

Country Name	Jarar valley and Shebele Sub-basin Water Supply Development Plan, and
Federal Republic of Ethiopia	Emergency Water Supply

**I. Project Outline**

Background	In the Horn of Africa which includes the eastern part of Ethiopia, most of the areas are arid and semi-arid areas with little rainfall and vulnerability as they are easily affected by drought and food crisis. Somali Region is most affected by droughts in Ethiopia. The water supply rate of Somali Region was 59.7% in 2011, which was lower than the national average of 68.5%. There were constant needs for stable water supply even when there was no drought. However, these needs were not met by Somali Region Water Resources Development Bureau (SRWDB) because of the lack of data/information on water resources development and its insufficient techniques.												
Objectives of the Project	By evaluating the utilization potential of the water resources, developing the water supply plan, conducting emergency water supply operations and training the related personnel, the project aimed at implementing water supply projects in the target area, thereby contributing to improvement of water supply.												
	<ol style="list-style-type: none"> <li>Expected Goals through the proposed plan<sup>1</sup>: Water supply is improved in the target area.</li> <li>Expected utilization of the proposed plan: Water supply projects are implemented based on the developed water supply plan in the target area.</li> </ol>												
Activities of the Project	<ol style="list-style-type: none"> <li>Project site: Jarar valley and Shebele Sub-basin (water supply development plan) and Somali (emergency water supply)</li> <li>Main activities: Evaluation of potential water resources for use, development of the water supply plan, conduct of the emergency water supply operations, technical training for the related personnel, etc.</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Ethiopian Side</td> </tr> <tr> <td>1) Mission members: 15 persons</td> <td>1) Staff allocated: 16 persons</td> </tr> <tr> <td>2) Equipment: vehicles and equipment for emergency water supply, etc.</td> <td>2) Land and facility: Office space</td> </tr> <tr> <td></td> <td>3) Equipment: Desktop PC, Lap-top computer, Printer, etc.</td> </tr> <tr> <td></td> <td>4) Local operation cost</td> </tr> </table> </li> </ol>			Japanese Side	Ethiopian Side	1) Mission members: 15 persons	1) Staff allocated: 16 persons	2) Equipment: vehicles and equipment for emergency water supply, etc.	2) Land and facility: Office space		3) Equipment: Desktop PC, Lap-top computer, Printer, etc.		4) Local operation cost
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Project Period	March 2012 to August 2013	Project Cost	(ex-ante) 580 million yen, (actual) 580 million yen										
Implementing Agency	Ministry of Water and Energy (MoWE)												
Cooperation Agency in Japan	Kokusai Kogyo Co., Ltd.												

**II. Result of the Evaluation**

<Special perspectives considered at the ex-post evaluation>

- Besides the master plan for water supply in 2 towns and 16 woredas (districts) in Somali Region was developed, equipment including water tank trucks, water supply trucks and mobile workshop were procured for the purpose of emergency water supply in Somali Region. Although at the ex-ante evaluation, indicators were set only for verification of the former purpose, at the ex-post evaluation, supplementary information was collected and analyzed for verification of the project effects made through the latter efforts.

<b>1 Relevance</b>
<p>&lt;Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion&gt;</p> <p>The project was consistent with Ethiopian development policies, as improvement of water supply was targeted in the “Universal Development Program 2” (2011-2015) which was formulated under the “Water Sector Development Program” (2002-2016). Thus, the project was consistent at time of both the ex-ante evaluation and project completion.</p> <p>&lt;Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion &gt;</p> <p>Somali Region is severely affected by drought, where the water supply rate was 59.7% in 2011 lower than the national average of 68.5%. However, SRWDB was not equipped with sufficient techniques and data/information on water resources development. There were constant needs for water supply even when there was no drought, and therefore the project was consistent with these needs at the time of both the ex-ante evaluation and project completion.</p> <p>&lt;Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation&gt;</p> <p>In the “Country Assistance Program for Ethiopia” (2008), one of the priority areas is “water.” Related to this, it is described that two different approaches would be taken for the purpose of securing drinking water for rural villages: development of facilities for water-supply whose maintenance is easy and building of people’s capacity to maintain water-supplying facilities. Thus, the project was consistent with Japan’s ODA policy at the time of the ex-ante evaluation.</p> <p>&lt;Evaluation Result&gt;</p> <p>In light of the above, the relevance of the project is high.</p>
<b>2 Effectiveness/Impact</b>
<p>&lt;Status of Achievement for the Objectives at the Time of Project Completion&gt;</p> <p>Based on the evaluation of potential water resources for use in Jarar valley and Shebele Sub-basin, the water supply plan in Jarar valley and Shebele Sub-basin was developed, which includes 53 water supply projects for 2 towns and 16 woredas. The water supply</p>

<sup>1</sup> The level of achievement of the expected goals is not to be assessed in principle at the time of ex-post evaluation, since it is defined as the medium-to long-term goals which will be attained as a result of crystallizing the proposed plan (“output” of the project).

plan has not officially been approved by SRWDB because the plan covers the limited number of woredas. However, the water plan which also includes water resource potential maps has been utilized by SRWDB, as it has developed the annual plan which contains some of the water supply projects proposed by the project. The project aimed at emergency water supply, too. The pilot project was implemented in Kabribeyah town and the feasibility study (F/S) was conducted in Godey town as planned, through utilization of the procured vehicles and other equipment.

During the project period, technical trainings were delivered to a total of 30 personnel of SRWDB and Water Supply Utility Offices of Godey and Kabribeyah Town and trainers of WASH<sup>2</sup> Communities (WASHCO) on mapping technology, geophysical survey, remote sensing, and so on.

<Utilization Status of the Proposed Plan at the Time of Ex-post Evaluation>

53 projects for 2 towns (Kabribeyah and Godey) and 16 woredas were proposed by the project, such as development of water supply facilities taking water from boreholes, haffir (rain water harvesting) dams, birkas (ponds), and so on. Among these projects, 16 projects have been implemented in 2 towns and 12 woredas as of September 2017. No project has been implemented in 4 woredas, because all the water sources were dried up in these areas due to the severe droughts from 2014 to 2016. Among the 53 proposed projects, 37 projects have not been included in the annual plan of SRWDB, because the budgets and necessary equipment were allocated to areas with more needs than the target woredas. SRWDB had an intention to cover almost all the region from 2014 to 2016. Besides the projects proposed by the project, SRWDB has implemented water supply projects in the target woredas, such as constructing reservoirs, pipelines, and so on.

With regard to the emergency water supply, SRWDB has been providing emergency water supply operations with the equipment procured by the project, especially during the drought season when Somali Region suffers from El Niño-induced drought. For example, it has conducted emergency water supply with the procured water trucks in Dollo Zone and maintenance work intensively in Zones of Dollo, Jarar and Korahai with the mobile workshop vehicles. Through these efforts, the ratio of non-functional water supply facilities in Somali Region decreased from 24% (2011) to 19% (2015). However, these operations of emergency water supply are limited, as two of the five water trucks and two of the three mobile workshop vehicles are out of function and have not been used since 2016. Needs for these machineries are recognized by SRWDB and it has a repair plan, but the budget has not been allocated.

<Status of Achievement for Expected Goals through the Proposed Plan at the Time of Ex-post Evaluation>

No data on the number of the beneficiaries of water supply in the target towns and woredas are available from SRWDB due to its insufficient capacity on documentation and record. Mixed implementation of the regular and humanitarian projects for the last three years has made the documentation difficult. However, SRWDB considers that the beneficiaries have increased in all of the target towns and woredas because of the improved water supply services, except four woredas where no project has been implemented. The improved water supply system in Kabribeya Town benefited a total of 16,697 refugees (2016) in the three refugee camps. On the other hand, the project contribution may have been partial in Kabribeya Camp, because both of the two boreholes drilled by the project have stopped their service since 2015<sup>3</sup> due to the pump problem and high cost of fuel.

<Other Impact at the time of Ex-post Evaluation>

Regarding other impacts in the social and natural environment aspects, SRWDB has not prepared monitoring documents, but they have not received any complaints from the residents or related organizations in the target sites till the time of the ex-post evaluation. Therefore, it can be said that no negative impact has been caused.

<Evaluation Result>

In light of the above, the water supply plan in Jarar valley and Shebele Sub-basin was developed. Though less than half of the proposed projects have been implemented, also water supply projects which were not proposed by the project implemented in the target woredas. Regarding the emergency water supply, SRWDB has conducted the services, though they are limited. It is presumed that the beneficiaries of the water supply have increased in all of the target sites where the proposed projects have been implemented, though the exact data were not available. Therefore, the effectiveness/impact of the project is fair.

Utilization of the Proposed Plan and Achievement of Expected Goals through the Proposed Plan

Aim	Indicators	Results
(Achievement status of the Objectives) 1. Utilization potential of the water resources in Jarar valley and Shebele Sub-basin is evaluated.		Status of achievement: Achieved. (Project Completion) - Utilization potential of the water resources in Jarar Valley and Shebele Sub-basin was evaluated.
2. The water supply plan in Jarar Valley and Shebele Sub-basin is developed.		Status of achievement: Achieved. (Project Completion) - The master plan for water supply in Jarar valley and Shebele Sub-basin was developed, which included 53 water supply projects for 2 towns (Kabribeya and Godey) and 16 woredas.
3. Capacity of the counterpart personnel for developing the water supply plan is improved.		Status of achievement: Achieved. (Project Completion) - Technical trainings were delivered to 30 personnel of SRWDB and Water Supply Utility Offices of Godey and Kabribeyah Town and WASHCO trainers on mapping technology, geophysical survey, remote sensing, and so on.
4. Water supply is improved in Kabribeyah.		Status of achievement: Achieved. (Project Completion) - In the pilot project in Kabribeyah and Jarar Valley, 2 water facilities with deep wells

<sup>2</sup> WASH stands for "Water, Sanitation and Hygiene." WASH Program has been implemented nationwide with support of UNICEF for improving sanitation and hygiene.

<sup>3</sup> In Kabribeya camp, UNHCR has provided water services for the refugees from the two boreholes connected to the national grid.

		were constructed, water conduits were introduced, water pumps were equipped, and 5 public water faucets were constructed.
5. F/S is implemented in Godey.		Status of achievement: Achieved. (Project Completion) - F/S was implemented in Godey.
6. The system of emergency water supply is developed in the whole Somali by procuring the equipment for emergency water supply.		Status of achievement: Achieved. (Project Completion) - Vehicles and equipment for emergency water supply were procured to widen the scope of work of SRWDB.
(Utilization Status of the Proposed Plan) Water supply is improved in the target area.	Number of the projects included in the water supply plan and the progress of the projects.	<u>Status of achievement: Not achieved.</u> (Ex-post Evaluation) - Among the 53 proposed projects in the water supply plan developed by the project, 16 are being implemented in 2 towns and 12 woredas as of September 2017.
	(Supplementary information) SRWDB provides emergency water supply when needed.	<u>Status of achievement: Achieved.</u> (Ex-post Evaluation) - SRWDB has been providing emergency water supply during the drought season with the equipment procured by the project. It also utilizes the procured equipment for emergency mobile maintenance services.
(Expected Goals through the Proposed Plan) Water supply is improved in the target area.	Number of the beneficiaries of water supply through the projects proposed in the water supply plan	<u>Status of achievement: Mostly achieved.</u> (Ex-post Evaluation) - No data were available on the number of the beneficiaries. - SRWDB presumes that the number of the beneficiaries has increased due to the improved water supply services in the 2 target towns and 12 woredas out of the target 16 woredas. <Supplementary information> - The improved water supply system in Kabribeya Town benefited a total of 16,697 refugees in 2016.

(Source) SRWDB.

### 3 Efficiency

Both of the project cost and period were as planned (ratios against the plan: 100% and 100%, respectively). Therefore, the efficiency of the project is high.

### 4 Sustainability

#### <Policy Aspect>

Both the regional and federal government has given keen consideration to water resource development, highly prioritizing the increase the water supply coverage to 83% by 2020 as depicted in the “Growth and Transformation Plan II” (2015/16-2019/20).

#### <Institutional Aspect>

SRWDB undertakes water supply and water resource management. Each woredas is expected to have the Woreda Water Desk (WWD) which is responsible for the study, design, construction, operation and maintenance of the small-scale rural water supply facilities such as hand pumps and small traditional dams, and it also supports WASHCOs which supposedly handle daily management of each community’s water supply facility. Urban water supply facilities are managed by the Town Water Utility Offices. Thus, the organizational structure itself for implementing projects proposed is clearly defined, but the number of the assigned personnel of SRWDB is not sufficient for managing projects of the annual plan and emergency water supply operations, due to the high staff turnover. And, only 7 of the 16 target woredas have WWD and there are no WASHCO in most of the target woredas, because of the limited management and coordination of SRWDB. Geographically difficult access to some woredas is another reason. With regard to emergency water supply, SRWDB leads operations in coordination with the Emergency Task Force which consists of the Disaster Prevention and Preparedness Bureau of Somali Region and NGOs. SRWDB is responsible for dispatch of the maintenance team, distribution of chlorine agents, drilling wells, and so on.

#### <Technical Aspect>

According to SRWDB, though SRWDB personnel gained knowledge and skills from the technical trainings of the project, due to the high staff turnover, there are few personnel who have sufficient knowledge for planning and implementing water supply projects. In order to solve this issue, SRWDB has undertaken efforts to improve its support for WWDs by deploying more than 315 water related technicians to be assigned at 67 woredas and 4 town councils. In addition, 254 technicians from the regional, town and woredas levels have been given opportunities to take the degree program at Jigjiga University or diploma program at Jigjiga Technical and Vocational College with financial support. For operation and maintenance of the procured mobile workshops, mechanical and electro-mechanical engineers of SRWDB have faced difficulties in maintenance works of on-spot generator, pumps, pipe lines, and so on.

#### <Financial Aspect>

The budget of SRWDB has been increasing as shown in the table, but it could not be confirmed at the ex-post evaluation how much have been secured for planning and implementing the projects proposed in the water supply plan of the project or SRWDB’s annual plan. The budget for operation and maintenance of the procured equipment has not been sufficient, as some procured equipment including two mobile workshop vehicles and two water trucks have remained unrepaired after the breakup.

Table: Budget of SRWDB (thousand ETB)

	2013	2014	2015	2016
Recurrent	8,400	8,577	11,263	16,435
Capital	264,657	490,904	545,369	814,210
Aid/loan	43,632	4,640	4,320	3,814
Total	316,690	504,121	560,953	834,459

Source: SRWDB.

#### <Evaluation Result>

In light of the above, problems have been observed in terms of the institutional, technical and financial aspects of the implementing

agency. Therefore, the sustainability of the effectiveness through the project is fair.

### 5 Summary of the Evaluation

In the project, the water supply plan in Jarar valley and Shebele Sub-basin was developed, and some of the proposed projects have been implemented. Regarding the emergency water supply, since some facilities and equipment have been out of function, SRWDB has conducted the services in a limited way. Although the statistics were not available, the beneficiary population has increased in the target towns and woredas where water supply operations including emergency water supply were conducted. As for the sustainability, issues related the high staff turnover at SRWDB were pointed out, which have caused the personnel insufficiency for managing projects of the annual plan and emergency water supply operations, though the organizational structure itself has remained appropriate since the project completion.

Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing Agency:

- It is recommended to SRWDB and respective organizations to build a coordination system for rehabilitation of (i) broken boreholes drilled by the project in Kabribeya Camp and (ii) non-functional water trucks and mobile workshop vehicles in order to increase the capacity of emergency water supply in Somali Region.
- It is recommended to SRWDB to set opportunities in which its personnel trained by the project would transfer their knowledge and skills on repair of the procured equipment to the new personnel. It is also recommended to provide refresher trainings for the personnel in service on development of the water supply plan and operation and maintenance of the procured equipment.

#### Lessons Learned for JICA:

- Less than half of the water supply projects proposed by the project have been implemented, as not all of the proposed projects have not been included in SRWDB's regional annual plan. However, this does not necessarily mean that SRWDB's water supply services have not been limited, but actually, SRWDB has conducted its services in other areas than the project target sites in the region and also emergency water supply operations upon necessity. And, refugee camps are located in some target sites where the boundary is not clear, and as water supply for them was included in the project, as a matter of course. For formulation of the master plan in regions which have possibilities of severe natural disasters or refugees' influx in a large area, it is necessary to consider the plan which includes both regular projects and emergency or humanitarian projects in a wider area than expected. It is also important to make the plan flexible in terms of the implementation timing and contents, so that resources would be allocated to projects upon necessity.



Procured equipment (Water truck which needs repair)



Procured equipment (Mobile workshop vehicle)