

Country Name	The Project for the Water Supply in Amhara Regional State
Ethiopia	

**I. Project Outline**

Project Cost	E/N Grant Limit: 499 million yen	Contract Amount: 357 million yen
E/N Date	August, 2005	
Completion Date	October, 2008	
Implementing Agency	Amhara Regional State Water Resources Development Bureau (AWRDB)	
Related Studies	Basic Design Study: October 2004 – March 2005	
Contracted Agencies	Consultant(s)	Nippon Koei Co., Ltd.
	Contractor(s)	–
	Supplier(s)	TOA-TONE BORING CO., LTD.
Related Projects (if any)	<p>[Japan's Cooperation]</p> <ul style="list-style-type: none"> <li>The Ethiopia Water Technology Center Project Phase 2 (2005-2008), Phase 3 (2009-2014) (Grant aid)</li> </ul> <p>[Other donors' cooperation]</p> <ul style="list-style-type: none"> <li>Water Supply and Sanitation Project (2004-2009) (Loan, World Bank)</li> <li>Water and Environmental Sanitation (2002-2006) (Grant aid, UNICEF)</li> <li>Rural Water Supply and Environmental Program Phase I (1994-1998), Phase II (1998-2002), Phase III (2003-2006) (Grant aid, FINNIDA)</li> </ul>	
Background	<p>The Government of Ethiopia envisaged to increase in the coverage ratio of rural water supply from 23.1% (2001) to 70.9% (2016) in the whole country and from 23% (2001) to 62% (2016) in Amhara National Regional State, respectively (The Water Supply and Sanitation Development Program (WSSDP) (2002-2016)). Amhara State had a population of around 18.6 million, with 78% of the inhabitants living in the rural areas. Since the social infrastructure including the public health and water supply was underdeveloped, the infant mortality in the State was high as 144 per 1,000 live births and the incidence of water-borne diseases were widely observed.</p>	
Project Objectives	<p>Outcome</p> <p>To promote construction of water supply facilities by provision of equipment for construction of shallow and deep wells in 20 Woredas (districts) of Amhara National Regional State</p>	
	<p>Outputs(s)</p> <p>Japanese Side:</p> <ol style="list-style-type: none"> <li>Truck Mounted Rotary Drilling Rigs: 2 units</li> <li>Air Lift System for Development of Shallow Wells x 2</li> <li>Supporting Trucks for Well Drilling (Crane Trucks x 2, Cargo Trucks x 2)</li> <li>Groundwater Survey Equipment (Electric Logger x 1, Geo-electric Equipment x 1, Portable Water Level Detector x 4, Portable Water Quality Meter x 1)</li> <li>Pumping Test Equipment (Mounted on the Crane Truck) x 1</li> <li>uPVC Casing Pipes and Screens (For Shallow Well x 1, For Deep Well x 1)</li> </ol> <p>Ethiopian Side:</p> <ol style="list-style-type: none"> <li>Construction cost for 200 wells</li> <li>To maintain and use properly and effectively the equipment and casing pipes and screens procured by the Project</li> <li>To assign the necessary staff and secure the necessary budget for operation and maintenance of the equipment purchased by the Project</li> </ol>	

**II. Result of the Evaluation****Summary of the Evaluation**

Since there were few available water sources in Amhara State, the local residents, particularly women and girls were imposed to heavy work load for water fetching. Also they used unprotected water source in the rainy season such as river water, spring water and reservoir, the water-borne diseases such as diarrhea, amebic dysentery, abdominal typhus, cholera were widely observed in the State.

This project has largely achieved its objectives of constructing new wells in the target area (211 wells against the target 200), the number of water served population in the target area (94,950 people against the target 94,000) and rural water coverage ratio in Amhara State (72% against the target 62%). Also the project has positive impacts on reduction in water fetching labor and incidence of water-borne diseases. As for sustainability, some problems have been observed in terms of technical aspect and current status of operation and maintenance due to (i) lack of manuals and operational guidelines for the equipment of the project and lack of skills for borehole rehabilitation, maintenance of advanced drilling machinery and hydraulic machinery and (ii) a difficulty in procurement of spare parts.

For relevance, the project has been highly relevant with Ethiopia's national development policy, development needs as well as Japan's ODA policy at the time of both ex-ante and ex-post evaluation. For efficiency, the project period slightly exceeded the plan.

In the light of the above, this project is evaluated to be satisfactory.

## 1 Relevance

This project has been highly relevant with Ethiopia's national development policy ("improvement in accessibility of safe drinking water" in the Sustainable Development and Poverty Reduction Program in 2002 and the National Five Years Strategic Plan 2010-15), development needs ("improvement in rural water coverage ratio in Amhara State"), as well as Japan's ODA Policy "the Japan's Country Assistance Strategy to Ethiopia" with priority area of water sector and social infrastructure" at the time of both ex-ante and ex-post evaluation.

Therefore, the relevance of this project is high.

## 2 Effectiveness/Impact

This project has largely achieved its objectives of constructing new wells, an increase in number of served population, and improvement in rural water coverage ratio in Amhara State. The number of wells newly constructed in the project target area by using the equipment of the project was achieved its target of 200 wells by 2010. The number of water served population in the target area was also achieved its target of 94,000 by 2010. The rural water coverage ratio in Amhara State was improved from 23% in 2005 to 72% in 2010 and 76% in 2012, which achieved its target of 62% by 2010. The above improvements have enhanced the accessibility of safe and stable drinking water supply in the target area as well as entire Amhara State.

The project has positive impacts on reduction in water fetching labor and incidence of water-borne diseases. According to the interview results with 15 women in selected three woredas of Amhara State, the improvement in availability of water points at their nearby households and villages significantly reduced the work labor load on women and girls through reduction in time and distance for fetching water. Also according to the interview results with the health extension workers at the respective sample woredas' health centers, it was recognized that the frequency of visit by the householders to the health center to get medication for water-borne diseases such as diarrhea decreased after the construction of the water facility in their woredas.

It should be noted that above mentioned achievement of project objectives and positive impacts are attributed not only by this project but also by the active intervention by other donors in Amhara State. In fact, during the three years from 2009 to 2011, total 2,799 water points were constructed in Amhara State by foreign donors including 2,083 by the Government of Finland, 583 by UNICEF, 47 by World Bank, 86 by AfDB).

No negative environmental impact. Regarding the land acquisition and resettlement, no information was collected.

Therefore, the effectiveness of the project is high.

### Quantitative Indicators

Indicator (unit)	baseline value (2005)	target value (2009)	actual value (2010/2011) <sup>2)</sup>	actual value in 2012 (at ex-post evaluation)
Indicator 1: No. of wells newly constructed in the project target area <sup>1)</sup> (no.)	0	200	211	- <sup>3)</sup>
Indicator 2: No. of water served population in the project target area (no. of people)	N.A.	94,000 (470 served population/well) <sup>4)</sup>	94,950 (450 served population/well) <sup>4)</sup>	-
Indicator 3: Rural water coverage ratio in Amhara State (%)	23%	62%	72%	76%

Source: AWRDB

Note 1: Project target area: 20 woredas (districts) in Amhara National Regional State.

Note 2: The Ethiopian fiscal year starts from July and ends in June.

Note 3: In 2012, 52 new wells were constructed in other parts of the region and out of the region, which were not included in the project area by using the equipment of the project. Moreover, it is planned that 25-30 wells will be constructed annually in Amhara State for the remaining three years until 2015 by using the equipment of the project.

Note 4: calculated by [Indicator 1 (No. of wells)] / [Indicator 2 (No. of water served population)]



Water Point



Well Drilling Rig



Well Drilling Rig

## 3 Efficiency

Although the project cost was within the plan (71%), the project period slightly exceeded the plan (105%) because of replacement of some defective equipment. Outputs were produced as planned. Therefore, efficiency of this project is fair.

#### 4 Sustainability

The equipment provided by the project is maintained by Amhara Water Works Construction Enterprise (AWWCE) which is a public corporation under Amhara State responsible for construction of wells by receiving order from AWRDB. While AWRDB is in charge of planning and implementation of water supply project, establishment of regulatory norms, standards and general guidelines for sustainable development and management of water supply, and supporting water committees for operation and maintenance of each water facility in Amhara State. Regarding the institutional aspect, no problems are observed since there is a clear division of roles between AWRDB and AWWCE, and the sufficient number of staff is allocated in both organizations. Regarding the technical aspect, some problems are observed in AWWCE because of lack of manuals and operational guidelines for the equipment of the project and lack of skills for borehole rehabilitation, maintenance of advanced drilling machinery and hydraulic machinery although they received training from UNICEF and JICA's technical cooperation project "Ethiopia Water Technology Center Project (EWTCP)". Regarding the financial aspect, no problems are observed since both AWRDB and AWWCE have been allocated sufficient budget in the last four years. While 211 wells constructed by using the equipment of the project are functional at present, AWWCE has some problems on the current status of operation and maintenance of the equipment of the project since there is a difficulty in procurement of spare parts that affects the condition and function of some equipment, particularly well drilling rigs.

Therefore, sustainability of this project is fair.

### III. Recommendations & Lessons Learned

#### Recommendations for Implementing agency

- It is desirable if AWRDB allocates more budget (either from the governments or donor organizations) for recurrent budget to ensure the monitoring activities of the present wells conditions of the rural water supply systems. It is also anticipated that AWWCE will be more involved in the monitoring of the equipment for the development of water supply schemes. To ensure the sustainable use of the equipment, the availability of spare parts is crucial. AWWCE shall allocate special budget for the spare parts of the rigs and they shall know the import tax exemption procedures to facilitate the import of the spare parts.

#### Lessons learned for JICA

- It would have been more successful if JICA also provided the necessary spare parts at the beginning of the project. The Amhara region couldn't use the rig for more or less one year due to the lack of spare parts. For enhancement of the project objective, JICA's other project, especially; Ethiopian Water Technology Center Project (EWTEC) should be more utilized for the capacity development of the AWRDB as well as AWWCE. It is mentioned that there is major skill capacity gaps in the following areas;
  - Boreholes Rehabilitation skill. Borehole Camera and its Application
  - Advanced drilling Machinery maintenance
  - Maintenance of Hydraulic Machineries