

Country Name	The Program for Emergency Water Supply for Addressing Climate Change (Programme d'urgence pour l'approvisionnement en eau pour faire face au changement climatique)
Republic of Niger	

I. Project Outline

Background	<p>Japan announced the establishment of the Cool Earth Partnership in 2008 aiming at supporting developing countries to achieve both greenhouse gas emission reduction and economic growth. As part of the mechanism of the partnership, a new grant aid scheme named “Program Grant Aid for Environment and Climate Change” was created in 2008. Niger was one of the countries to be benefitted from this initiative/program.</p> <p>In Niger, decrease in rural water source recharge due to the decline of groundwater level caused by climate change in recent years, suspension of water supply in urban areas due to interruption of operation of water supply facilities as a result of deterioration of electricity supply situation were constraining factors to the improvement of water supply rate.</p>				
Objectives of the Project	To strengthen the capacity for implementing measures for climate change by procuring emergency water supply equipment, equipment for water supply facilities, and development and rehabilitation equipment for groundwater, thereby contributing to supplying safe and stable water in the target areas and improvement of the hygiene there.				
Contents of the Project	<ol style="list-style-type: none"> 1. Project Site: All 8 regions, especially 4 regions (Niamey, Tillabéri, Dosso, and Maradi) where equipment for groundwater development/rehabilitation are mainly used. 2. Japanese side: <ol style="list-style-type: none"> (1) Procurement of (i) equipment for emergency water supply (portable water quality test instruments, plastic bags, and water trucks), (ii) equipment for water supply facilities (generators), and (iii) equipment for development and rehabilitation of ground water (derrick cranes and service rigs) (2) Technical Assistance (Soft component) on implementation of emergency water supply, Operation and Maintenance (O&M), and securing of O&M cost 3. Niger side: Securing places for keeping/storing equipment 				
Planning	2008	E/N Date	March 31, 2009	Completion Date	September 27, 2011
		G/A Date	April 9, 2009		
Project Cost	E/N Grant Limit/G/A Grant Limit: 400 million yen, Actual Grant Amount 397 million yen				
Implementing Agency	Ministry of Hydraulics and Environment (from April, 2011) (the “Ministry”)				
Contracted Agencies	Japan International Cooperation System, HELICOM CORPARATION INC, Toyota Tsusho Corporation, and Sirius Corporation				

II. Result of the Evaluation

< Special perspectives considered in the ex-post evaluation >

- Ex-ante evaluation sheet was not prepared for this project, and therefore, effects of the project are evaluated under this ex-post evaluation based on the intended effects specified in the preparatory survey report.

- There were some limitations for data collection on quantitative effects: 1) the change of personnel responsible for the execution of the project by the Ministry, and 2) the lack of an efficient system or structure of data collection on emergency operations in the Ministry. Regarding the indicator 3, “capacity of well and development of wells”, data is only available for Tillaberi Region for because other regions do not record data.

1 Relevance
<p><Consistency with the Development Policy of Niger at the time of planning and ex-post evaluation></p> <p>This project has been highly consistent with Niger’s development policy. At the time of planning, “Accelerated Development and Poverty Reduction Strategy 2008-2012” aimed at improving water supply rate (100% in urban areas and 80% in rural areas by 2012). At the time of ex-post evaluation, Niger, by adopting the Millennium Development Goals (MDGs) through its Economic and Social Development Program 2012-2016 pledged to reduce by half the number of people without access to safe drinking water and basic sanitation.</p> <p><Consistency with the Development Needs of Niger at the time of planning and ex-post evaluation></p> <p>The project has been also highly relevant with Niger’s development needs for improvement of water supply. At the time of planning, people did not have access to stable water supply. Water supply rate in Niger was as low as 71.79% in urban areas and 62.19% in rural areas in 2008. The low water supply rate was partly because ground water level dropped in rural areas due to climate change. Also, operation of water supply facilities was suspended in urban areas due to the shortage of power supply. At the time of ex-post evaluation, efforts on village water supply have been made and the coverage rate for drinking water needs increased to 66.48 per cent in 2011. This level of coverage is, however, insufficient to reach the target of MDGs set at 80% coverage by 2015 and needs to be enhanced.</p> <p><Consistency with Japan’s ODA Policy at the time of planning></p> <p>The project was also consistent with Japan’s ODA policy for Niger at the time of ex-ante evaluation. Japan placed priority on basic human needs in accordance with the implementation of Poverty Reduction Strategy Paper in Niger including water supply, according to ODA Country Databook 2008.</p>

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Effectiveness>

The project has partially achieved its objectives, “to strengthen the capacity for implementing measures for climate change”. Indicators of quantitative effects such as “Emergency water supply,” and “Improvement of well capacity and development of wells (for rural water supply)” which were set at the time of project planning have improved¹. No data was obtained on “Suspension of water supply”.

Emergency water supply to those who were affected by disasters such as droughts and floods was carried out. The number of affected people to whom the water is supplied through the equipment (plastic bags, water trucks and portable water quality test instruments) procured under the project increased. For example, during the period covering the last half of 2011 and throughout 2012, the work under emergency interventions was carried out by the Ministry through the training center for water and sanitation named the Water and Sanitation Techniques Training Center (CFTEA). This work included the following activities: (1) Cleaning, disinfection and analysis of the water quality of the cemented well in the village of Tamalalaou due to pollution. (2) Use of water trucks by the regional water scarcity management committee in Zinder Region. For example, for three months, these trucks ensured the supply of water to the populations of the remote areas and those located in high elevations who only randomly receive water from the existing network. (3) Boring and/or pumping tests on water in wells in Dosso and Tillaberi regions. (4) Physico-chemical and bacteriological analysis of water available to population in all regions of Niger.

Although the decrease in the number of water suspension by the use of the generators procured by the project was expected, the data on the suspension of water supply was not obtained. According to the Niger Water Development Corporation (SEEN: Société exploitation des Eaux du Niger), a private water operating company, which carries out Operation and Maintenance (O&M) of the generators procured under the project, the generators have faced frequent breakdowns from the outset. At the time of ex-post evaluation, 14 out of 23 generators did not perform. The majority of breakdowns relates to the problem of a choke coil which triggers the safety devices. There are also frequent engine failures that cannot be repaired because of lack of spare parts on the local market. Sometimes, engines were repaired by taking parts of the old generators

As to the improvement in capacity of well and the number of newly developed wells, the progress is observed in the region of Tillaberi but other regions do not have data. On the use of the equipment on this aspect, although 8 derrick cranes were procured under the project, they are used very little (Occupancy rate is 10%, according to the regional department of hydraulic Niamey). They are currently stored at the level of the regional department of hydraulics of Niamey (in the headquarters) due to lack of funds to convey them to the different regions, although it was expected that each regional department of hydraulics utilizes the derrick crane whenever necessary. But they are occasionally used. For example, they were used for the cleaning, disinfection and emptying of cemented wells in the departments of Filingué and Tillabery between 2011 and 2012. When an emergency arises, the Direction of Resources Financiers and Material (DRFM) of the Ministry is seeking funds to move derrick cranes.

As a result of implementation of technical assistance (soft component), technical capacity for emergency water supply as well as O&M of equipment has been enhanced. Emergency water supply is carried out without any trouble. Maintenance checkups as well as operation of the equipment are carried out properly based on the manuals developed by the project. The technical assistance included a component for securing O&M costs for regional department of hydraulics by setting the proper water charge and by establishing rental system of derrick cranes. However, no action is taken on this aspect as the derrick cranes are still stored at the central level.

<Impact>

Water supply rate has improved with the project especially in emergency areas such as Tera and Kandagi, as trucks, service rigs, derrick cranes, plastic bags and water analysis devices have been used on several occasions not only for emergency water supply, but for disinfection, cleaning, boring, and analysis of the quality of the water of the cemented wells and boreholes in order to ensure the continuation of the drinking water supply for those who are affected by disasters. As to the improvement of the hygiene of the target people, no improvement on the incidence of diarrhea is observed.

No negative impacts on natural environment were observed and no land acquisition occurred under this project.

<Evaluation Result>

In light of the above, the effect of the project has been somewhat observed. Therefore, the effectiveness/impact of the project is fair.

Quantitative Effects

	Before the project 2009	Actual Value at the project completion (2011)	Actual Value (2012)	Actual Value (2013)	Actual Value (2014)	Actual Value (2015)	Actual Value at the year of Ex-post evaluation (2016)
Indicator 1: Emergency water supply							
1-1 The number of operations of plastic bags and water trucks	50	700	715	730	740	730	520
1-2 The number of use of portable water quality test instruments	200	256	412	430	360	290	300
1-3 The number of people to whom water is supplied through the equipment procured under the project	1,000	1,600	1,600	1,600	1,600	3,200	3,200

¹ No targets were set at the time of planning.

Indicator 2: Water suspension							
2-1 Number of water suspension	817 times	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2-2 Hours of water suspension	1,440.93 hours	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Indicator 3: Capacity of well and development of wells*							
3-1 The number of rehabilitated wells	55	63	75	95	105	125	n.a.
3-2 The number of newly developed wells	20	38	45	69	80	90	n.a.

*Data is only available for Trillaberi Region.

Source : JICA internal documents, questionnaire and interviews with the Ministry and SEEN

3 Efficiency

Although the project cost was within the plan (ratio against the plan: 99%), project period exceeded the plan (ratio against the plan: 162%), due to delay in delivery of equipment.

Therefore, the efficiency of the project is fair.

4 Sustainability

<Institutional Aspect>

O&M of the equipment is carried out by DRFM of the Ministry, and SEEN. DRFM owns the equipment and is responsible for their sustainable use, installation, operation, and maintenance of the equipment. As for the generators, DRFM is the owner of the equipment, the Niger Water Heritage Company (SPEN: Société de Patrimoine des Eaux du Niger), a public water property company, administers it, and SEEN under the guidance of SPEN is responsible for O&M. These executing agencies including DRFM will use the equipment properly and report their conditions to JICA annually. Some problems are observed in the institutional aspects: The fact that the equipment is managed by DRFM and actual use of the equipment is carried out by CFTEA leads to a problem of coordination. Also, there is no structure which deals specifically with emergency response.

At the time of ex-post evaluation, the number of staff at DRFM is 16 and the number of staff allocated to the regional department of hydraulics is 342 while the number of staff of SEEN is 700. The number of staff for O&M is sufficient as the number is in the increasing trend, and to carry out O&M of the equipment.

<Technical Aspect>

The Ministry and SEEN have the competence for the O&M, as they carry out the O&M without trouble as mentioned above. Especially, SEEN is capable as it currently operates and maintains more than 200 generators, and has an appropriate system for updating technical skills for maintenance. However, the Ministry of Hydraulics does not have a regular plan or a system to revise the technical skills of officers, due to the difficulty in finding the financial resources.

<Financial Aspect>

The secured budget after passing the national assembly based on the Finance Act² are often lower than the one requested by the Ministry. The budget for DRFM and regional departments of hydraulics is not sufficient accordingly.

Table: Requested and approved budget of Ministry of Hydraulics and Environment
(Unit: CFA)

	2013	2014	2015
Requested budget	132,975,241,000	139,496,215,000	133,081,825,000
Approved budget	52,966,352,376	45,121,413,669	120,000,495,905

Usually departments have difficulties to find funds that are not planned in advance, but for the duration of the project, the project supported the Ministry to register a budget in the national budget around the month of July each year. The Ministry expects that this registration becomes a habit for the Ministry and departments to secure all necessary funds.

SEEN does not disclose the financial data, however, there is budget for maintenance according to SEEN.

<Current Status of Operation and Maintenance>

Some of the equipment items, especially generators are not functioning well as mentioned above. However, this is not due to the lack of proper checkup, but it is because of the poor quality of the equipment procured. Regular maintenance is carried out appropriately. Spare parts are difficult to find in the local market.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional and financial aspects and current of status of O&M of the implementing agency. Therefore, the sustainability of the project effect is fair.

² Fiscal year of Niger is from January to December. Usually, Ministry of Economy and Finance decides the budget framework of the following year in March, and each ministry makes a budget around June and July. The discussions are held in August and will be passed through the national assembly in December.

5 Summary of the Evaluation

The project has partially achieved its objectives, “to strengthen the capacity for implementing measures for climate change”, as the indicators of quantitative effects set at the time of planning have improved. Especially, water was supplied to those who were affected by disasters. However, the improvement of well capacity and development of new wells may have underperformed, considering the limited use of the derrick cranes procured under the project. Besides, majority of the generators procured under the project are not functional. For sustainability, some problems have been observed in terms of the institutional and financial aspects and current of status of O&M of the implementing agency such as lack of coordination among departments, insufficient budget and some of the equipment items being unfunctional. For efficiency, the project period exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations to implementing agency

- The Ministry of Hydraulics and Environment is recommended to make the necessary arrangements to transport the remaining equipment to the regional department of hydraulics.
- The Ministry of Hydraulics and Environment is recommended to secure the funds used to maintain the equipment. During the project period, the project supported the ministry to register a budget in the national budget around the month of July each year. The ministry is recommended to continue this procedure to include all necessary funds of departments including DRFM in advance so that they are able to secure funds for maintenance of the equipment.

Lessons learned for JICA:

- Many of the generators procured under the project have frequently faced breakdowns shortly after the handover. Hydraulic technicians who use the equipment were not associated with the choice of equipment or their advice were not taken into account as well because the suppliers were selected made based on the price. It was necessary to take into account the technical and interoperability of the equipment proposed by the Ministry on the quality, the performance and the durability of equipment in the selection of the supplier;
- To ensure their proper use and maintenance of the equipment, it would be better to get the similar models of equipment that the officers in the department are used to use. In addition, accompanying the equipment with the spare parts and training of the agents of the department not only on the use of the equipment, but also the maintenance and the replacement of spare parts would be effective. Also, it is desirable for the project to encourage the implementing agency to mobilize a sufficient budget for the maintenance of equipment and execution of activities dedicated to the implementing agency in order to ensure the sustainability of the project



Utilization of Water quality test equipment provided by the program in the laboratory of Tillabery



Generator used by SEEN on the site of Libore (Tillabery region)