

Country Name	The Project for Support in National Roll-out of Sustainable Operation and Maintenance Programme (SOMAP 3)
Republic of Zambia	

I. Project Outline

Background	<p>In Zambia, approximately 50% of the rural population had access to safe water as of 2011. Thus, the improvement of the rural water supply sector was an important development issue. As such, the Government of Japan had assisted the construction of borehole-well water-supply facilities fitted with hand pumps in hope of contributing to the improvement of accessibility of safe water in rural areas. However, there was a valid concern that they might not be fully capable of availing of the introduced water supply facilities in absence of functional operation and maintenance (O&M) systems in the areas. Therefore, a JICA technical cooperation project as SOMAP1 (2005-2007) was implemented with the aim of building and strengthening the operation and maintenance system of the local water supply facilities. Subsequently, the Zambian government decided to adopt the “National Operation and Maintenance Guideline” formulated in SOMAP1 above. Thereafter, SOMAP 2 (2007-2010) was duly carried out to refine the above model. Yet, the establishment and strengthening of the O&M system were much needed then and it was necessary to roll out the program in order to sustainably achieve the better accessibility of safe water in the rural areas across the country.</p>				
Objectives of the Project	<p>Through strengthening the capacity for O&M of water supply facilities and hands-on support to roll out SOMAP O&M model in Mansa, Milenge, Mwense, and Nchelenge Districts in Luapula Province as well as the other target districts on a countrywide scale, the project aims at improving the operation rate of rural water supply facilities, thereby contributing to increasing the proportion of rural residents with access to the safe water supply in Zambia.</p> <ol style="list-style-type: none"> Overall Goal: The proportion of rural residents who have access to a safe and accessible water supply is increased. Project Purpose: The operation rate of rural water supply facilities is improved. 				
Activities of the Project	<ol style="list-style-type: none"> Project Site: All 93 target districts of the National Rural Water Supply and Sanitation Programme (NRWSSP)¹ Main Activities: 1) Strengthening the capacity of the Department of Housing and Infrastructure Development (DHID) for O&M of water supply facilities; 2) implementation of the SOMAP O&M model in the NRWSSP target districts, and 3) supporting the implementation of the SOMAP O&M model in Mansa, Milenge, Mwense, and Nchelenge Districts in Luapula Province. Inputs (to carry out the above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Japanese Side</p> <ol style="list-style-type: none"> Experts: 10 persons Equipment: vehicles, PCs, Printers, Copiers, 13 GPS, pH meter, and the initial stock of spare parts for 4 districts in Luapula, etc. local operating cost </td> <td style="width: 50%; vertical-align: top;"> <p>Zambian Side</p> <ol style="list-style-type: none"> Staff allocated: 106 persons Facilities: a total of three offices in MLGH/HQ, DHID Lusaka, and DHID Luapula and its utilities for the experts Local cost: Administrative and operational expenses </td> </tr> </table>			<p>Japanese Side</p> <ol style="list-style-type: none"> Experts: 10 persons Equipment: vehicles, PCs, Printers, Copiers, 13 GPS, pH meter, and the initial stock of spare parts for 4 districts in Luapula, etc. local operating cost 	<p>Zambian Side</p> <ol style="list-style-type: none"> Staff allocated: 106 persons Facilities: a total of three offices in MLGH/HQ, DHID Lusaka, and DHID Luapula and its utilities for the experts Local cost: Administrative and operational expenses
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Project Period	September 2011 – March 2017	Project Cost	(ex-ante) 478 million yen, (actual) 666 million yen		
Implementing Agency	Ministry of Water Development, Sanitation and Environmental Protection (MWDSEP); has taken over water-related issues from the Ministry of Local Government and Housing (MLGH) and Department of Housing and Infrastructure Development (DHID) since the ministerial reform in 2017.				
Cooperation Agency in Japan	Japan Techno Co., Ltd.				

II. Result of the Evaluation

<Constraints on Evaluation>

Due to travel restrictions and lockdown measures raised during the COVID-19 Pandemic, data gathered in the rural areas during the ex-post evaluation was lower both in quantity and quality as on-site data collection and direct observation were not as feasible as planned. Nonetheless, mitigation measures were taken as follows; 1) rely more on existing monitoring data collected prior to COVID-19, 2) increase scope of desk-based review of administrative data, 3) use of remote data collection and analysis methods where available.

< Special Perspectives Considered in the Ex-Post Evaluation >

The necessity of supplemental data/information to examine the impact

At the outset, the indicator for the overall goal (at least 75% of rural residents use safe water) was set based on a specific design standard within the scope of the project which was the design total population served by protected water points with the aggregated total number of 250 hand pumps in the target districts at that time. Yet, to address local monitoring and evaluation, Management Information System (MIS) was introduced by the project. The MIS stipulated that the percentage was supposed to be calculated based on households/population within 500m (or 30-minute return journey) of a protected functioning water point, and households/population using the protected functioning water point as the main source for drinking at the target districts. At the time of the ex-post evaluation, however, it was deemed that the situation would not allow obtaining justifiable data of each target district to calculate the total percentage within the given timeframe. Thus, to maintain data coherency as much as possible, the achievement level was

¹ Since mid-1990s, the Government of Zambia has implemented reforms on the water supply and sanitation sector, the water sector reform led to the elaboration and adoption of a National Water Policy in 1994, and enactment of the Water Supply and Sanitation Act of 1997. The NRWSSP has been implemented into two phases. The first phase encompassed the period of the Fifth National Development Plan (FNDP) (2006-2010), during which the activities of the program were implemented on Area Based implementation approach. While the second phase of the program (2011-2015) was implemented in the subsequent national development plan period on the basis of nation-wide full-fledged program approach. <Source> African Development Fund Appraisal Report, July 2006, p.1

comprehensively surmised through pertinent background information (e.g., charging water usage) and data of the sample 10 districts from 9 provinces selected for the end-line survey conducted in 2016.

1 Relevance

<Consistency with the Development Policy of Zambia at the Time of Ex-Ante Evaluation >

The project was consistent with the development policies of Zambia at the time of ex-ante evaluation. In order to improve water supply and sanitation in rural areas, the government of Zambia implemented activities based on the NRWSSP (2006-2015) promulgated in 2007. The overall goal was to provide safe and clean water sustainably and equitably to improve the health status and to reduce poverty in the rural areas that would contribute to the achievement of the MDG (Millennium Development Goals) targets of the relevant sectors. In this regard, operation and maintenance of local water supply facilities were one of the seven pillars of the NRWSSP, and the goal was 70-80% of local water supply facilities will be in operation by 2015.

<Consistency with the Development Needs of Zambia at the Time of Ex-Ante Evaluation >

The project was consistent with the needs of Zambia at the time of ex-ante evaluation. Access to safe water in Zambia remained low at 46% in 2008. Also, the maintenance of the water supply facilities was not properly performed, and the decrease in the operation rate was a challenging issue. The Zambian government decided to adopt the “National Operation and Maintenance Guideline” and to deploy it nationwide with the SOMAP O&M model. However, in order to promote the SOMAP O&M model on a nation-wide scale, proper dissemination and deployment activities were required in those provinces where the model had been un-introduced thus far. Also, it was deemed necessary for the implementing agency to further develop the dissemination capacity for the model and to ensure sufficiently equipped for the evaluation and planning of the implementation of the model.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan’s ODA policy towards Zambia. The Country Assistance Program for Zambia (2002) was formulated and both countries have held policy consultations every year. Among the priority areas based on the result of the close consultation, the project was considered to correspond to the two areas: (1) support for poverty reduction through rural development, (2) Human resource development, and system construction for sustainable development.

<Evaluation Result>

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

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved. According to the end-line survey conducted in the 10 selected districts of the 9 provinces in 2016, 77.7% of rural water supply facilities in the 10 target districts were in operation which was slightly below the target value of 80% (Indicator 1). Regarding the average downtime within 14 days, the end-line survey data showed that the percentage increased by 4.87% in comparison to the baseline survey in 2012 (Indicator 2). 71 District Local Authority (DLA) out of 93 target districts of NRWSSP incorporated the rehabilitation programs for the repair of water supply facilities that could not be repaired by communities and Area Pump Menders (APMs) into the District Rural Water Supply and Sanitation (RWSS) Plan (Indicator 3).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have partially continued after the project completion. According to the survey result, the total average percentage of well-functioned water facilities in the 10 sample districts (71~74%) was slightly below target (80%) since 2017. Further, 6 out of the 10 sample districts responded that the average downtime takes less than 2 weeks, whereas the other 4 districts reported that it takes more than 2 weeks. Compared to the baseline data (67%), it slightly improved to reduce the downtime. Although the data was not comparable to the time of project completion, 80% of surveyed districts formulated the rehabilitation program as planned. It is slightly better than the total average of the 93 districts (76%).

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved at the time of ex-post evaluation. According to the survey result, although it is not comprehensive data as described in the section “Special Perspectives Considered in the Ex-Post Evaluation,” 6 districts exceeded the minimum target value of 75% (Indicator 1). And where data available, the percentage of the population with access to safe water generally demonstrated an upward trend after project completion.

<Other Impacts at the time of Ex-post Evaluation>

According to the survey, cross-cutting issues such as gender relations and young people were duly taken into consideration in providing a fair opportunity to represent in the V-WASHE (Village Water, Sanitation and Health Education) committee. As such, they became visible in the decision-making process for the public interests of their community such as hygiene education at school through activities of the V-WASHEs committees. The other unintended impact mentioned was the improvement of sanitation through community-led hand wash campaigns. Also, a notable synergy was that basic accounting and book-keeping skills through training V-WASHE were applied to many other things concerning livelihood in the village and individual households. On the other hand, although the project made pre-warning and suggested preventive measures, there was a concern that handpumps of India Mark II sometimes showed the chemical reaction of metal with water as they might become corrosive. On the other points of concern, there was no resettlement and land acquisition caused by the project, and thus there were no ramifications to do with them.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The operation rate of rural water supply facilities is improved.	Indicator 1: At least 80% of rural water supply facilities in NRWSSP target districts are in operation.	Status of the Achievement: partially achieved (partially continued) (Project Completion) Sample data in the end-line survey showed that 233 units of protected water point with a hand pump were in operation (77.7% of a total 300 water points). (Ex-post Evaluation) According to the survey result, the total average percentage of well-functioned water facilities in 10 sample districts was below 80% (71% in 2017, 72% in

		2018, 74% in 2019, 73% in 2020). Concerning the percentage of charging water usage among 10 districts, 4 out of 10 surveyed districts charge the residents, less than 50% of all. Only two districts had more than 80% charging water usage.																																																																																																											
	Indicator 2: The average downtime of a rural water supply facility is reduced below 14 days for repair works that can be handled by community members and APMs.	Status of the Achievement: partially achieved (partially continued) (Project Completion) There were difficulties with 146 units of 300 samples of protected water points with a hand pump in the period between January and September 2016, of which 63 units (43.15%) were repaired within 14 days, allowing the water points to be recovered. By comparison of 38.28% obtained by the baseline survey in 2012, the percentage of the water points that had been repaired within 14 days increased by 4.87%. (Ex-post Evaluation) According to the survey results, 6 out of 10 districts responded that the average downtime takes less than 2 weeks, whereas the other 4 districts reported that it takes more than 2-week time. According to the end-line survey in 2016, 67% of the handpumps in these 10 districts have required more than 2-week downtime, which may mean that there has been an improvement of the downtime over the last 4 years although no specific records were not presented. In general, it was deemed that the availability of necessary spare parts, proactive V-WASHE committees, APMs, and caretakers were conducive to reduce the downtime.																																																																																																											
	Indicator 3: The DLAs incorporate rehabilitation of a rural water supply facility of which repair work cannot be handled by community members and APMs into the District RWSS Plan.	Status of the Achievement: partially achieved (partially continued) (Project Completion) 71 DLAs (76% of all 93 target districts of NRWSSP) incorporated the rehabilitation programs for the repair of water supply facilities that could not be repaired by communities and APMs into the District RWSS plan. The rehabilitation program was not yet formulated in many of the newly established DLAs. (Ex-post Evaluation) 80% of surveyed districts formulated the rehabilitation program. According to the interviews in each district, availability of funds and support from other donors was the key to a success in the formulation of rehabilitation programs and proper enforcement in order.																																																																																																											
(Overall Goal) The proportion of rural residents who have access to a safe and accessible water supply is increased.	Indicator 1: At least 75% of rural residents use safe water.	(Ex-post Evaluation) partially achieved In light of the original scope of the project, it is hardly conclusive given limited data availability. However, 6 districts exceeded the minimum target value of 75%. And where data available, the percentage of the population with access to safe water demonstrated a largely upward trend. According to the interviews in each district, it was confirmed that those activities and services of V-WASHE were pivotal to make the local community aware of the importance of O&M supported by the beneficiaries-pay principle. That would inevitably affect the sound management of local SOMAP shops to provide needed spare parts in a timely and efficient manner. Table: The Percentage of Local Residents with Access to Safe Water, the Percentage of V-WASHEs Collecting Community User Fee for O&M Services, and Availability of Spare Parts in Local SOMAP Shop in the Selected 10 Target Districts (2017-2020)																																																																																																											
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		Fee collection (%)	No denominator value available			
	Mansa	Spare parts	○	○	○	○
		Access to water (%)	97%	97%	97%	100%
		Fee collection (%)	30%	28%	28%	32%
	Nchelenge	Spare parts	○	○	○	○
		Access to water (%)	100%	100%	100%	100%
		Fee collection (%)	76%	80%	83%	83%
	Chinsali	Spare parts	○	×	×	×
		Access to water (%)	N/A	N/A	N/A	100%
		Fee collection (%)	N/A	N/A	N/A	N/A
		Spare parts	N/A	N/A	N/A	○

Note: ○: regularly provided, △: provided but not regularly, ×: not provided

Source : Field survey report at the target district offices.

3 Efficiency

Both the project cost and project period exceeded the plan (ratio against the plan: 139% and 128%, respectively). The outputs were produced as planned. Thus, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The O&M of water supply facilities in the rural areas has retained its importance in the national policy of the Government of Zambia. The “National Rural Water Supply and Sanitation Programme Phase II” (2016-2030) addressed sustainable O&M for all water supply and sanitation infrastructure in-country. The MWDSEP launched the “Ministerial Action Plan” (2018-2021) in order to provide details of prioritized issues on the O&M, activities, and targets. Furthermore, this was resonated with the “Water Supply and Sanitation Policy” issued in 2020 which has provided the specific direction of relevant sub-sectors of water supply and sanitation.

<Institutional/Organizational Aspect>

The role and responsibility of the promotion of the O&M for water supply facilities were effectively taken over by the MWDSEP as of 2017. The MWDSEP has been responsible for relevant policymaking, planning, budgeting, monitoring, evaluation, and capacity development to ensure the O&M of water supply facilities in rural areas as was the MLGH. The survey results show that it has strengthened the roles and responsibilities of local authorities at the provincial and district levels on the whole. As per the manpower status of the MWDSEP, Provincial offices of 10 provinces, and DLAs of the 93 target districts to ensure the water supply in rural areas, it was reported adequate by the MWDSEP.

<Technical Aspect>

According to the survey results, as the current staff members at each DLA office have been trained and had hands-on experiences after project completion, required skills have been mostly available in the target districts. The O&M for water supply facilities in rural areas has been institutionally retained through the utilization of guidelines to enhance equitable access to safe water. Each Provincial office has carried out technical and supportive supervision on APMs to increase their performance level. Likewise, DLAs have been generally capable of supervision for their water supply facilities through the support of communities, notably the V-WASHE activities at the target districts. Also, it was observed that through hands-on practices at the community level, staff members served to maintain level hand pumps and their relevant facilities through the utilization of training on installation, repair, supply chain, and operation of SOMAP shops.

<Financial Aspect>

The MWDSEP has not guaranteed to disburse the amount of budget as anticipated the lesser amount of revenue for the next fiscal year. Thus, even though the annual budget was allocated, the grants from the central government were not fully disbursed as originally scheduled, some provinces have entirely depended on donors’ financial/technical supports, for example, boreholes were rehabilitated in 2019, 180 units by UNICEF and 282 units by African Development Bank, respectively and in-kind services of local authorities for O&M of water supply facilities.

<Evaluation Result>

In light of the above, Slight problems have been observed in terms of the financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project has partially achieved the Project Purpose and the Overall Goal as rural water supply facilities generally better function and thus, the access of water supply showed an upward trend in the survey of the 10 target districts. As for sustainability, it is deemed technically sufficient to perform each duty and to retain the skill set to promote the rural water supply although the national budget has been precarious to ensure operation thus, it may need to depend on interested donors’ support. As for efficiency, the project cost and period exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

In order to achieve the Overall Goal through enhanced sustainability, it is recommended that the MWDSEP should secure and disburse the budget for a training program for V-WASHES and APMs on the O&M for water supply facilities, primarily to efficiently sensitize the local community with the beneficiaries-pay principle to cover the costs of O&M. As such, it is thus imperative for the MWDSEP to make a concrete plan by the end of 2021, in light of a pivotal role of V-WASHE to promote a sustainable water supply in rural areas through local community support and the sound supply chain of SOMAP shops.

Lessons Learned for JICA

It was observed that import prices of major spare parts have nearly doubled mainly due to the recent depreciation of Zambian Kwacha in the foreign exchange market since 2019. As such, more local APMs could not afford to purchase the spare parts and SOMAP shops became suffering from a smaller margin in tandem with higher costs could not replenish spare parts for local water supply facilities in a timely

manner. Thus, the supply chain was keyed to be weakened. Therefore, when JICA formulates the establishment of a water supply system with a hand pump or any other water facilities under any schemes, essential spare parts and/or materials of the facilities should be procured sustainably within the country to avoid risks of unexpected price fluctuation in the mid and long terms. The cost projection covered the time frame after project completion should be carefully taken into consideration to enhance the sustainability from the project design stage.



Kazungula SOMAP shop



Sesheke hand water pump