

United Republic of Tanzania

Project for Rural Water Supply in Lindi and Mtwara Regions

External Evaluators: Takeshi Daimon and Rui Hiwatashi, Waseda University

0 . Summary

This project is intended to support the water supply facilities in the Lindi and Mtwara regions, and thus increase water supply pervasion and supply safe water in the target areas continuously. Considering Tanzanian and Japanese development policies, the project is highly relevant. It is fairly efficient because the project cost remains within the original estimate, although the period has slightly increased. On the other hand, the population with access to safe water has increased, and there has been a decline in the incidence of waterborne diseases; thus, the effectiveness and impact of the project are high. O&M has had some problems in technical aspects, and the project is considered fairly sustainable.

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

1 . Project Description



Project Location: Lindi and Mtwara Regions A resident fetching water

1.1 Background

The water supply situation in Tanzania is very critical situation, and about a half of the population does not have access to safe and hygienic water, resulting in frequent waterborne diseases and—of particular concern—increased infant morbidity and mortality rates. In the absence of proper water supply facilities, the arduous job of fetching water falls on women and children.¹

¹ Basic Design Report

In 1976, water supply facilities were constructed in the two southern regions covered by this project according to a “Water Sector Master Plan” with Finnish aid, and the water supply coverage improved to 75% by 1984. However, the conditions of the facilities rapidly deteriorated because of the lack of budget, with the end of Finnish aid in 1992, and a low level of awareness about maintenance among the people. Consequently, the water supply coverage had dropped drastically to about 35% at the planning stage of this project.

In order to overcome this situation, the Government of Tanzania (GoT) requested the Government of Japan (GoJ) to carry out a study for the improvement of water supply, which resulted in a “Southern Regions Water Supply Plan” formulated over almost two years, from February 2000 to December 2001. On the conclusion of this study, the GoT requested the GoJ for a grant-in-aid to provide a safe and stable water supply by constructing deep wells.

1.2 Project Outline

This project is intended to support water supply facilities in the Lindi and Mtwara Regions, thereby increasing water supply coverage and continuously supplying safe water to target areas.

Grant Limit / Actual Grant Amount	1,729 million yen / 1,671 million yen
Exchange of Notes Date	Phase 1: September 2003 Phase2: June 2004 Phase3: June 2005
Implementing Agency	Ministry of Water
Project Completion Date	Phase 1: December 2004 Phase2: February 2006 Phase3: March 2007
Main Contractor(s)	Mitsubishi Corporation (Phase 1) Hazama Corporation (Phase 2) Koken Boring Machine, Co. Ltd.(Phase 3)
Main Consultant(s)	Kokusai Kogyo Group
Basic Design	From November 2002 to June 2003 (8.0 months)

Related Projects (if any)	The Rural Water Supply and Sanitation Capacity Development Project (Technical Assistance) (June 2007 to August 2010) Southern Regions Water Supply Plan (February 2000 to December 2001) Water Supply Project in Lindi and Mtwara Regions by CONCERN
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2. Outline of the Evaluation Study

2.1 External Evaluators

Takeshi Daimon and Rui Hiwatashi, Waseda University

2.2 Duration of Evaluation Study

Duration of the Study: December 2010 – December 2011

Duration of the Field Study: February 14 to March 17 and July 19 to July 30, 2011.

2.3 Constraints during the Evaluation Study (if any)

The target areas include 174 facilities in 64 villages in Lindi and Mtwara Regions. Hence, 28 sample villages have been randomly selected (taking the coverage into consideration), and interviews have been conducted to obtain data on the impact and sustainability of the project.²

3. Results of the Evaluation (Overall Rating : B³)

3.1 Relevance (Rating : ③⁴)

3.1.1 Relevance with the Development Plan of Mauritius

The higher policy goal of improving the water sector is the “National Water Policy” (NWP) of 1991, which was revised in 2002. The revised NWP took over the original focus of promoting the participation of the users of the water supply, cost sharing for operations and maintenance (O&M) by users, and the promotion of safe water and sanitation. This is in addition to a new emphasis on the nationwide construction of facilities for hygienic and safe water. However, as the water supply coverage in 2002 remained below 70% in urban areas and 50% in rural areas, the revised NWP redefined the policy goals to include the importance of the demarcation of roles and responsibilities

² Surveys were conducted for water engineers in all 9 districts and 2 regions with jurisdiction over target villages.

³ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁴ ③: High, ② Fair, ① Low

among the water and sanitation sector personnel, as well as cost sharing of O&M by users. At post-evaluation, the National Water Sector Development Strategy (NWSD) 2006-2015 was drafted in 2006, based on the revised NWP, and the Water Sector Development Program (NSDP) was drafted in 2007, both supporting the water sector in the country. The NSDP also emphasizes the importance of rural water, and this project continues to promote a community-driven approach to strengthen O&M capacity.

Hence, this project has been consistent with the nation's development policies before and after the project.

3.1.2 Relevance with the Development Needs of Tanzania

At the time of pre-evaluation, the drinking water situation in Tanzania was deteriorating, and almost half of the population had limited access to safe and hygienic water, causing waterborne diseases; especially worrisome was high infant morbidity and mortality. In addition, the lack of proper water facilities forced women and children to shoulder the burden of fetching water. The two southern regions covered by this project were also high-priority areas with as low as 35% water coverage in 2003, before evaluation. At post-evaluation, the improvement has not been significant because of the malfunction of facilities or possibly the lack of supply capacity to match the increasing population,⁵ and the national coverage itself has improved slightly, remaining as low as about 60%.

Hence this project has been consistent with the nation's development needs before and after the project.

3.1.3 Relevance with Japan's ODA Policy

The Country Assistance Plan (CAP, 2000) states that continued assistance must be extended to (i) the basic infrastructure sector for poverty alleviation and the improvement of standards of living by achieving inclusive growth and (ii) inter- and intraregional infrastructure projects connecting city centers for the improvement of rural living conditions along with its byproduct of arresting the inflow of the rural population into the capital city (e.g., rehabilitation of major truck roads and water resource development in the southern region).

The revised CAP of 2008 still stresses the importance of building water-related infrastructure in areas with limited access to safe water as well as developing expertise in formulating and implementing water plans through training local staff in the sector.

Therefore, this project has been consistent with the Japanese development policy before and after the project.

⁵ Interview with the implementing agency

In light of above, this project is highly relevant because it is consistent the country's development plan, its development needs, as well as Japan's ODA policy.

3.2 Efficiency (Rating : ②)

3.2.1 Project Outputs

The project has been implemented without change in scope of procured equipment and facilities between plan (basic design) and realized (post-evaluation).

(a) Well drilling machines and support equipment (Phase 1/Phase2)

Drills	1
Drills (Tools accessories)	1
High pressure compressor	1
Electric Investigator	2
Well logging equipment	1
Pumps for pumping test (for hand pumps)	1
Pumps for pumping test (for motor pumps)	1
V-notch weirs for pumping test (for hand pumps)	1
V-notch weirs for pumping test (for motor pumps)	1
Generator for pumping test (for hand pumps)	1
Generator for pumping test (for motor pumps)	1

(They have been procured as planned. Drillers are on lent to other regions for drilling wells).

Phase 2

Maintenance Equipment	Maintenance Trucks	2
	Motorbikes	9
	Well-washer compressor	2
	Cargo trucks	2
	Water gauge	2
	PCs	2
	Printers	2
Survey Equipment	pH meters	2
	ORP meters	2
	EC meters	2
	Pickup Trucks	2

Current meters	2
Survey machines	2

(b) Installation of hand pumps in 14 villages and collective pumping stations in 19 villages in Lindi Region

Installation of hand pumps in 12 villages and collective pumping stations in 19 villages in Mtwara Region

Facility	Quantity
Construction of deep wells with hand pumps	● Drilling new wells (75)(16 villages) (Phase 1) ● Drilling new wells (72)(16villages) (Phase 2) ● Installation of hand pumps (75) (Phase 1) ● Installation of hand pumps (72) (Phase 2)
Construction of deep wells with motor pumps	● Drilling new wells (22) and existing wells (2) (24villages) (Phase 1) ● Drilling new wells (12) (12villages)(Phase 2) ● High rising water tanks 20m³ (10), 30m³(3), 50m³ (10), and existing tank (1) (Phase 1) ● High rising water tanks 20m³ (9), 30m³(1), 40m³ (1), 50m³ (1) ● Pumping stations (96) (Phase 1) ● Pumping stations (36) (Phase 2)
Construction of deep wells with motor pumps for spring water	● 2 sites (2villages) (Phase 1) ● High rising water tanks 50m³ (1), 40m³ (1) (Phase 1) ● Pumping stations (10) (Phase 1)

(c) Technical Assistance for Operations and Maintenance (Soft Component)

The following activities were carried out without any change since the plan.

Activities	Phase 2		Phase 3	
	MM	Target Areas	MM	Target Areas
Participatory workshop	4.7	4 districts in Lindi, Mtwara, Tandahimba,	2	5 districts in Masasi, Newala, Nachingwea,
Village gathering			2	
Socialization workshop			1	
Hygienic education	2.1	Kilwa	2	

O & M plan workshop	3.8		3	Ruangwa,
Technical training for repair (DWE)	0.3		0.6	Liwale
Technical training for repair (VWC)	1.6		1	
Technical training for administration			6	
Joint commission for stakeholders	0.6			
Visiting training for O&A	5			

3.2.2 Project Inputs

3.2.2.1 Project Cost

Table 1 Comparison of Original and Actual Project Costs

Unit: Million Yen

	Phase 1	Phase2	Phase 3	Total
Original	331	813	584	1729
Actual	331	756	584	1671

Source: Inspection Report

The estimated period at the planning stage was 1,737 million yen (of which Japan's contribution was 1,729 million yen and Tanzania's contribution was 8 million yen) and the actual cost was within the planned amount (94%).

3.2.2.2 Project Period

This project was implemented in three phases (Phase 1: 15 months from October 2003 to December 2004, Phase 2: 19 months from August 2004 to February 2006, Phase 3: 21 months from July 2005 to March 2007), of which the duration of procurement and construction periods (42 months in total) exceeded the plan (41 months in total) (or 102% of the plan). The executing agency (Ministry of Water) explains that the delay is due to changes in project sites in Phase 2 (11 sites in Mtwara and 4 sites in Lindi) due mainly to insufficient water.

Although the project cost was within the plan, the project period was slightly exceeded, therefore efficiency of the project is fair.

3.3 Effectiveness ⁶(Rating : ③)

3.3.1 Quantitative Effects

3.3.1.1 Results from Operation and Effect Indicators

The original goals of the project were the following:

(a) The water-served population should increase by about 200,000, raising the coverage in the two target regions⁷ from about 35% in 2002 to about 42% in 2007.

(b) Per villager safe water must be 20 liters⁸ per day.

The executing agency (Ministry of Water) reports that, as the table below shows, the access to safe water in the Lindi and Mtwara Regions has, overall, improved, achieving the 2007 goal of 42% coverage. However, since it peaked in 2008, the coverage has been declining because of the malfunction of facilities and a drastic increase of the inflowing population after 2009. This trend is particularly evident in Lindi.

Table 2 Access to Safe Water (%)

	Lindi	Mtwara
2004	45.2	53.6
2005	46.3	53.6
2006	47.3	57.0
2007	48.1	58.2
2008	63.4	72.8
2009	54.9	70.2
2010	40.1	67.0

Source: Ministry of Water

As explained before, during the pre-evaluation period there was no baseline indicator of water supply coverage to give a sense of (ratio of) the “population with access to safe water/population in the target areas”. Only statistics in the target regions (i.e., Tanzanian official statistics of “population with access to safe water/population in Lindi and Mtwara regions”) was used as an indicator of effectiveness.

The project originally assumed that the water supply facilities would be accessed by 100% of the target population (about 200,000), raising the coverage by 7% in the two southern regions. This may prove somewhat problematic.

Replies to the questionnaire from the water department in each Region show that nearly

⁶ Rating takes into account of Impact as well.

⁷ The Basic Document has no mention about coverage in targeted villages.

⁸ “National Water Plan” (GoT) (revised in 2002) defines the design standard as “within 400 meters from location of living place, 25 liters per person per site on annual basis, accessible to 250 users.”

100% of the target population in Lindi and 80% in Mtwara⁹ have achieved their target goals, and the target for the amount of water per capita was achieved (23 liters in Lindi and 60 liters in Mtwara, both as of 2007). Furthermore, as the table below shows, a beneficiary survey with 150 sample households in 28 sample target villages shows that nearly all of the households (147 households, or 98%) who used surface water (spring, river, and rainwater) or an unsafe well before the project have now turned to the facilities provided by this project. The executing agency explains that areas without water supply facilities still have a low access to water, below 30%, and the regional disparity in water supply is a major issue.

Table 3 Sources of Drinking Water

	Before	After
Mineral Water	0	0
Unsafe Public Water	0	0
Safe Public Water	0	0
Protected Well	0	0
Unprotected Well	23	0
Safe Spring	6	0
Unsafe Spring	0	0
River	67	0
Rain	54	0
JICA Project Well	—	147
Others	0	3

Source: Beneficiary Survey

3.3.2 Qualitative Effects

At the pre-evaluation stage, the following qualitative effects were considered as targets.

(a) Through on-the-job training (OJT), workers will acquire skills to construct deep wells on their own in other places by fine-tuning the task details to local conditions.

Interviews with the Department of Water Engineer (DWE) in all of the nine target provinces confirm that the OJT was provided to staff in provincial water departments as planned and after the completion of the project the skills acquired and equipment

⁹ In Mtwara, 67,912 out of 84,890 residents in target villages, except for two villages with mal-functioning facilities, are defined as population with access to safe water. By the same definition, 67,392 residents are considered accessible to safe water.

procured are still used in a dozen water facilities. Therefore, this subgoal is considered to have been achieved.

(b) Drills and support materials will allow people to drill wells to a depth of more than 150 m, thereby improving drilling skills.

The executing agency explains that actually those drills and support materials have been used in a dozen places. Thus, this subgoal is also considered to have been achieved.

(c) Maintenance equipment will allow workers to maintain and repair facilities sustainably.

A survey of village water committees (VWC) in the 28 sample villages shows that prefectural water engineers conduct monitoring for maintenance and repair monthly in 25 villages (or 89% of all the villages). Hence, as planned, the maintenance equipment has been procured and used to achieve higher policy goals. However, the maintenance skills acquired through training were not always utilized in some districts and villages because courses were: “too general and did not teach how to make repairs,” or “too difficult for staff to comprehend at village or at the district level.”¹⁰

(d) Survey equipment will allow them to conduct planning for the creation of deep wells, evaluation of water quality, measurement design, and monitoring of maintenance.

The executing agency explains that the survey equipment has been introduced and utilized as planned, and actually a dozen deep wells have been planned, evaluated, designed, and monitored, which suggests that the higher goal has been mostly achieved.

(e) A community-based O&M system will be established and water facilities will be maintained in a sustainable and appropriate manner.

The VWC survey shows that 28 villages (100%) have successfully established an organizational framework (such as water committees at the village level and a maintenance mechanism including collection of fees) and O&M committees for water supply are fully functional. In the target districts, including four in Mtwara (Mtwara, Masasi, Newala, Tandahimba) and five in Lindi (Liwale, Kilwa, Nachingwea, Ruangwa, Lindi), continued technical assistance (“Village Water Supply and O&M Planning Project”) has helped in strengthening people-centered O&M systems. Hence, subgoal (e) is considered to have been mostly achieved, and the effectiveness of aid through a soft component is evident.

¹⁰ Interviews with VWC.

Therefore, the above five qualitative effects are considered to have been achieved. This project has achieved its objectives, therefore its effectiveness is high.

3.4 Impact

3.4.1 Intended Impacts

At the pre-evaluation phase, the following indirect effects (impacts) were assumed.

- (a) safe and hygienic water supply¹¹
- (b) promotion of national water policy¹²
- (c) improvement of sanitary conditions¹³
- (d) education and promotion of maintenance and regional development¹⁴

The beneficiary survey (among the 28 sample villages with 150 sample households) has been used to analyze impact.

First, (a) the question of whether “safe and clean drinking water has been secured for villagers in order to improve the hygienic situation” seems to have been achieved, because, as explained in the “effectiveness” part, among users of surface water (spring-, river, and rainwater) and unprotected wells, almost all villagers (147 households, or 98% of the total) have access to the facilities provided by this project.

(b) The question of whether “the project has become a model case for rural water supply, in line with the national water plan, and with a huge influence over the promotion of a rural water supply plan in the future” also seems to have been achieved, because, according to the interview with the executing agency (Ministry of Water), the implementation of the project has indeed generated the expected impact and has been recognized as a model case for future plans.

¹¹ “It is intended to secure safe and clean water for villagers, to improve hygienic environment, satisfying Basic Human Needs (BHN) of target 201,967 (estimated for 2005). In addition, after the completion of the project, it is expected to reduce labor for women and children to fetch water, thereby transferring its labor to agriculture and various other activities in the region.” (Basic Design)

¹² “With the completion of this project, it is expected to serve as a model case for the rural water supply plan in line with national water plan, promoting significantly future rural water supply programs.” (Basic Design)

¹³ “It is expected, in the long run, to effectively help improve hygienic conditions, thereby decreasing the morbidity of waterborne diseases such as diarrhea, parasites, skin and eye diseases.”

(Basic Design)

¹⁴ “Through this activity, people are expected to raise their awareness about maintenance on their own, by acquiring O&M skills necessary for water facilities. In this process, it is expected to help raise community identity, with possible spillover to productive activities in this region, thereby contributing to form rural communities.” (Basic Design)

(c) The improvement of hygienic conditions seems to have been achieved as well, as the morbidity of waterborne diseases such as diarrhea, parasites, skin disease, eye infections, has been improved since the implementation of the project (as shown in the table below).

Table4 Morbidity of Waterborne Diseases (Sample 150 households)

Are there household members with chronic waterborne diseases?	Before	After
Yes	136	24
No	9	126
Others or No answer	5	0

Source: Beneficiary Survey

Asked why they are “very satisfied” (105 households) or “satisfied” (39 households, or 96% of all respondents), the most cited reasons include “improvement of access to water” (58), “improvement of water quality” (28), “reduction of waterborne diseases” (28), and “improvement of sanitation and environment” (16).¹⁵

In addition, when asked about time saving as an economic impact, nearly all households reported significant time saving, suggesting a “reduction in water-fetching labor by women and children,” as proposed in subgoal (a).

Table5 Time to Fetch Water

	Before	After
Less than 10 minutes	14	87
10 to 30 minutes	71	61
More than 30 minutes	65	2

Source: Beneficiary Survey

Furthermore, (d) the question of whether “people have an enhanced awareness of self-maintenance and have acquired sustainable skills for the O&M of water facility” is slightly problematic because, as explained in the “sustainability” section, once skills are

¹⁵ Other respondents include “increase in consumable water” (3), “time saving” (9) and “increase in income” (9).

acquired through training and technical assistance, a lack of sufficient follow-up measures for additional training and monitoring makes it difficult to sustain the level of O&M skills or transfer them to others.

3.4.2 Other Impacts

This project has not involved any relocation of people or expropriation of land. No environmental impact from the construction and operation of water facilities has been mentioned in interviews or field surveys.

Hence, the project has generated the results planned and has had a high impact.

3.5 Sustainability (Rating : ②)

In the Lindi and Mtwara regions, 174 wells (with manual and electric pumping systems) in the target villages (originally 64, but subsequently extended to include 69 villages of which 2 villages have unserviceable wells; thus, 67 de facto target villages) have been installed. The following sections describe the overall situation of Operations and Maintenance (O&M) based on an interview with the Ministry of Water, water engineers at the regional and prefectural levels, and the VWCs.

3.5.1 Structural Aspects of Operation and Maintenance

The Ministry of Water, an executing agency of the project, delegates almost all its O&M responsibilities to the prefectural level and daily O&M is conducted by LGA. Each village or facility has Community-Owned Water Supply Organizations (COWSOs), and they have the responsibility to provide water for people. However, COWSO has been institutionalized only since 2009¹⁶ and, in many cases, the previous water supply system (the VWC) continues to exist. On the other hand, the regional government plays an advisory role, and heavy machines, which are difficult to be purchased by an individual district, are also owned by the region to make them disposable at the district level when necessary.

Under the ongoing “Water Sector Development Program,” a “Water and Sanitation Team” is formed with water, regional development, health, and education divisions to strengthen the support systems for monitoring, repair of facilities and equipment, and other necessities at the village level.

As for daily O&M, the District Water Engineer (DWE) is considered to be operational

¹⁶ Water Supply and Sanitation Act No 12 of 2009.

with necessary timing and staff.¹⁷ However, for more complex operations requiring a certain level of skills, engineers at the central level often fill in the gap and support repairs in the field.

The organization of the community, one of the activities implemented under this project, is highly appreciated at the regional level. The Regional Water Engineer (RWE) in Lindi evaluated this activity highly, saying “I have instructed that the measures taken under the project to enlighten communities shall be well coordinated between community development staff and water engineers”. These beliefs have been confirmed by facts.

3.5.2 Technical Aspects of Operation and Maintenance

As explained in the “qualitative” effect, core personnel in water supply, including prefectural water division staff, have acquired O&M skills and related equipment handling skills through OJT and other training. Hence, in many cases, technology is considered to have been transferred to villages, districts, and regions.

Interviews in villages reveal that manuals provided under the project for VWCs are not necessarily utilized. As a result, daily technical problems are not appropriately dealt with or, in some cases, acquired skills are not accumulated. For example, it has been pointed out by an RWE that the manuals were “not user friendly and could only be understood by DWE engineers, but not accessible to village- and community-level users due to a lack of feedback.”

This example illustrates a situation in which, in addition to the above-mentioned problem related to the manuals, the way training and technical advice was conducted was not effective enough (for them to be passed on to new staff, because the knowledge acquired remained at the individual level), nor was there any follow-up training or monitoring led by the district in order to fill in the skill gap, so that the O&M skills required for the wells have not been retained institutionally.

In order to overcome such problems, it is important to establish “capacity development,” for which the “institutionalization or organization” of O&M skills plays an important role. Interviews with VWC have reported some successful cases of organization, but the extent to which it has seen success remains difficult to determine.

3.5.3 Financial Aspects of Operation and Maintenance

The annual budget for RWE in Lindi is about 9 million Tanzania shillings, which is barely sufficient for the monitoring and other minimum services. Mtwara has about 30 million

¹⁷ Interview with DWE

shillings.¹⁸ The major responsibilities for water supply rest at the district level. Each district has had a stable or slightly declining budget over the past 3 to 5 years; budget size differs among individual districts, but is roughly 100 to 500 million shillings, of which 5 to 10 million shillings are allocated to the O&M of water sector. This budget size is considered sufficient to cover socialization and activities related to O&M at the village level.

On the other hand, collection of fees for O&M rests with villages: some villages charge for the amount of water used, while others charge fixed monthly or yearly fees per household or for all people above a certain age. The tariff for one bucket (20 liters) is about 20–30 shillings in the previous system. The target villages have received technical assistance as part of the soft component of the project, and they have regular bookkeeping practices for revenue and expenditure records. This also implies that the collected fees (about 100–200 thousand shillings) are enough to cover the O&M costs.

3.5.4 Current Status of Operation and Maintenance

The condition of O&M differs across facilities but out of 174 installed, about 80% are “fully” or “partially” operational, while 17% are under repair or going to be repaired and the remaining 3% are unrepaired.¹⁹

Examples of out-of-order facilities include Newala (Mrunga and Okonboji) in Mtwara, where only one out of six is working, and five are found to be nonoperational due to malfunction or lack of a water source, as confirmed in the field survey. Finding more precise causes of the malfunction may require further technical inspection (according to DWE, this is because of missing length and the strength of “riser pipes”), but whatever the reasons, the people in these two villages must walk to the next village for over an hour to get safe water.²⁰

On the other hand, when the skills and knowledge necessary for planning, monitoring, and repair are not passed on to new staff, it is likely that those villages will have difficulty in conducting an effective O&M. In case of repair by DWE, there should be some cases requiring technical advice from the central government, but no such case has been reported in this survey.

Some problems have been observed in terms of technical aspects, therefore sustainability of the project effect is fair.

¹⁸ RWE is a coordinating agency in charge of overall water supply and sanitation sectors and provides support to DWE, but it is not an implementing agency and has no investment budget on its own.

¹⁹ Interview with district water engineers in target areas.

²⁰ Interview with district water engineers in target areas.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project is intended to support the water supply facilities in the Lindi and Mtwara regions, and thus increase water supply pervasion and supply safe water in the target areas continuously. Considering Tanzanian and Japanese development policies, the project is highly relevant. It is fairly efficient because the project cost remains within the original estimate, although the period has slightly increased. On the other hand, the population with access to safe water has increased, and there has been a decline in the incidence of waterborne diseases; thus, the effectiveness and impact of the project are high. O&M has had some problems in technical aspects, and the project is considered fairly sustainable.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

It is recommended that training and monitoring be followed up by district (or region), targeting COWSO personnel in charge of O&M. This is intended to support self-help efforts (budgetary or personnel efforts) by target districts in Lindi and Mtwara after the project is over.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

None