

Country Name	The Project for Groundwater Development and Water Supply in rural area of Santiago Island (Projecto de Desenvolvimento de Águas Subterrâneas e Abastecimento de Água no Sector Rural na Ilha de Santiago)
Republic of Cabo Verde	The Project for Rural Water Supply in Santiago Island (Projecto de Abastecimento de Água às Zonas Rurais da Ilha de Santiago)

I. Project Outline

Background	Cabo Verde is located in tropical Sahel dry zone of the western edge of Africa. The limited annual rainfall of about 300 mm in average causes water shortage, particularly in the dry season. Under those situations, supply of safe drinking water had been one of the prioritized national development goals since the 1990's. In order to increase the water supply coverage ratio in the country, the National Institute of Water Resources (INGRH: Instituto Nacional de Gestão dos Recursos Hídricos) elaborated the National Action Plan for Integration of Water Resource (2008). Since 1994, upon the request of the government of Cabo Verde, the government of Japan had supported development of groundwater and started the Project for Groundwater Development and Rural Water Supply Santiago Island in 2004 (hereinafter referred to as "the Groundwater Project") in order to cope with shortage of safe drinking water. However, the construction works under that project were suspended and the project was terminated without completing construction of deep wells and water supply facilities as planned except for a part of the plan. Therefore, the government of Cabo Verde requested the government of Japan a project to complete the planned water source and water supply facilities under the previous project and the Project for Rural Water Supply in Santiago Island as Community Development Grant Aid Project (hereinafter referred to as "the Rural Water Supply Project") started in 2009.				
Objectives of the Project	To stably supply safe water to the population in the target area by construction of water supply facilities with sufficient quality and quantity and institutional building for sanitation awareness activities by the residents, thereby improvement of living conditions and sanitation for the population in the target area.				
Outputs of the Project	<ol style="list-style-type: none"> 1. Project Site: 25sites in Santiago Island: Tarrafal (1 site), São Miguel (1 site), Santa Catarina (4 sites), São Salvador do Mundo (4 sites), Santa Cruz (1 site), São Lourenço dos Orgãos (3 sites), São Domingo (7 sites), Praia (1 site), Ribeira Grande de Santiago (3 sites) 2. Japanese side: Construction of 18 water supply systems in the 25 sites (deep wells, lifting pumps, distribution reservoir, distribution pipes, and public water taps, etc.), technical assistance (training for the Peer Educators (community instructor selected from the community members) to conduct sanitation awareness building activities in the communities of the project sites) 3. Cabo Verde side: Procuring sites, land preparation, development of access roads 				
Ex-Ante Evaluation	2009 (for the Rural Water Supply Project)t	E/N Date	May 21, 2004 (the Groundwater Project)	Completion Date	December 12, 2011 (the Rural Water Supply Project)
Project Cost	E/N Grant Limit:622 million yen (for the Groundwater Project), Actual Grant Amount: 995million yen (for the both projects)				
Implementing Agency	National Institute of Water Resource Management (INGRH: Instituto Nacional de Gestão dos Recursos Hídricos), reformed to the current National Water and Sanitation Agency (ANAS: Agência Nacional de Água e Sanemamento) since 2013.				
Contracted Agencies	(For the Groundwater Project) Consultant: Japan Techno Co., Ltd., Contractor: Dorico Ltd. (For the Rural Water Supply Project) Consultant: Japan Techno Co., Ltd., Procurement Agency: Japan International Cooperation System				

II. Result of the Evaluation

<Special Perspectives to be Considered in the Ex-post Evaluation>

[Scope of this ex-post evaluation]

Since the Groundwater Project was not completed within the E/N period and the Rural Water Supply Project was implemented mainly in order to complete the construction works planned in the Groundwater Project, a scope of this ex-post evaluation covered the two projects to be evaluated as one project.

[Verification of Expected Project Effect and Baseline]

The following baselines based on the data estimated at the time of project design are used for verification of the expected effects by the project at the time of ex-post evaluation

- Indicator 1 (population access to stable and safe water): Since the project sites increased from 23 sites in the original plan of the Groundwater Project to 25 sites in the plan of the Rural Water Supply Project, the target beneficiaries of the population to be covered by the water supply facilities can be considered as around 17,000, which is estimated by the plan of the Rural Water Supply Project.
- Indicator 2 (improvement of water coverage rate): Although the original plan expected that the water coverage rate in Santiago Island would have increase by 6.5 points (from 38.6% in 2000 to 45.1% in 2010), it is difficult to verify the change made by the project contribution from the water coverage rate in 2000, because the water coverage rate in 2006 reached 81% by the implementation of other projects. Therefore, it was verified by the changes in the water coverage rate from 2006 to 2015 by the increase in the population with access to the water supply facilities constructed or rehabilitated by the project in order to clarify the project contribution to the improvement of water coverage rate in Santiago Island.

1 Relevance

Consistency with Cabo Verde's development policy at the time of ex-ante evaluation and ex-post evaluation

This project has been highly consistent with Cabo Verde's development policy prioritizing "the increase in the coverage of safe and stable drinking water to 100%" is set in policy documents such as the "Water Resource Development Master Plan (1993-2005)", "The National Action Plan for Integrated Water Resource (2008)", and "the National Vision of the Water, Life and Environment at the Horizon 2025".

Consistency with Cabo Verde's development needs at the time of ex-ante evaluation and ex-post evaluation

The project has met Cabo Verde's development needs for construction of water supply facilities to supply safe drinking water for the population in the target areas.

Consistency with Japan's ODA policy at the time of ex-ante evaluation

The project was consistent with Japan's ODA policy for Cabo Verde prioritizing support for the area of basic living environment, including water supply, at the time of ex-ante evaluation.

Evaluation result

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

2 Effectiveness/Impact

Effectiveness

The project has achieved its objective of "stable supply of safe water to the population in the target area". The population with stable access to safe water in the target 9 municipalities in Santiago Island reached to around 19,000 persons which is more than the target value of 17,000 persons. Also, the water supply coverage in Santiago Island improved by 6.5 points from the baseline in 2006 which is higher than the target value of 5.4 points. In 22 sites out of 25 sites, the water supply facilities with construction or rehabilitation of water supply facilities by the project have been well functioning and continuously supplying safe water. In the 3 sites, Pó de Saco, Tronco, Leitãozinho, the pumping systems have not operated, for example, due to cracks of a large part of the distribution pipe by runoff rainwater during the raining season 2015. However, the repair of that pipe is under preparation. According to ANAS, quality of water supplied through the water supply systems constructed by the project in the target area met the national water quality standard of Cabo Verde except Pó de Saco. The populations in the target area have improved their sanitation practices such as safe utilization of water, body hygiene, hand washing and home hygiene through the sanitation awareness activities conducted by the Peer Educators trained by the project. Also, in the 22 sites with well-functioning water supply facilities, the average water supply volume exceeded the target value of 20 liters per person per day.

Impact

The project contributed to improvement of living conditions and sanitation of the population in the target area, such as reduction of incidence of water-borne diseases as well as reduction of work burden and time for water fetching by women and children in the target area. In terms of incidence of water-borne diseases, for example, the number of cases of diarrhea under 5 children decreased in some project sites after the project completion: from 576 in 2012 to 367 in 2014 in São Miguel and from 477 to 346 for the same period in São Domingos. According to the Autonomous Water and Sanitation Service (SAAS: Serviço Autónomo de Água e Saneamento) and the water users in the project sites, the water supply facilities constructed or rehabilitated by the project shortened distance for access to drinking water that were round 3 to 5 km away from houses in the project sites and increased availability of safe water. As a result, average time for water fetching decreased from 3 hours in the project sites. Also, since the municipalities with the water supply facilities constructed or rehabilitated by the project have implemented household connections with those facilities, access to safe water became easier.

On the other hand, the ground water levels were lowered in the three sites of São Tomé, Tronco and Montanha e Fundra because of utilization of the ground water for water supply to the populations in the those sites. In order to cope with the issue, it is planned that those water supply facilities will be connected to other water source to be constructed under the future program.

No land acquisition and resettlement took place in by the project and no negative impact by the project on natural environment was not observed at the time of ex-post evaluation.

Evaluation result

In light of the above, effectiveness and impact of the project are high.

Quantitative Effects

Indicator	Before the project (2003) Baseline	Plan (2015) Target Value	Actual (2012)	Actual (2013)	Actual (2014) Target Year	Actual (2015) Ex-post Evaluation
Indicator 1*: The population with stable access to and safe water in the project sites (9 municipalities in Santiago Island)	0	Around 17,000 persons	N.A.	N.A.	N.A.	Around 19,000 persons
Indicator 2**: Improvement of the water supply coverage in Santiago Island	0 point (81.0%) (2006)	5.4 points (86.4%)	N.A.	N.A.	N.A.	6.5 points (87.5%)

Source : Ex-ante Plan Summary, Outline Design Report, Basic Design Report, information provided by ANAS and SAAS

Note 1: * Indicator 1 was verified by increase in the number of population with access to water supply through the water supply facilities in the project sites.

Note 2: ** Indicator 2 was verified by increase in the water supply coverage in Santiago Island through the project contribution of the expected increase in population of around 17,000 to be covered by the project to the estimated baseline population with access to water supply of 314,814 in 2006.

3 Efficiency

In the original plan for the Groundwater Project, construction of 19 water supply systems in 23 sites in Santiago Island were planned but the water supply systems in 6 sites¹ were completed or partially completed within the E/N period for the Groundwater Project. Upon the request by the government of Cabo Verde, the Rural Water Supply Project aimed at construction of the 18 water supply systems in 25 sites in Santiago Island in order to construct uncompleted works by the Groundwater Project and in the additional sites as well as rehabilitation of the completed works by the Groundwater Project. Since the project sites were added, the outputs of the distribution pipes were increased from the total length of 48.5km to the total length of 65.5km.

The project cost and period significantly exceeded the plan of the Groundwater Project (ratio against the plan: 160% and 475%, respectively.) The reasons of cost overrun were the increase in the number of the project sites and additional construction of new reservoir as well as rehabilitation of the existing sites. In addition, significant price escalation of energy and material prices in the international market may have attributed to the construction cost. Also, since the planned construction works were not completed within the E/N period for the grant aid project started in 2003², the project under the Rural Water Supply Project was implemented and the entire project period exceeded the original plan. Therefore, efficiency of this project is low.

4 Sustainability

Institutional aspect

Under the sector reform, INGRH was transformed to ANAS in 2013. ANAS is responsible for policy and planning for all water resources, domestic water supply, wastewater treatment and sanitation. ANAS is going to be guided by the National Water and Sanitation Council which was established in 2015, consisting of the core ministries, municipalities, private sector and civil society in order to align the sector policies with the overall policy direction of the government. For the operation and maintenance of rural water supply facilities, SAAS has been responsible at a municipality level. The number of technical staffs in ANAS increased from 40 in 2009 to 55 in 2015 and reached to a sufficient level in order to ensure proper monitoring of facilities. For SAASs, the number of staffs varies by size of municipality but it is considered as sufficient to adequately operate and maintain the water supply facilities in the project sites. Each site has at least 1 pump operator and 1 water sale person for each public tap. Except Tarrafal and São Miguel, the target municipalities have 1 or 2 Peer Educators to be engaged in the public awareness activities to improve hygiene practices, including sanitation management surrounding public taps, consumption of safe water and storage conditions at home through training sessions and conversation with the population. SAASs have continuously conducted supervision and monitoring for the Peer Educators trained by the project for implementing the sanitation awareness activities in the main sites.

Technical Aspect

The engineers and technicians of ANAS have sustained their skills and knowledge on major repair of rural water supply facilities, water quality management and delivery of trainings of maintenance for SAAS staffs through capacity building and continuous trainings by the government. Also, the technical staffs of SAAS have sustained their skills and knowledge of maintenance of the water supply facilities through the trainings by ANAS. However, ANAS has a lack of technical expertise for maintenance of the chlorination systems. The SAAS staffs have sufficient level of skills and knowledge for supervision and monitoring of the Peer Educators in order to conduct adequate sanitation awareness activities. All the Pump Operators and Water Sales Person in the project sites have been trained by ANAS and sustained sufficient level of skills and knowledge to operate and maintenance of the water supply facilities, including collection of water charge. The manuals developed by the project have been utilized by the Peer Educators, the Pump Operators and the Water Sales Persons. Although ANAS established a training system, the trainings have not been delivered on regular basis.

Financial Aspect

ANAS is able to support SAASs for major repair of the water supply facilities through the budget allocation by the government. However, the process of mobilizing necessary budget for major repair usually takes time. According to some of SAASs in the target areas, such as São Miguel, Santa Catarina, Santa Cruz, they continuously earned sufficient amount of revenue from the water sales to cover necessary O&M cost.

Current Status of O&M

As mentioned above, the water supply facilities in 22 out of the 25 project sites have been well-functioning. The main water supply facilities constructed by the project have been functioning as planned except chlorination systems that have been no longer functional in most project sites. In case of temporal malfunctioning, SAASs have been able to fix them shortly with support of ANAS if necessary, such as pump procurement.

Evaluation result

In light of the above, there are some problems observed in technical and financial aspect as well as current status of O&M. Therefore, sustainability of project effects is fair.

5 Summary of the Evaluation

The project has achieved its objective, "to stably supply safe water to the population in the target areas". Also, the project contributed to reduction of water-borne disease and work burden and time for water fetching in the target areas as well. As for sustainability, there is a concern about timely budget execution for major repair of the water supply facilities because of the time consuming process. Also, the chlorination systems installed for the water supply facilities have not been functional in most project sites. As for efficiency, the project cost and period considerably exceeded the plan due to the suspension of planned construction works under the E/N signed in 2003 and additional works required afterwards.

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

III. Recommendations & Lessons Learned

Recommendations to implementing agency:

[ANAS]

-It is necessary to improve planning of trainings for technician to maintain the technical level of operation and maintenance system;

-It is required to improve internal budget mobilization procedure of ANAS for major repairs to avoid long-term malfunctioning of water

¹ Curral Velho, Chã de Ponta, Bombardeiro, Entre Picos de Reda, Ribeira de Barca, and Ribeirão Almoça

² It was because the construction works had been suspended by disagreement on design changes between the consultant and the contractor and never been completed with the E/N period.

supply facilities;

-It is recommended to introduce specific training on the chlorination system installed in the project sites in order to allow technicians of ANAS and SAASs to have the expertise needed to ensure maintenance of such equipment.



Public Water taps in Sao Tome (Praia)



Water tank and machinery room in Levada (San Lorenzo dos Orgãos)