

(2) 討議議事録 (2012 年 2 月 17 日)

**MINUTES OF DISCUSSIONS
ON THE SECOND PREPARATORY SURVEY
ON THE PROJECT FOR SMALL TOWN WATER SUPPLY
IN SOUTHERN PART OF THE AMHARA REGIONAL STATE
IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
(Additional Survey)**

From September 2011 to February 2012, the Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Second Preparatory Survey Team (hereinafter referred to as “the Team”) on the Project for Small Town Water Supply in Southern Part of the Amhara Regional State (hereinafter referred to as “the Project”) to Ethiopia. The Team carried out field survey which include 20 test well drillings at 11 target towns.

After having the result of the initial test well drillings, JICA decided to send Dr. Yuji MARUO to Ethiopia in order to consult with the Government of Ethiopia on some additional target towns at which the Team will conducts supplemental field survey including with some more test well drillings, from February 13rd to February 21st 2012.

The Team, with Dr. Yuji Maruo and Mr. Dereje Yeshaneh made reconnaissance site visit at 7 (seven) candidate towns out of 8 (eight) candidate sites proposed by Ethiopian side for additional target towns (see attached map). After discussion both sides agreed that Bikolo and Amanuel were selected for additional target towns at which the Team will carry out at most three test well drillings at respective town together with other survey items as geophysical exploration, land survey and socio-economic survey.

Bahir Dar, February 17th, 2012

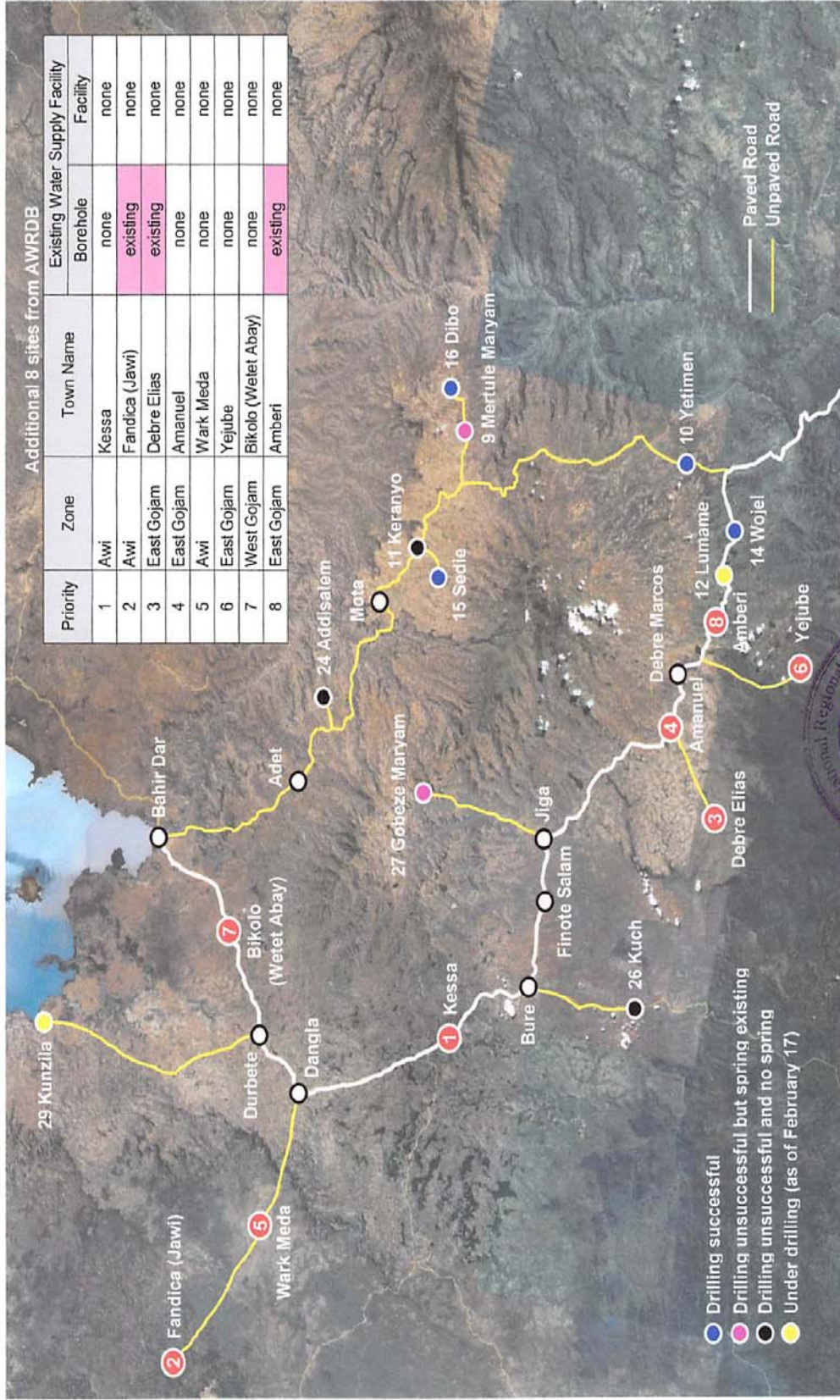


Dr. Yuji MARUO
Leader
Second Preparatory Survey Team
Japan International Cooperation Agency



Mr. Zemene Tsehaye Bogale
Deputy Bureau Head
Bureau of Water Resource Development
Amhara Regional State.
Federal Democratic Republic of Ethiopia





Location Map of the Additional 8 Sites
 The Second Preparatory Survey for the Project for Small Town Water Supply in Southern Part of the Amhara Regional State

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(3) テクニカルノート (2012 年 7 月 10 日)

**TECHNICAL NOTES
ON THE SECOND PREPARATORY SURVEY
ON THE PROJECT FOR SMALL TOWN WATER SUPPLY
IN SOUTHERN PART OF THE AMHARA REGIONAL STATE
IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**

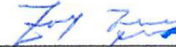
Based on the Minutes of Discussions signed on the 18th day of October 2011 and the 17th day of February 2012 between the Second Preparatory Survey Team (hereinafter referred to as “the Team”) of Japan International Cooperation Agency (hereinafter referred to as “JICA”) and Bureau of Water Resource Development, Amhara Regional State (hereinafter referred to as “AWRDB”) on The Project for Small Town Water Supply in Southern Part of the Amhara Regional State (hereinafter referred to as “the Project”), the consultant members of the Team had a series of discussions and conducted field surveys from the 20th day of September 2011 to the 10th day of July 2012.

As a result of the discussions and the surveys, AWRDB and the Team (hereinafter referred to as “both sides”) confirmed the technical conditions described in the attached sheets.

The detail of the contents of the Project shall be decided upon further surveys and discussion between both sides.

Bahir Dar, July 10, 2012




Mr. Zemene Tsehay Bogale
Deputy Bureau Head
Bureau of Water Resource Development,
Amhara Regional State
Federal Democratic Republic of Ethiopia


Takeshi NAKANO
Chief Consultant
Preparatory Survey Team
Kokusai Kogyo Co., Ltd.
Japan

ATTACHMENT

1. GENERAL

Both sides have agreed and confirmed the following items:

1-1 Candidate Sites

The thirteen (13) candidate sites shown below will be adopted.

Table 1: Name of Candidate Sites

ID	Zone	Woreda	Town
9	East Gojam	Enebsie Sar Midir	Mertule Maryam
10		Enemay	Yetimen
11		Hulet Egu Enesie	Keranyo
12		Awabel	Lumame
14		Awabel	Wojel
15		Hulet Egu Enesie	Sedie
16		Enebsie Sar Midir	Dibo
-		Machakel	Amanuel
24	West Gojam	Gonji Kollala	Addisalem
26		Bure	Kuch
27		Quarit	Gobeze Maryam
29		Semen Achefer	Kunzila
-		Macha	Bikolo

1-2 Population and Growth Rate

The population in 2012, and estimate for 2016 of the candidate sites, as shown below, will be adopted.

Table 2: Population (2012 and 2016)

ID	Town	Population (2012)	Annual growth rate	Population (2016)
9	Mertule Maryam	15,124	4.2%	17,829
10	Yetimen	3,289		3,877
11	Keranyo	2,101		2,477
12	Lumame	11,410		13,451
14	Wojel	3,188		3,758
15	Sedie	3,348		3,947
16	Dibo	2,129		2,510
-	Amanuel	10,768		12,694
24	Addisalem	5,247		6,186
26	Kuch	6,865		8,093
27	Gobeze Maryam	5,860		6,908
29	Kunzila	5,767		6,799
-	Bikolo	4,929		5,811
Total		80,025	-	94,340

The population data of Dibo does not exist; therefore, the population of Dibo has been calculated with average basic household rate (4.2 head/household) after counting the number



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of household from the satellite imagery data by the Team. The calculated population of Dibo in 2012 is 2,129 people.

1-3 Water Supply Basic Unit

Water supply basic unit will be adopted twenty (20) liters per capita per day (20 l/c/d).

1-4 Unit Integration

The units for the Project will be according to SI (International System).

2. RESULT OF THE SURVEYS

Both sides have agreed and confirmed the following items:

2-1 Social Condition Survey

Social condition surveys have been conducted at thirteen (13) sites.

The survey results will be utilized to confirm the willingness to accept new water supply project, and referred to calculate the water fee for operation and maintenance and to consider the organization and system for operation and maintenance for new water supply facilities.

2-2 Topographic Survey

Topographic surveys have been conducted at thirteen (13) sites.

The survey results will be utilized to plan and design the new water supply facilities.

2-3 Geophysical Survey

Geophysical surveys have been conducted at thirteen (13) sites.

The survey results were referred to decide test well drilling points.

2-4 Test Well Drilling

Test well drilling has been conducted at twenty five (25) points at twelve (12) sites except Bikolo, because test well at Bikolo has already been drilled by AWRDB.

The drilling results were that six (6) sites (Yetimen, Lumame, Wojel, Sedie, Dibo and Amanuel) were successful and six (6) sites (Mertule Maryam, Keranyo, Addisalem, Kuch, Gobeze Maryam and Kunzila) were unsuccessful.

The final drilling success rate was 24 % (6 wells of 25 wells).



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Table 3: Result of Test Well Drilling

ID	Town	1st test well	2nd test well	3rd test well	4th test well
9	Mertule Maryam	Unsuccessful *1	Dry hole		
10	Yetimen	Successful			
11	Keranyo	Dry hole	Unsuccessful *1	Dry hole	
12	Lumame	Dry hole	Unsuccessful *1	Successful	
14	Wojel	Successful			
15	Sedie	Successful			
16	Dibo	Successful			
-	Amanuel	Successful	Dry hole		
24	Addisalem	Dry hole	Dry hole		
26	Kuch	Dry hole	Dry hole	Dry hole	
27	Gobeze Maryam	Dry hole	Dry hole		
29	Kunzila	Unsuccessful *2	Unsuccessful *1	Dry hole	Dry hole
-	Bikolo	Successful (Conducted by AWRDB)			

*1 Not sufficient yield

*2 Not sufficient water quality

Table 4: Result of Pumping Test

ID	Town	Quantity (L/sec.)	Water source
10	Yetimen	8.70	Groundwater
12	Lumame	8.86	Groundwater
14	Wojel	7.80	Groundwater
15	Sedie	8.90	Groundwater
16	Dibo	8.90	Groundwater
-	Amanuel	3.00	Groundwater

2-5 Existing Water Source Survey

Existing water source survey has been conducted at six (6) sites (Mertule Maryam, Keranyo, Addisalem, Kuch, Gobeze Maryam and Kunzila) to detect alternative water sources.

Two (2) sites (Mertule Maryam and Gobeze Maryam) have existing spring source with sufficient water quantity for planning of water supply facility scheme, however four (4) sites (Keranyo, Addisalem, Kuch and Kunzila) have no existing water source.

Table 5: Result of Existing Water Source Survey

ID	Town	Quantity (L/sec.)	Water source
9	Mertule Maryam	11.42	Spring
27	Gobeze Maryam	3.96	Spring

2-6 Water Quality Analysis

Water quality analysis has been conducted seventeen (17) points, eight (8) test drilling points, three (3) existing wells (Keranyo and Lumame) and six (6) spring source points (Mertule Maryam and Gobeze Maryam).

The value of Nitrate of first test well at Kunzila exceeds Ethiopian water quality standards; therefore, this drilling point at Kunzila was evaluated as unsuccessful for production well.

2-7 Water Supply Facility Plan

Based on test well drilling and water quality analysis, seven (7) sites (Yetimen, Lumame, Wojel, Sedie, Dibo, Amanuel and Bikolo) will be planned for water supply facility scheme by groundwater.

Based on existing water source survey and water quality analysis, a water supply facility schemes by spring water collection will be planned at two (2) sites (Mertule Maryam and Gobeze Maryam).

However, four (4) sites (Keranyo, Addisalem, Kuch and Kunzila) have been excluded from the Project because of no water source was found.

Table 6: Plan of Water Source for New Facilities

ID	Town	Groundwater	Spring source	Water source
9	Mertule Maryam	None	Existing	Spring
10	Yetimen	Existing	-	Groundwater
11	Keranyo	None	None	Excluded
12	Lumame	Existing	-	Groundwater
14	Wojel	Existing	-	Groundwater
15	Sedie	Existing	-	Groundwater
16	Dibo	Existing	-	Groundwater
-	Amanuel	Existing	-	Groundwater
24	Addisalem	None	None	Excluded
26	Kuch	None	None	Excluded
27	Gobeze Maryam	None	Existing	Spring
29	Kunzila	None	None	Excluded
-	Bikolo	Existing	-	Groundwater

2-8 Environmental Impact Assessment (EIA)

Initial Environmental Examination (IEE) requires no action according to Amhara Environmental Impact Assessment (EIA) guideline, because the water supply quantity by new facilities will be planned less than 500 m³/day. As the comprehensive result of evaluation, as shown in EIA guideline, there will be very low level of negative environmental impact caused by the construction, operation and maintenance of the water supply facilities in the Project.

(1) Social Environmental Condition

In four (4) sites (Sedie, Dibo, Gobeze Maryam and Bikolo), the distribution reservoir will be planned in public land. Therefore, the problem of land acquisition is not expected to occur. In the other sites, there is no negative impact, because new facilities will be planned within the land of existing facilities.

(2) Natural Environmental Condition

The bird family Ardeidae (Ciconia Ciconia) was confirmed to exist in Kuch. However, this species is categorized as the criteria of "least concern" according to IUCN (International Union for Conservation of Nature and Natural Resources) Red List of Threatened Species. Moreover, the Project is not expected to have an impact on this Species. Therefore, there

would be no negative impact on the ecology and biodiversity.

3. FUTURE SCHEDULE

Both sides have agreed and confirmed that the survey results would be used for analysis in Japan, and then the Team will make Project designs and estimate Project cost. Then the result of plan and cost estimation for the Project will be reported and explained by the Team on October 2012.



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(4) 討議議事録 (2012 年 11 月 7 日)

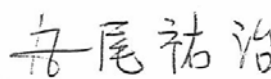





**Minutes of Discussions
on
The Preparatory Survey
for
The Project for Small Town Water Supply
in Southern Part of the Amhara Regional State
in the Federal Democratic Republic of Ethiopia
(Explanation on Draft Report)**

In October 2011, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Preparatory Survey Team on the Project for Small Town Water Supply in Southern Part of the Amhara Regional State (hereinafter referred to as "the Project") to the Federal Democratic Republic of Ethiopia (hereinafter referred to as "Ethiopia") and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

JICA dispatched to Ethiopia the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Dr. Yuji MARUO, Senior Advisor of JICA, from November 5th-8th, 2012 to consult the Ethiopia authorities on the components of the draft report.

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

Bahir Dar, November 7th, 2012

<p style="text-align: center;"></p> <hr/> <p>Dr. Yuji MARUO Leader Preparatory Survey Team Japan International Cooperation Agency</p> <div style="text-align: center;"> 3</div>	<p style="text-align: center;"></p> <hr/> <p>Mr. Getachew Jember Bureau Head Bureau of Water Resource Development, Amhara Regional State, Federal Democratic Republic of Ethiopia</p> <div style="text-align: center;"></div>
<p style="text-align: center;"></p> <hr/> <p>Mr. Mesfin G/medhin Birru Deputy Bureau Head Bureau of Finance and Economic Development, Amhara Regional State, Federal Democratic Republic of Ethiopia</p> <div style="text-align: center;"></div>	

ATTACHMENT

1. Components of the Draft Report

The Ethiopia side agreed and accepted in principle the components of the draft outline design explained by the Team.

2. Japan's Grant Aid scheme

The Ethiopia side understood the scheme of Japan's Grant Aid and would take the necessary measures and allocate necessary budget timely for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented. The Grant Aid Scheme and necessary measures were described in the Annex 3, and 4 of the Minutes of Discussions signed by both sides on October 18th, 2011 (hereinafter referred to as "the previous minute").

Both sides confirmed that the dispatch of the Team is not necessarily a commitment of the Project to be implemented and that the scope of the Project would be examined further by the Government of Japan for its approval as a Grant Aid.

3. Selected Sites

9 towns which are shown in the Annex-3 were selected as the project sites based on the result of the preparatory surveys and analysis in Japan.

9 selected sites are shown below.

East Gojam Zone (7): Mertule Maryam, Yetimen, Lumame, Wojel, Sedie, Dibo, Amanuel

West Gojam Zone (2): Gobeze Maryam, Bikolo

4. Responsible and Implementing Organization

4-1 The Responsible and Implementing Agency is the Amhara Water Resources Development Bureau (hereinafter referred to as "AWRDB").

4-2 The Organization chart of the implementing agency is shown as Annex-4.

5. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to Ethiopia by the end of December, 2012.

6. Other Relevant Issues

6-1 Components of the Project

The project sites and components of the project are shown in Annex-1 and 2.

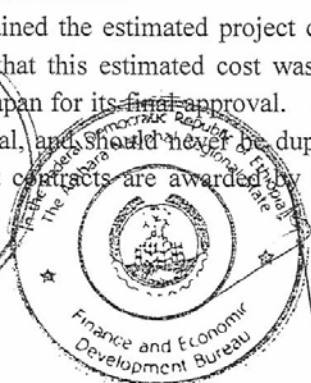
6-2 Project Cost Estimate

The Team explained the estimated project cost to the Ethiopia side as shown in Annex-5. Both sides confirmed that this estimated cost was provisional and would be examined further by the Government of Japan for its final approval. Furthermore, both sides confirmed that this estimated cost is confidential, and should never be duplicated in any forms or released to any other parties until the relevant contracts are awarded by the executing agency, in order to secure fairness of tender procedure.

Cooperation Agency

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6-3 Securing Project sites

Both sides agreed that the Ethiopia side takes necessary measure for securing the project sites until commencement of the Project.

6-4 Technical Assistance

Both sides agreed that technical assistance by Japanese consultants will be carried out in order to strengthen the capacity of Water Management Organization (WMO) and Woreda water office in terms of O&M of water supply facilities during the implementation period. The contents of technical assistance is shown in Annex-2.

6-5 Undertakings by the Ethiopia Side

(1) Allocation of Necessary Budget

The Ethiopia side agreed that it would allocate the necessary amount of budget timely (Annex-5) for smooth implementation of the Project, and would assign counterpart personnel by its own expense to the Japanese consultants during the implementation of the Project.

(2) Tax Exemption and Custom Clearance

Both sides confirmed that the Ethiopia side shall take necessary measures to exempt Japanese nationals who will be engaged in the Project from all duties and related fiscal charges which may be imposed in Ethiopia with respect to local procurement under the verified contract.

Both sides also confirmed that the Ethiopia side shall take necessary measures to implement smooth custom clearance for the materials and equipment for the Project to be imported from Japan or third countries.

(3) Environmental Impact Assessment (EIA)

As the result of evaluation conducted by the JICA Survey Team on the environmental condition of the project sites, there would be negligible environmental and social impacts from the Project according to the criteria of the Environmental Impact Assessment Procedural Guideline in Amhara regional state. The Ethiopia side also assured it.

(4) Protection of Test Boreholes

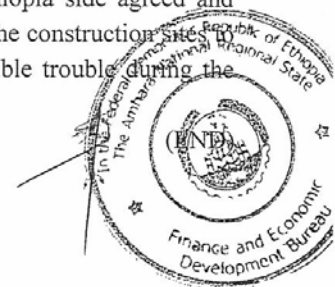
The Ethiopia side agreed that the test boreholes drilled in the survey shall be protected safely by the Ethiopia side until the commencement of the Project.

(5) Land use permission

Both sides confirmed that the entire land in Ethiopia is government owned under Ethiopian law, so that there is no obstacle in acquiring the land for construction of public faucets; reservoir tanks, generator houses, the collection chamber etc. Those construction sites have already been confirmed by the respective WMO and local beneficiaries as well. However the Ethiopia side agreed and promised to submit an official letter regarding the securance of the land for the construction sites to JICA Ethiopia Office by November 30th, 2012 in order to avoid any possible trouble during the implementation period.



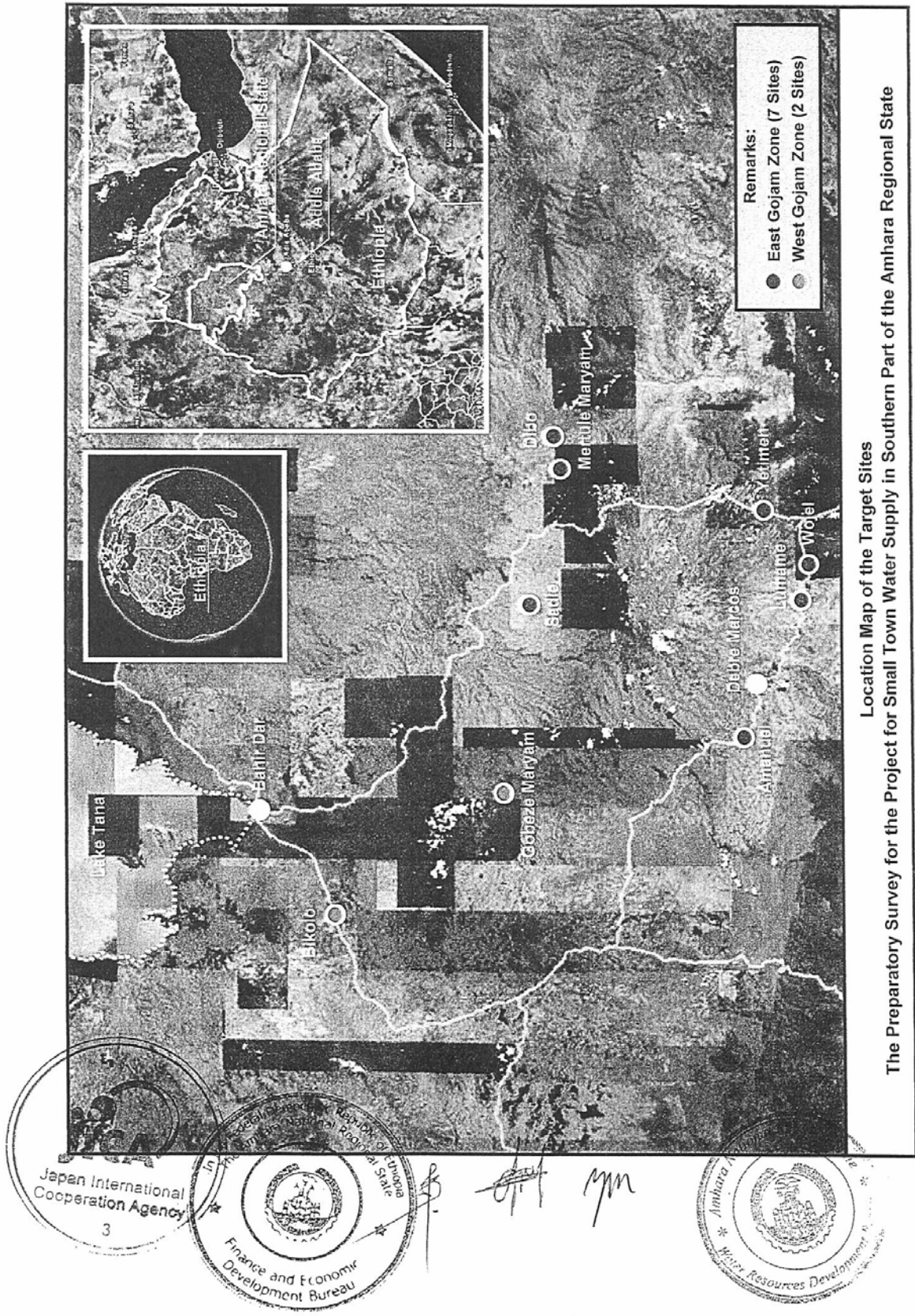
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Annex:

- Annex-1 Project Sites
- Annex-2 Components of the Project
- Annex-3 Selected Sites
- Annex-4 Organization Chart of the Responsible Organization
- Annex-5 Project Cost Estimation





Components of the Project

1. Construction of Water Supply Facilities: 9 towns as listed below

No.	Town	Population (2016)	Water supply amount (2016)
9	Mertule Maryam	17,829	328.97 m ³ /day
10	Yetimen	3,877	74.33 m ³ /day
12	Lumame	13,451	255.17 m ³ /day
14	Wojel	3,758	121.22 m ³ /day
15	Sedie	3,947	87.99 m ³ /day
16	Dibo	2,510	89.22 m ³ /day
	Amanuel	12,694	86.40 m ³ /day
27	Gobeze Maryam	6,908	114.00 m ³ /day
	Bikolo	5,811	181.43 m ³ /day
	Total	70,786	1,338.73 m ³ /day

2. Technical Assistance consisting of:

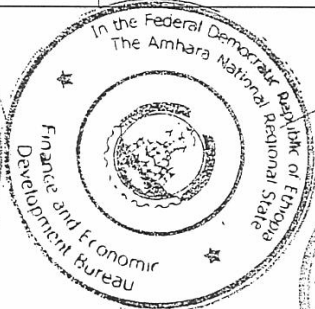
- To facilitate AWRDB and Woreda water office on the effective support system in proper management of Water Management Organization (WMO)
- To institutionalize the operation and maintenance structures of WMO
- To secure general understanding among the stakeholders on the operation and maintenance structures
- To conduct technical trainings on the maintenance and repair of the facilities (implemented by EWTEC)
- To conduct technical trainings on administrative tasks such as accountancy, book keeping and reporting
- To assist WMO conducting monitoring and evaluation, modification of the plan



Annex-3

Selected Target Sites

No.	Zone	Woreda	Town
9	East Gojam	Enebsie Sar Midir	Mertule Maryam
10	East Gojam	Enemay	Yetimen
12	East Gojam	Awabel	Lumame
14	East Gojam	Awabel	Wojel
15	East Gojam	Hulet Egu Enesie	Sedie
16	East Gojam	Enebsie Sar Midir	Dibo
	East Gojam	Machakel	Amanuel
27	West Gojam	Quarit	Gobeze Maryam
	West Gojam	Macha	Bikolo



Organization Chart of the Responsible Organization

