

Country Name	The Project for Water Supply for Guinea Worm Eradication in Zinder Region
Niger	(Projet d'Approvisionnement en eau potable en vue de l'Eradication du ver de Guinée dans la région de Zinder)

**I. Project Outline**

Project Cost	E/N Grant Limit: 814 million yen	Contract Amount: 813 million yen
E/N Date	June, 2004	
Completion Date	February, 2007	
Implementing Agency	Ministry of Water Resources, Environment and the Fight Against Desertification (MHE/LCD) (Present: Ministry of Water Resources and Environment (MHE))	
Related Studies	Basic Design Study: February, 2003 - August, 2003	
Contracted Agencies	Consultant	Japan Engineering Consultants Co., Ltd. (Currently, Eight-Japan Engineering Consultants Inc.)
	Contractor	A consortium of Nissaku Co., Ltd. and Sojitz Corporation
	Supplier	Sojitz Corporation.
Related Projects (if any)	<p>Japan's cooperation</p> <ul style="list-style-type: none"> <li>The project for water supply for guinea worm eradication (Grant Aid, 1997-2000)</li> <li>Japan Overseas Cooperation Volunteer: dispatch of 2 volunteers to guinea worm office at the Regional Direction of Public Health and the Fight against Endemic for Zinder region</li> </ul> <p>Other donors' cooperation</p> <ul style="list-style-type: none"> <li>Water, hygiene and sanitation sector support project for the Danish International Development Agency (DANIDA, 2003-2006)</li> <li>Project of water supply in rural areas (construction of 175 boreholes) (World Vision (NGOs), from 2004 to 2008)</li> <li>Construction program boreholes (AQUADEV (NGO))</li> </ul>	
Background	<p>Niger government attempted to raise water coverage ratio from 51.5% in 2000 to 100% in 2010. However, the ratio in Zinder Region decreased from 75% in 1990 to 55% in 2001 and many people had difficulty in accessing safe water. As a result, there were many people infected with guinea worm parasites which are infected through drinking water. In response to the situation, the government of Japan implemented "The Project for water supply guinea worm eradication (1997-2000)" which constructed 167 boreholes (construction of 90 new boreholes and rehabilitation of 77 boreholes) in 128 villages in Mirriah District, Zinder Region, which had the highest incident rate of guinea worms. The project had been successful in eradicating guinea worms; however, there were new incidents of guinea worms in Zinder region after 2003 and there was a need for decreasing water borne diseases including guinea worm parasites. Under this situation, the government of Niger requested the government of Japan to implement an additional water supply project.</p>	
Project Objective	Outcome	To supply safe and stable water in 88 villages in Mirriah, Zinder Region by constructing boreholes and procuring equipment necessary for the construction and for awareness raising activities.
	Outputs	<p>Japanese side</p> <ul style="list-style-type: none"> <li>Procuring equipment necessary for awareness raising, water quality measurement, and repairs of pumps, and parts for repairing previously procured vehicles</li> <li>Construction of 93 boreholes in 88 villages</li> <li>Support for village awareness raising activities for water use and sanitation (Soft component)</li> </ul> <p>Niger side</p> <ul style="list-style-type: none"> <li>Lands for borehole construction</li> <li>Securing access to the construction sites (repair of roads)</li> </ul>

**II. Result of the Evaluation**

Summary of the Evaluation
<p>Modern water supply facilities had not been fully constructed in Niger, and people used unsafe water from lakes and shallow wells. Incidence of guinea worm was high in Zinder Region with 21,000 infected people among 33,000 nationwide. In particular, many infected people were found in Mirriah.</p> <p>This project has largely achieved its objectives: The water coverage ratio has increased, the quality of drinking water has improved, and people's awareness has been raised in Mirriah, Zinder Region. In addition, the number of patients of water borne diseases such as diarrhea and cholera has decreased, and the workload of collecting water has decreased. Furthermore, the project has contributed to eradication of guinea worms. As for sustainability, problems have been observed in financial aspect. The Regional Direction of Water Resource, Zinder under the Ministry of Water Resources and Environment has insufficient budget for support and technical guidance to water point management committees and pump</p>

repairers and for maintenance of the equipment procured by the project.

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

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

#### 1 Relevance

This project has been highly relevant with Niger's development policies "to increase the water coverage ratio to 100% by 2010 as set in National Hydraulic Program (1999-2000) and to increase the water coverage ratio to 58% in rural areas by 2015 (100% in urban areas) as set in National Drinking Water Supply and Sanitation Program (PN-AEPA, 2011-2015)", development needs "to decrease incidents of the water borne diseases including guinea worm by providing safe water in Zinder Region where the prevalence is high", as well as Japan's ODA policy (support for education, health, rural development and water supply as the prioritized area).

Therefore, relevance of this project is high.

#### 2 Effectiveness/Impact

The project has largely achieved its objective of supplying safe drinking water in Mirriah, Zinder Region. The water coverage ratio has increased from 61% in 2002 to 72% in 2011. Among 10 villages visited during the site survey, the quality of water satisfied the standards of the Niger in 8 villages (The pumps were broken and being repaired at 2 villages). According to interviews with 40 beneficiaries (rural residents) in 10 villages, the awareness of people have changed: Before the project, people used unsafe water from the ponds and shallow wells, however people now use water from the boreholes for drinking and cooking purposes and for their domestic animals. In addition, people wash ingredients, clothes, and their hands more often than before.

According to interviews with the Regional Direction of Public Health and the Fight against Endemic Zinder (the "Regional Direction of Public Health Zinder") and rural residents, the number of water borne diseases such as diarrhea and cholera have decreased drastically in the target areas after the project. In particular, together with the effects of other borehole construction projects supported by Japan's previous grant aid and other donors, currently there is no guinea worm parasite in Mirriah\*. The Regional Direction of Public Health Zinder recognizes that the project has contributed to the guinea worm eradication. In addition, this project has contributed to the decrease of workload of collecting water.

There is no negative impact on natural environment. Lands for the boreholes were acquired properly based on the domestic laws and no resettlement occurred.

Therefore, effectiveness/impact of this project is high.

\*The prevalence of guinea worm in Mirriah, Zinder decreased from 1,528 in 1996 to 36 in 2002.

#### Quantitative Effects

	2002 Actual (BD)	2007 Planned (Target Year)	2007 Actual (Target Year)	2012 Actual (Year of ex-post evaluation)
<b>Indicator 1</b> Served population in the target 88 villages (persons)	21,350	80,210	N/A.	N/A
<b>Indicator 2</b> Water coverage ratio in Mirriah (%)	61	66	73.01 (data for 2009)	72.38 (data for 2011)

Source : SYNTHÈSE REF 2009, and Rapport sur les indicateurs 2011.

Note : Indicator 2 : area-wise water coverage ratio

#### 3 Efficiency

The inputs were appropriate for producing the outputs of the project, and both the project cost and the project period were within the plan (ratio against the plan: 99%, 97%).

Therefore, efficiency of this project is high.

#### 4 Sustainability

99 boreholes in 91 villages constructed under this project are operated and maintained by water point management committees in the target villages. At the same time, Regional Direction of Water Resource Zinder under the Ministry of Water Resources and Environment (the "Regional Direction of Water Resource Zinder") is responsible for selection and supervision of pump repairers, preparing the basic infrastructure for pump sales and distribution networks, and urgent repairs of pumps. Operation and maintenance by the water point management committees are limited to the simple works such as daily checkups, and repair works, which are carried out by trained pump repairers, and spare parts are supplied by private suppliers. In the 10 villages where the site survey was conducted, most committees function well, and no serious problem of pump repair work was found, although there are problems of shortage of pump repairers and long waiting time for procuring parts from suppliers, whose sales offices are in Zinder city. Equipment procured by the project is maintained by The Regional Direction of Water Resource Zinder and the Regional Direction of Public Health Zinder. Therefore, there is no problem in institutional aspect.

The project has no technical problem. The water point management committees and the pump repairers carry out

operation and maintenance by observing guidelines. The staff at the Regional Direction of Water Resource Zinder own technical skills of urgent repair works and operation of the equipment procured by the project. In financial aspect, maintenance costs of boreholes (especially pumps) are funded by the user charges the committees collect from water users. Although some committees do not keep the account appropriately, basically there is no financial problem in the committees. On the other hand, The Regional Direction of Water Resource Zinder does not have sufficient budget for providing training and support for the water committees and pump repairers, and for the maintenance of the equipment provided by the project. Therefore, this project has some problem in financial aspect. On the current status of operation and maintenance, boreholes in the 10 villages visited during the survey are well maintained; however, the Regional Direction of Water Resource Zinder does not have information on the rest of the wells (88 wells). The equipment provided by the project is maintained well.

Therefore, sustainability of this project is fair.

### III. Recommendations & Lessons Learned

Recommendations for implementing agency:

- The Regional Direction of Water Resource Zinder and the Regional Direction of Public Health Zinder are responsible for maintenance of the equipment provided by the project; however, they do not carry out maintenance and inspection properly due to budget shortage. The equipment is expected to be used for further construction of boreholes and for awareness raising activities. Therefore, both departments need to secure budgets for maintenance.
- Since members of water point resource committees change often, the committees want Regional Direction of Water Resource to provide technical guidance and support for daily maintenance and inspection. In addition, there are needs for developing pump repairers and strengthening a system for parts supply. MHE needs to respond to those issues as soon as possible.

Lessons Learned to JICA

- The efforts by the water point management committees for their maintenance of boreholes (especially pumps) should be appreciated. However, since parts suppliers do not have agents/sales offices in district level, it takes long time to procure spare parts, and therefore, coordination between the pump repairers and parts suppliers is very difficult. Coordination among water point management committee, pump repairers and parts suppliers is important for sustainable use of boreholes. In planning of future similar projects, it is necessary to consider including a component of strengthening a system for prompt and stable supply of spare parts.

A borehole facility



A borehole facility

