

Summary of Terminal Evaluation Results

1. Outline of the Project	
Country: Republic of Sudan	Project title: Project for Human resources Development for Water Supply Phase 2
Issue/Sector: Water Resources Management	Cooperation scheme: Technical Cooperation Project
Division in Charge: Global Environment Department	Total Cost : 615 million Japanese Yen (at the time of the evaluation)
Period of Cooperation	(R/D: 14 August 2011) 1 November 2011 – 30 September 2015 (4 years)
	Partner Country's Implementing Organization: Drinking Water and Sanitation Unit (DWSU) Drinking Water and Sanitation Unit Training Center (DWST), Federal Ministry of Water Resources and Electricity State Water Corporations (SWCs)
Supporting Organization in Japan: Earth System Science Co., Ltd.	
Related Cooperation:	
<p>【JICA】</p> <ul style="list-style-type: none"> ▪ Technical Cooperation Project “Capacity Development Project for the Provision of Services for Basic Human Needs in Kassala” (2011-2014) ▪ Technical Cooperation Project “Project for Human Resources Development for Darfur and the Three Protocol Areas” (2009-2013) ▪ Technical Cooperation Project “Frontline Maternal and Child Health Empowerment Project Phase 2” (2011-2014) <p>【United Nations Children’s Fund: UNICEF】</p> <ul style="list-style-type: none"> ▪ “Water Environment Sanitation (WES) Project” (1996-) <p>【United Nations Office for Project Services: UNOPS】</p> <ul style="list-style-type: none"> ▪ “Darfur Urban Water Supply Project” (2010-2014) <p>【International Organization for Migration: IOM】</p> <ul style="list-style-type: none"> ▪ Water supply Project in South Kordofan 	
1-1. Background of the Project	
<p>In Sudan, access rate to improved water source was 67.5% in 1990⁷. However, the situation has been stagnant at around 65% (2010)⁸ because of the effects of civil wars⁹. Government of Sudan has made efforts on improving water supply facilities with the aim to achieve full coverage of adequate and safe water supply at adequate consumption rates by the end of 2031 as stated in “Quarter Century Strategy for Water Supply, 2007-2031”¹⁰.</p> <p>The Decentralization Law, which was approved in 1994, led the local government to have much authority, transferred from the federal government. Before the decentralization, the Public Water Corporation (hereinafter referred to as “PWC”), which renamed as Drinking Water and Sanitation Unit (hereinafter referred to as “DWSU”¹¹), was responsible for water supply throughout Sudan. Under the decentralization policy, the responsibility for operation and maintenance (O&M) of the</p>	

⁷ Source: WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (<http://www.wssinfo.org/>)

⁸ These figures are average rates of 14 states as of 2010 (Blue Nile, Gedaref, North Kordofan, Northern, Red Sea, River Nile, Sennar, South Kordofan, White Nile, Gezira, Kassala, North Darfur, South Darfur, West Darfur). 91.1% (urban), 56.8% (rural). Source: Documents prepared by JICA experts based on data from 2008 Census and state statistic offices.

⁹ Comprehensive Peace Agreement was signed between northern Sudan and Southern Sudan in 2005 followed by the Darfur Peace Agreement in May 2006 and the Eastern Sudan Peace Agreement in October 2006.

¹⁰ Source: “Quarter Century Strategy for Water Supply First phase programme 2007-2011”, “National Water Corporation, Ministry of Irrigation and Water Resources (2007).” The goal is set at 50 liters per capita per day (L/C/day) for the rural population and 150L/C/day for the urban population. As of 2010, consumption rate is 24.0L/C/Day (18.7 in rural 42.1 in urban) according to the document prepared by JICA experts based on data of SWC and WES projects 2010.

¹¹ Ministry of Irrigation and Water Resources was reformed to Ministry of Water Resources in December 2011 and then to Ministry of Water Resources and Electricity in July 2012. Upon this reform in 2012, PWC changed to DWSU to cover sanitation aspect in 2013.

water supply facilities was transferred from PWC to State Water Corporations (hereinafter referred to as “SWCs”). Therefore, the role of the PWC became limited to water supply policy, the construction of large-scale water supply facilities, coordination of the international cooperation projects, monitoring of SWCs and human resources development. However, the water sector in Sudan faced serious problems associated with lack of budget, human resources, and equipment in most SWCs.

In response, the Human Resources Development Project for Water Supply (hereinafter referred to as “Phase 1”) was implemented with technical cooperation by JICA for 3 years from June 2008 to March 2011. As a result, PWC Training Center, which renamed to Drinking Water and Sanitation Unit Training Center (hereinafter referred to as “DWST”), developed its training implementation capacity¹². On the other hand, the issue of human resources development in the water supply sector in the state level remained to be improved further. Therefore, the Government of Sudan requested the Phase 2 to the Government of Japan with the aim to enhance the management of the water supply system for the entire country. The Project has been carried out since 2011 for the period of 4 years until September 2015.

1-2. Project Overview

In order to improve the water supply services in Sudan, the Project aims to train human resources in the water supply sector through the implementation of training courses by SWCs and DWST.

- (1) **Overall Goal:** Water supply system is properly managed in Sudan.
- (2) **Project Purpose:** Human resources in water supply sector are properly trained in Sudan.
- (3) **Outputs:**
 - 1) Training courses are implemented by DWST based on its mid-term/long-term human resources development plan.
 - 2) Training course implementation structures in Pilot State Water Corporations (PSWCs) are developed by PSWCs in collaboration with DWST.
 - 3) Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.
 - 4) Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.

(4) Inputs

Japanese side:

Short-term Experts:	10 short-term experts (108.74 MM)
Trainees received:	46 persons (for Training in Morocco, including 10 for the plan)
Provision of Equipment:	Equivalent to 245,249,213 JPY
Local Operational Expenses:	Equivalent to 62,607,000 JPY

Sudanese side:

Counterpart Personnel:	Total of 68 C/Ps were assigned by DWSU/DWST (16), White Nile SWC (28), Sennar SWC (24)
Provision of Space:	Project offices (DWST, White Nile SWC, Sennar SWC), Office furniture, communication network, electricity etc., Training facilities and space
Local Cost Sharing:	DWST: Equivalent to 223,226,829 JPY White Nile SWC: Equivalent to 36,197,222 JPY Sennar SWC: Equivalent to 31,906,943 JPY

2. Evaluation Team

Member of Evaluation Team	<Japanese Side>		
	Team leader	Mr. Yukihiro Ejiri	Senior Assistant Director, Water Resources and Disaster Management Group, Global Environment Department, JICA
	Evaluation Planning	Mr. Koji SHIMIZU	Deputy Director, Water Resources Management Team 2, Water Resources and Disaster

¹² SWC was changed to DWSU so as to cover sanitation aspect in 2013, and accordingly PWCT was renamed to DWST.

	Evaluation Analysis <Sudanese Side> Course coordinator	Ms. Hiroyo Onozato Mr. Egbal B. Alamir	Management Group, Global Environment Department, JICA Researcher, Global Link Management Department of Training Management, Drinking Water and Sanitation Unit Training Center (DWST)
Schedule of survey	22 February – 12 March, 2015		Type of Evaluation: Terminal Evaluation

3. Result of Evaluation

3-1. Project Performance

3-1-1. Outputs

(1) Output 1 (Training courses are implemented by DWST based on its Mid-term/ Long-term human resources development plan.)

Output 1 has mostly been achieved by the time of the terminal evaluation as shown in the indicators.

DWST prepared the outline of the “Mid-term and Long-Term Human Resources Development Plan 2012-2026.” JCC discussed and approved it at the 2nd JCC meeting in June 2012. Based on this plan, DWST has been preparing annual training plan (Indicator 1-1). By the Mid-term review in January 2014, it has been confirmed that contribution rates of DWST training coordinators on planning and implementation of training courses reached 100% (Indicator 1-2). DWST has been implementing more than 20 training courses annually (Indicator 1-3). Therefore, it is confirmed that DWST has implemented training courses based on its Mid-term/ Long-term human resources development plan.

(2) Output 2 (Training course implementation structures in PSWCs are developed by PSWCs in collaboration with DWST.)

Output 2 has been achieved by the time of the terminal evaluation as shown in the indicators.

After starting training center in 2012, both PSWCs have achieved target contribution rates (annual average of all courses) of 80% in 2013 (Indicator 2-1). According to the annual training implementation plan prepared, each PSWC have implemented more courses than the previous years (Indicator 2-2). Thus, it is identified that training course implementation structures in PSWCs have been developed by PSWCs.

(3) Output 3 (Monitoring system is established within DWSU and pilot SWCs for training course implementation and O&M of water supply system of PSWCs.)

Output 3 has been achieved by the time of the terminal evaluation as shown in the indicators.

The monitoring manuals were developed by March 2015 and distributed to SWCs as well as to international organizations working in the water supply sector at JCC in March 2015 (Indicator 3-1). Monitoring & evaluation units formulated after the Mid-term review in January 2014 developed the monitoring plan and manuals with formats for training implementation and O&M of water yards¹³. Data of training implementation has been regularly sent from PSWCs to DWST. On the other hand, along with the plans¹⁴, data of each water yard at locality level have been compiled in the database by monitoring & evaluation unit of PSWC. Moreover, in PSWCs, results of monitoring data analysis were compiled in the action plans for rehabilitation of water yards by monitoring & evaluation units. For the rests of the localities, monitoring activities for baseline survey will be completed by December 2015 in Sennar state and by January 2016 in White Nile state (Indicator 3-2).

Therefore, the monitoring system for training implementation has been established by PSWCs. It is confirmed that monitoring for water supply facilities have been started one by one at locality level in pilot states, and the monitoring system has been under establishment.

¹³ Water yard monitoring formats were developed for (1) Baseline survey, (2) Annual survey for SWC monitoring units, (3) Seasonal survey, (4) Monthly survey for SWC locality, and (5) Daily recording for operators.

¹⁴ “Sennar SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014.”, “White Nile SWC Monitoring Plan – Water Supply Facility (Water Yard). November 2014.”

(4) Output 4 (Training course implementation structure is developed within each SWC in Sudan in collaboration with DWST.)

Output 4 has been achieved by the time of the terminal evaluation as shown in indicators.

DWST has been working on finalization of the “Human resources development manual” at the time of the terminal evaluation. Once this manual is created, copies will be distributed to all SWCs (Indicator 4-1). Before the Project, there was no training center at any of SWCs besides DWST. Through Phase 1 and Phase 2, 14 SWCs out of 18 SWCs established training centers. These SWCs hosted Joint Seminar. By November 2014, Joint Seminar has been implemented for 6 times for sharing outputs of PSWCs as well as achievements of other newly established SWC training centers (Indicator 4-2).

Thus, although progresses are varied among different SWCs, it can be said that training course implementation structures have been developed within SWCs in Sudan.

3-1-2. Project Purpose (Human resources in water supply sector are properly trained in Sudan.)

The Project Purpose has been achieved at the time of the terminal evaluation as shown in the indicators.

Total number of the trainees in DWST and SWCs exceeds 3,196 (Indicator 1). Renovation and maintenance of the water yards have been conducted for more than 20 annually in each PSWC. In Year 4, 32 facilities (57 items) in Sennar state and 48 facilities (85 items) in White Nile state have been maintained and/or renovated (since October 2014 as of February 2015) (Indicator 2).

3-2. Evaluation Results

3-2-1. Relevance: High

Relevance of the Project is high. The Project is in line with policies and strategy of the Government of Sudan, the Government of Japan and Japanese technical expertise. In 2 pilot states, collaboration with other JICA technical cooperation projects and scheme have brought about mutual effects and meet the needs of social development.

3-2-2. Effectiveness: High

Effectiveness of the Project is high. Two indicators of the Project Purpose “Human resources in water supply sector are properly trained in Sudan” have been achieved. Achievement of the Project Purpose has been led by 4 Outputs. Moreover, contributing factors for achievement of the Project include the technical exchange with Morocco and also with other JICA technical cooperation projects. For SWCs in the conflict-affected areas where DWST staff and JICA Experts were restricted to travel, capacity building was conducted through offering regular and special training courses at DWST and PSWCs, and training in Morocco.

3-2-3. Efficiency: Relatively high

Efficiency of the Project is relatively high. All Outputs have mostly been achieved by the time of the terminal evaluation. Contributing factors for achieving the Outputs include utilization of experiences gained through DWST training, OJT for some technical courses, and collaboration among stakeholders. Regarding the delay in construction of new Kilo Ten training center, which was designed to have the larger capacities, caused changes in scope of some activities under Output 1. Although DWST has continued training implementation in the existing facilities, DWST has managed implementing the training plan every year at the larger scale than previous years. Regarding monitoring activities for O&M of water facilities, DWSU and PSWCs established monitoring and evaluation department/units after the Mid-term review. As a result, efficiency of Output 3 has negatively been affected.

3-2-4. Impacts: Moderate

Impact of the Project is moderate because Overall Goals is unlikely to be achieved within three to five years after the completion of the Project. In order for water supply facilities in Sudan to be properly managed, it is essential to fulfill external factors (financial, organizational, facilities and equipment, security condition etc.) in addition to the continuation of the Project Purpose. Moreover, it is also prerequisite to establish the monitoring system at every state and grasp the situation of the

existing water supply facilities throughout the country. Considering several external factors and years to be taken to improve the system for water supply facilities, inadequate setting of the Overall Goal resulted in the negative element for assessing the impact.

On the other hand, regarding the indicator set for the Overall Goal “SWC staff utilizes their knowledge and technical skills to maintain and operate water supply facilities”, it is expected to be achieved to some extent in two pilot states and some other states. Good practices have been identified in cases of utilization of trained skills and knowledge by SWC staff. Therefore, if necessary inputs are allocated for O&M of water supply facilities in the sustainable manner, trained SWC staff members, technicians and operators will be able to properly manage water supply facilities in their states and localities with utilization of their knowledge & skills. Other notable ripple effects include 1) increases in inquiry for training courses by international organizations and local organizations in the water supply sector associated with improvement of reputation of DWST and 2) establishment of training centers in 14 SWCs by their self effort.

3-2-5. Sustainability: Relatively high

Sustainability of the Project is relatively high as evidenced by the following factors.

(1) Policy and institutional aspect: High

Importance of the capacity building of human resources in the water supply sector is emphasized in strategies of Sudan. DWSU and DWST as well as PSWCs developed various plans relevant to human resources development, O&M of water yards, and monitoring. In future, if these plans are implemented with proper management of human resources, adequate O&M of water supply facilities will be promoted.

(2) Institutional aspect: High

Regarding human resources development, training implementation structured is established in DWST. If the “Mid-term/long-term human resources development plan 2012-2026” has continuously implemented, DWSU and DWST will be able to increase sustainability of the Project effects. For implementation of the training center action plan for 2015-2018, both PSWCs have strong will to continue training center activities and sufficient number of course coordinators. Regarding O&M of water supply facilities, it is expected to improve quality of O&M of water yards by mobilizing trained staff as well as machinery and equipment provided through the Project. In terms of monitoring of water yards, monitoring structure is clarified in the manual, and both DWSU and PSWCs recognize importance of introducing the constant monitoring system.

(3) Financial aspect: Relatively high

Regarding human resources development, although disbursement of annual budget is depend on the financial condition of federal government for DWST as well as of state government and water tariff revenue for PSWCs, DWST and PSWCs have constantly secured training budget every year throughout the Project. Moreover, both PSWC training centers have prepared action plan for the next 3 years.

Regarding O&M of water supply facilities, SWCs depend on water tariff revenue to cover O&M costs. Therefore, common challenges are remained for all SWCs in how to reduce O&M costs. As for monitoring of water yards by operators and locality staff, costs are also financed by PSWC sector/locality offices. However, PSWCs anticipate that their vehicles and equipment are insufficient to outreach all the water yards that are mostly in remote areas in the vast extent of land.

(4) Technical aspect: Relatively high

Regarding human resources development, DWST became the main training center for the water supply sector in Sudan. In PSWCs, training center directors and coordinators are confident about training management by utilizing the manuals, methods, tools and equipment introduced by the Project. Regarding O&M of water supply facilities, DWST has been taking initiative in introducing new technology to their training courses. On the other hand, in order to maximize the effect of training and link to the quality O&M of water supply facilities, C/Ps in PSWCs recognize that further technical supports are in needs for monitoring activities as well as technical training activities in O&M of water supply facilities.

3-3. Factors promoting better implementation process

(1) Utilization of useful capacity development methods in implementation of activities

The following methods have led to promoting generation of the Project effects.

- Training management cycle, evaluation method and budget planning tools developed at DWST in Phase 1
- Awarding system for the trainees with high technical levels
- Technical exchange among SWCs
- Joint seminar and study tours
- Training in Morocco and dispatch of experts from Morocco
- Collaboration with other JICA Projects and Program

(2) Project management system

Relationship among C/P organizations had already been developed through Phase 1. C/Ps and JICA Experts have activated communications through JCC meetings, series of the Joint Seminar and regular meetings of SWC DGs with DWSU and DWST. Moreover, team work spirit of C/Ps have strengthened through the Project and brought about effective Project management.

(3) Appropriate assignment of C/Ps

Those who were trained in Phase 1 played significant roles as training center directors of SWCs as well as training instructors and coordinators in PSWCs.

(4) High recognition and participations of DWSU, DWST, SWCs

Through Phase 1 and Phase 2, DWSU and DWST staff members have highly recognized the Project activities. SWCs have highly recognize the Project as reflected in the establishment and operations of training centers in 14 states and their active participations in JCC, Joint Seminar and training activities.

(5) Involvement of other stakeholders

Through training activities and Joint seminar, other organizations besides SWCs involved in the Project as trainees. Moreover, international organizations collaborated with DWST in human resources development in the water, sanitation and hygiene sector.

3-4. Factors inhibiting the Project process

(1) Factors concerning to Planning (Delay in Changes in pre-condition for Output 1 & Output 3)

• Delay in construction of new Kilo Ten training center, which was designed to have the larger capacities, caused changes in scope of some activities in Output 1. Although DWST has continued training implementation in the existing facilities, DWST has managed implementing the training plan every year at the larger scale than previous years.

• There was a delay in establishment of the monitoring units. After the Mid-term review in January 2014, DWSU and PSWCs formulated the monitoring and evaluation department/units and started monitoring activities (baseline survey) in Year 4. It is planned to complete the baseline survey for all localities by January 2016 and then start the regular monitoring accordingly. It is common understanding among C/Ps and JICA Experts that more time and inputs are necessary to monitor O&M status of all the existing water yards most of which are located in remote areas.

3-5. Conclusion

Among five evaluation criteria, *Relevance* and *Effectiveness* of the Project are evaluated high. *Efficiency* and *Sustainability* of the Project are evaluated relatively high. *Impact* of the Project is evaluated moderate because of the unlikeliness of achievement of the Overall Goal within three to five years after the Project completion. However, good practices have been identified such as utilization of trained skills and knowledge by SWCs staff and their contributions on improvement of O&M of water supply facilities. Common challenges are remained for PSWCs to involve all the operators and locality offices and make the monitoring system function to cover all water yards. Thus *Sustainability* of the Project is evaluated relatively high.

3-6.Recommendations

In order to secure sustainability of the Project and fill the gap to achieve the overall goal, recommendations are made to DWSU, DWST and PSWCs on the following points.

- (1) To provide technical support to SWCs for strengthening their training management system
- (2) To reflecting the monitoring results to the next WASH strategic plan
- (3) To introduce the monitoring system to other SWCs and other types of water facilities
- (4) To continue technical cooperation with Morocco
- (5) To establish new Kilo Ten Training Center

3-7.Lessons Learned

In order to increase ownership of the C/Ps for the Project, the following methods were proved for maximizing their effectiveness.

- Learning from experiences of Morocco in the water supply sector which has similarities with Sudan
- Award system for the best trainees and best training center to encourage C/Ps for further improvement of their organizations associated with increasing their sense of ownership
- Joint seminar hosted in various states for sharing information and experiences among SWCs and other stakeholders in water supply development