No.	Township	Village Tract	Village	Household	Population
1	MG-01	Chauk	Gwaycho	Sharpin	210	1,025
2	MG-02	Chauk	Gwaypin	Suetut	93	800
3	MG-03	Chauk	Gwaypin	Thapaypin	130	655
4	MG-04	Chauk	Gwaypin	Gwaypin (Ywama)	88	468
5	MG-05	Chauk	Htainsun	Tonywar	74	350
6	MG-06	Chauk	Kyaungshartaw	Uyin (E)	120	750
7	MG-07	Chauk	Nayweltaw	Nayweltaw (W)	136	703
8	MG-08	Chauk	Nyaungzin	Myaynelain	42	245
9	MG-09	Chauk	Myay Son	Myayson (E)	120	670
10	MG-10	Chauk	Poakpakan	Thangon	70	361
11	MG-11	Chauk	Poakpakan	Hmatgyiphone	42	240
12	MG-12	Chauk	Byipin	Bombwe	80	400
13	MG-13	Chauk	Byipin	Molar	180	1,000
14	MG-14	Chauk	Sardaung	Sardaung (W)	54	311
15	MG-15	Chauk	Segan	Thithla	72	500
16	MG-16	Chauk	Swebaukkan	Zeechopin	105	635
17	MG-17	Chauk	Swebaukkan	Htansu Ywarma	98	487
18	MG-18	Chauk	Swebaukkan	Yaylar	187	972
19	MG-19	Chauk	Taungthar	Taungthar (N)	153	702
20	MG-20	Chauk	Thlonetway	Thayetgone	103	800
21	MG-21	Chauk	Thanbo	Sanyoc	110	504
22	MG-22	Chauk	Thanbo	Kyauktai	107	584
23	MG-23	Chauk	Thanbo	Twinphyuyoe	109	550
24	MG-24	Chauk	Twinlat	Konegyi	260	1,393
25	MG-25	Chauk	Twinlat	Kaphyu	213	1,184
26	MG-26	Chauk	Wathesan	Wathesan	67	459
27	MG-27	Chauk	Wathesan	Thanbo	100	600
28	MG-28	Chauk	Wathesan	Thayetpin	184	991
29	MG-29	Chauk	Wathesan	Sanyayin	47	260
30	MG-30	Chauk	Kywetut	Kywetut Ywama	204	993
31	MG-31	Yanangyaung	Naga	Ziphyugone	80	370
32	MG-32	Yanangyaung	Naga	Htanaunghla	90	470
33	MG-33	Nat Mauk	Waryonkone	Oakpho	104	579
34	MG-34	Nat Mauk	Kyaukpon	Gwekan (S)	86	531
35	MG-35	Nat Mauk	Kyaukpon	Kyaukpon	174	776
36	MG-36	Nat Mauk	Thamonpin	Ywathit	50	308
37	MG-37	Nat Mauk	Thetwin	Thetwin (S)	540	3,442
38	MG-38	Myothit	Chauk Kyar	Chauk Kyar	199	1,187
39	MG-39	Myothit	Phalangyine	Dahatgon	280	1,233
40	MG-40	Myothit	Wargyiaing	Wargyiaing	715	3,400
41	MG-41	Myothit	Yonetaw	Yonedaw	380	2,230
42	MG-42	Myothit	Magyigone	Magyigone	670	3,900
43	MG-43	Myothit	Teepinsan	Ngarlonepho	150	1,258
44	MG-44	Myothit	Yaypyae	Natywar	160	1,247
45	MG-45	Myothit	Yaypyae	Yaypyae	200	1,280
46	MG-46	Myothit	Bork	Bork	113	660
47	MG-47	Myothit	Laytaisin	Gwetaw	128	510
48	MG-48	Myothit	Laytaisin	Laytaisin(N)	160	615
49	MG-49	Sa Lin	Thitkauktaung	Kaigyi	64	188
50	MG-50	Sa Lin	Shwezanthee	Chaungyetet (N)	98	515
51	MG-51	Magway	Kyitsonpway	Kyitsonpway	1,280	5,733
52	MG-52	Magway	Nyaungbin	Nyaungbin	317	1,615

Total 45 villages



7 villages

The eliminated village(s), where the water level may be quite low due to the small amount of intake from a thin aquifer, or the water quality may be poor (high saline content), or the water supply facility may be ineffective because of a low water level.

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## Annex-6 List of Target Villages

## VILLAGES' INFORMATION (SAGAING REGION)

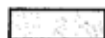
Sr. No.	Code No.	Township	Village Tract	Village	Household	Population
1	SA-01	Bu Ta Lin	Yehtwat	Yehtwat	306	1,834
2	SA-02	Bu Ta Lin	Chindwin	Chindwin	240	1,020
3	SA-03	Wet Let	Myindaw	Myindaw	200	963
4	SA-04	Wet Let	Taiywa	Tamakan	270	1,134
5	SA-05	Wet Let	Mingone	Sahmon	120	360
6	SA-06	Wet Let	Minywa	Wetleywa	71	332
7	SA-07	Wet Let	Yoneywa	Yonethar	259	1,750
8	SA-08	Ayar Daw	Chinpin	Htainpinkar	294	1,360
9	SA-09	Ayar Daw	Chinpin	Thanbayargyin	350	1,300
10	SA-10	Pe Le	Kandouk	Kandouk	200	935
11	SA-11	Pe Le	Ayechanthar	Ayechanthar	292	1,252
12	SA-12	Pe Le	Mintaipin	Mintaipin	585	3,150
13	SA-13	Pe Le	Wunbaecharik	Padaukgon	550	3,115
14	SA-14	Yin Mar Pin	Minzu	Phowintaung	129	668
15	SA-15	Yin Mar Pin	Shwepankhaing	Tebingan	130	730
16	SA-16	Yin Mar Pin	Lakapya	Indaw	174	1,160
17	SA-17	Yin Mar Pin	Myayeik	Myayeik	178	1,189
18	SA-18	Yin Mar Pin	Kapaing	Kapaing	521	2,245
19	SA-19	Yin Mar Pin	Sinzwel	Sinzwel(N)	123	748
20	SA-20	Sa Lin Gyi	Paungkatar	Zedaw	58	285
21	SA-21	Sa Lin Gyi	Yonepinyoe	Pyawbwe	65	416
22	SA-22	Sa Lin Gyi	Myayzone	Nyaungpintar	170	920
23	SA-23	Sa Lin Gyi	Yaymain	Yaymain (N)	130	962
24	SA-24	Ka Ni	Taungpouk	Nyaungpinle	110	450
25	SA-25	Ka Ni	Thaminchan	Minma	217	1,097
26	SA-26	Mon Ywa	Kyeeoak	Neikbanwa	152	780
27	SA-27	Mon Ywa	Kyaungkone	Bawga	119	432

Total 15 villages



2 villages

The eliminated village(s), which may be almost impossible to develop groundwater.



10 villages

The eliminated village(s), where the water level may be quite low due to the small amount of intake from a thin aquifer, or the water quality may be poor (high saline content), or the water supply facility may be ineffective because of a low water level.

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## Annex-7 Project Cost Estimate (Confidential)

### (1) Japanese side obligation

Items		Project Cost (Million Yen)
Equipment and Materials	Equipment for well drilling	622
	Equipment and materials for well construction	
	Equipment for water quality inspection	
Soft component		4
Detailed design and supervision		21
Total		647

### (2) Myanmar side obligation

#### 1) General cost

Obligation	Cost (Kyat)
Inland transportation for drilling rigs and tracks with crane (Fuel, Yangon to Nyang Oo)	456,000
Inland transportation for other equipment (Yangon to Nyang Oo)	45,772,500
Daily allowance and accommodation fee for DDA staffs	1,320,000
Commission for Banking Arrangement (B/A)	3,250,000
Total	50,798,500

#### 2) Operation and maintenance cost

No.	Cost for water supply facility construction (Kyat)		Maintenance cost (Kyat)		
	Item	Per one well	Item	Per one unit	Annually (2 units)
1	Geophysical survey	174,200	Well drilling rig	1,500,000	3,000,000
2	Transportation of equipment and materials (Yangon-sites)	1,300,000	Cargo truck with crane	4,400,000	8,800,000
3	Preparation work	814,300	Air compressor (1 unit)	500,000	500,000
4	Drilling work	6,190,800			
5	Well logging and casing installation	213,300			
6	Well washing and pumping test	771,615			
7	Installation of submersible motor pump	203,408			
8	Removal work	694,500			
9	Construction of cabin for pump	690,000			
10	Construction of water supply tank	1,650,000			
	Total	12,702,123	Total	6,400,000	12,300,000

\*Note: The number of compressor is one

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## Annex-8 Allocation Plan of DDA Staff

## Staff Allocation Plan for Procured Drilling Rig No (1)

Name of staff	Present department	Experiences of drilling deep well (more than 300m depth)	Experiences trained by JICA's technical assistance project
U Tin Soe	AE (Magway Div.)		3 years experience
U Zaw Myo Lwin	SAE(Chauk)		3 years experience
U Ag Linn	SAE(Pwint Phyu)		3 years experience
U Naing Naing Win	SAE(Moe Hnyin)		3 years experience
U Mg Kyaw	Driller 1		3 years experience
U Than Ag	Driller 2		3 years experience
U Zin Ag Myo	Driller 2		3 years experience
U Zaw Htet	Driller 2		

## Staff Allocation Plan for Procured Drilling Rig No (2)

Name of staff	Present department	Experiences of drilling deep well (more than 300m depth)	Experiences trained by JICA's technical assistance project
U Win Thein Oo	AE(HQ)		3 years experience
U Kyaw Soe Lwin	SAE(Sagaing)		3 years experience
U Zaw Nyunt Oo	Head of Driller (HQ)		
U Yan Lin Ag	JE(MonYwa)		3 years experience
U Tun Min Latt	Driller 1		3 years experience
U Than Tin	Driller 2		3 years experience
U Win Thaug	Driller 2		3 years experience
U Kyaw Thu YA	Driller 2		

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