

Country Name	<b>Ethiopian Water Technology Centre (EWTEC) Project Phase III</b>
Federal Republic of Ethiopia	

**I. Project Outline**

Background	In Ethiopia, the access ratio to the safe water was 22%, much lower than the Sub Saharan average (58%) (2002). Through the Groundwater Development and Water Supply Training Project (1998-2003) and the Ethiopia Water Technology Centre (EWTEC) Project (2005-2008), JICA supported establishment of EWTEC, operation of training courses and material development based on the research activities. EWTEC came to be known as the center of capacity building for the water resource development and decided to be upgraded to a public institute. Further support was needed for strengthening EWTEC to be a sustainable center which can meet various needs and provide quality training courses.		
Objectives of the Project	By strengthening the training monitoring and evaluation system, improving the capacity of EWTEC personnel for training provision and organizational management, the project aimed at strengthening the capacity of EWTEC as a core training center for water supply technicians and engineers, thereby contributing to the increase in the number of skilled human resources to be engaged in groundwater/water supply management for sustainable construction and maintenance of water supply facilities in Ethiopia. 1. Overall Goal: The number of skilled human resources who deal with groundwater/water supply management for sustainable water supply construction and maintenance in Ethiopia is increased. 2. Project Purpose: Capacity of EWTEC as a core training center for water supply technicians and engineers of Ethiopia is strengthened. Note: EWTEC was restructured to the Ethiopian Water Technology Institute (EWTI) during the project period.		
Activities of the project	1. Project site: Ethiopia 2. Main activities: Revising training curriculums and materials, conduct of the needs assessment and impact evaluation, developing final exam tests, instructors' database, training of the coordinators and instructors, development of the strategic plan, etc. 3. Inputs (to carry out above activities) Japanese Side 1) Experts from Japan: 17 persons 2) Training in Japan: 11 persons 3) Equipment: vehicle, PCs, GPS equipment, etc. 4) Operation cost for hiring local consultants, travel expenses, etc. Ethiopian Side 1) Staff allocated: 25 persons 2) Land and facilities: Office space for JICA experts. 3) Operation cost.		
Project Period	January 2009 to December 2013	Project Cost	(ex-ante) 490 million yen, (actual) 687 million yen
Implementing Agency	Ministry of Water, Irrigation and Electricity (Restructured from the Ministry of Water Resources in 2010)		
Cooperation Agency in Japan	Kokusai Kogyo Co., Ltd.		

**II. Result of the Evaluation**

[Special perspectives of evaluation considered at the ex-post evaluation]

- In PDM, the Indicator 1 of the Overall Goal had been set as "Approximately 6,000 technicians and engineers among the Regional Water Bureau (RWB), Zonal Water Resource Development Office (ZWRO), Town Water Supply Service (TWSSO), Woreda Water Office (WVO), Government enterprises, Technical and Vocational Education and Training College (TVETC) instructors, private sector (consulting & drilling companies), and NGOs complete EWTEC training." On the other hand, EWTI's Mid-Term Strategic Plan (2013-2015) targeted 2,093 training participants. In the ex-post evaluation, training achievement was compared with the latter target figure. This target figure is considered appropriate from the following reasons: 1) EWTI's commitment shown in the Mid-Term Strategic Plan, and 2) expectation for the strengthened capacity of EWTI on training management based on the project achievement (1,581 training participants during the project period).

- In PDM, the Indicator 2 of the Overall Goal had been set as "Knowledge and skills acquired by trainees are transferred to other colleagues in training participating organizations." However, it is one of the effects which would be brought by the training participants of EWTEC training (Overall Goal), and furthermore, it was expected difficult to collect and examine this information in terms of the quantity and objectiveness. Therefore, this information was interpreted as not the Overall Goal but an expected impact. However, no relevant information could not be collected from the training participants, as it was difficult to contact each of them individually.

**1 Relevance**

<Consistency with the Development Policy of Ethiopia at the time of ex-ante evaluation and project completion>

The water sector was prioritized in "Ethiopia: Building on Progress – A Plan for Accelerated and Sustained Development to End Poverty" (2005-2009) and "Growth and Transformation Plan (GTP)" (2010-2014). And, increasing the water supply ratio in the rural areas and training the personnel for water supply were targeted in the "Universal Access Programme", which was effective during the project period. Thus, the project was relevant with the development policy of Ethiopia at the time of the ex-ante evaluation and project completion.

<Consistency with the Development Needs of Ethiopia at the time of ex-ante evaluation and project completion >

In Ethiopia, the access ratio to the safe water was as low as 22%, much lower than the Sub Saharan average. Though the Government of Ethiopia implemented programs for water resource development and water supply, there were not sufficient skilled personnel of both public and private sectors. There were needs for capacity building of EWTI at both the time of the ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

In the Country Assistance Program for Ethiopia (2008), one of the priority areas was "water." Related to this, it was described that two different approaches would be taken for the purpose of securing drinking water for rural villages: development of facilities for water-supply with easy maintenance and building capacity of people to maintain water-supplying facilities. Thus, the project was relevant with Japan's ODA policy at the time of the ex-ante evaluation.

<Evaluation Result>

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

## 2 Effectiveness/Impact

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

The Project Purpose was mostly achieved by the project completion. Through the project activities, EWTEC officers acquired sufficient capacity for training management, though it varied among them (Indicator 2). Certificates issued by EWTEC were well acknowledged in the water sector (Indicator 1), especially that of the drilling technology course, as they became advantageous for getting jobs. In August 2013, EWTEC was officially approved by the prime minister's office and become a public training institute as EWTI, and it started to function as an Assessment Center in the water sector to conduct assessment of candidates for certification of the Ethiopian Occupational Standard (EOS). The draft of the Mid-Term Strategic Plan (2013-2015) was developed and shared with related organizations and donors (Indicator 3). After becoming EWTI, it presented the budget plan to the Ministry of Finance and Economic Development (MFED) (Indicator 4).

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

The project effects have partially continued. EWTI has sustained its position as an official training institute (WASH<sup>1</sup> Training Center of Excellence) and Assessment Center in the water sector. The Mid-Term Strategic Plan (2013-2015) which was drafted during the project period was officially approved in 2014. When the top management was changed in 2015, the Business Process Reengineering (BPR) was developed for renovating the organizational structure and work process, which was officially approved in 2016. Furthermore, training plans were newly developed in accordance with the GTP II. The training management process was developed based on BPR, from the training needs survey, curriculum revision and design, recruitment of trainees, implementation, to the assessment. Thus, EWTI has provided short-term training courses on groundwater investigation, drilling technology, well rehabilitation and diagnosis, drilling machinery maintenance, among others, for the water sector professionals, instructors and students of TVETCs. It has not conducted long-term courses, because, according to the training needs assessment conducted by EWTI in early 2017, majority of the organizations of the trainees have demanded short-term training courses not long-term courses. Another reason is that the curriculum not only needs to satisfy some criteria such as accordance with EOS and appropriate proportion of the theoretical and practical parts, but also depends much on other organizations' preparation and coordination<sup>2</sup>.

Besides, EWTI has started the post-graduate diploma course on meteorology since 2015 and conducted 7 international courses on ground water investigation in 2016.

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

The Overall Goal has not been achieved. Against the target set forth in the Mid-Term Strategic Plan by 2015 (2,093), a total of 656 completed training courses, much less than planned. The reason is, first, that EWTI lacked concrete plans for implementing training courses due to the weak managerial structure, even though it had the Mid-Term Strategic Plan. Second, EWTI did not secure skilled instructors and training materials. Third, the recruitment process was delayed and EWTI could not set a sufficient application period. Fourth, there were some organizations which hesitated to send its staff during the work time. No course was conducted in 2013, but since 2014 the number of the training participants has almost doubled each year. One of the promoting factors is that restructured EWTI has developed clearer work process. Another factor is that the facility was expanded to provide training in 7 rooms and receive 240 trainees at the dormitory with EWTI's own budget.

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

It could not be confirmed if the training participants have shared the gained knowledge and skills with their colleagues in the workplace. No other particular impact has been confirmed at the ex-post evaluation.

<Evaluation Result>

In light of the above, the project purpose was mostly achieved and the effects have partially continued. The Overall Goal has not been achieved. However, provision of training courses has been shown an increasing trend after BPR. Therefore, the effectiveness/impact of the project is fair.

### Achievement of the Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Capacity of EWTEC as a core training center for water supply technicians and engineers of Ethiopia is strengthened.	1. EWTEC Certificates are well acknowledged as a technical certification in the water sector.	Status of achievement: <u>Achieved (Continued).</u> (Project Completion) - Certificates issued by EWTEC were well acknowledged in the water sector, as EWTEC become a public institute as EWTI. (Ex-post Evaluation) - EWTI has functioned as an Assessment Center in the water sector.
	2. EWTECs officers have sufficient knowledge to assess needs, plan, coordinate, conduct, and evaluate training activities	Status of achievement: <u>Achieved (Continued).</u> (Project Completion) - EWTEC acquired sufficient capacity to plan, coordinate and evaluate the courses, though, in conducting training; there were needs in capacity building of staff in some courses.

<sup>1</sup> WASH stands for "Water, Sanitation and Hygiene." WASH Program has been implemented nationwide with support of UNICEF and other donors for improving sanitation and hygiene.

<sup>2</sup> Training contents are developed by the related ministries in collaboration with and business sectors and decided by the Federal TVET Agency. Then, curriculum is developed by each training institute.

		(Ex-post Evaluation) - EWTI itself plans and conducts training needs assessment to evaluate current training programs. EWTI developed a training management system, modifying the training coordination system developed by the project. EWTI has introduced new approaches such as the Trainees Record Book, Progress Chart and Evaluation before and after the delivery of training. - The training management process was renewed based on BPR.																																																											
	3. Mid- to Long-term Strategy of EWTEC is approved by MoWIE, and is acknowledged by training participating organizations and donors.	Status of achievement: <u>Partially achieved (Partially continued).</u> (Project Completion) - The draft of the Mid-Term Strategic Plan was developed. - EWTI was described as a WASH Training Center of Excellence in the final program document of the One WASH National Program launched in September 2013. Responsibilities and strategies were shared with related organizations and donors. (Ex-post Evaluation) - EWTI has implemented its activities based on the Mid-Term Strategic Plan which was approved in August 2014 by MoWIE, but training was not conducted as planned. EWTI's BPR including organizational structure, work process and guidelines was approved by the Prime Minister's Office in January 2016. - EWTI has been positioned as a WASH Training Center of Excellence of the national program.																																																											
	4. Financial plan to implement the operational plan of the Strategy is endorsed by MoWIE	Status of achievement: <u>Partially achieved (Continued).</u> (Project Completion) - Under the provisionally appointed director general, an operational plan was prepared and based on this a lump sum budget for 2014/15 was notified to MFED as of November 2013. (Ex-post Evaluation) - EWTI's financial plan was approved by MoWIE in 2015.																																																											
(Overall goal) The number of skilled human resources who deal with groundwater/water supply management for sustainable water supply construction and maintenance in Ethiopia is increased.	1. Approximately 6,000 technicians and engineers among RWB, ZWRO, TWSSO, WWO, Government enterprises, TVETC instructors, private sector (consulting & Drilling companies), and NGOs complete EWTEC training.  Note: The target number of the training participants was 2,093 in the Mid-Term Strategic Plan.	Status of achievement: <u>Not achieved.</u> (Ex-post Evaluation) - The Mid-Term Strategic Plan (2013-2015) targeted 2,093 training participants (1,787 for short-term courses and 306 for long-term courses). By 2015, there were 656 participants for the short-term courses (following table) but no participants for the long-term training courses.																																																											
		<table border="1"> <thead> <tr> <th></th> <th></th> <th>2013</th> <th>2014</th> <th>2015</th> <th>Total (-2015)</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Number of water sector professionals</td> <td>Plan</td> <td>52</td> <td>305</td> <td>610</td> <td>967</td> <td>NA</td> </tr> <tr> <td>Actual</td> <td>0</td> <td>153</td> <td>207</td> <td>360</td> <td>452</td> </tr> <tr> <td rowspan="2">Number of water TVETC trainees (at regional TVETCs)</td> <td>Plan</td> <td>120</td> <td>200</td> <td>320</td> <td>640</td> <td>NA</td> </tr> <tr> <td>Actual</td> <td>0</td> <td>50</td> <td>228</td> <td>278</td> <td>268</td> </tr> <tr> <td rowspan="2">Number of water TVETC lecturers</td> <td>Plan</td> <td>18</td> <td>54</td> <td>108</td> <td>180</td> <td>NA</td> </tr> <tr> <td>Actual</td> <td>0</td> <td>18</td> <td>0</td> <td>18</td> <td>72</td> </tr> <tr> <td rowspan="2">Total</td> <td>Plan</td> <td>190</td> <td>559</td> <td>1,038</td> <td>1,787</td> <td>925</td> </tr> <tr> <td>Actual</td> <td>0</td> <td>221</td> <td>435</td> <td>656</td> <td>792</td> </tr> </tbody> </table>			2013	2014	2015	Total (-2015)	2016	Number of water sector professionals	Plan	52	305	610	967	NA	Actual	0	153	207	360	452	Number of water TVETC trainees (at regional TVETCs)	Plan	120	200	320	640	NA	Actual	0	50	228	278	268	Number of water TVETC lecturers	Plan	18	54	108	180	NA	Actual	0	18	0	18	72	Total	Plan	190	559	1,038	1,787	925	Actual	0	221	435	656	792
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	2. Knowledge and skills acquired by trainees are transferred to other colleagues in training participating organizations.	Status of achievement: <u>To be verified as other impacts.</u> (Ex-post Evaluation) - (Thought it was planned to be verified as other expected impact,) it could not be confirmed if the training participants have shared the gained knowledge and skills with their colleagues in the workplace.																																																											

Source: Project Completion Report, Detailed Design Survey Report of the Project for Strengthening Capacity for Training Operation and Management for Ethiopian Water Technology Institute, questionnaire and interview survey with EWTI.

### 3 Efficiency

Outputs were produced as planned. The project period was as planned (ratio against the plan: 100%), but the project cost exceeded the plan (ratio against the plan: 140%), because JICA experts were dispatched for a longer period than planned in order to support organizational transition of EWTEC to EWTI. Therefore, the project efficiency is fair.

### 4 Sustainability

#### <Policy Aspect>

Water supply is prioritized in the national development plan GTP II which is effective up to 2020. Objectives include increases in the water supply coverage in both rural and urban areas. GTP II also prioritizes capacity building of the personnel in the water sector.

#### <Institutional Aspect>

At EWTI, under the General Directorate Office, there are 8 Directorates and offices of planning and information management and registration. Among 324 positions, 165 are filled at the time of the ex-post evaluation. EWTI plans to fill vacant posts gradually. According to EWTI, the number of the training instructors is not sufficient in terms of quantity and expertise, and therefore EWTI invites professionals from the private sector and ex-personnel as provisional instructors. And, EWTI makes efforts to prevent the staff turnover, such as providing its personnel with scholarship for their master's or doctor's degree on conditions that they will continue working after the study at least for the same period as the scholarship. BRP defines four core work process of EWTI and one of them is the training. Another core process is related to the support of TVETC and EOS. EWTI's works are evaluated by the federal parliament, Ministry of Finance and Economic Cooperation and MoWIE, since it is an official training institute.

#### <Technical Aspect>

According to EWTI, its training coordinators and instructors do not have sufficient knowledge and skills to perform their

responsibilities, as they have difficulties in conducting training courses which meet the changing market needs. Training materials developed by the project have been used but need to be revised to match the current training contents. Training equipment and materials are sufficient for some courses, but not for other new courses such as that on water utility management, solid waste management, irrigation, and so on, due to the budget limitations. To solve this issue, EWTI collaborates with TVETCs, private companies and other organizations for using their facility and equipment for the training purposes. The database of the external instructors developed by the project is not used, but the reason was not verified at the ex-post evaluation. For further capacity development, EWTI and JICA have implemented the Project for Strengthening Capacity for Training Operation and Management for Ethiopian Water Technology Institute to strengthen EWTI's capacity for training management and implementation including training of the lecturers (2017-2020).

#### <Financial Aspect>

The budget source of EWTI is the allocation from the federal government. The budget has been increasing (15 million ETB in 2015, 30 million ETB in 2016 and 55 million planned in 2017), and it has been sufficient for conducting most training courses, as EWTI has collaboration with TVETC and private companies, according to EWTI. On the other hand, some training courses lack sufficient equipment and materials due to the budget shortage. Besides the budget from the government, EWTI has got financial support from the King of Morocco Foundation for construction of the water quality laboratory.

#### <Evaluation Result>

In light of the above, problems have been observed in terms of the institutional, technical and financial aspects of the related organizations. Therefore, the sustainability of the effectiveness through the project is fair.

#### 5 Summary of the Evaluation

Through the project activities, EWTEC strengthened its capacity as a training center for technicians and engineers in the water sector. It was upgraded to EWTI, an official training institute, and has sustained its functions. EWTI has conducted training courses, but not to the extent targeted in the plan by 2015 developed during the project period. Regarding the sustainability, EWTI faces issues of shortage of the budget and personnel including instructors. However, since the change of the top management, EWTI has renovated the organizations structure and work process and the number of the conducted trainings has been on an increasing trend. As for the efficiency, the project cost exceeded the plan.

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

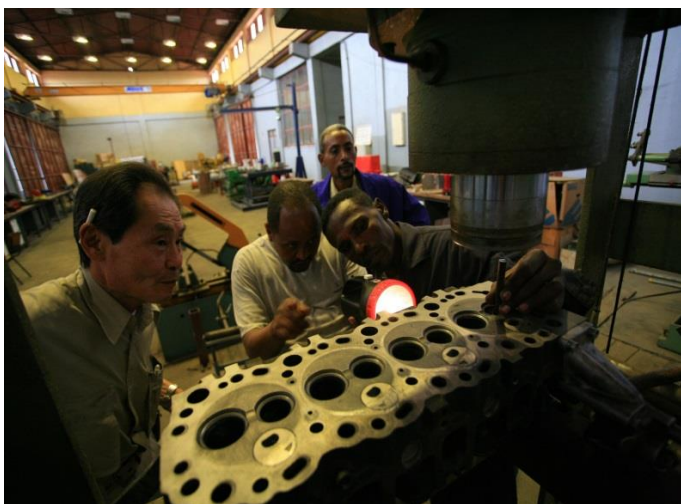
### III. Recommendations & Lessons Learned

#### Recommendations for Implementing agency:

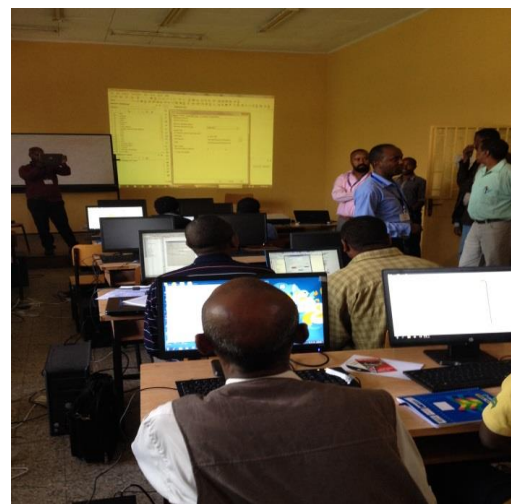
-It is recommended to EWTI to assess the market needs to revise the training curriculum as an activity of the ongoing project.

#### Lessons learned for JICA:

- After EWTEC was grown to EWTI, the draft of the Mid-Term Strategic Plan was prepared in alignment with GTP by the project completion (2013). The draft was approved after the project completion (2014), but most of the planned trainings were not implemented, mainly due to weak top management and high staff turnover. After that (2015), GTP was revised to GTP II and the top management of EWTI was changed, which was followed by the revision of training plans as a fresh start. In case the project is completed right before the preparation of the succeeding national development plan, the project should collect information on the future direction of the succeeding national development plan with the implementing agency and even higher up ministries on the possible revision of the national policies and the implementing agency's strategy from the early timing so that they could be reflected in the plan of the implementing agency for its sustainable use.



Trainee's at EWTI workshop (Practical session)



Trainee's at EWTI class room (Theoretical session)