


RECORD OF DISCUSSIONS
ON
THE PROJECT FOR GROUNDWATER RESOURCES ASSESSMENT
IN THE MIDDLE AWASH RIVER BASIN
IN
THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
AGREED UPON BETWEEN
MINISTRY OF WATER AND ENERGY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

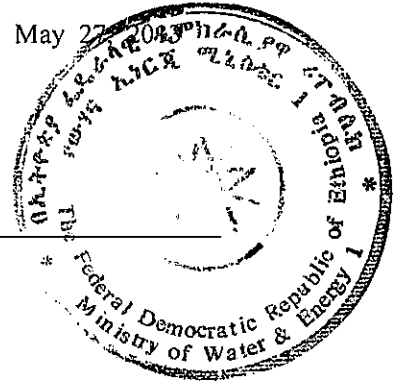
Addis Ababa, May 27, 2013



Mr. Kimiaki Jin
Chief Representative
Ethiopia Office
Japan International Cooperation Agency



Ato. Kebede Gerba
State Minister
Ministry of Water and Energy
Federal Democratic Republic of Ethiopia



Witnesses



Ato. Kokob Misrak
Director
Bilateral Cooperation
Ministry of Finance and Economic Development
Federal Democratic Republic of Ethiopia

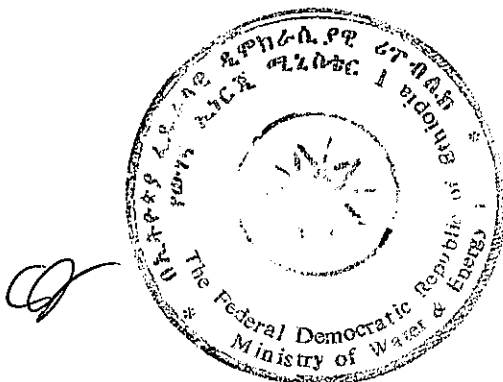


Based on the minutes of meetings on the Detailed Planning Survey on the Project for Groundwater Resources Assessment in the Middle Awash River Basin (hereinafter referred to as "the Project") signed on 12 September, 2012 between Ministry of Water and Energy, Federal Democratic Republic of Ethiopia (hereinafter referred to as "MoWE") and the Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with MoWE and relevant organizations to develop a detailed plan of the Project.

Both parties agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both parties also agreed that MoWE, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of Federal Democratic Republic of Ethiopia.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on December 1, 2011 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on June 11, 2012 between the Government of Japan (hereinafter referred to as "GOJ") and Federal Democratic Republic of Ethiopia.



PROJECT DESCRIPTION

Both parties confirmed that there are a few changes as described in Appendix 2 in the Project Description agreed on in the minutes of meetings on the concerning Detailed Planning Survey of the Project signed on 12 September, 2012.

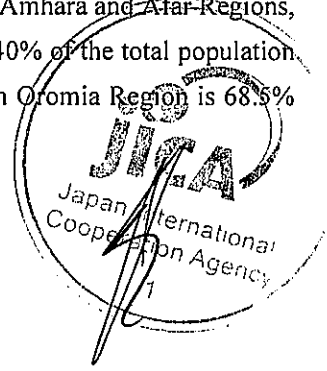
I. BACKGROUND

The access rate to improved drinking water sources in Ethiopia is 42% (96% in urban and 32% in rural areas) (UNICEF/WHO 2008) which is far lower than the average coverage rate of 60% in Sub-Sahara Africa. In 2011, the Government of Ethiopia has revised their Universal Access Plan (UAP), which was originally issued in 2006 as a strategy for the water and sanitation sector. The updated UAP plans to improve the national average water supply access rate from 91.5% (estimation of UAP, 2010) to 100% in urban areas and from 65.8% (estimation of UAP, 2010) to 98% in rural areas by 2015. Although nearly 90% of water relies on groundwater, there is a serious constraint regarding the limited information on groundwater resources which is required for effective groundwater resources development and sustainable groundwater utilization.

The Middle Awash River Basin (covering catchment area of approximately 20,000km² out of whole basin 119,000km²) is located in a part of Great Rift Valley which is frequently affected by droughts. The project area was seriously damaged by drought in 2011. The need for groundwater resources development has been increasing to tackle drought vulnerability. Furthermore, groundwater resources development is expected in the project area to meet the water demand which has been rising due to population increase in the small towns. The progress of groundwater resources development however has been slow as borehole drilling sometimes fails due to limited information on quantity and quality of groundwater resources which can be obtained from hydrogeological maps.

In addition, the water level of Basaka Lake which is located in the Middle Awash River Basin has been rising and its lake surface area has been expanding from 1960's. Consequently, those houses located near the lake have been affected. Groundwater is considered as one of the water sources to Basaka Lake; there is therefore an urgent need to study the mechanism of groundwater recharge. Considering such circumstances, the detailed study on groundwater resources including the assessment of hydrogeology and identification of aquifers is needed to accelerate the groundwater development.

Oromia Region, covering part of the Middle Awash River Basin with Amhara and Afar Regions, has population of approximately 2.7 million which is approximately 40% of the total population in Ethiopia. Although the access rate to improved drinking water in Oromia Region is 68.5%



(2010) which is at the national average level, the population without access to improved drinking water is the largest among all regions. Because the small towns and villages are scattered in the Middle Awash River Basin, the groundwater resources development is the most appropriate option to secure improved drinking water. In order to meet the tremendous increase of water demand, there is an urgent need to formulate water supply scheme development plans.

Under such circumstances, the Government of Ethiopia has requested the Government of Japan to support a technical cooperation project for development of geological and hydrogeological maps at a scale of 1:250,000 in the Middle Awash River Basin and formulation of a provisional water supply scheme development plan for West Hererge (190 million people), Arsi Zone (260 million people) and East Shewa Zone (140 million people) in Oromia Region as depicted in Annex 1.

II. OUTLINE OF THE PROJECT

1. Title of Project

The Project for Groundwater Resources Assessment in the Middle Awash River Basin

2. Expected Goals which will be attained after the Project Completion

(1) Goal of the Proposed Plan

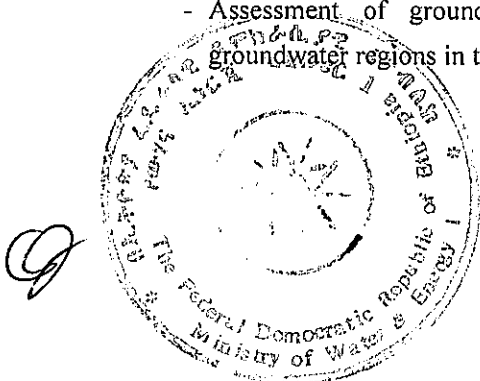
- Appropriate groundwater development / management plan will be formulated and implemented by the Ethiopian government with assistance from concerned donors based on the groundwater potential assessment study which will be carried out by the Project and on hydrogeological map which will be also produced by the Project.
- The small town water supply schemes development plan (facility plan and O&M plan) which will be elaborated by the Project will be applied and implemented by the Ethiopian government with assistance from concerned donors.

(2) Goal to be attained by the Proposed Plan

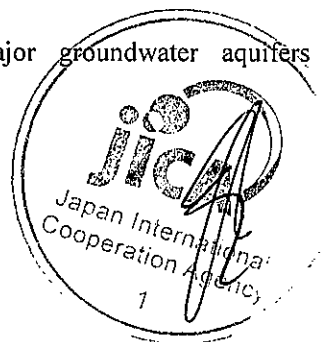
- Groundwater will be effectively developed for drinking water and/or other purposes, and it will be appropriately managed in the Middle Awash River Basin.
- The water supply coverage of the small towns will be improved in the Middle Awash River Basin.

3. Outputs

- Assessment of groundwater potential of the major groundwater aquifers and groundwater regions in the Project areas;



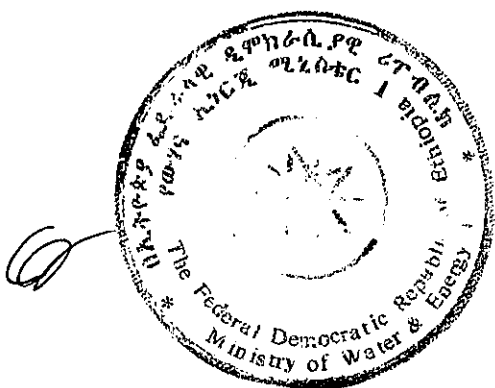
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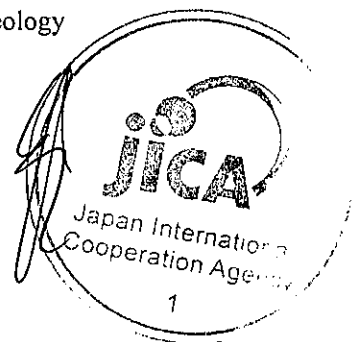
- Production of a set of geological and hydrogeological map at a scale of 1:250,000 in the Middle Awash River Basin; and
- Formulation of provisional water supply scheme development plan of the priority small towns (population of which would be less than about 15,000) selected from Oromia Region (a part of Arsi, West Harerge and East Showa Zones) in the Middle Awash River Basin.

4. Activities

- (1) Collection and review of basic data and information
- (2) Geomorphologic and geologic study (both remote sensing and field study)
- (3) Meteo-hydrological analysis and water balance study
- (4) Geophysical exploration
 - 1) Electric resistivity exploration
 - 2) Electro-magnetic exploration (TDEM)
- (5) Drilling of test wells
- (6) Groundwater monitoring
- (7) Isotopic analysis of some groundwater samples
- (8) Water quality analysis
- (9) Survey on water utilization by water sources
- (10) Survey on water utilization by small towns
- (11) Social economic survey
- (12) Design and assemble GIS and database on existing wells and other water points
- (13) Environmental and social consideration study (The draft terms of reference is shown in Annex 6).
- (14) Study on groundwater recharge mechanisms (including study on Lake Basaka)
- (15) Production of a set of geological and hydrogeological map at a scale of 1:250,000
- (16) Construction of groundwater model
- (17) Water demand projection
- (18) Review on strengthening of institution for groundwater resources development and management
- (19) Assessment on future impact of groundwater utilizing groundwater model
- (20) Provisional study of water supply scheme development plan for small towns
- (21) Cost estimation and project evaluation
- (22) Capacity development including seminar on isotope hydrogeology



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5. Input

(1) Input by JICA

Experts

- 1) Team Leader/Groundwater Resources Development and Management
- 2) Hydrogeology / Water Quality Analysis
- 3) Small Town Water Supply Scheme Development / Water Use
- 4) Groundwater Modeling
- 5) Volcanic Geology
- 6) Meteo-Hydrology
- 7) Physical Exploration
- 8) Test Well Drilling
- 9) GIS/ Database
- 10) Environmental / Social Consideration
- 11) Economic Analysis / Project Evaluation
- 12) Coordinator / Seminar and Workshop

Equipment and Software

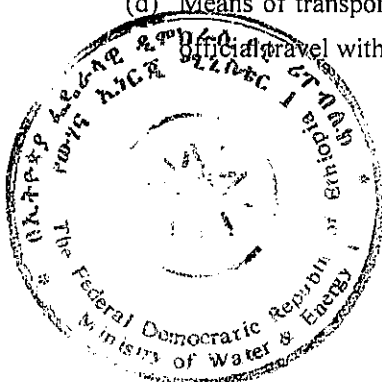
- 1) GPS
- 2) Water Level Recorder / Data Logger
- 3) Water Level Meter
- 4) Field Water Quality Kit
- 5) Office Equipment (Desktop Computer, Printer/Photocopy Machine)
- 6) Software (GIS, Groundwater Modeling Software)

Input other than indicated above will be determined through mutual consultations between JICA and MoWE during the implementation of the Project, as necessary.

(2) Input by MoWE

MoWE will take necessary measures to provide at its own expense:

- (a) Services (professional) of MoWE's counterpart personnel and administrative personnel as referred to in II-6;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Means of transport and travel allowances for members of the JICA missions for official travel within Ethiopia;



- (e) Suitable furnished accommodation for the members of the JICA missions;
- (f) Information as well as support in obtaining medical service;
- (g) Credentials or identification cards;
- (h) Available data (including maps and photographs) and information related to the Project;
- (i) Running expenses necessary for the implementation of the Project;
- (j) Necessary facilities to the members of the JICA missions for the remittance as well as utilization of the funds introduced into Ethiopia from Japan in connection with the implementation of the Project

6. Implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) MoWE: Responsible Agency

Chairperson of Steering Committee (State Minister) will be responsible for guiding the Project to the proper direction

(2) Groundwater Study Directorate, MoWE: Implementing Agency

Project Director (Director, Groundwater Study Directorate) will be responsible for overall administration and implementation of the Project

(3) Groundwater Study Directorate, MoWE: Implementing Agency

Project Coordinator (Responsible person from Groundwater Study Directorate) will be responsible for overall administration and implementation of the Project

(3) JICA Experts

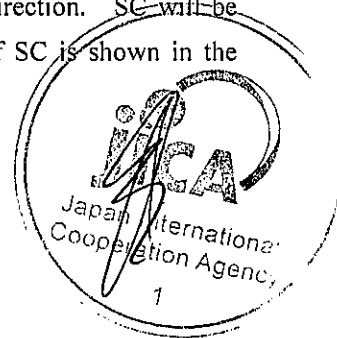
The JICA experts will give necessary technical guidance, advice and recommendations to MoWE on any matters pertaining to the implementation of the Project.

(4) Steering Committee

Steering Committee (hereinafter referred to as "SC") will be established in order to facilitate inter-organizational coordination. The function of the SC is to share the information on the Project and to guide the Project in the proper direction. SC will be held whenever deems it necessary. A list of proposed members of SC is shown in the



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(5) Counterpart Personnel

Counterpart personnel (hereinafter referred to as “CP”) will be assigned for smooth implementation of the Project. A list of proposed CP is shown in the Annex 5.

7. Project Site

Middle Awash River Basin (refer to Annex 1)

8. Duration

The Project will be carried out in accordance with the tentative schedule as attached in the Annex 2. The schedule is tentative and subject to be modified when both parties agree upon any necessity which will arise during the course of the Project.

9. Reports

JICA will prepare and submit the following reports to the MoWE in English.

(1) Inception Report

Twenty (20) copies of Inception Report at the commencement of the first work period in Ethiopia.

(2) Progress Report 1

Twenty (20) copies of Progress Report 1 at the time of seventh (7th) months after the commencement of the work in Ethiopia.

(3) Progress Report 2

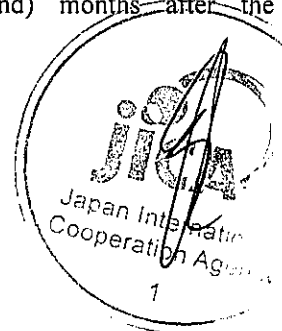
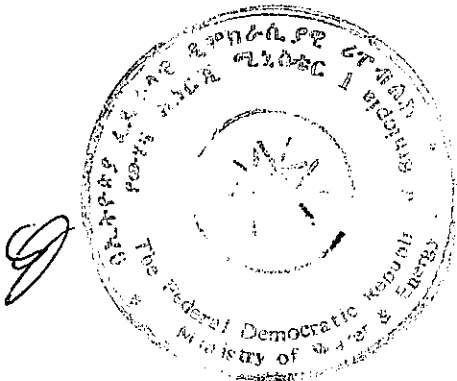
Twenty (20) copies of Progress Report 2 at the time of eleventh (11th) months after the commencement of the work in Ethiopia.

(4) Interim Report

Twenty (20) copies of Interim Report at the time of seventeenth (17th) months after the commencement of the work in Ethiopia.

(5) Draft Final Report

Twenty (20) copies of the Draft Final Report with 1:250,000 geological and hydrogeological maps at the time of twenty-second (22nd) months after the commencement of the work in Ethiopia.



(6) Final Report

Fifty (50) copies of the Final Report with 1:250,000 geology and hydrogeological maps within one (1) month after the receipt of the comments on the Draft Final Report. Additional thirty (30) copies of 1:250,000 geology and hydrogeological maps. Two (2) sets of electronic form of the Final Report including 1:250,000 geology and hydrogeological maps.

10. Environmental and Social Considerations

MoWE agreed to abide by 'JICA Guidelines for Environmental and Social Considerations (April, 2010)' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF MOWE

MoWE will take necessary measures to:

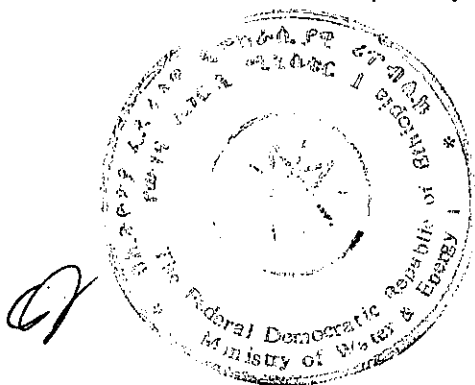
- (1) ensure that the technologies and knowledge acquired by the Ethiopian nationals as a result of Japanese technical cooperation contributes to the economic and social development of Ethiopia, and that the knowledge and experience acquired by the personnel of Ethiopia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the members of the JICA missions referred to in II-5 (1) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Ethiopia.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement signed on December 1, 2011 and the Note Verbales exchanged on June 11, 2012 between the GOJ and the Federal Democratic Republic of Ethiopia.

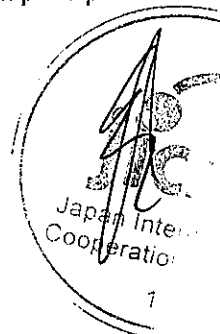
IV. EVALUATION

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. The MoWE is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis



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V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, MoWE will take appropriate measures to make the Project widely known to the people of Ethiopia.

VI. MUTUAL CONSULTATION

JICA and MoWE will consult each other whenever any major issues arise in the course of Project implementation.

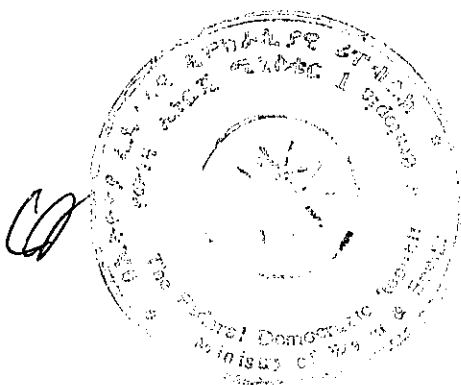

VII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and MoWE.

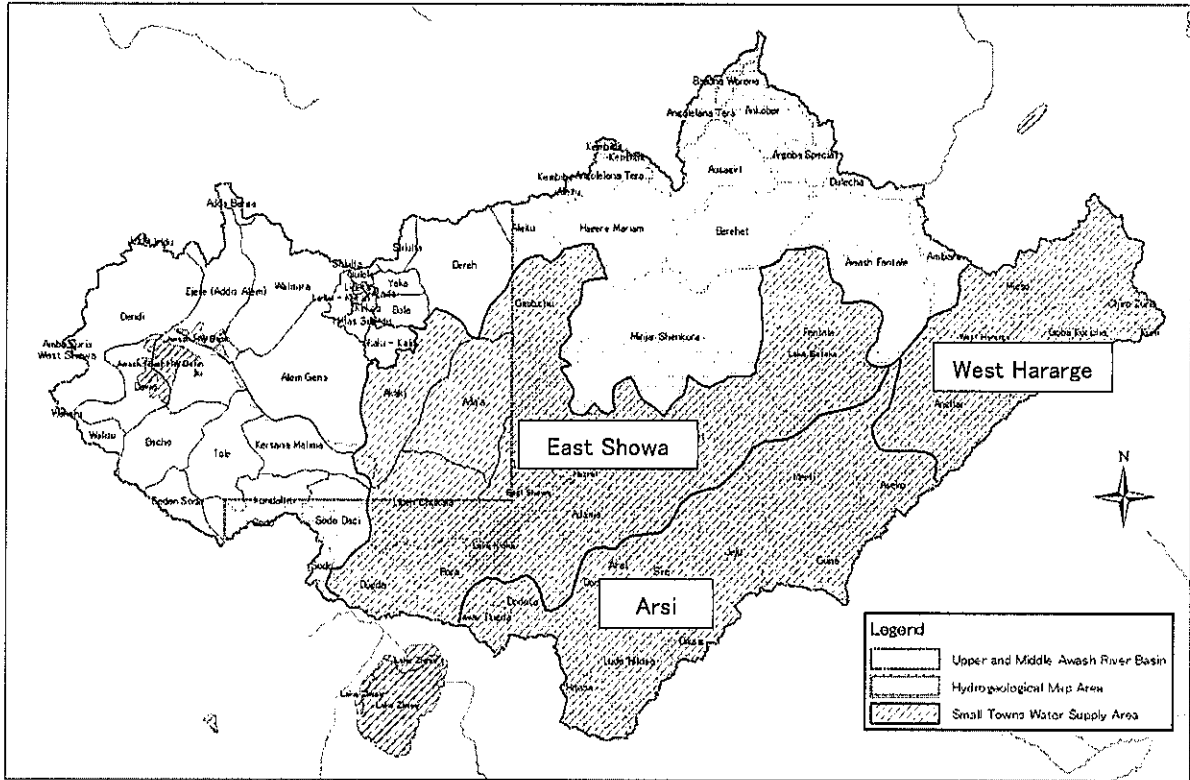
The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Location Map of Project
- Annex 2 Tentative Project Schedule
- Annex 3 Project Organization Chart
- Annex 4 List of Proposed Members of Steering Committee
- Annex 5 List of Proposed Counterpart Personnel
- Annex 6 Draft Terms of Reference for Environmental and Social Considerations Study

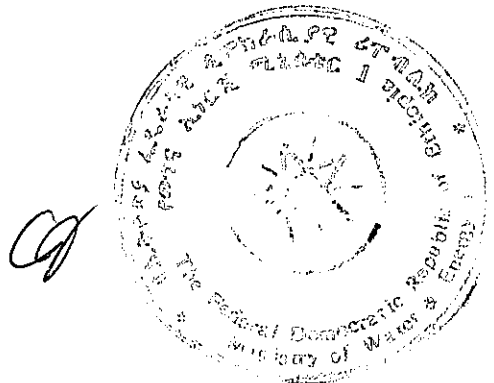
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Annex 1



M *A*



Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Phase	[Solid black bar]																							
Study in Ethiopia	[Solid black bar]																							
Study in Japan	[Solid black bar]																							
Reports							▲										▲							
Steering Committee							▲										▲							
Workshop ¹⁾							▲										▲							

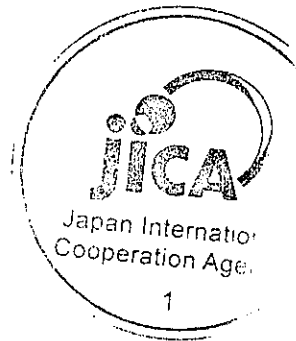
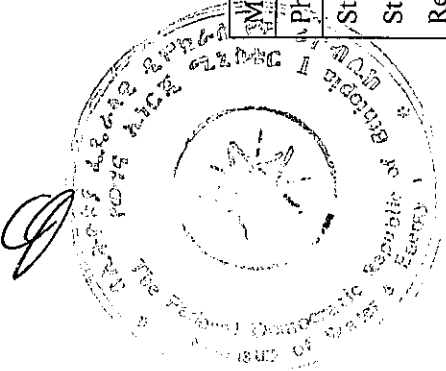
Inception Report Progress Report 1 Progress Report 2 Interim Report Draft Final Report Final Report

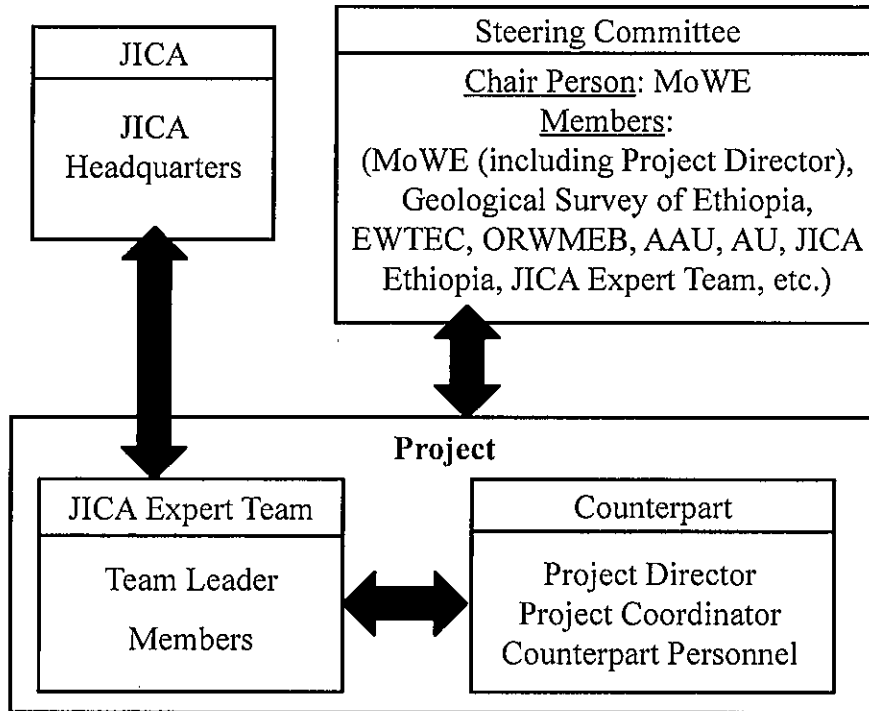
Note:

1) Workshops include at least one seminar on Isotopic Hydrogeology

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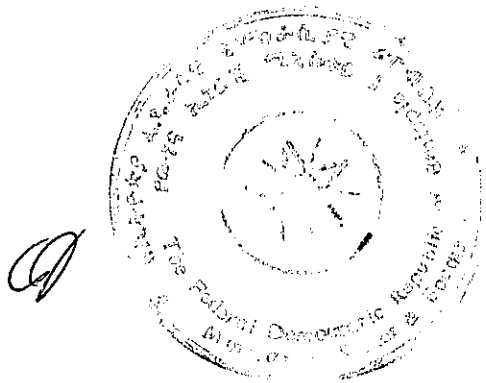
Tentative Project Schedule





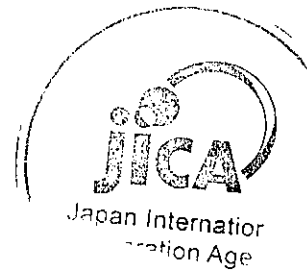
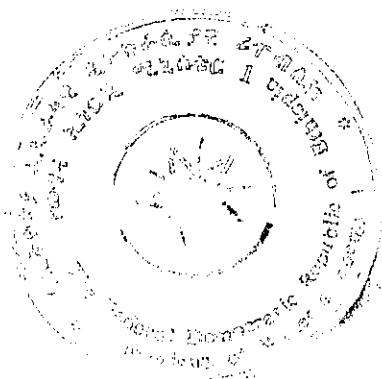
Note ORWMEB: Oromia Regional Water, Mineral and Energy Bureau,
 AAU : Addis Ababa University
 AU : Adama University

Project Organization Chart




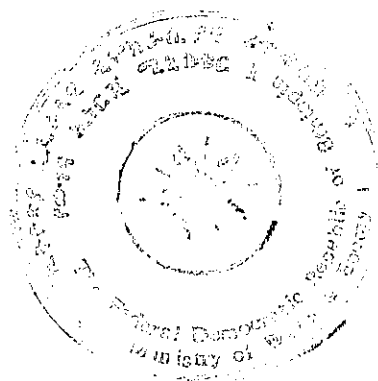
List of Proposed Members of Steering Committee

Name	Organization	Remarks
Ato. Kebede Gerba	MoWE	Chair Person
Ato. Tesfaye Tadesse	MoWE	Member
(to be named)	MoWE	Member
(to be named)	MoWE	Member
Ato. Yohanes Belete	GSE	Member
(to be named)	GSE	Member
(to be named)	EWTEC	Member
Ato. Fekadu Lebecha	Oromia Regional Water, Mineral and Energy Bureau (ORWMEB)	Member
(to be named)	Addis Ababa University (AAU)	Member
(to be named)	Adama University (AU)	Member
(to be named)	JICA Ethiopia Office	Member
	JICA Project Team	Member



List of Proposed Counterpart Personnel

Name	Organization	Remarks
Ato. Tesfaye Tadesse	MoWE	Project Director
Ato. Zebene Lakewo	MoWE	Project Coordinator
(to be named)	MoWE	Counterpart
Ato. Fekadu Lebecha	Oromia Regional Water, Mineral and Energy Bureau (ORWMEB)	Counterpart
(to be named)	Arsi Zone, ORWMEB	Counterpart
(to be named)	West Harerge Zone, ORWMEB	Counterpart
(to be named)	East Showa Zone, ORWMEB	Counterpart
(to be named)	GSE	Counterpart
(to be named)	GSE	Counterpart
(to be named)	GSE	Counterpart
Ato. Tamiru Fekadu	EWTEC	Counterpart
Ato. Abebe Mekonen	EWTEC	Counterpart
(to be named)	Addis Ababa University (AAU)	Counterpart
(to be named)	AAU	Counterpart
(to be named)	Adama University (AU)	Counterpart

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Draft Terms of Reference
for Environmental and Social Considerations Study

Phase I

1. Review the Ethiopian Environmental Laws, Regulations, Policy and Guidelines.
2. Explain the JICA Guidelines for Environmental and Social Considerations (April, 2010) to counterparts (C/Ps).
3. Support C/Ps for scoping of the environmental and social consideration study.
4. Support C/Ps to prepare TOR of Strategic Environmental Assessment (SEA).
5. Implement the SEA with C/Ps and local consultants.
6. Support C/Ps to organize meetings for presentation of the SEA report.

Phase II

1. Support C/Ps for the scoping of the environmental and social consideration study for the water supply scheme development plan of the priority towns.
2. Support C/Ps to organize stakeholders meetings.
3. Support C/Ps to prepare TOR for the IEE (EIA Schedule 2*).
4. Implement the IEE (EIA Schedule 2*) with C/Ps and local consultants.
5. Support C/Ps to make a monitoring plan.
6. Support C/Ps to organize meetings for presentation of the IEE report.
7. Make recommendations for the Project implementation based on the IEE report.

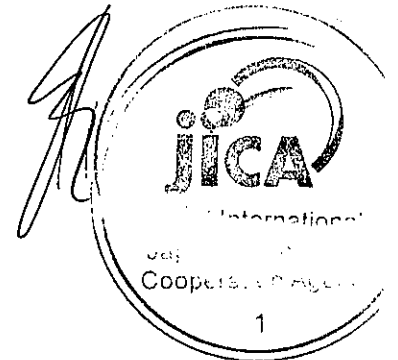
Note:

* Level of EIA based on Ethiopian EIA Guideline (EPA, 2000):

- Schedule 1 projects must carry out a full EIA and obtain agreement from the respective authority before proceeding;
- Schedule 2 projects must undertake preliminary environmental study;
- Schedule 3 projects need no assessment



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MAIN POINTS DISCUSSED

Changes agreed upon by both parties are as follows:

- There is a change in the implementation structure. An officer from Groundwater Resources Assessment Core Process Owner, GSE will not be assigned as Project Manager. Instead, a responsible person from Groundwater Study Directorate, MoWE will take a role of the Project Coordinator.
- Duration of project is twenty-four months which is one month extension from the draft R/D.
- Progress Report 2 will be added to the reports.

Points discussed and agreed upon by both parties regarding the Implementation of the Project:

- The Project is expected to contribute to climate change adaptation.

