

## Internal Ex-Post Evaluation for Grant Aid Project

conducted by Zambia office: October, 2011

Country	The Project for Groundwater Development and Sanitation Improvement in the Northern Province
Zambia	

### I. Project Outline

Project Cost	E/N Grant Limit: (1) 491 million yen; (2) 286 million yen	Contract Amount: (1) 490 million yen; (2) 285 million yen
E/N Date	(1) June 2004; (2) July 2005	
Completion Date	(1) January 2006; (2) February 2007	
Implementing Agency	Ministry of Energy and Water Development (MEWD) *Note: Mandate of rural water supply and sanitation has been transferred to Ministry of Local Government and Housing (MLGH) since 1994.	
Related Studies	Basic Design Study: March - July 2003; Detailed Design Study: September 2004 - March 2005	
Contracted Agencies	Consultant(s)	Japan Techno
	Contractor(s)	Nissaku
	Supplier(s)	Mitsubishi Corporation
Related Projects (if any)	Japanese cooperations: The Project for Groundwater Development and Sanitation Improvement in Southern Province Phases 1 & II (JICA Grant Aid, 1985 and 1988); Project of Capacity Development for Maintenance of Rural Water Facilities (JICA Technical Cooperation, 2005-2007); Sustainable Operation and Maintenance Project for Rural Water Supply (SOMAP 2) (JICA Technical Cooperation, 2007-2010); The Project for Support in National Roll-out of Sustainable Operation and Maintenance Programme (SOMAP 3) (JICA Technical Cooperation, 2011-2016); Other donors' cooperations: National Rural Water Supply and Sanitation Programme – Support to Northern Province (AfDB, ongoing)	
Background	Rural access rate to water supply and sanitation services was still low at around 30%. Northern province has quite good amount of rainfall (1,000-1,400mm/year), but many villagers got water from hand dug shallow wells or rivers, which caused water-borne diseases, water-fetching burden on women, low economic activities, etc. Also, the province is distant from the capital (800km away), and thus was relatively underdeveloped compared to other regions. Under such circumstances, the government of Zambia requested Grant Aid from Japan.	
Project Objectives	Outcome To ensure sustainable supply of safe water by development of deep well water supply facilities in seven districts in Northern Province.	
	Outputs Japanese Side - 163 deep wells with hand pumps and related facilities ( <i>Note: the planned number of wells was 175</i> ) Phase 1: total 60 wells in Mbala, Mpulungu and Luwingu Phase 2: total 103 wells in Mpika, Chinsali, Isoka, Nakonde and Mbala - Equipment for survey and excavation and for maintenance activities - Software component: workshop and training for capacity development of district- and sub district-level water committees (D-WASHE and Sub-WASHE) and formulation of village-level water committees (V-WASHE) Zambia Side - Engineers, drilling staffs, drilling technique instructors - Existing drilling equipment - Local cost	

### II. Result of the Evaluation

Summary of the Evaluation
<p>Northern province in Zambia, being distant from the capital and thus relatively underdeveloped, was suffering from lack of supply of safe drinking water. People living in these areas had been originally using hand dug shallow wells or rivers.</p> <p>This project has partially achieved its objective of sustainable supply of safe water through construction of deep wells and capacity development for water management, as shown in the larger amount of safe water supply right after the project completion (2007) than planned at the ex-ante evaluation, and the improved technical capacity of contractors and drilling engineers/technicians. However, the amount of safe water at the time of the ex-post evaluation could not be confirmed as the data was not available. As for sustainability, while no problem has been observed in structural and technical aspects of operation and maintenance of the project facilities/equipment, some problems have been observed in terms of financial aspects due to relatively low collection rate of maintenance fees from households, and current status of operation and maintenance in that some hand pumps are broken down.</p> <p>For relevance, the project has been highly relevant with Zambia's National Development Plans, the National Rural Water Supply and Sanitation Programme (NRWSSP), development needs as well as Japan's ODA policy at the time of both ex-ante and ex-post evaluation.</p> <p>For efficiency, although the project cost and the project period were within the plan, the number of wells constructed was less than planned due to increasing cost of materials.</p> <p>In the light of above, this project is evaluated to be partially satisfactory.</p>

**1 Relevance**

The project has been highly relevant with Zambia's development plans (development of water and sanitation infrastructure aimed in the National Water Policy 1994, the Sixth National Development Plan 2011-2015 and Water Supply and Sanitation Programme 2007-2015), development needs (improvement of low access rate of water supply), as well as Japan's ODA policy (Country Assistance Policy for Zambia 2002), at the time of planning and ex-post evaluation. Therefore, its relevance is high.

**2 Efficiency**

Both project cost and project period were within the plan. However, the quantity of the output was decreased from the planned 175 deep wells to actual 163 deep wells due to a rise in fuel price and an appreciation of the Zambian kwacha against the US dollar. Therefore, efficiency of this project is fair.

**3 Effectiveness/Impact**

The amount of safe water supply (liter/minute/well) was achieved beyond the target value in the target year (2007); however, the data of the ex-post evaluation was not available. The functioning rate of hand pumps are kept more than 80 %, though 20% out of them was requiring repair, and the rate is based on the observation of only ten locations in 2010 and more comprehensive or updated data was not available. Besides the use of the wells, based on a JICA study in 2010, it was found that technical capacity of contractors and drilling engineers/technicians were improved through the soft component of the project.

The rural rate to water supply still remains low (percentage of rural population with access to safe and reliable water within 500 meter is 6-20% by district), however, according to the implementing agency, the number of people who has access to safe and reliable water has been increased through this project. People living in these areas had been originally using hand dug shallow wells or rivers, which causes water-borne diseases, water-fetching burden on women, low economic activities, etc. Therefore, this project contributed to improve their living standard of rural population.

No negative impact was observed in terms of the natural environment. However, based on the survey conducted by AfDB, ground water in Northern Province contains high level of iron, which affects people's use of water from wells. One possibility of the increase in the iron content is corrosion of the borehole, but this has not been proved and confirmed scientifically. Thus, the issue is currently not considered as a negative impact caused by this project, but rather an inhibiting factor against maximization of effectiveness / impact of the project. AfDB has facilitated Provincial Support Team (PST), which is in charge of supervising operation and maintenance of boreholes at provincial level, and some other donors to form a working group to look into the issue. Therefore, effectiveness of the project is fair.

**Quantitative Effects**

Indicator(unit)	Baseline year (2003) (Actual value)	Target year (2007) (Planned value)	Target year (2007) (Actual value)	Ex-post evaluation year (2010) (Actual value)
Amount of safe water supply (liter/person/day)	0	30	Not available	Not available
Amount of safe water supply (liter/minute/well)  <i>Note: water safety is determined by national water quality standard, except iron (can be &gt;2mg/liter)</i>	0	More than 10	Average: 45.2 Mpika: 42.5 Chinsali: 55.1 Isoka: 29.9 Nakonde: 29.1 Mbala: 68.3 Mpulungu: 42.4 Luwingu: 49.2	Not available
Functioning rate of hand pumps	-	-	-	8 out of 10 sites (wells) (80%) observed as of January 2010

Source: PCR, Post observation report (Jan 2010)

**4 Sustainability**

The project has some problems in financial aspect due to the lack of commitment of households: maintenance fee of protected boreholes is to be collected from households, but collection rate is relatively low at 12-52%. Also, the implementing agency has some problems in the status of operation and maintenance due to breakdown of some hand pumps and some village-level maintenance groups not active as of January 2010, and unavailability of updated information from them. However, no problem has been observed in structural/technical aspects of the implementing agency due to the good structure of operation and maintenance with allocation of necessary staffs, and the retention of trained staffs as well as trainings for new staffs provided by the on-going AfDB project. Therefore, sustainability of the project is fair.

**III. Recommendations & Lessons Learned**

Recommendations for the Implementing agency:

- It is recommended that efforts of AfDB against the issue of iron containment are linked up with a scientific research institution within Zambia for their possible collaboration in this matter.
- The data on water supply conditions should be readily available at the central ministry level by functioning the Information Management System (IMS). It is recommended that IMS should be developed as soon as possible.
- MLGH is recommended to investigate causes for inactive village-level maintenance groups and low collection rate of maintenance fees from them, and to take actions to improve village-based maintenance of wells and pumps accordingly.

Lessons learned for JICA:

As for the iron contents, this issue has been already shared among other donors. JICA is going to implement the research/survey to find out the current status and provide technical advice to cope with this problem through the on-going technical cooperation project (2011-2016).