4. RECOMMENDATIONS

4.1 Recommendations for the actions to be taken before the end of the Project

(1) To ensure the achievement of Output 4(WDM), JICA will start necessary preparation to extend the project period;

(2) The Project will summarise, in its Final Report, the economic effect of the NRW/SOP activities undertaken during this Project, and share the results with the Egyptian counterparts;

(3) The Project will highlight in its Final Report the findings on the design of the facilities from the viewpoint of facility operators.

4.2 Recommendations for the actions to be taken after the Project

(1) HCWW will share the summary of the findings on the facility design mentioned in 1.(3), with the NOPWASD stakeholders in charge of design and construction supervision of these facilities. HCWW will also make its utmost efforts to promote increased information-sharing between the contractors and the operators, through such actions as hosting an opportunity for the NOPWASD stakeholders to visit the facilities that participated in this Project.

(2) To sustain and disseminate the outcome of this Project, GHAPWASCO and MCWW undertake the following:

1) For NRW, ensure that the "5-year Plan for Non-revenue Water Reduction" formulated in this Project will be implemented. The two ACs will also undertake the following measures to facilitate the NRW activities.

- Maintain the current staff allocation and implementation arrangement for NRW(both at HQ and at Markaz branches), and increase the collaboration with each branch;
- Provide to the NRW teams the vehicle(s) and equipment necessary for NRW activities.

2) For SOP, ensure the implementation of SOP dissemination plans created in this Project. The two ACs also regularly undertake the following actions to facilitate the implementation of the plans.

- Purchase of spare parts necessary for the O&M at WTP and IMRP;
- Calibration of instrumentation devices.

(3) To achieve the Super Goal of this Project, GHAPWASCO, MCWW, and SHAPWASCO will extend the project activities also to other Governorates, upon the completion of the dissemination within their Governorates.

(4) To sustain the skills and motivation of the staff involved in this Project, the GHAPWASCO and MCWW will take initiatives to promote the sharing of experiences and outputs of this Project. An example of possible actions they could take is to utilize the network fostered in this Project to organize joint seminars, where the operational-level staff will be given opportunities to share their experiences with other ACs.

(5) To ensure correct data collection and improve the water fee collection rate, HCWW, GHAPWASCO, MCWW, and SHAPWASCO will make utmost efforts to sensitize the water users on the need for regular replacement of customer water meters. The four organizations also discuss concrete measures to promote the replacement of the meters by the users. HCWW should consider the house connections (including the meters) to be the property of the ACs instead of the customers, to ensure the maintenance and replacement of these meters.

(6) After confirming the effects of Output 4 activities, SHAPWASCO will apply the WDM activities to other water distribution facilities within Sharkiya governorate which were not covered in this Project. In so doing, SHAPWASCO will ensure not only the dissemination of the remote monitoring system, but also of the water distribution management capacity to address the issues identified through the monitoring. With precise data acquired through monitoring, SHAPWASCO is recommended to analyse the present conditions of water distribution in Zagazig, and establish countermeasures to solve the problems such as low service pressure and intermittent water supply.

(7) SHAPWASCO will ensure the proper maintenance and management of the remote monitoring system provided by the Project. In so doing, SHAPWASCO will establish a maintenance agreement with the approval firm familiar with this system, to address any problem that may arise with the software, and undertake upgrading of the software in cooperation with the supplier. SHAPWASCO will also secure the budget to address any problem relating to the system that cannot be covered by the supplier.

ANNEX 1: Project Design Matrix (PDM3)

別添資料3

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

Dated October 30, 2013

Project Site : Sharkiya Governorate, Gharbia Governorate, Minufia Governorate (Nile Delta Area)

Duration : FY2011-FY2014

Target Group : Staff of SHAPWASCO, GHAPWASCO, MCWW

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
【Super Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Nile Delta Area	Performance Indicators (PIs) in the fields of management capacity of operation and maintenance are improved in Nile Delta Area	Quarterly Reports of all water supply companies in Nile Delta Area submitted to HCWW	
【Overall Goal】 Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates	PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	Central and local government budget for development of water supply facilities is allocated appropriately
【Project Purpose】 Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates	PIs (*1) in the fields of management capacity of operation and maintenance are improved at the model areas/facilities	Quarterly reports of SHAPWASCO, GHAPWASCO, MCWW	
【Output】 1) Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened	a. More than 3 members each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are approved as trainers by Steering Committee b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team	a. Certification of Training b. Reports of workshops	Employees who received trainings by the Project will continuously work for SHAPWASCO, GHAPWASCO, MCWW Personnel transfer of executive management will not affect the implementation of the Project
2) Based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates	a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation b. The model facilities are operated and maintained based on SOP c. Improvement of PIs for the model facilities are evaluated based on SOP	a, b, c. Project Progress Reports	
3) The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates	a. More than 80% of NRW teams members rates understanding of trainings more than 3 on the 5-scale evaluation b. Water balance analysis is conducted properly for the 3 model areas c. 100% of detected leakage is repaired at the model area	a, b, c. Project Progress Reports	
4) The water distribution management capacity is improved in Sharkiya Governorate as an advanced model	a. Water distribution is managed based on SOP at the model areas b. Issues on water distribution capacity are reported to top management of SHAPWASCO	a, b. Project Progress Reports	
0) The project is managed and coordinated properly	a. Agreement on the coordination among SHAPWASCO・GHAPWASCO・MCWW is prepared b. Project activities are regularly monitored based on PO/APO	a. Agreement Document b. Project Progress Reports	

*1 PIs

SOP: a. Energy consumption per m^3 of water production (kWh/m^3) b. Amount of alum sulfate/ chlorine / potassium permanganate used per m^3 of water production (g/m^3)
c. Ratio of effective utilization of raw water (%)

NRW: a. NRW ratio (%) b. Reduction ratio of NRW (%)

WDM: a. Number of complaints per 1000 connections on water suspension and low pressure b. Ratio of inappropriate pressure of water distribution (%) c. Ratio of public opinion mentioning enough pressure (%)

	Activities	Inputs	Important Assumption
1-1	Conduct management training for the top management	**Japanese side** 1) Japanese Experts • Chief advisor/water supply planning • NRW reduction management • Leakage detection • Water Treatment • Water quality • Electrical equipment • Mechanical equipment • Distribution network • Others (if necessary) 2) Local Expert 3) Equipment 4) Training in Japan 5) Local Cost **Egyptian side** 1) Counterpart Personnel • Project Director: Chairman, HCWW • Project Manager: Vice Chairman, HCWW • Co-Project Manager: Chairman, SHAPWASCO Chairman, GHAPWASCO Chairman, MCWW • SOP Team • NRW Team 2) Office space and facilities for the experts 3) Equipment 4) Necessary Information 5) Local Cost	Budget for the Project is allocated as planed by HCWW, SHAPWASCO, GHAPWASCO, and MCWW 【Pre-condition】 Budget for HRD is allocated properly to SHAPWASCO, GHAPWASCO and MCWW by HCWW
1-2	Conduct Training of Trainers (TOT) for developing SOP		
1-3	Conduct TOT for NRW reduction		
1-4	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops		
2-1	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates		
2-2	Select 3 model facilities in Gharbia and Minufia Governorates each		
2-3	Organize SOP teams		
2-4	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate		
2-5	Revise SOPs of Sharkiya Governorate, if necessary		
2-6	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO		
2-7	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance		
2-8	Monitor the progress of SOP activities		
2-9	Draft the policy/plan for disseminating SOP to the other Marakazes		
3-1	Analyze the current situation on NRW in Gharbia and Minufia Governorates		
3-2	Select 3 model areas for NRW reduction in Gharbia and Minufia Governorates each		
3-3	Organize NRW reduction teams		
3-4	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO		
3-5	Conduct training on general practice of NRW reduction		
3-6	Conduct training at the training yard in Sharkiya Governorate		
3-7	Conduct training at model areas for water distribution management in Sharkiya Governorate		
3-8	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates		
3-9	Make water balance analysis at model areas		
3-10	Conduct leakage detection survey at model areas		
3-11	Make water balance analysis after repair works		
3-12	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes		
4-1	Discuss methods and conduct survey for water distribution management		
4-2	Conduct training for water distribution management		
4-3	Formulate a plan for water distribution management		
4-4	Install the equipment for water distribution management at the model area		
4-5	Operate the system		
4-6	Develop SOP for water distribution management		
4-7	Evaluate the operation and SOP for water distribution management		
0-1	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW		
0-2	Discuss the contents, the manners for the cooperation among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee		
0-3	Organize JCC at least once a year		
0-4	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first Joint Coordination Committee (JCC)		
0-5	Prepare a draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the first JCC		
0-6	Monitor the progress of PO/APO and achievement of the Indicators of the PDM		

別添資料3

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

ANNEX 2: Plan of Operation (PO-3)

30 October 2013

	Items	Year1				Year2				Year3				Year3				Person in Charge	Major Input		Remarks
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		Japan	Egypt	
1. Human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened																					
1-1.	Conduct management training for the top management			☆														HC, SH, G,M	☆ Training in Japan		
1-2.	Conduct Training of Trainers (TOT) for developing SOP			☆														SH, G,M	JICA Experts Local Exerts ☆ Training in Japan		Year 1: Mainly for SH Year 3: Mainly for G, M
1-3.	Conduct TOT for NRW reduction			☆														SH, G,M	JICA Experts Local Experts ☆ Training in Japan		
1-4.	Disseminate the contents, the manners and the results of the collaboration among SHAPWASCO, GHAPWASCO and MCWW to the water supply companies in Nile Delta Area through reports and workshops																	HC, SH, G,M	JICA Experts		
2. Based on the experiences of SHAPWASCO, SOPs are development and utilized at the model facilities in Gharbia and Minufia Governorates																					
2-1.	Survey the current conditions of water supply facilities in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
2-2.	Select 3 model facilities in Gharbia and Minufia Governorates each																	G,M	JICA Experts	SH	
2-3.	Organize SOP teams																	G,M	JICA Experts	SH	
2-4.	Conduct training for developing and applying SOPs at the facilities of Sharkiya Governorate																	G,M	JICA Experts	SH	
2-5.	Revise SOPs of Sharkiya Governorate, if necessary																	G,M	JICA Experts	SH	
2-6.	Develop SOPs for model facilities in Gharbia and Minufia Governorates based on SOPs for SHAPWASCO																	G,M	JICA Experts	SH	
2-7.	Conduct On-the-Job Training for GHAPWASCO and MCWW to apply SOPs in operation and maintenance																	G,M	JICA Experts	SH	
2-8.	Monitor the progress of SOP activities																	G,M	JICA Experts	SH	
2-9.	Draft the policy/plan for disseminating SOP to the other Marakazes																	G,M	JICA Experts	SH	
3. The institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates																					
3-1.	Analyze the current situation on NRW in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
3-2.	Select 3 model areas in Gharbia and Minufia Governorates each																	G,M	JICA Experts	SH	
3-3.	Organize NRW reduction teams																	G,M	JICA Experts	SH	
3-4.	Formulate an action plan for NRW reduction activities based on the action plan for SHAPWASCO																	G,M	JICA Experts	SH	
3-5.	Conduct training on general practice of NRW reduction																	G,M	JICA Experts	SH	
3-6.	Conduct training at the training yard in Sharkiya Governorate																	G,M	JICA Experts ☆ Training in Japan	SH	
3-7.	Conduct training at model areas for water distribution management in Sharkiya Governorate																	G,M	JICA Experts	SH	
3-8.	Prepare GIS drawing for model areas in Gharbia and Minufia Governorates																	G,M	JICA Experts	SH	
3-9.	Make water balance analysis at model areas																	G,M	JICA Experts	SH	
3-10.	Conduct leakage detection survey at model areas																	G,M	JICA Experts	SH	
3-11.	Make water balance analysis after repair works																	G,M	JICA Experts	SH	
3-12.	Draft policy/plan for disseminating NRW reduction activities to the other Marakazes																	G,M	JICA Experts	SH	
4. The water distribution management capacity is improved in Sharkiya governorate as an advanced model																					
4-1.	Discuss methods and conduct survey for water distribution management																	SH	JICA Experts		
4-2.	Conduct training for water distribution management							☆										SH	JICA Experts ☆ Training in Japan		
4-3.	Formulate a plan for water distribution management																	SH	JICA Experts		
4-4.	Install the equipment for water distribution management at the model area																	SH	JICA Experts		
4-5.	Operate the system																	SH	JICA Experts		
4-6.	Develop SOP for water distribution management																	SH	JICA Experts		
4-7.	Evaluate the operation and SOP for water distribution management																	SH	JICA Experts		
5. The project is managed and coordinated properly																					
0-1.	Establish Steering Committee, consisting of representative of HCWW, SHAPWASCO, GHAPWASCO and MCWW																	HC, SH, G, M	JICA Experts		
0-2.	Coordinate among SHAPWASCO, GHAPWASCO and MCWW through the Steering Committee																	HC, SH, G, M	JICA Experts		
0-3.	Organize the Joint Coordination Committee (JCC) meeting at least once a year																	HC, SH, G, M	JICA Experts		
0-4.	Finalize the Indicators of the Project Design Matrix (PDM) for approval of the first JCC																	HC, SH, G, M	JICA Experts		
0-5.	Draft Annual Plan of Operations (APO) based on the Plan of Operations (PO) for approval of the JCC																	HC, SH, G, M	JICA Experts		
0-6.	Monitor the progress of PO/APO and achievement of the Indicators of the PDM							●						▲				HC, SH, G, M	JICA Experts		● Mid-Term Review ▲ Final Evaluation

ANNEX 3: Schoedule of Terminal Evaluation

			Evaluation Consultant		Team Leader/Cooperation Planning	
			Activity	Stay	Activity	Stay
1	12-Feb	Wed	Dept from Tokyo			
2	13-Feb	Thu	AM: Arrival at Cairo PM: 14:00-15:00 Meeting in JICA Office Move to Tanta	Tanta		
3	14-Feb	Fri	Documentation	Tanta		
4	15-Feb	Sat	AM: 10:00-13:00 Visit GHAPWASCO SOP site (Samanoud) and Meeting with SOP site members PM: 14:00-16:00 Meeting with Experts and Facilitators	Tanta		
5	16-Feb	Sun	AM: 9:00-11:30 Visit GHAPWASCO NRW site (Santa) and meeting with NRW C/P members PM: 13:00-13:30 Meeting with IWSP 14:30-15:30 Meeting with GHAPWASCO Chairman	Tanta		
6	17-Feb	Mon	AM: 9:30-12:30 Meeting with MCWW Chairman and then with C/P (SOP & NRW) members PM: 12:30-14:00 Visit SOP site (Shebin)	Tanta		
7	18-Feb	Tue	AM: 10:00-13:00 Meeting with SHAPWASCO Chairman and then with C/P (WDM) members PM: 13:00-15:00 Visit WDM sites	Tanta		
8	19-Feb	Wed	AM: 10:00-13:00 Visit GHAPWASCO SOP site(Mahalet Marhoom) and MCWW NRW site (Barket El Sab'a) PM: Move to Cairo	Cairo		
9	20-Feb	Thu	Documentation	Cairo		
10	21-Feb	Fri	Documentation	Cairo	Dept from Tokyo	
11	22-Feb	Sat	PM: 15:00-17:00 Internal team meeting at Cairo	Cairo	AM: Arrival at Cairo PM: Internal team meeting	Cairo
12	23-Feb	Sun	AM: 9:00-11:00 Courtesy call to HCWW and Meeting in HCWW PM: 13:00-14:00 Meeting in JICA Office 15:00-16:00 Meeting with GIZ	Cairo	Same as left	Cairo
13	24-Feb	Mon	AM: 10:00-15:00 Progress confirmation for WDM with SHAPWASCO Chairman and WDM members	Cairo	Same as left	Cairo
14	25-Feb	Tue	Documentation and Internal team meeting at Cairo	Cairo	Same as left	Cairo
15	26-Feb	Wed	AM: Documentation PM: 16:30-18:30 Meeting in HCWW	Cairo	Same as left	Cairo
16	27-Feb	Thu	Spare day for site visit	Cairo	Same as left	Cairo
17	28-Feb	Fri	Documentation	Cairo	Same as left	Cairo
18	1-Mar	Sat	11:00-12:30 Visit MCWW SOP site (Sadat) and meeting with SOP site members 13:00-14:00 Visit MCWW SOP site (Gezy) and meeting with SOP site members	Cairo	Same as left	Cairo
19	2-Mar	Sun	AM: 11:00-14:00 JCC PM: 16:00-17:00 Meeting in JICA Office if necessary	Cairo	Same as left	Cairo
20	3-Mar	Mon	AM: 10:00-11:00 Meeting in JICA Office PM: 14:00-15:00 Meeting in Embassy of Japan Dept from Cairo		Same as left	
21	4-Mar	Tue	PM: Arrival at Tokyo		Same as left	

ANNEX 4. List of Seminars, Workshops and Training

Date	Title	Program	Attendance	Trainer
April 2011 – December 2011				
8-9 June 2011, 10:00-13:00	1st Mini Seminar for SOP Activity	- Introduce the SOP activity of SHAPWASCO Project (Presented by C/P Team of SHAPWASCO) - Discussion	• Project manager, Project co-manager • C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
18-19 June 2011, 10:00-13:00	2nd Mini Seminar for NRW reduction Activity	- Introduce the NRW reduction activity of SHAPWASCO Project (Presented by C/P Team of SHAPWASCO) - Discussion	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
2-3 July 2011, 10:00-14:30	3rd Mini Seminar on Selection Criteria for SOP and NRW	- Discussion of selection criteria for Model Facility and Pilot Area (Presented by C/P Team of SHAPWASCO) - Difference between NRW and UFW (Presented by C/P Team of SHAPWASCO)	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
13 July 2011, 10:30-12:30	Internal Workshop for Well Monitoring Activity	- Method, contents and importance of the well monitoring and experience of implementation of well monitoring (Presented by C/P Team SHAPWASCO) - Usage of the result of well monitoring (ditto) - Discussion	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
21 September 2011, 9:30-12:30	Internal Workshop for Water Distribution Management (W[illegible]	- Explanation of the Project in General (Presented by JICA Expert Team) - General Idea and Policy for WDM Activity in the Project (Presented by JICA Expert Team) - Outline of Action Plan for WDM (Presented by JICA Expert Team)	• C/P team of SHAPWASCO • Engineers and operators in SHAPWASCO • JICA Expert Team	SHAPWASCO

Date	Title	Program	Attendance	Trainer
		- Activities done so far and Selection of Pilot Area for WDM Activity by WDM Team of SHAPWASCO (Presented by C/P Team of SHAPWASCO)		
27 September 2011, 12:00-13:50	Kicking Off Seminar	- Current JICA Project and background of Seminar (Presented by Head of Sector, HCWW) - Experience and Plan of SOP activities (Presented by C/P Team of GHAPWASCO,MCWW and SHAPWASCO) - Experience and Plan of NRW reduction activities (Presented by C/P Team of GHAPWASCO,MCWW and SHAPWASCO) - Plan of Water Distribution Management (WDM) activities (Presented by C/P Team of SHAPWASCO) - Discussion	• Water companies under HCWW • Authorities related to water supply services in Egypt • Foreign aid organizations involved in water sectors in Egypt • Project manager, Project co-manager • C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	Representative of SHAPWASCO, GHAPWASCO and MCWW
2-5 October 2011, 10:00-14:30	Training of Trainers (TOT)	- Differentiate between training and facilitations. - Identify theories and techniques of adult learning. - Identify training methods and techniques. - Prepare lectures. - Make speech. - Prepare and conduct presentation. - Use Audiovisual Aids effectively. - Work in Group	**[SHAPWASCO]** Mr. Alaa El Din Talib Mr. Saeed Mohamed Attia Ms. Walaa Mohamed Ms. Walaa Hamdy Mr. Tamer Wael Mr. Salama Mohamed Mr. El Sayed Mostafa Mr. Gamal Abd El Hameed Mr. Abd El Shafee Abd Al Aziz Ms. Heba Mahmoud Mr. Ahmed Saeed Mr. Ahmed Maher Mr. Mostafa Ibrahim Mr. Mohamed Atef Mr. Abd El Raheem Mohamed Mr. Mohamed Salah El Din Ms. Aliaa El Sayed Hameed Ms. Marwa Mahmoud Khater Ms. Nancy Metwaly Taha JICA Expert Team	Local Consultant Integrated Solutions for Consultations Training

Date	Title	Program	Attendance	Trainer
10 October 2011, 10:00-14:30	Site Tour for SOP and NRW Reduction Activity in SHAPWASCO	- Briefing of site tour (Presented by C/P Team of SHAPWASCO) - Site tour in Zagaizig WTP (Arranged by C/P Team of SHAPWASCO) - Site tour for existing chamber for minimum night flow survey (Arranged by C/P Team of SHAPWASCO) - Site tour in Hehya Training Yard (Arranged by C/P Team of SHAPWASCO) - Site tour in Hehya WTP (Arranged by C/P Team of SHAPWASCO)	• C/P team of GHAPWASCO • C/P team of MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
19-20 & 22-23, October 2011, 10:00-14:30	Conducting of Training for NRW Reduction	- Class room training - Learning principle of flow measurement, method of minimum night flow survey, etc. - Field training - Learning usage of flow meter and water leak detector, acrostic rod. - Class room training - Learning method of data transfer from flow meter to computer. - Field training - Learning usage of flow meter and water leak detector, acrostic rod.	**[GHAPWASCO]** Mr. Ahmed El Said Rabea Mr. Omar Mohamed Salah El Din Mr. Abdel Aal Ali Mr. Hamdy Yasin Reraz Mr. Samy Mohamed Abdel Gawad Mr. Nasr El Din Mohamed Mr. Ahmed Abdel Salam Hemeda Mr. Abdel Azim Goda Abo Khimar Mr. Ali Ibrahim Maary Mr. Mohamed Hamid Abdo Mr. Arafa Mostafa El Bahnasy Mr. Mosaad El Shiekh **[MCWW]** Mr. Mr. Ahmed Radwan Mr. Mohamed Shafey Mr. Mohamed Fawzy Mr. Metwally Elsayed Mr. Ragab Youssif Hegazi Mr. Amin Abdelhakim Mr. Mohamed Sobhi Mr. Sadek Abdelati Mr. Abdelsattar Hossin Mr. Mohamed Eldib Mr. Mohamed Nagib **JICA Expert Team**	**[SHAPWSCO]** Mr. Alae El Din Mohamed Mr. Saaied Mohamed Mohamed Atia Mr. Walaa Mohamed Ali Mr. Walla Hamdy Maahmoud Mr. Tamer Wael Abdel Hady
26-30 October 2011, 10:00-12:30	WUAs Workshop for Action Plan NRW reduction Activity	- Purpose and Output of the Project (Presented by JICA Expert Team) - Project Period (Presented by JICA Expert Team) - Contents of Action Plan (Presented by JICA Expert Team)	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW	SHAPWASCO

Date	Title	Program	Attendance	Trainer
		- Flow Chart of Each Action (Presented by JICA Expert Team) - Model Markaz and Pilot Area (Presented by C/P Team of GHAPWASCO, MCWW) - Next Step (Explanation of Each Action) (Presented by C/P Team of GHAPWASCO, MCWW) - Schedule of NRW Activity (Presented by C/P Team of GHAPWASCO, MCWW) - NRW reduction Approach (Presented by JICA Expert Team)	• C/P team of SHAPWASCO • JICA Expert Team	
20 November 2011, 10:00-12:00	3ACs Workshop for Water Quality Management Activity	- What is Water Quality Management (Presented by C/P Team SHAPWASCO) - Case Study of Water Quality Management in SHAPWASCO (Presented by C/P Team SHAPWASCO) - Relationship between SOP and ISO (Presented by C/P Team GHAPWASCO) - Discussion	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO
January 2012 – December 2012				
7 March 2012, 12:00-15:00	3ACs Workshop for NRW reduction Activity in SHAPWASCO	**Minimum Night Flow (MNF) Determining** - Data logging and collect by Pressure logger - Data logging and collect by Flow meter logger **Leak Detection Survey** - Valve Acoustic Survey - Ground Surface Acoustic Survey - Leak Noise Correlation Survey	• C/P team of GHAPWASCO • C/P team of MCWW • JICA Expert Team	JICA Expert Team and each other of participants
25 March 2012, 12:00-15:00	Internal Workshop for NRW reduction Activity in GHAPWASCO	- Presentation on Meter Reading Survey (JICA Expert Team) - Site tour in Tanta - Discussion	• C/P team of GHAPWASCO • JICA Expert Team	JICA Expert Team
27 March 2012, 12:00-15:00	Internal Workshop for NRW reduction Activity in MCWW	- Presentation on Meter Reading Survey (JICA Expert Team) - Site tour in Shebin - Discussion	• C/P team of MCWW • JICA Expert Team	JICA Expert Team
22-24 April 2012, 10:00-14:30	3ACs Workshop for SOP Activity	- Presentation on Operation Records (Presented by C/P Team of GHAPWASCO, MCWW) - Presentation on Utilization & Management Methods of Operation Records (Presented by C/P Team of SHAPWASCO) - Presentation on Water Quality Management Method	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO	SHAPWASCO

	Date	Title	Program	Attendance	Trainer
			(Presented by C/P Team of GHAPWASCO, MCWW and SHAPWASCO) - Discussion - Comments by SHAPWASCO	• JICA Expert Team	
	2 September 2012, 10:00-12:30	Internal Workshop for NRW reduction Activity in GHAPWASCO	- Presentation on Progress MNF Survey (Presented by C/P Team of GHAPWASCO, MCWW) - Discussion	• Authorities related to water supply services in Gharbia • C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • JICA Expert Team	JICA Expert Team
	27 September 2012, 10:00-14:30	Site Tour for SOP Activity in MCWW	- Briefing of site tour (Presented by C/P Team of MCWW) - Site tour in Sadat WTP (Presented by C/P Team of MCWW) - Discussion	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • JICA Expert Team	Each other by participants
	30 September 2012, 0 10:00-12:30	Special Workshop for NRW Reduction Activity in GHAPWASCO	- Introduce the NRW reduction Activity (Presented by C/P Team of GHAPWASCO) - Discussion	• Authorities related to water supply services in Egypt • C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • JICA Expert Team • Utility & Positioning Systems Ltd. (Private Company)	GHAPWASCO
	14-18 October 2012	Special Workshop (High rank exchange of opinion with Water Authority of Jordan)	- Presentation of NRW reduction activities in Jordan as well as achievement of JICA technical assistance - Presentation of SOP and NRW reduction activates in Egypt as well as achievement of JICA technical assistance - Site observation in Jordan - Opinion exchange	• Dr. Salah Bayoumi, Head of Project Sector, HCWW • Mr. Shaker Abdelfattah, Head of Project Sector, SHAPWASCO • Mr. Adel Attia, Head of O&M Sector • Mr. Ayman Bassuni, Head of O&M Sector	Training each other by the participants, including the Jordanian side
	14 November 2012, 11:00-14:00	3ACs Workshop in SHAPWASCO for SOP and NRW Reduction Activity	- Progress of NRW reduction Activity (Presented by C/P Team of GHAPWASCO, MCWW) - Progress of SOP Activity (Presented by C/P Team of GHAPWASCO, MCWW) - Discussion - Comments by SHAPWASCO	• C/P team of GHAPWASCO • Engineers and operators in GHAPWASCO • C/P team of MCWW • Engineers and operators in MCWW • C/P team of SHAPWASCO • JICA Expert Team	SHAPWASCO

	Date	Title	Program	Attendance	Trainer
	22 November 2012, 10:00-15:00	Open Seminar	- Current JICA Project and background of Seminar (Presented by Head of Sector, HCWW, HCWW and Chief Advisor, JICA expert team) - Interim results and Plan of SOP activities (presented by C/P team of GHAPWASCO and MCWW) - Interim results and plan of NRW reduction activities (presented by C/P team of GHAPWASCO and MCWW) - Interim results and plan of WDM activities (presented by C/P team of SHAPWASCO) - Motivational words by the Minister and Chairman of HCWW for the sustainability and dissemination to other companies. - Discussion	• Minister of Water and Wastewater Utilities • Water companies in Nile Delta area under HCWW • Directors / Managers of HCWW • SHAPWASCO, GHAPWASCO and MCWW • Foreign aid organizations involved in water sectors in Egypt • JICA and JICA expert team	Representative of SHAPWASCO, GHAPWASCO and MCWW
	9 December 2012, 10:00-14:30	3ACs Workshop for SOP Activity (Water Quality)	- Experiments of duplicate samples in SHAPWASCO laboratory. - Discussion	• C/P team of GHAPWASCO • C/P team in MCWW • C/P team of SHAPWASCO • JICA expert team	SHAPWASCO
	15 January 2013, 11:00-15:00	Leak Detection Training in SHAPWASCO	- Leak detection survey using acoustic rod, ground microphone, and leak noise correlator (training by C/P members of GHAPWASCO and SHAPWASCO). - Discussion	• NRW team of GHAPWASCO • NRW team of branches from GHAPWASCO • NRW team of SHAPWASCO • JICA expert team	SHAPWASCO
	13 February 2013, 11:00-15:00	Leak Detection Training in SHAPWASCO	- Leak detection survey using acoustic rod, ground microphone, and leak noise correlator (training by C/P members of MCWW and SHAPWASCO). - Discussion	• NRW team of MCWW • NRW team of branches from MCWW • NRW team of SHAPWASCO • JICA expert team • Staff members of Qalubya Water and Wastewater Company for observation and trial	SHAPWASCO
	2 June 2013, 10:00-14:00	3ACs Workshop for SOP Activity in MCWW	- Interim results and Plan of SOP Activities (presented by C/P team of GHAPWASCO and MCWW) - Discussion	• C/P team of GHAPWASCO • C/P team in MCWW • C/P team of SHAPWASCO • JICA expert team	Representative of SHAPWASCO, GHAPWASCO and MCWW
	23 September 2013, 10:00-14:00	1st Workshop for Five Year Plan for NRW Reduction Activity in MCWW	- Progress of Five Year Plan for NRW reduction Activity (Presented by C/P Team of MCWW) - Discussion	• NRW team of MCWW • NRW team of branches from CWW	MCWW

	Date	Title	Program	Attendance	Trainer
	30 September 2013, 10:00-14:00	Workshop for Five Year Plan for NRW Reduction Activity in GHAPWASCO	- Progress of Five Year Plan for NRW reduction Activity (Presented by C/P Team of GHAPWASCO) - Discussion	• NRW team of GHAPWASCO • NRW team of branches from GHAPWASCO	GHAPWASCO
	24 November 2013, 10:00-12:30	2nd Workshop for Five Year Plan for NRW Reduction Activity in MCWW	- Progress of Five Year Plan for NRW reduction Activity (Presented by C/P Team of MCWW) - Discussion	• NRW team of MCWW • NRW team of branches from CWW	MCWW

ANNEX 5 別添資料3
Results of Water Balance Analysis
①

Barket El Saba before

Water Distribution Volume 588.656 (m³/day) (100%)	Authorized Consumption 429.081 (m³/day)	Billed Authorized Consumption (m³/day) 429.081	Billed Metered Consumption (m³/day)	306.25	Sold Water 429.081 (m³/day) (72.9%)	Revenue Water (RW) (m³/day) 429.081 (72.9%)
			Metering Error (over registration) (m³/day)	-85.816		
			Billed Unmetered Consumption (m³/day)	208.64		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0		
			Unbilled Unmetered Consumption (m³/day)	0	Commercial Loss 15.361 (m³/day) (2.6%)	Non Revenue Water (NRW) (m³/day) 159.575 (27.1%)
	Water Losses 159.575 (m³/day)	Apparent Losses (m³/day) 15.361	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	15.36		
		Real Losses (m³/day) 144.214	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 144.214 (m³/day) (24.5%)	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	144.21		

Barket El Saba after

Water Distribution Volume 654.360 (m³/day) (100%)	Authorized Consumption 522.651 (m³/day)	Billed Authorized Consumption (m³/day) 522.651	Billed Metered Consumption (m³/day)	351.07	Sold Water 522.651 (m³/day) (79.9%)	Revenue Water (RW) (m³/day) 522.651 (79.9%)
			Metering Error (over registration) (m³/day)	-104.26		
			Billed Unmetered Consumption (m³/day)	275.84		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0		
			Unbilled Unmetered Consumption (m³/day)	0	Commercial Loss 15.361 (m³/day) (2.3%)	Non Revenue Water (NRW) (m³/day) 131.709 (20.1%)
	Water Losses 131.709 (m³/day)	Apparent Losses (m³/day) 15.361	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	15.36		
		Real Losses (m³/day) 116.348	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 116.348 (m³/day) (17.8%)	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	116.35		

Quesna before

Water Distribution Volume 495.838 (m³/day) *(100%)*	Authorized Consumption 348.073 (m³/day)	Billed Authorized Consumption (m³/day) 348.073	Billed Metered Consumption (m³/day)	300.59	Sold Water 348.073 (m³/day) *(70.2%)*	Revenue Water (RW) (m³/day) 348.073 *(70.2%)*
			Metering Error (over registration) (m³/day)	-109.64		
			Billed Unmetered Consumption (m³/day)	157.13		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 12.026 (m³/day) *(2.4%)*	Non Revenue Water (NRW) (m³/day) 147.764 *(29.8%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 147.764 (m³/day)	Apparent Losses (m³/day) 12.026	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	12.03		
		Real Losses (m³/day) 135.738	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 135.738 (m³/day) *(27.4%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	135.74		

Quesna after

Water Distribution Volume 444.100 (m³/day) *(100%)*	Authorized Consumption 344.277 (m³/day)	Billed Authorized Consumption (m³/day) 344.277	Billed Metered Consumption (m³/day)	259.12	Sold Water 344.277 (m³/day) *(77.5%)*	Revenue Water (RW) (m³/day) 344.277 *(77.5%)*
			Metering Error (over registration) (m³/day)	-108.45		
			Billed Unmetered Consumption (m³/day)	193.60		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 12.026 (m³/day) *(2.7%)*	Non Revenue Water (NRW) (m³/day) 99.823 *(22.5%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 99.823 (m³/day)	Apparent Losses (m³/day) 12.026	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	12.03		
		Real Losses (m³/day) 87.797	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 87.797 (m³/day) *(19.8%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	87.80		

Shebeen before

Water Distribution Volume 347.149 (m³/day) *(100%)*	Authorized Consumption 278.999 (m³/day)	Billed Authorized Consumption (m³/day) 278.999	Billed Metered Consumption (m³/day)	288.04	Sold Water 278.999 (m³/day) *(80.4%)*	Revenue Water (RW) (m³/day) 278.999 *(80.4%)*
			Metering Error (over registration) (m³/day)	-87.885		
			Billed Unmetered Consumption (m³/day)	78.85		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 15.361 (m³/day) *(4.4%)*	Non Revenue Water (NRW) (m³/day) 68.150 *(19.6%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 68.150 (m³/day)	Apparent Losses (m³/day) 15.361	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	15.361		
		Real Losses (m³/day) 52.789	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 52.789 (m³/day) *(15.2%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	52.789		

Shebeen after

Water Distribution Volume 356.90 (m³/day) *(100%)*	Authorized Consumption 298.06 (m³/day)	Billed Authorized Consumption (m³/day) 298.06	Billed Metered Consumption (m³/day)	293.1	Sold Water 298.06 (m³/day) *(83.5%)*	Revenue Water (RW) (m³/day) 298.06 *(83.5%)*
			Metering Error (over registration) (m³/day)	-93.888		
			Billed Unmetered Consumption (m³/day)	98.85		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 15.361 (m³/day) *(4.3%)*	Non Revenue Water (NRW) (m³/day) 58.85 *(16.5%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 58.85 (m³/day)	Apparent Losses (m³/day) 15.361	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	15.361		
		Real Losses (m³/day) 43.49	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 43.49 (m³/day) *(12.2%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	43.485		

④

Zefta before

Water Distribution Volume 198.646 (m³/day) *(100%)*	Authorized Consumption 156.585 (m³/day)	Billed Authorized Consumption (m³/day) 156.585	Billed Metered Consumption (m³/day)	188.89	Sold Water 156.585 (m³/day) *(78.8%)*	Revenue Water (RW) (m³/day) 156.585 *(78.8%)*
			Metering Error (over registration) (m³/day)	-38.26		
			Billed Unmetered Consumption (m³/day)	5.96		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 7.405 (m³/day) *(3.7%)*	Non Revenue Water (NRW) (m³/day) 42.061 *(21.2%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 42.061 (m³/day)	Apparent Losses (m³/day) 7.405	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	7.41		
		Real Losses (m³/day) 34.656	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 34.656 (m³/day) *(17.4%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	34.66		

Zefta after

Water Distribution Volume 212.315 (m³/day) *(100%)*	Authorized Consumption 167.694 (m³/day)	Billed Authorized Consumption (m³/day) 167.694	Billed Metered Consumption (m³/day)	185.62	Sold Water 167.694 (m³/day) *(79.0%)*	Revenue Water (RW) (m³/day) 167.694 *(79.0%)*
			Metering Error (over registration) (m³/day)	-19.609		
			Billed Unmetered Consumption (m³/day)	1.68		
		Unbilled Authorized Consumption 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 7.405 (m³/day) *(3.5%)*	Non Revenue Water (NRW) (m³/day) 44.621 *(21.0%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 44.621 (m³/day)	Apparent Losses (m³/day) 7.405	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	7.41		
		Real Losses (m³/day) 37.216	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 37.216 (m³/day) *(17.5%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	37.22		

Mahala before

Water Distribution Volume 354.544 (m³/day) *(100%)*	Authorized Consumption 258.370 (m³/day)	Billed Authorized Consumption (m³/day) 258.370	Billed Metered Consumption (m³/day)	218.50	Sold Water 258.370 (m³/day) *(72.9%)*	Revenue Water (RW) (m³/day) 258.370 *(72.9%)*
			Metering Error (over registration) (m³/day)	-85.26		
			Billed Unmetered Consumption (m³/day)	125.13		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 6.946 (m³/day) *(2.0%)*	Non Revenue Water (NRW) (m³/day) 96.174 *(27.1%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 96.174 (m³/day)	Apparent Losses (m³/day) 6.946	Unauthorized Consumption (m³/day)	0		
			Metering Inaccuracies (m³/day)	6.95		
		Real Losses (m³/day) 89.228	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 89.228 (m³/day) *(25.2%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	89.23		

Mahala after

Water Distribution Volume 337.304 (m³/day) *(100%)*	Authorized Consumption 263.030 (m³/day)	Billed Authorized Consumption (m³/day) 263.030	Billed Metered Consumption (m³/day)	209.34	Sold Water 263.030 (m³/day) *(78.0%)*	Revenue Water (RW) (m³/day) 263.030 *(78.0%)*
			Metering Error (over registration) (m³/day)	-86.80		
			Billed Unmetered Consumption (m³/day)	140.49		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 10.607 (m³/day) *(3.1%)*	Non Revenue Water (NRW) (m³/day) 74.274 *(22.0%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 74.274 (m³/day)	Apparent Losses (m³/day) 10.607	Unauthorized Consumption (m³/day)	3.72		
			Metering Inaccuracies (m³/day)	6.89		
		Real Losses (m³/day) 63.667	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 63.667 (m³/day) *(18.9%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	63.67		

Tanta Before

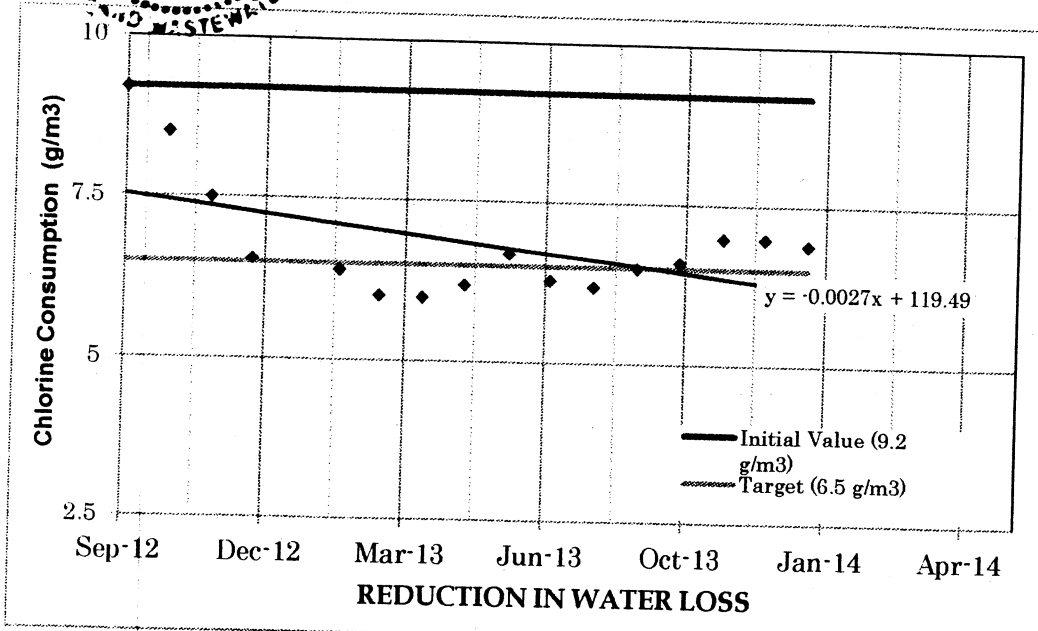
Water Distribution Volume 359.474 (m³/day) *(100%)*	Authorized Consumption 215.237 (m³/day)	Billed Authorized Consumption (m³/day) 215.237	Billed Metered Consumption (m³/day)	150.67	Sold Water 215.2371429 (m³/day) *(59.9%)*	Revenue Water (RW) (m³/day) 215.237 *(59.9%)*
			Metering Error (over registration) (m³/day)	0		
			Billed Unmetered Consumption (m³/day)	64.571		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 15.54803896 (m³/day) *(4.3%)*	Non Revenue Water (NRW) (m³/day) 144.237 *(40.1%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 144.237 (m³/day)	Apparent Losses (m³/day) 15.5480	Unauthorized Consumption (m³/day)	8.48		
			Metering Inaccuracies (m³/day)	7.07		
		Real Losses (m³/day) 128.689	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 128.6888182 (m³/day) *(35.8%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	128.69		

Tanta after

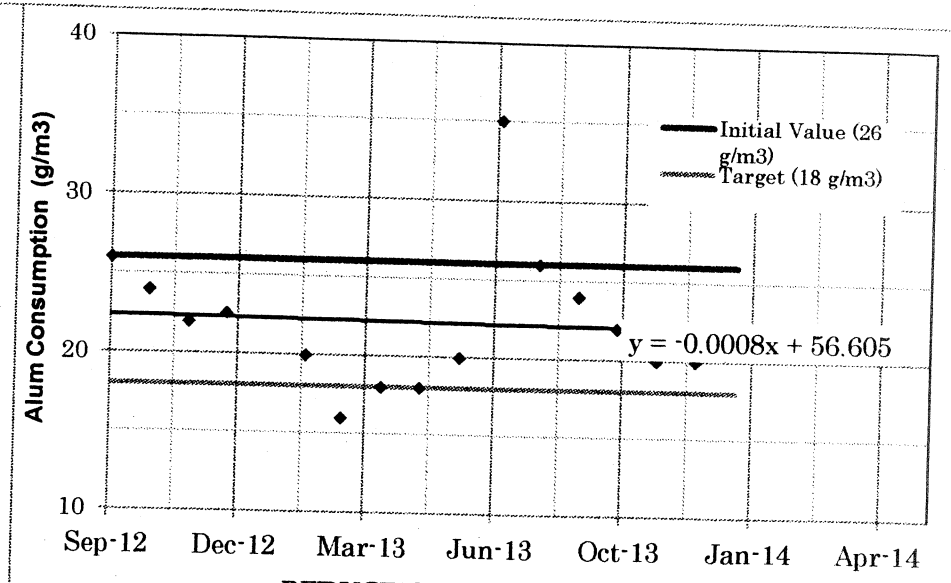
Water Distribution Volume 280.102 (m³/day) *(100%)*	Authorized Consumption 210.810 (m³/day)	Billed Authorized Consumption (m³/day) 210.810	Billed Metered Consumption (m³/day)	147.57	Sold Water 210.810 (m³/day) *(75.3%)*	Revenue Water (RW) (m³/day) 210.810 *(75.3%)*
			Metering Error (over registration) (m³/day)	0		
			Billed Unmetered Consumption (m³/day)	63.24		
		Unbilled Authorized Consumption (m³/day) 0	Unbilled Metered Consumption (m³/day)	0	Commercial Loss 10.2631 (m³/day) *(3.7%)*	Non Revenue Water (NRW) (m³/day) 69.292 *(24.7%)*
			Unbilled Unmetered Consumption (m³/day)	0		
	Water Losses 69.292 (m³/day)	Apparent Losses (m³/day) 10.263	Unauthorized Consumption (m³/day)	3.19		
			Metering Inaccuracies (m³/day)	7.07		
		Real Losses (m³/day) 59.029	Leakage on Transmission and/or Distribution Mains (m³/day)	0	Physical Loss 59.029 (m³/day) *(21.1%)*	
			Leakage and Overflows at Utility's Storage Tanks (m³/day)	0		
			Leakage on Service Connections up to point of Customer metering (m³/day)	59.03		

ANNEX 6-1: Progress in Attaining PIs for SOP

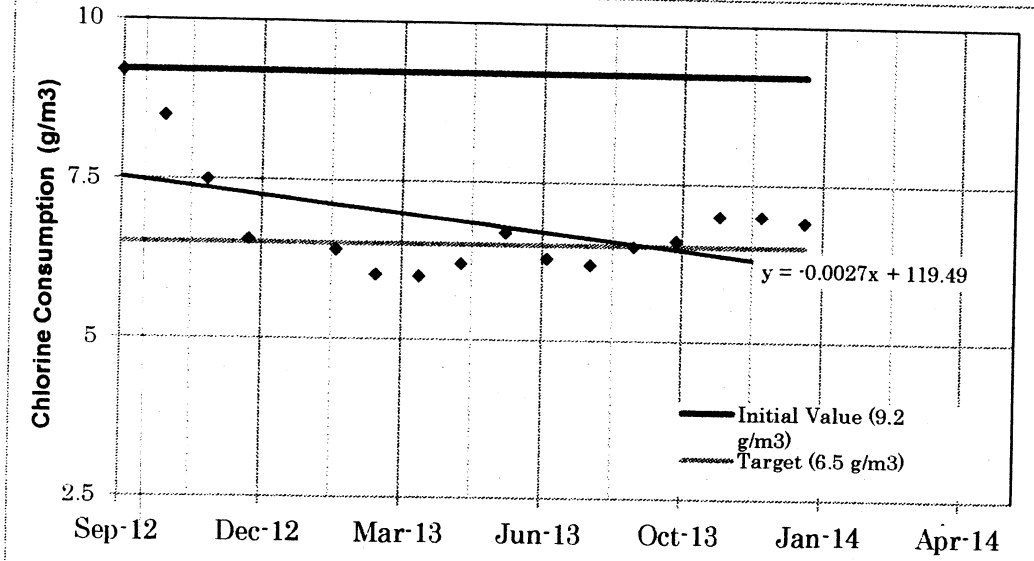
(1) El Sadat - MCWW



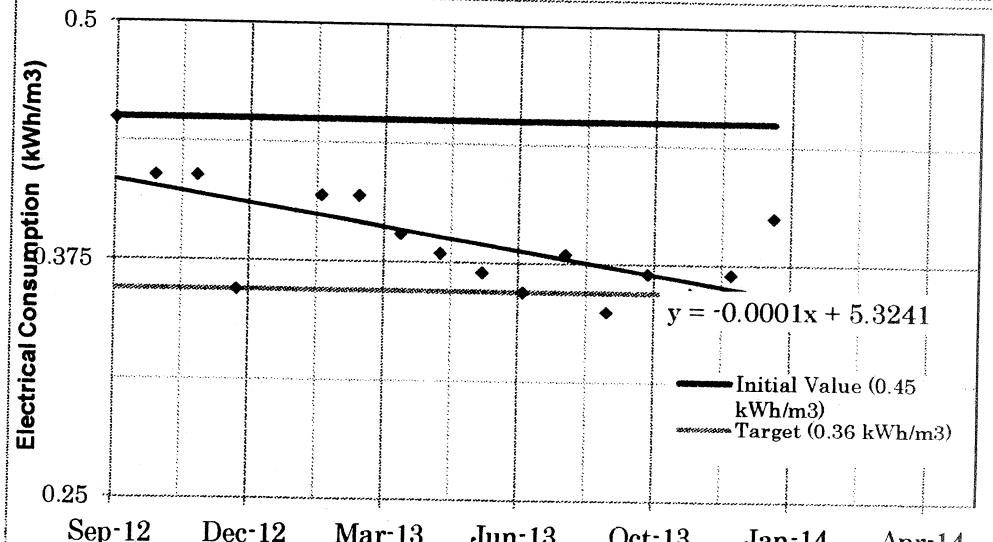
REDUCTION IN WATER LOSS



REDUCTION IN ALUM CONSUMPTION



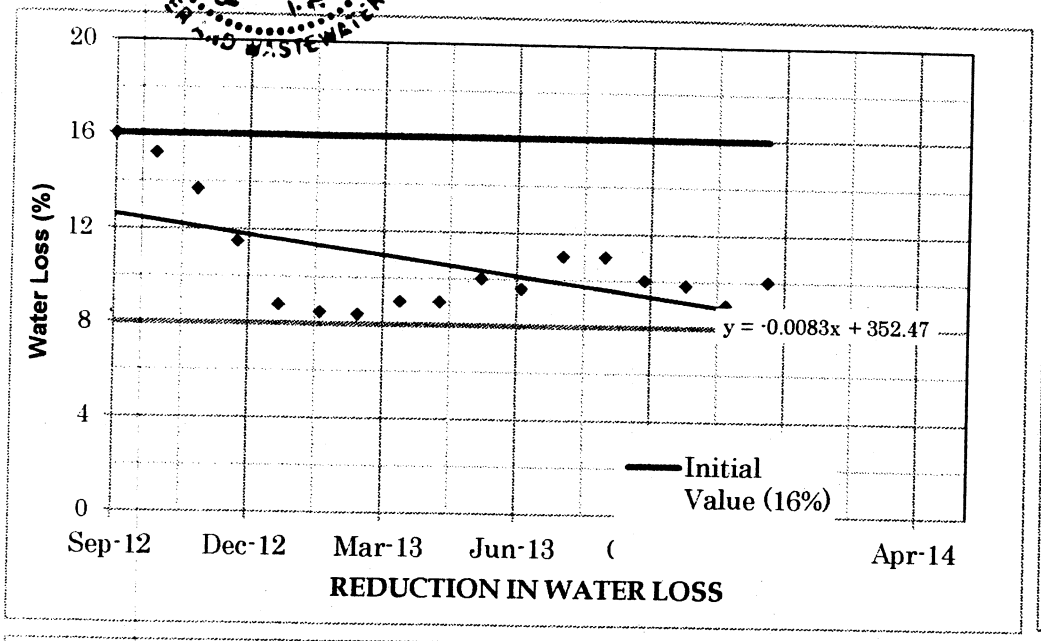
REDUCTION IN CHLORINE CONSUMPTION



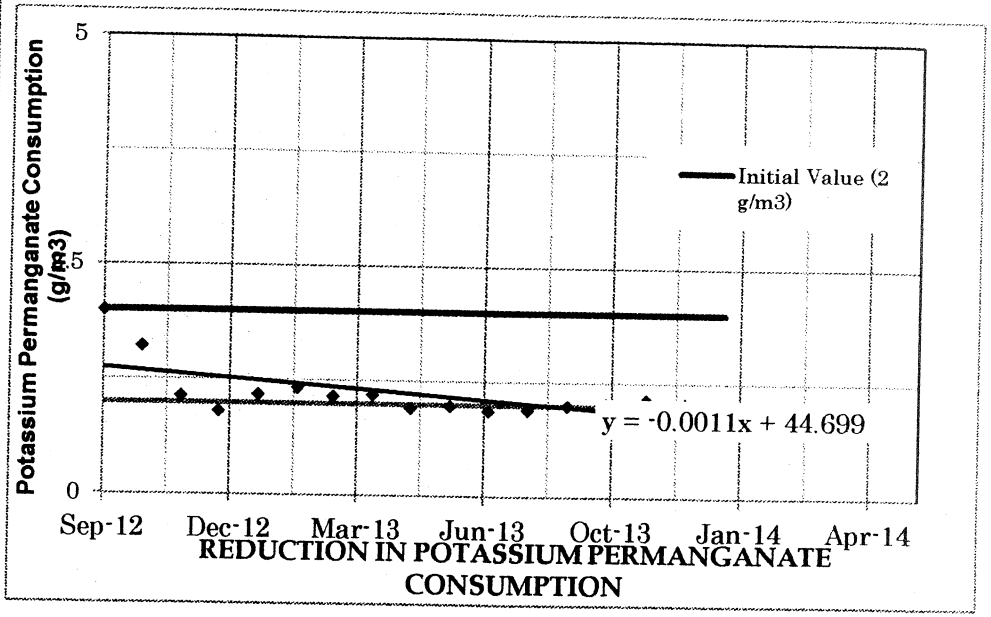
REDUCTION IN CONSUMPTION OF ELECTRICITY

ANNEX 5-1: Progress in Attaining PIs for SOP

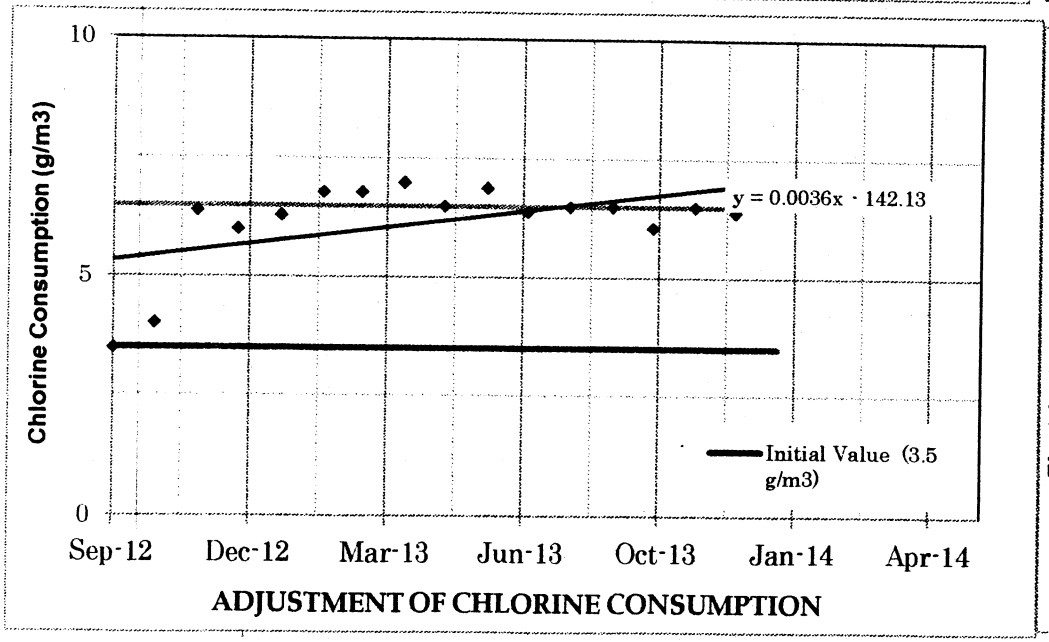
(2) Gezy - MCWW



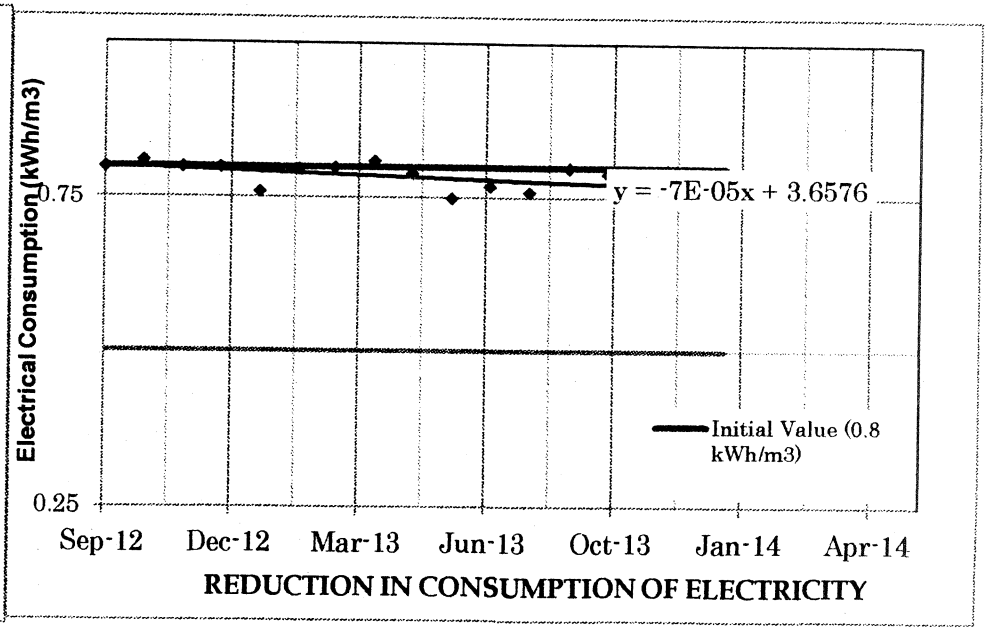
REDUCTION IN WATER LOSS



REDUCTION IN POTASSIUM PERMANGANATE CONSUMPTION



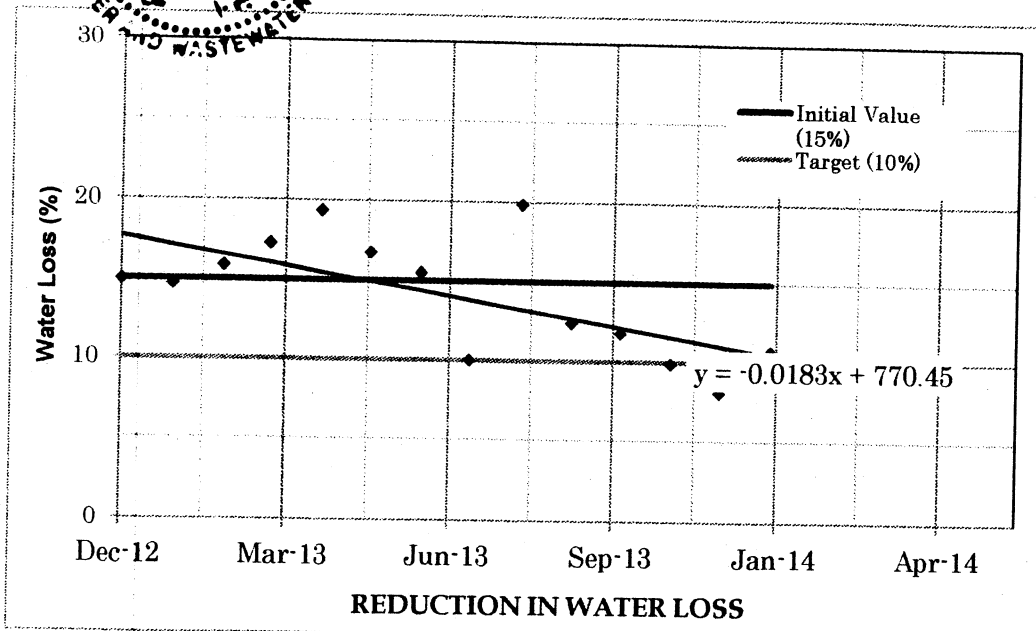
ADJUSTMENT OF CHLORINE CONSUMPTION



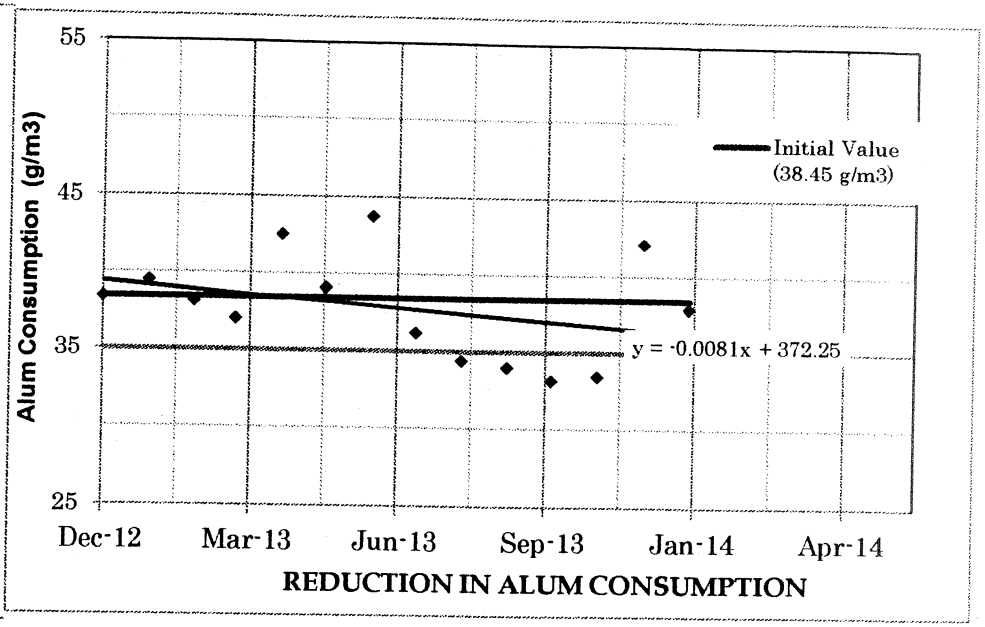
REDUCTION IN CONSUMPTION OF ELECTRICITY

ANNEX 5-1: Progress in Attaining PIs for SOP

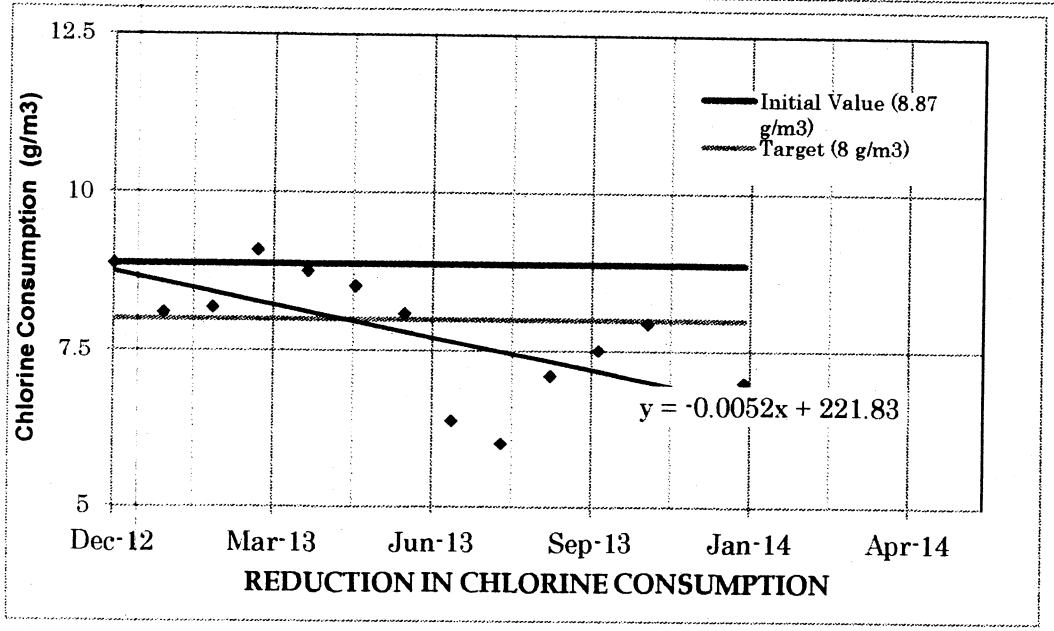
(3) El Melahia – GHAPWASCO



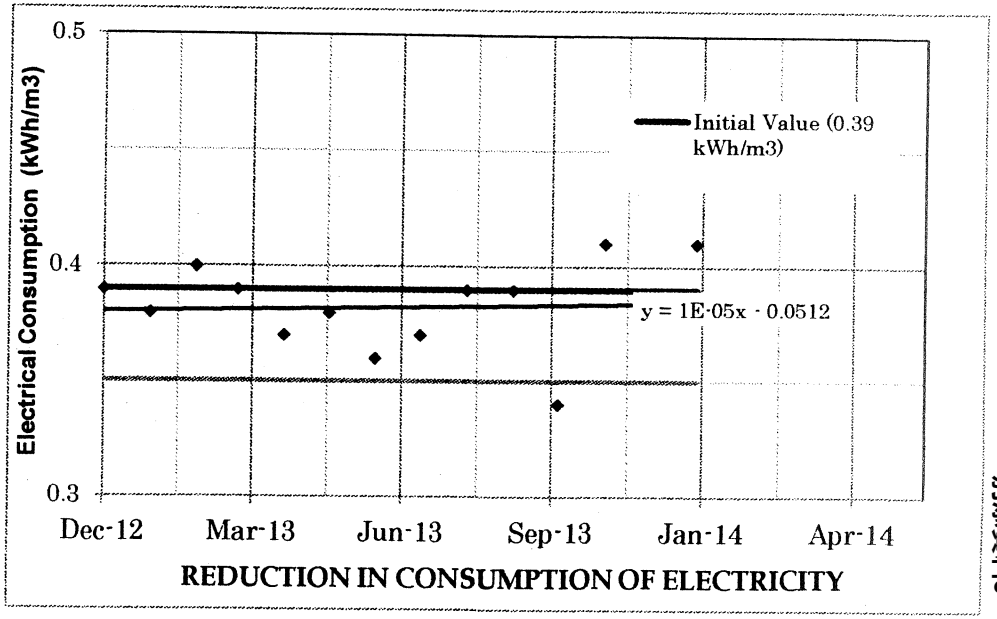
REDUCTION IN WATER LOSS



REDUCTION IN ALUM CONSUMPTION



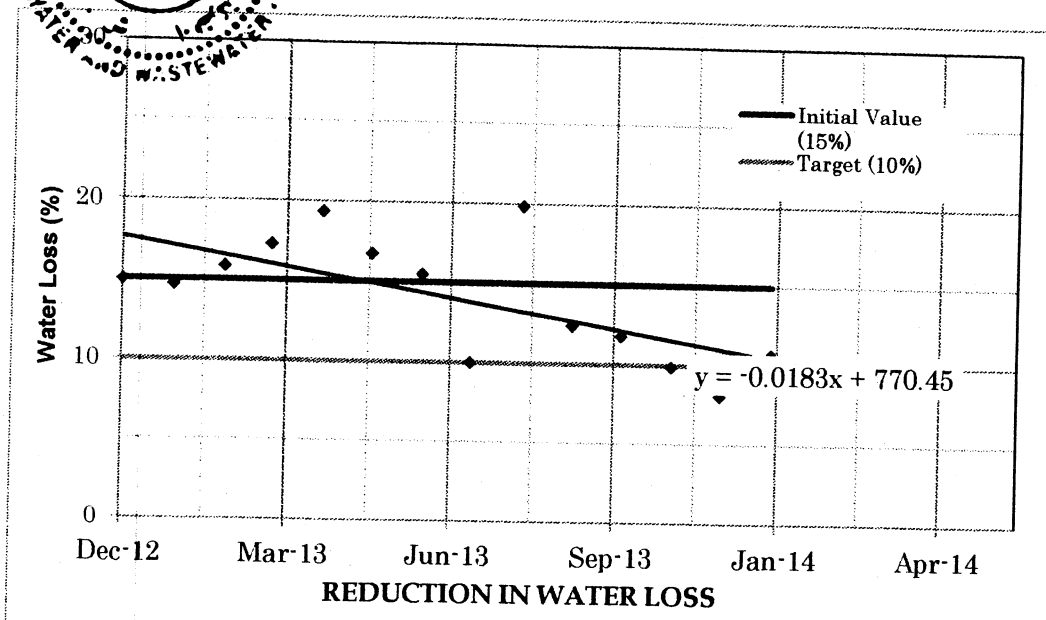
REDUCTION IN CHLORINE CONSUMPTION



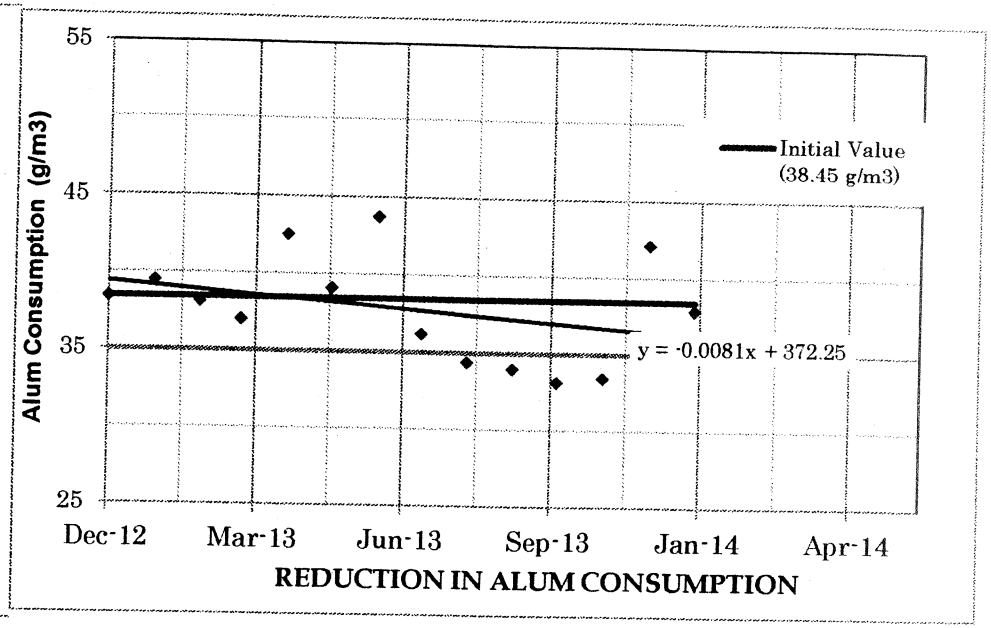
REDUCTION IN CONSUMPTION OF ELECTRICITY

ANNEX 6-1: Progress in Attaining PIs for SOP

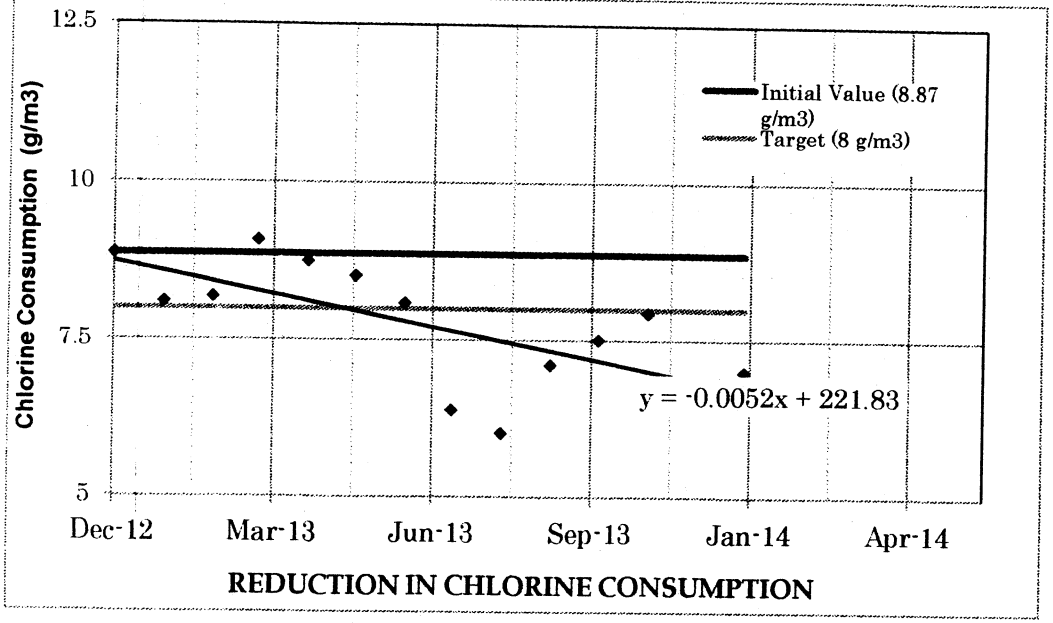
(4) Mahalet Marhoom – GHAPWASCO



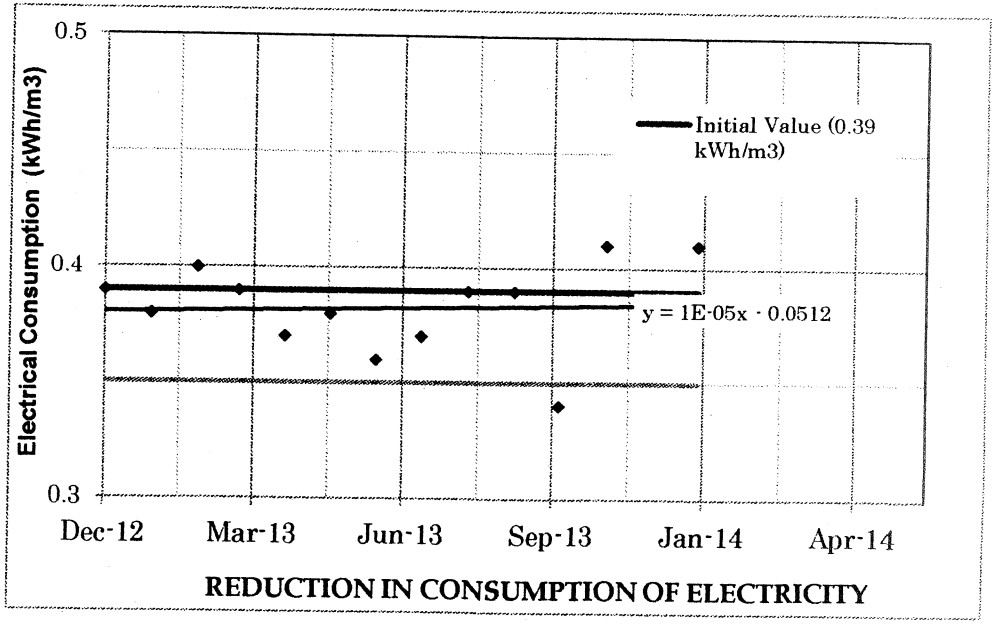
REDUCTION IN WATER LOSS



REDUCTION IN ALUM CONSUMPTION



REDUCTION IN CHLORINE CONSUMPTION



REDUCTION IN CONSUMPTION OF ELECTRICITY

ANNEX6-2 Targets and Actual Performance on Agreed Performance Indicators(PIs)

GHAPWASCO Model facility (1): El Melahia WTP

1. Performance Targets

	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Baseline	85	15	8.87	38.45	0.39 kWh/m3
Targets	90	10	8	35	0.35

2-1 Actual Performance(raw data by month) (Months that achieved targets marked in ye

Month	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Liquid Aluminum Sulfate (g/m^3)	
Dec-12	85	15	8.87	38.45	0.39
Jan-13	85.3	14.7	8.11	39.47	0.38
Feb-13	84.1	15.9	8.19	38.14	0.4
Mar-13	82.7	17.3	9.09	37	0.39
Apr-13	80.6	19.4	8.76	42.56	0.37
May-13	83.2	16.8	8.53	39.08	0.38
Jun-13	84.5	15.5	8.1	43.74	0.36
Jul-13	90	10	6.38	36.18	0.37
Aug-13	80.1	19.9	6.01	34.42	0.39
Sep-13	87.6	12.4	7.1	34	0.39
Oct-13	88.2	11.8	7.51	33.14	0.34
Nov-13	90.1	9.9	7.95	33.43	0.41
Dec-13	91.9	8.1	6.62	42.14	0.38
Jan-14	89.3	10.7	7	37.9	0.41
(# of months that attained targets/# of months monitored)	3/14		7/14	4/14	1/14

2-2. Level of Imrpovement (comparsion of 2-month average performance in 2012 and 2013)

2 month average (Dec 2012-Jan 2013)	85.15	14.85	8.49	38.96	0.385
2 month average (Dec 2013-Jan 2014)	90.6	9.4	6.81	40.02	0.395
	Improved		Improved	Progress steady	Progress steady

ANNEX6-2 Targets and Actual Performance on Agreed Performance Indicators(Pis)
GHAPWASCOModel facility (2): Mahalet Marhoom IMRP

1. Performance Targets

	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Calcium Hypochlorite (g/m^3)	Potassium Permanganate (g/m^3)	
Baseline	NA*		7.05	3.04	0.76
Targets	96	4	6	2	0.6

* Baseline coud not be obtained due to the technical problem with facilities

2-1 Actual Performance(raw data by month) (Months that achieved targets marked in yellow)

Month	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	ium Hypochlorite(g/	Potassium Permanganate (g/m3)	
Dec-12	N/A	N/A	7.05	3.04	0.76
Jan-13	N/A	N/A	6.59	2.38	0.66
Feb-13	N/A	N/A	7.42	2.12	0.6
Mar-13	86.7	13.3	4.29	2.15	0.68
Apr-13	89.8	10.2	5.63	2.05	0.64
May-13	94.3	5.7	4.92	1.79	0.54
Jun-13	96.7	3.3	4.14	1.5	0.5
Jul-13	93.5	6.5	2.64	1.5	0.56
Aug-13	98.5	1.5	3.37	1.68	0.59
Sep-13	93.9	6.1	3.98	1.6	0.59
Oct-13	91.3	8.7	2.54	1.7	0.56
Nov-13	91.2	8.8	3.45	1.97	0.6
Dec-13	91.6	8.4	3.06	2.04	0.6
Jan-14	92.5	7.5	2.88	1.92	0.66
(# of months that attained targets/# of months monitored)	2/14		11/14	8/14	8/14

2-2. Level of Improvement (Comparsion of 2-month average in 2012 and 2013)

2 month average (Dec 2012-Jan 2013)	NA	NA	6.82	2.71	0.71
2 month average (Dec 2013-Jan 2014)	92.05	7.95	2.97	1.98	0.63
	Assessment not possible		Improved	Improved	Improved

ANNEX6-2 Targets and Actual Performance on Agreed Performance Indicators(PIs)

MCWW Model facility (1): El Sadat WTP

1. Performance Targets

	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Aluminum Sulfate (g/m^3)	
Baseline	88	12	9.2	26	0.45
Target	92	8	6.5	18	0.36

2-1 Actual Performance(raw data by month) (Months that achieved targets marked in yello

Month	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Aluminum Sulfate (g/m^3)	
Sep-12	88	12	9.2	26	0.45
Oct-12	90	10	8.5	24	0.42
Nov-12	90	10	7.5	22	0.42
Dec-12	88.6	11.4	6.56	22.6	0.36
Feb-13	90.41	9.6	6.41	20	0.41
Mar-13	92.46	7.5	6.02	16	0.41
Apr-13	91.2	8.8	6	18	0.39
May-13	91	9	6.2	18	0.38
Jun-13	91	9	6.7	20	0.37
Jul-13	90.5	9.5	6.3	35	0.36
Aug-13	92	8	6.2	26	0.38
Sep-13	93	7	6.5	24	0.35
Oct-13	92	8	6.6	22	0.37
Nov-13	92	8	7	20	0.36
Dec-13	91	9	7	20	0.37
Jan-14	91	9	6.9	22	0.4
(# of months that attained targets/# of months monitored)	5/16		7/16	3/16	4/16

2-2. Level of Improvement (Comparsion of quarterly average in 2012 and 2013)

Average in 4th quarter 2012	89.15	10.85	7.94	23.65	0.41
Average in 4th quarter 2013	92	8	6.78	21.5	0.36
	Improve d		Improved	Improved	Improved

ANNEX6-2 Targets and Actual Performance on Agreed Performance Indicators(PIs)

MCWW Model facility (2): Gezy IMRP

1. Performance Targets

	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Potassium Permanganate (g/m^3)	
Baseline	84	16	3.5	2	0.8
Targets	92	8	6.5	1	0.5

2-1 Actual Performance(raw data by month) (Months that achieved targets marked in yello

Month	Effective utilization Ratio of Water (%)		Unit consumption of Chemicals		Energy Consumption (kWh/m^3)
		Water Loss (%)	Gaseous Chlorine (g/m^3)	Potassium Permanganate (g/m^3)	
Sep-12	84	16	3.5	2	0.8
Oct-12	84.8	15.2	4.03	1.61	0.81
Nov-12	86.3	13.7	6.4	1.07	0.8
Dec-12	88.5	11.5	6	0.91	0.8
Jan-13	91.2	8.8	6.3	1.09	0.76
Feb-13	91.5	8.5	6.8	1.17	0.797
Mar-13	91.6	8.4	6.8	1.08	0.8
Apr-13	91	9	7	1.1	0.81
May-13	91	9	6.5	0.96	0.79
Jun-13	90	10	6.9	0.99	0.75
Jul-13	90.4	9.6	6.4	0.94	0.77
Aug-13	89	11	6.5	0.95	0.76
Sep-13	89	11	6.5	1	0.8
Oct-13	90	10	6.06	1.02	0.79
Nov-13	90.2	9.8	6.5	1.07	0.76
Dec-13	91	9	6.4	1.03	0.75
Jan-14	90	10	7	0.98	0.79
(# of months that attained targets/# of months monitored)	0/14		13/16	7/16	0/16

2-2. Level of Improvement (Comparsion of quarterly average in 2012 and 2013)

Average of 4th quarter 2012	85.90	14.10	4.98	1.40	0.80
Average of 4th quarter 2013	90.05	9.95	6.37	1.03	0.78
	Improved		Improved	Improved	Slightly improved

ANNEX 7-1. List of Dispatched Experts

NO.	Field	Name	Assignment Period (No. of days)	M/M
1	Chief Advisor/Water Supply Planning	Katsumi FUJII	2011.05.14-2011.06.23 (41 days)	1.36
			20011.09.03-2011.10.01 (29)	0.97
			2012.02.21-2012.04.03 (43)	1.43
			2012.06.25-2012.07.24 (30)	1.00
			2012.10.08-2012.12.01 (55)	1.84
			2013.01.15-2013.02.28 (45)	1.50
			2013.05.24-2013.06.22 (30)	1.00
			2013.10.20-2013.11.08 (20)	0.67
			2014.01.28-2014.03.13 (45)	1.50
			Domestic working period	
			2011.05.09-2011.05.13 (5)	0.17
2	Deputy Chief Advisor/NRW Reduction Management	Mitsuhito OMORI	2011.06.03-2011.07.02 (30)	1.00
			2011.09.03-2011.11.01 (60)	2.00
			2011.12.11-2011.12.26 (16)	0. 53
			2012. 03.16-2012. 05.20 (66)	2.20
			2012.07.02-2012. 07.31 (30)	1.00
			2012.08.26-2012.09.24 (30)	1.00
			2012.11.27-2013.02.03 (69)	2.30
			2013.05.24-2013.07.07 (45)	1.50
			2013.11.15-2013.11.29 (15)	0.50
			2014.02.07-2014.03.08 (30)	1.00
3	Leakage Detection	Hiroki NIIMURA	2011.09.05-2011.11.08 (65)	2.17
			2012.02.10-2012.03.30 (50)	1.66
			2012.08.26-2012.12.13 (110)	3.67
			2013.01.15-2013.02.28 (45)	1.50
			2013.05.06-2013.07.04 (60)	2.00
4	Water Treatment System	Tomohiro SHIMIZU	2011.05.14-2011.06.12 (30)	1.00
			2011.10.02-2011.11.15 (45)	1.50
			2012.03.16-2012.05.04 (50)	1.67
			2012.06.25-2012.07.24 (30)	1.00
			2012.09.11-2012.10 10 (30)	1.00
			2013.01.15-2013.02.28 (45)	1.50
			2013.04.16-2013.06.14 (60)	2.00
			2014.02.12-2014.03.13 (30)	1.00
			Domestic working period	
			2011.05.10-2011.05.13 (4)	0.13
5	Mechanical Equipment	Ryoji NAGAO	2011.06.03-2011.07.17 (45)	1.50
			2011.10.23-2011.12.01 (40)	1.33
			2012.02.14-2012.03.30 (46)	1.53
			2012.10.02-2012.11.29 (60)	2.00
6	Electrical Equipment	Sayed Osman Madbouly	2011.07.01-2011.07.30 (30)	1.00
			2011.09.05-2011.09.14 (10)	0.33
			2011.09.16-2011.09.24 (9)	0.30
			2011.09.26-2011.09.29 (4)	0.13
			2011.10.03-2011.10.05 (3)	0.10

NO.	Field	Name	Assignment Period (No. of days)	M/M
			2011.10.08-2011.10.08 (1)	0.04
			2011.10.19-2011.10.19 (1)	0.04
			2011.10.26-2011.10.27 (2)	0.06
			2012. 02.12-2012. 03.02 (20)	0.67
			2012. 06.02-2012. 06.11 (10)	0.33
			2012.06.28-2012.07.17 (20)	0.67
			2012.09.27-2012.10.11 (15)	0.50
			2013.01.17-2013.02.10 (25)	0.83
7	Hydraulic Analysis for Network	Kenji YAMADA	2011.09.03-2011.11.01 (60)	2.00
			2012.11.14-2013.02.11 (90)	3.00
			2013.06.01-2013.06.28 (28)	0.93
			Domestic working period	
			2013.07.01-2013.07.02 (2)	0.07
8	Distribution Network(1)	Masahiro TAKEUCHI	2011.05.14-2011.05.28 (15)	0.50
			2011.09.03-2011.09.24 (22)	0.73
			2011.11.19-2011.12.18 (30)	1.00
			2012.11.05-2012.12.12 (38)	1.27
			Domestic working period	
			2011.05.09-2011.05.13 (5)	0.17
9	Distribution Network(2)	Kiyoshi KIYAMA	2011.06.27-2011.08.04 (39)	1.30
			2011.09.03-2011.11.07 (66)	2.20
			2012.03.16-2012.04.14 (30)	1.00
			2012.09.18-2012.10.17 (30)	1.00
			2013.01.30-2013.02.18 (20)	0.67
			2013.04.16-2013.06.04 (50)	1.67
			Domestic working period	
			2011.11.08-2011.11.22 (15)	0.50
			2012.02.10-2012.03.10 (30)	1.00
10	Well Monitoring	Nobuyuki IIJIMA	2011.06.20-2011.08.04 (46)	1.53
			2011.11.13-2011.12.26 (44)	1.47
			2012.11.14-2012.12.28 (45)	1.5
			2013.06.01-2013.06.28 (28)	0.93
			Domestic working period	
			2013.07.01-2013.07.02 (2)	0.07
11	Water Quality	Kazuhiro UMEKI	2011.10.07-2011.11.4(29)	0.97
			2011.11.08-2011.11.29(22)	0.73
			2011.12.07-2011.12.12 (6)	0.20
			2012.03.29-2012.04.27 (30)	1.00
			2012.12.04-2013.01.17 (45)	1.50
12	Coordinator／Assistant for NRW Reduction Management	Atsushi KATO	2011.05.14-2011.06.12 (30)	1.00
			2012.11.04-2012.12.13 (40)	1.33
			2013.01.30-2013.02.28 (30)	1.00
			2014.02.07-2014.03.13 (35)	1.16

ANNEX 7-2. List of Local Experts (Input by Japan)

NO.	Field	Name	Assignment Period
1	Facilitator 1 (SHAPWASCO)	Mohamed Nagi Gaber	2011.05.15-2011.12.25 2012.02.11-2013.02.27 2013.04.17-up to now
2	Facilitator 2 (GHAPWASCO)	Mohamed Abdel Kader Abouzekry	2011.05.17-2011.12.25 2012.02.11-2013.02.27 2013.04.17-up to now
3	Facilitator 3 (MCWW)	Mohammed Abd El-kader Abd El-Ghany	2011.06.05-2011.12.25 2012.02.11-2013.02.27 2013.04.17-up to now
4-1	Interpreter (SOP)	Ahmed Ragab Hamed	2011.06.05-2011.12.25 2012.02.11-2012.07.05
4-2	Interpreter (SOP)	Ahmed Rasmy	2012.07.01-2013.02.27
4-3	Interpreter (SOP)	Amr Salah Abd-elaal	2012.12.10-2013.02.27 2013.04.17-up to now
4-4	Interpreter (SOP)	Ahmed Tahoun	2013.05.01-up to now
5	Interpreter (NRW)	Ahmed Atef	2011.06.05-2011.12.25 2012.02.11-2013.02.27 2013.04.17-up to now
6	Local Expert (Water distribution facilities)	Mostafa Moawed Mostafa	2011.06.05-2011.12.25 2012.02.11-2013.02.27 2013.04.17-up to now
7-1	Local Expert (Water treatment facilities)	Ahmed El-Baz	2011.06.05-2011.12.25 2012.02.11-2012.10.1
7-2	Local Expert (Water treatment facilities)	Mahmoud Abo Khalaf	2012.10.2- 2013.01.31
7-3	Local Expert (Water treatment facilities)	Mahmoud Mohamed Abdelkader	2013.05.22-up to now

ANNEX 7-3 List of Equipment Provided by the Japanese side

JFY	No.	Item	Qty.	Price in YEN	Price in LE.	Responsible Agencies	Delivery date
2011	1	Water leak detector	6	2,412,000	187,704.28	GHAPWASCO,MCWW	20-Oct-11
	2	Digital sound detector	4	256,000	19,922.18	GHAPWASCO,MCWW	20-Oct-11
	3	Acoustic rod (1.5m)	8	160,000	12,451.36	GHAPWASCO,MCWW	20-Oct-11
	4	Pressure data logger	3	1,350,000	105,058.37	GHAPWASCO,MCWW	20-Oct-11
	5	Pipe and cable locator	4	2,668,000	207,626.46	GHAPWASCO,MCWW	20-Oct-11
	6	Metal pipe locator	2	300,000	23,346.30	GHAPWASCO,MCWW	20-Oct-11
	7	Magnetic locator	2	560,000	43,579.77	GHAPWASCO,MCWW	20-Oct-11
	8	Non metallic pipe vibrator	4	348,000	27,081.71	GHAPWASCO,MCWW	20-Oct-11
	9	Hammer drill	4	272,000	21,167.32	GHAPWASCO,MCWW	20-Oct-11
	10	Drill bid	16	208,000	16,186.77	GHAPWASCO,MCWW	20-Oct-11
	11	Boring bar (1m)	4	108,000	8,404.67	GHAPWASCO,MCWW	20-Oct-11
	12	Generator	4	282,700	22,000.00	GHAPWASCO,MCWW	19-Dec-11
	13	Water level indicator	6	2,760,000	214,785.99	GHAPWASCO,MCWW	20-Oct-11
	14	Leak sound detector	4	5,780,000	412,856.00	GHAPWASCO,MCWW	21-Feb-12
	15	Portable ultrasonic flow meter (For large diameters)	6	3,612,000	257,982.00	GHAPWASCO,MCWW	21-Feb-12
	16	Portable ultrasonic flow meter (For normal diameters)	4	1,968,000	140,560.00	GHAPWASCO,MCWW	21-Feb-12
2012	17	Pickup	2	3,366,700	262,000.00	GHAPWASCO,MCWW	26-Jul-12
	18	Personal computer (Desk top)	2	178,148	13863.63	GHAPWASCO,MCWW	26-Jul-12
	19	Personal computer (Notebook)	4	323,586	25181.8	GHAPWASCO,MCWW	26-Jul-12
	20	Copy and Fax machine	2	809,550	63,000.00	GHAPWASCO,MCWW	26-Jul-12
	21	Water CAD	2	2,929,800	228,000.00	GHAPWASCO,MCWW	22-Mar-12
	22	Ultrasonic flow meter (For large and normal dia.)	2	1,296,000	140,560.00	GHAPWASCO,MCWW	2-Jul-12
	23	Ultrasonic flow meter (For small dia. Chamber type)	6			SHAPWASCO	4-May-13
	24	Ultrasonic flow meter (For large dia. Chamber type)	1			SHAPWASCO	4-May-13
	25	Ultrasonic flow meter (For small dia. indoor type)	7			SHAPWASCO	4-May-13
	26	Water pressure gauge (For WTP)	2			SHAPWASCO	4-May-13
	27	Water pressure gauge (For indoor type)	10			SHAPWASCO	4-May-13
	28	Telemeter (For outdoor type)	17			SHAPWASCO	4-May-13
	29	Telemeter (For indoor type)	7			SHAPWASCO	4-May-13
	30	Central monitoring system	1	47,390,000	3,325,614.04	SHAPWASCO	4-May-13
2013	31	Water leak detector	4	1,968,000	138,105.26	GHAPWASCO,MCWW	26-Jun-13
Total				81,306,484	5,917,037.91		

JICA exchange rate: 1US$=JP76.63 , 1LE.=12.85 (Nov.2012)
JICA exchange rate: 1US$=JP97.84 , 1LE.=14.25 (May.2013)

ANNEX 7-4. List of C/P Training in Japan

1. Management Training in Japan

(1) Purpose

The purpose of the training in Japan is to learn the experience for water supply service management in Japan and utilize it in the water supply service management of GHAPWASCO, MCWW, SHAPWASCO and other water companies in Egypt.

(2) Attendance List

Attendants were as follows:

- Dr. Salah Bayoumi, Head of Project Sector of HCWW
- Mr. Ayman Abd El Kader, Chairman of GHAPWASCO
- Mr. Mohamed Abu El Khair, Chairman of MCWW
- Mr. Ahmed Abdeen, Chairman of SHAPWASCO

(3) Training Schedule in Japan

C/P training has been conducted in Japan from 3rd to 12th October 2011. The project manager (Head of Project Sector, HCWW) and project co-manager (chairman of GHAPWASCO, MCWW and SHAPWASCO) attended following course.

Training Schedule for Management Training in Japan

Date		Activity	Location
1-Oct	Sat	Departure from Cairo.	
2-Oct	Sun	Arrival at Tokyo.	
3-Oct	Mon	Orientation by JICA.	JICA/TIC
		Courtesy call to JICA headquarters	JICA
4-Oct	Tue	Trend and development of water management in the world (Workshop to be held by IWA-ASPIRE).	Tokyo International Forum
5-Oct	Wed	Introduction of national policy and governing organization for water supply. Opinion exchange with the Japanese officials.	Ministry of Health, Labor and Welfare
		Introduction of Japan Water Works Association and system for information/technology transfer among water supply service providers. Opinion exchange for technology development.	Japan Water Works Association
6-Oct	Thu	Opinion exchange for service and human resources development with a water supply service provider.	Yokohama city
		Practice of inter-agency cooperation for technical education and O&M.	Yokohama city
7-Oct	Fri	Policy and practice of NRW reduction.	Yokohama city
		Practice to promote efficiency (power reduction, tariff collection, water distribution management)	Yokohama city
8-Oct	Sat	Holiday	
9-Oct	Sun	Holiday	
10-Oct	Mon	Water Museum in Yokohama (observation of example for publicity)	Yokohama city
		Miyagase dam (observation of example for publicity)	Miyagase dam
11-Oct	Tue	Observation of solar power facility in the water treatment plant (Nishiya WTP)	Yokohama city
		Site observation of a water treatment plant as well as SOP practices (Kawai WTP)	Yokohama city
12-Oct	Wed	Closing ceremony and opinion exchanges with JICA.	JICA/TIC
13-Oct	Thu	Departure from Tokyo.	
14-Oct	Fri	Arrival at Cairo.	

2. SOP and NRW reduction Training in JAPAN

(1) Purpose

The purpose of the training in Japan is to learn the experience for SOP and NRW reduction in Japan and utilize it in the water supply service management of GHAPWASCO, MCWW, SHAPWASCO and other companies in Egypt.

(2) Attendance List

Attendants were as follows:

- Mr. Wesam Abd El-Fattah, Operation and Maintenance Dep. of HCWW
- Mr. Nagi Yousri, Technical Support of GHAPWASCO
- Mr. Ahmed Elsayed Rabi, Water Supply Sector of GHAPWASCO
- Mr. Mohamed Fathy Gaber, Operation and Maintenance Dep. of MCWW
- Mr. Mohamed Mostafa El Shafie, Operation and Maintenance Dep. of MCWW
- Mr. Saeed Mohamed Attia, Non-revenue water (NRW) Dep. of SHAPWASCO
- Mr. Ahmed Saeed, Standard Operation Procedures Dep. of SHAPWASCO

(3) Training Schedule in Japan

C/P training has been conducted in Japan from 5th to 16th December 2011. Total 7 trainees attended following course.

Training Schedule for SOP and NRW Reduction Training in Japan

Date		NRW		SOP	
		Activity	Place	Activity	Place
3-Dec	Sat	Departure from Cairo			
4-Dec	Sun	Arrival at Tokyo			
5-Dec	Mon	JICA Briefing	JICA/TIC	Same as NRW	Same as NRW
		Orientation	JICA/TIC	Same as NRW	Same as NRW
6-Dec	Tue	Outline of Yokohama City Water	Yokohama City	Same as NRW	Same as NRW
		Risk management of Yokohama	Yokohama City	Same as NRW	Same as NRW
		Public relations of Yokohama	Yokohama City	Same as NRW	Same as NRW
7-Dec	Wed	Practical training course for tariff collection	Yokohama City	Outline of Integrated monitoring system	Yokohama City
		Water distribution network management for streets monitoring equipment	Yokohama City	Same as NRW	Same as NRW
		Observation of streets monitoring equipment	Yokohama City	Same as NRW	Same as NRW
8-Dec	Thu	Overview of Non Revenue Water	Yokohama City	Work safety and efficient operation of power-chemical quantity	Yokohama City
		Organization for leakage inspection and pipeline maintenance	Yokohama City	Operation and maintenance of water treatment plant	Yokohama City
9-Dec	Fri	Management of water supply block system, Replacement of aged pipes	Yokohama City	Data management of O&M and manual WTP O&M	Yokohama City
		Outline of pipeline mapping system	Yokohama City	Introduction of standard operation procedures in Japan	Yokohama City
10-Dec	Sat	Holiday		Holiday	
11-Dec	Sun	Holiday		Holiday	

Date		NRW		SOP	
		Activity	Place	Activity	Place
12-Dec	Mon	Outline of leak detection training	FUJI TECOM	Outline of Saitama City Water	Saitama City
		Training of leak detection-1, 2	FUJI TECOM	Replacement of well plan	Saitama City
13-Dec	Tue	Outline of steel pipes detector, metal pipe detector, correlation detector	FUJI TECOM	Replacement of electric facility and water quality monitoring	Saitama City
		Training of leak detection-3, 4	FUJI TECOM	Observation of well facility.	Saitama City
14-Dec	Wed	Method of training leak detection	FUJI TECOM	Operation and maintenance of water treatment plant and well	Saitama City
		Training leak detection facility and equipment, Implement for training leak detection	FUJI TECOM	Observation of East WTP and Groundwater WTP	Saitama City
15-Dec	Thu	Ending Ceremony	JICA/TIC	Same as NRW	Same as NRW
16-Dec	Fri	Departure from Tokyo			
17-Dec	Sat	Arrival at Cairo			

3. WDM Training in JAPAN

(1) Purpose

The purpose of the training in Japan is to learn the experience for WDM in Japan and utilize it in the water supply service management of SHAPWASCO in Egypt.

(2) Attendance List

Attendants were as follows:

- Mr. Elsayed Moustafa Ibrahim Attia, Engineer / Water Distribution Management Department of SHAPWASCO
- Mr. Ali Mohamed Atef Abde Ihamid, Engineer / Water Distribution Management Department of SHAPWASCO
- Mr. Bhnsawy Ahmed Maher Elsayed, Engineer / Water Distribution Management Department of SHAPWASCO
- Mr. Ahmed AbdElRaheem Mohamed AbdElRaheem, Engineer / Water Distribution Management Department of SHAPWASCO

(3) Training Schedule in Japan

C/P training has been conducted in Japan from 28th October 2012 to 9th November 2012. Total 4 trainees attended following course.

Training Schedule for WDM Training in Japan

Date		Activities	Place
27-Oct	Sat	Departure from Cairo	
28-Oct	Sun	Arrival at Yokohama	JICA Yokohama
29-Oct	Mon	Briefing	JICA Yokohama
		Orientation	JICA Yokohama
30-Oct	Tue	Outline of Yokohama water supply system	Yokohama Waterworks Bureau
		Equipment management of water facilities (Outline water supply maintenance)1	Yokohama Waterworks Bureau

Date		Activities	Place
31-Oct	Wed	Equipment management of water facilities (Outline water supply maintenance)1	Yokohama Waterworks Bureau
		Drawing management of water facilities	Yokohama Waterworks Bureau
1-Nov	Thu	Mechanical and electrical equipment maintenance work in the water facility	Yokohama Waterworks Bureau
		Equipment outline water treatment plant which is the main water supply facility	Yokohama Waterworks Bureau
		Site observation on equipment outline water treatment plant which is the main water supply facility	
2-Nov	Fri	Electrical equipment maintenance work in the water facility1	Yokohama Waterworks Bureau
		Electrical equipment maintenance work in the water facility2	
3-Nov	Sat	Holiday	
4-Nov	Sun	Holiday	
5-Nov	Mon	Water operational plan and Water supply operation total management system	Yokohama Waterworks Bureau
		Installation management of measuring equipment on the street, and a maintenance	
		Site observation on measuring equipment on the street, and a maintenance	Yokohama Waterworks Bureau
6-Nov	Tue	Operation of water (water supply management), management, maintenance and operation of the well	Saitama City Waterworks Bureau
		Site observation on tobu distribution facility, groundwater water treatment facilities	Saitama City Waterworks Bureau
7-Nov	Wed	SCADA for water supply 1	Yokogawa Electric Corporation
		SCADA for water supply 2	Yokogawa Electric Corporation
		Leakage management	
		Demonstration room, Global Response Center	
8-Nov	Thu	Results presentation	JICA Yokohama
		Evaluation meeting/closing ceremony	
9-Nov	Fri	Departure from Tokyo / Yokohama	
10-Nov	Sat	Arrival at Cairo	

ANNEX 7-5. Operational Expenses by Japan

As of Dec. 31, 2013

Unit=Yen

	Major Budget Item	JFY2011 (May.2011 - Jan.2012)	JFY2012 (Feb.2012 - Mar.2013)	JFY2013 (Apr.2013 - Dec.2013)	Total
1	General Cost	9,728,000	21,677,813	15,311,524	**46,717,503**
1.1	Staff Cost	6,888,754	13,964,285	11,364,282	**32,217,321**
1.2	Epuipment Maintenace Cost	0	0		**0**
1.3	Consumable Cost	145,311	583,554	20,227	**749,092**
1.4	Travel Expense	0	0		**0**
1.5	Communicatoion Cost	69,640	116,862	56,786	**243,288**
1.6	Document Preparation Cost	275,144	9,095		**284,239**
1.7	Rental Cost	2,349,317	7,004,017	3,870,229	**13,223,563**
1.8	Light, Fuel and Water Cost	0	0		**0**
1.9	Staff Training Cost	0	0		**0**
1.10	Facility Maintenance Cost	0	0		**0**
1.11	Field Training Cost	0	0		**0**
1.12	Domestic Activity Cost	0	0		**0**
1.13	Domestic Consultant Cost	0	0		**0**
1.14	Miscellanceous Cost	0	0		**0**
2	Equipment Cost (JICA Expert's Equipment)	11,689,000	1,296,000	1,968,000	**14,953,000**
3	Equipment Shipping Cost (JICA Expert's Equipment)	254,000	49,000	38,565	**341,565**
4	Equipment Cost (Carry Equipment)	0	0		**0**
5	Equipment Shipping Cost (Carry Equipment)	0	0		**0**
6	Equipment Cost (Other Equipment)	0	0		**0**
7	Equipment Shipping Cost (Other Equipment)	38,000	0		**38,000**
8	Report Prepation Cost (Printing and Binding)	11,000	11,000		**22,000**
9	Report Prepation Cost (Exclude Printing and Binding)	19,000	19,000		**38,000**
10	Local Consultant Cost	666,000	0		**666,000**
11	Local NGO Cost	0	0	0	**0**
12	Construction Cost	0	0	0	**0**
13	Meeting Cost	0	0	0	**0**
14	Insurance Cost	0	0	0	**0**
15	C/P Training in Japan Cost	1,837,000	896,000	0	**2,733,000**
Total in Japanese Yen		**24,242,000**	**23,948,000**	**17,318,000**	**65,508,000**
				Total in LE:	4,959,817.73
	FX rate (Avg.)at 1LE.=	12.940000	12.850000	14.163222	

ANNEX 7-6. List of Egyptian C/Ps

1. List of SHAPWASCO C/Ps

C/P Name	Title / Field	Qualification	Working Period	Note
Ahmed Abdeen	Chairman	Management	2011.05～2014.01	
Ayman Abd El Kader	Chairman	Management	2014.01～up to now	
WDM Team in Headquarters (HQ)				
Alae El Din Mohamed	Head of C/P team/ Headquarters (HQ)	Management	2011.05～up to now	
Ahmed Maher	Assistant for head of WDM team/HQ	Engineer	2011.05～up to now	
Abd El Rahim Mohamed	Assistant for head of WDM team/HQ	Engineer	2011.05～2013.12	On leave
Mohamed Atef	Assistant for head of WDM team/HQ	Engineer	2011.05～up to now	
Mostafa Ibrahim	Assistant for head of WDM team/HQ	Engineer	2011.05～up to now	
Tamer Kamel Hussein	Assistant for head of WDM team/HQ	Engineer	2014.2～up to now	

2. List of GHAPWASCO C/Ps

C/P Name	Title / Field	Qualification	Working Period	Note
Ayman Abd El Kader	Chairman	Management	2011.05～2014.01	
Mahmoud Zaki	Chairman	Management	2014.01～up to now	
Abdullah El Letty	Head of C/P team	Management	2011.06～2012.05	Retired
Adel Attia	Head of C/P team	Head of C/P team	2012.06～up to now	
SOP Team in Headquarters (HQ)				
Ahmed El Maleh	SOP team leader/HQ	Engineer	2011.06～up to now	
Rizk El Fiky	SOP member/HQ	Engineer	2011.09～up to now	
Nagy Youssry	SOP member/HQ	Engineer	2011.09～2012.06	Left Company
Mohamed Masood	SOP member/HQ	Engineer	2012.07～up to now	
Mahmoud Badr	Electricity SOP member/HQ	Engineer	2011.07～up to now	
Mekawy Mekawy	WQMSOP member/HQ	Chemist	2011.11～up to now	
Gad Abdel Monsef Gad	SOP member/HQ	Engineer	2013.8 ～up to now	
SOP Team in Branches				
Moataz Riyad Hassan	Station manager / Melahia SWTP	Engineer	2012.07～up to now	
Mahmoud El Sayed Sarhan	Vice manager/ Melahia SWTP	Engineer	2012.07～up to now	
Hemat Fathy Hozayfa	Laboratory manager/ Melahia SWTP	Chemist	2012.07～up to now	
Goerge Naguib Abdo	Senior technician/	Technician	2012.07～up to now	

C/P Name	Title / Field	Qualification	Working Period	Note
	Melahia SWTP			
Saeed Eid Kombar	Senior technician/ Melahia SWTP	Technician	2012.07～up to now	
Ramy Mostafa El Feky	Technician/ Melahia SWTP	Technician	2012.07～up to now	
Mahrous Mohamed El Zayat	Technician/ Melahia SWTP	Technician	2012.07～up to now	
Amir El Safty	Technician/ Melahia SWTP	Technician	2012.07～up to now	
Mohamed Aly Saber	Technician/ Melahia SWTP	Technician	2012.07～up to now	
Mohamed Ahmed Balat	Technician/ Melahia SWTP	Technician	2012.07～up to now	
Huessein Youssef Shahin	Station manager / Mahalet Marhoum IMRP	Technician	2012.09～up to now	
El Mohamady Mekawy	Senior technician / Mahalet Marhoum IMRP	Technician	2012.09～up to now	
Mahmoud Abou El Anein	Technician / Mahalet Marhoum IMRP	Technician	2012.09～up to now	
Ahmed El Maraghy	Technician / Mahalet Marhoum IMRP	Technician	2012.09～up to now	
Ahmed Shoieb	Samanoud SWTP	Engineer and facility manager	2013.12～up to now	
Ahmed El Shimy	Samanoud SWTP	Engineer	2013.12～up to now	
Malek Abo El Fadl	Samanoud SWTP	Chemist	2013.12～up to now	
Hamdy El Sayed Ramadan	Samanoud SWTP	Chemist	2013.12～up to now	
Ahmed Mahmoud	Samanoud SWTP	Chemist	2013.12～up to now	
Magdy Sherif	Samanoud SWTP	Technician	2013.12～up to now	
Abdel Aty Galal	El Ramlia IMRF	Manager/technician	2013.12～up to now	
Sayed Bayoumy Sharaf	El Ramlia IMRF	Technician	2013.12～up to now	
Fath El Bab Saber	El Ramlia IMRF	Technician	2013.12～up to now	
Reda bdel Hady Zaki	El Ramlia IMRF	Technician	2013.12～up to now	
Ahmed Fath El Bab	El Ramlia IMRF	Technician	2013.12～up to now	
Mohamed Ali El Meliegy	Shobrabeel WPS	Manager/technician	2013.12～up to now	
Mohamed Saad Gouda	Shobrabeel WPS	Technician	2013.12～up to now	
Saeed Khaled Ibrahim	Shobrabeel WPS	Technician	2013.12～up to now	
Suliman El Sayed Suliman	Shobrabeel WPS	Technician	2013.12～up to now	
Ibrahim Ahmed Shehata	Shobrabeel WPS	Technician	2013.12～up to now	
El Husseinein El Sayed Sengaf	Shobrabeel WPS	Technician	2013.12～up to now	
NRW Team in Headquarters (HQ)				
Ahmed Rabee'	NRW team leader/HQ	Engineer	2011.06～up to now	

C/P Name	Title / Field	Qualification	Working Period	Note
Omar Salah El Din	NRW member/HQ	Engineer	2011.06～up to now	
Ahmed Ramadan El Bakary	NRW member/HQ	Engineer	2011.06～2012.03	Moved to another department
Mohamed Masood	NRW member/HQ	Engineer	2012.03～2012.06	Moved to SOP
Gad Abdel Monsef Gad	NRW member/HQ	Engineer	2012.03～2012.06	Moved to another department
Salah Mohamed El Sawahly	NRW member/HQ	Technician	2012.03～up to now	
NRW Team in Branches				
Abdel Azim Gouda	Water manager/Zefta	Engineer	2012.03～up to now	
Abdel Ghafar Mohamed	Network manager/Zefta	Technician	2012.03～up to now	
Mohamed Hasouna	Meter reader/Zefta	Technician	2012.03～up to now	
Adel Othman	Meter reader/Zefta	Technician	2012.03～up to now	
Ibrahim Shehata	Worker/Zefta	Worker	2012.03～up to now	
Abdel Azim El Beheiry	Worker/Zefta	Worker	2012.03～up to now	
Waleed El Sayed Bekheit	Surveyor /Zefta	Technician	2013.09～up to now	
Tamer Nassef	Surveyor /Zefta	Technician	2013.09～up to now	
Ibrahim Abdel Mallak	Branch manager/Tanta	Engineer	2012.03～up to now	
Mostafa Abdel Aal	Nawag area network manager/Tanta	Technician	2012.03～up to now	
Ahmed Hemeida	Network technician/Tanta	Technician	2012.03～up to now	
Atef El Borlosy	Network technician/Tanta	Technician	2012.03～up to now	
Samy Abdel Gawad	Network manager/Tanta	Technician	2012.03～up to now	
Saied Shahin	Follow up/Tanta	Technician	2012.03～up to now	
Hany Sallam	Worker/Tanta	Worker	2012.03～up to now	
El Dessouky Mohamed	Worker/Tanta	Worker	2012.03～up to now	
Ahmed Abdel Rabo Aallam	Network/Tanta	Engineer	2013.09～up to now	
Mohamed Ibrahim El Sheikh	Network /Tanta	Engineer	2013.09～up to now	
Samy Morees Bekheet	Water manager/Mahala	Engineer	2013.09～up to now	
Refaii Abdel El Rahman Badawy	Network technician/Mahala	Technician	2013.09～up to now	
Rashed Mohamed Abo Hargal	Technician/Mahala	Technician	2013.09～up to now	
Fahmy Moussa	Branch manager/Mahala	Engineer	2012.03～up to now	
Ahmed Suliman	Network	Technician	2012.03～up to now	

C/P Name	Title / Field	Qualification	Working Period	Note
	technician/Mahala			
Mohamed El Sheshtawy	Network head/Mahala	Technician	2012.03～up to now	
Hany Abdel Wahab	Worker/Mahala	Worker	2012.03～up to now	
Sobhy Farahat	Meter reader/Mahala	Technician	2012.03～up to now	
Mohamed Hegazy	Meter reader/Mahala	Technician	2012.03～up to now	
Ahmed El Sayed Morsi	Bassyoun	Engineer	2013.09～up to now	
Zakaria Kandil	Bassyoun	Technician	2013.09～up to now	
Saad Kotb Rezq	Bassyoun	Technician	2013.09～up to now	
Abdel Hamid Sherif	Bassyoun	Technician	2013.09～up to now	
Nashaat Eissa	Kotour	Technician	2013.09～up to now	
Mohamed Ismail Attia	Kotour	Technician	2013.09～up to now	
Saeed Abou Ali	Santa	Engineer	2013.09～up to now	
Abdel Hameed Ahmed Omar	Santa	Technician	2013.09～up to now	
Abdel Hady Saeed El Hebeishy	Santa	Technician	2013.09～up to now	
Mosaad El Sheikh	Samanoud	Technician	2013.09～up to now	
Mahmoud El Mahalawy	Samanoud	Technician	2013.09～up to now	
Mohamed Khalil	Samanoud	Technician	2013.09～up to now	
Aly El Hassawy	Kafr El Zayat	Technician	2013.09～up to now	
Ragab El Nagar	Kafr El Zayat	Technician	2013.09～up to now	
Ramadan El Araby Abdel Aziz	Kafr El Zayat	Technician	2014.01～up to now	

3. List of MCWW C/Ps

C/P Name	Title / Field	Qualification	Working Period	Note
Mohamed Abo El Khier	Chairman	Management	2011.05～2012.09	Retired
Ezzat Elsayad	Chairman	Management	2012.09～2014.01	
Mohamed Naguib	Chairman	Management	2014.01～up to now	
Samir Abdel Moneom Suliman	Head of C/P team	Management	2011.05～2012.01	Retired
SOP Team in Headquarters (HQ)				
Ayman Bassyouni	Head of SOP team/HQ	Engineer	2011. 06～up to now	
Mohamed Fawzy Awad	Assistant for head of SOP team/HQ	Engineer	2011. 07～up to now	
Mohamed Fathy	Assistant for head of SOP team/HQ	Engineer	2011. 07～up to now	
Khaled Kazamel	Assistant for head of SOP team/HQ	Engineer	2011.07～up to now	
Saeed Abdelfattah	Assistant for head of SOP team/HQ	Engineer	2011.07～up to now	
Mostafa Lotfy	Assistant for head of	Engineer	2012.03～2012.10	Moved to another

C/P Name	Title / Field	Qualification	Working Period	Note
	SOP team/HQ			department
Adel Ibraheem	Assistant for head of SOP team/HQ	Chemist	2011. 06～up to now	
SOP Team in Branches				
Ahmed Sameer Elkawas	Mahatet El Sadat El Satheya SWTP	Engineer, Plant manager	2011.12～up to now	
Mohamed Abdallah Abdelrehem	Mahatet El Sadat El Satheya SWTP	Engineer, Operation manager	2011.12～up to now	
Ahmed Fathy Said Ahmed	Mahatet El Sadat El Satheya SWTP	Chemist	2011.12～up to now	
Mahmod Abdelzaher Elsaid	Mahatet El Sadat El Satheya SWTP	Chemist	2011.12～up to now	
Mansoor Shawky Ibraheem	Mahatet El Sadat El Satheya SWTP	Technician (Generator)	2011.12～up to now	
Mansoor Shawky Ibraheem	Mahatet El Sadat El Satheya SWTP	Technician (Mech. maintenance)	2011.12～up to now	
Haithem Ahmed Omar	Mahatet El Sadat El Satheya SWTP	Technician (Mech. maintenance)	2011.12～up to now	
Mohamed Foaad Soltan	Mahatet El Sadat El Satheya SWTP	Technician (Elec. maintenance)	2011.12～up to now	
Mohamed Ashraf Arafa	Mahatet El Sadat El Satheya SWTP	Technician (Elec. maintenance)	2011.12～up to now	
Haithem Ahmed Omar	Mahatet El Sadat El Satheya SWTP	Technician (Sedimentation facility)	2011.12～up to now	
Ahmed Bahnasy Mohamed	Mahatet El Sadat El Satheya SWTP	Technician (Filtration facility)	2011.12～up to now	
Mohamed Sabry Abdelazeem	Mahatet El Sadat El Satheya SWTP	Technician (Sludge facility)	2011.12～up to now	
Ahmed Abd Elsalam Belal	Mahatet El Sadat El Satheya SWTP	Technician (Pump room)	2011.12～up to now	
Ahmed Samy Saleh	Mahatet El Sadat El Satheya SWTP	Technician (Cl room)	2011.12～up to now	
Amin Gamal Mahroos	Mahatet El Sadat El Satheya SWTP	Technician (Al room)	2011.12～up to now	
Ahmed Ebrahim Gobara	Gezy IMRP	Technician, O&M	2011.12～up to now	
Elsaid Reyad	Gezy IMRP	Technician (Elec. maintenance)	2011.12～up to now	
Abdelhakeem Abdelrasheed	Gezy IMRP	Technician (Cooling system)	2011.12～up to now	
Mahmood Ali Ateem	Gezy IMRP	Technician	2011.12～up to now	

C/P Name	Title / Field	Qualification	Working Period	Note
		(Operation)		
Ibrahim Maher Abdelglel	Gezy IMRP	Technician (Operation)	2011.12～up to now	
Shaker Ibrahim Abdelgel	Gezy IMRP	Labor	2011.12～up to now	
Dr. M. Nagi	Gezy IMRP (Chemist)	Technician (Mech. maintenance)	2012.03～up to now	
Wala'a Elaskary	Gezy IMRP (Manager)	Engineer	2011.12～up to now	
Salah M. Kabeel	Ashama WPS	Technician, Plant manager.	2012.03～up to now	
Yosri William	Ashama WPS	Technician	2012.03～2013. 08	Moved to another plant
Hassan Mohamed	Ashama WPS	Technician	2013.08～up to now	
Zaki Abdelazim	Ashama WPS	Technician	2012.03～up to now	
Mohamed Abdelfatah	Ashama WPS	Technician	2012.03～up to now	
Abdelrahman Abdullah	Ashama WPS	Technician	2012.03～up to now	
Abdellatif Ammar	Ashama WPS	Technician	2012.03～2013, 08	Moved to another plant
Abdullah Abu Omar	Ashama WPS	Technician	2013, 08～up to now	
Helal Khedr	Shebin SWTP Manager	Engineer	2013.10 ～up to now	
Bassem Mahmoud	Shebin SWTP lab manager	Chemist	2013.10 ～up to now	
Radwa Hassan	Shebin SWTP SCADA system	Engineer	2013.10 ～up to now	
Ali Amer	Shebin SWTP	Technician	2013.10 ～up to now	
Mostafa Mohammed	Shebin SWTP	Technician	2013.10 ～up to now	
Baha'a Elserwy	Shebin SWTP Lab.	Chemist	2013.10 ～up to now	
Hala Bukr	Shebin SWTP Lab.	Chemist	2013.10 ～up to now	
Yassmin Gaber	Shebin SWTP Lab.	Chemist	2013.10 ～up to now	
Mahmoud Elhadary	Minuof SWTP Manager	Engineer	2013.10 ～up to now	
Mahmoud Sallam	Minouf SWTP Chemist	Chemist	2013.10 ～up to now	
Mohammed Abdeldaim	Minouf SWTP	Technician	2013.10 ～up to now	
Mohammed Khalifa	Minouf SWTP	Technician	2013.10 ～up to now	
Ashraf Elshahed	Minouf SWTP	Technician	2013.10 ～up to now	
Ali Kamunna	Minouf SWTP	Technician	2013.10 ～up to now	
Salah Elbatanony	Kafr Elbatanon IMRF Manager	Engineer	2013.10 ～2013.12	Retired
Mohammed Khattab	Kafr Elbatanon IMRF Lab. manager.	Chemist	2013.10 ～up to now	
Mohammed Eid	Kafr Elbatanon IMRF Electrical(Plant manager)	Technician	2013.10 ～up to now	
Ahlam Sadek	Kafr Elbatanon IMRF	Technician	2013.10 ～up to now	
Mohammed Ghaly	Kafr Elbatanon IMRF	Technician	2013.10 ～up to now	
Shawky M. Elmeshad	Elbatanon WPS Manager	Technician	2013.10 ～up to now	
Kamel Abdelsaid	Elbatanon WPS	Technician	2013.10 ～up to now	
Mohamed Abdelaziz	Elbatanon WPS	Technician	2013.10 ～up to now	
Samy Azer	Elbatanon WPS	Technician	2013.10 ～up to now	
Adel Abellatif	Elbatanon WPS	Technician	2013.10 ～up to now	
Saeed Sha'aban	Elbatanon WPS	Technician	2013.10 ～up to now	
NRW Team in Headquarters (HQ)				
~~Belal Galal Khalaf~~	~~Head of NRW team/HQ~~	~~Management~~	~~2011.05～2013.12~~	~~Retired~~

C/P Name	Title / Field	Qualification	Working Period	Note
Mohamed El Shafey	Assistant for head of NRW team/HQ	Engineer	2011,07～up to now	
Mohamed Fawzy Bader	Assistant for head of NRW team/HQ	Engineer	2011,07～up to now	
Ahmed Radwan	Assistant for head of NRW team/HQ	Engineer	2011,07～2012,12	Left C/P due to health condition
Ahmed El Showny	Assistant for head of NRW team/HQ	Engineer	2012,02～up to now	
Ahmed Shalaby	Assistant for head of NRW team/HQ	Engineer	2012,02～2012,10	Moved to another company
Gamal Rizk	NRW team member	Technician	2012.08～2013,08	Army service
Mohammed Gaber	NRW team member	Technician	2012.08～2013,08	Army service
NRW Team in Branches				
Monir Mohamed	Quesna	Engineer	2012.03～up to now	
Anwar Ibrahem	Quesna	Engineer	2012.03～up to now	
Abdelsattar Hossin	Quesna	Technician	2012.03～up to now	
Nagi Nikola	Quesna	Technician	2012.03～up to now	
Mohamed Sobhy	Quesna	Technician	2012.03～up to now	
Mohamed Ibrahem	Quesna	Plumper	2012.03～up to now	
Abdelmalek Mohamed	Quesna	Worker	2012.03～up to now	
Mansour Mohamed	Quesna	Worker	2012.03～up to now	
Ayman Abdrabo	Berket El Saba'a	Engineer	2012.03～up to now	
Ahmed Shawky	Berket El Saba'a	Technician	2012.03～up to now	
Bakry Mohamed	Berket El Saba'a	Plumper	2012.03～up to now	
Hamed Ali	Shebin	Network manager	2012.03～up to now	
Hassan Ismael	Shebin	Supervisor	2012.03～up to now	
Gamal Eldemerdash	Shebin	Technician	2012.03～up to now	
Abdelmonsif Mohamed	Shebin	Worker	2012.03～up to now	
Hitham Mohamed	Shebin	Worker	2012.03～up to now	
Ahmed Elshamy	Shebin Surveyor	Technician	2013.08 ～up to now	
Sobhy Yossif	Berket El Saba'a Surveyor	Technician	2013.08 ～up to now	
Mostafa Marzok	Minouf Surveyor	Technician	2013.08 ～up to now	
Mahmoud Faramawy	Elbagour Surveyor	Technician	2013.08 ～up to now	
Ali Ahmed Reyad	Ashaman Surveyor	Technician	2013.08 ～up to now	
Abdelsattar Hossin	Quesna Surveyor	Technician	2013.08 ～up to now	
Mohamed Ibrahem	Quesna Surveyor	Technician	2013.08 ～up to now	
Mohamed Sobhy	Elshohada Surveyor	Technician	2013.08 ～up to now	
Mohamed Elsha'ar	Minouf Surveyor	Technician	2013.08 ～up to now	
Mahmoud Shafik	Tala Surveyor	Technician	2013.08 ～up to now	

ANNEX 7-7. Facility, Equipment and Operational Expenses Provided by Egypt

Company Activity	Item	No. of units	Price in Egyptian pound
SHAPWASCO			
WDM	Chamber construction for installation of WDM equipment	13	265,100.00
	Construction of SCADA Room	1	950,000.00
	Internet Communication	25	33,750.00
	Electricity for Equipment	1	4,500.00
	Electricity meters and Poles Installation	1	5,000.00
	Materials for Equipment Installation	1	5,000.00
	Transport cost for Equipment	1	2,000.00
	Total		**1,265,350.00**
GHAPWASCO			
SOP	Auma Control valves	10	166,500.00
	Adjustments for Auma valves (water level indicator and control panels)	10	140,000.00
	Water flow meters Calibration	11	8,250.00
	Chlorine Cylinder balance	1	13,000.00
	Air Scouring flow meter	2	82,000.00
	Flow meter Chamber in Tanta WTP	1	17,000.00
	Residual Chlorine indicator meter	1	23,000.00
	Chlorine leakage detection system	1	14,000.00
	Chlorine Dosing flow meter for IMRF	2	3,000.00
	Chemical dosage indicator utility bags (Chlorine and Manganese)	2	2,000.00
	Computers for Model facilities	2	11,000.00
	Vacuum pump for back wash in Tanta WTP	1	22,000.00
	Alum dosage totalizer	1	13,000.00
	Ultrasonic flow meters for Tanta WTP	4	96,000.00
NRW	Chamber construction for installation of NRW equipment	8	136,000.00
	Acoustic Rods for leak detection	20	32,000.00
Other	Approximate expenses for the Project by company such as office and JICA Car fuel and maintenance, workshops, etc. ...	----	10,000.00
	Total		**788,750.00**
MCWW			
SOP	Calibration Works		
	1st Gezay IMRF:		
	Elecromagnatic F.M	4	2,800.00
	Ultrasonic level transmitter	6	3,600.00
	(pH) measurement level	2	1,200.00
	(NTU) measurement level	2	1,200.00
	(ITT) portcel for Residual Chlorine	1	700.00
	Electronic pressure switch	2	1,200.00
	2nd Elsadat SWTP:		
	Raw water Ultrasonic F.M	1	700.00
	Treated water Ultrasonic F.M	1	700.00
	Ultrasonic F.M for filtered water	14/16	9,800.00
	Ultrasonic level measurement	15/16	9,000.00
	Ultrasonic level transmitter	6	3,600.00
	Level meter controller	15/16	9,000.00
	Electronice level switch (Intake)	1	600.00
	Raw water F.M (Intake)	1	700.00
	Analyzer for residual Chlorine	1	700.00
	Chlorine dosing controller (touch)	1	900.00
	Purchasing & Installation works		
	Purchasing & Installation Ultrasonic F.M for filter back wash water	1	54,595.00
	purchasing & Installing Air F.M for Elsadat 8"	2	79,780.00
	purchasing & Installing Ultrasonic level controller	3	59,700.00
	purchasing & Installing 1Ton Table balance for Chlorine cylinder	3	51,000.00
	purchasing & Installing Air F.M for Gezay 2"	1	41,000.00
	purchasing & Installing Air F.M for Gezay 3"	1	41,500.00
	purchasing & Installing permanganate potassium glass indicator(Gezay)	1	4,100.00
	purchasing & Installing electromagnetic F.M	1	27,500.00
	purchasing & Installing ultra-sonic F.M (Elsadat-Shebin-Minouf)	3	66,600.00
	purchasing & Installing pressure gauge (Kom Akhdar)	2	1,000.00
	purchasing & Installing pipes & valves (to change Chlorine point)	3	6,000.00
	purchasing & Installing stainless plate for (Gezay)	1	1,000.00
	purchasing & Installing filter sand (Gezay) 5m^2	5	1,800.00
	Purchasing Only		
	purchasing pressure gauge (-) 0 to -10 mws	4	2,600.00
	purchasing Chlorine cylinder Hook balance	2	26,400.00
	purchasing electromagnetic F.M	1	27,500.00
	purchasing pressure gauges different types	42	23,520.00
	purchasing pressure gauges different types	30	18,300.00
	purchasing submersible pump 25L/s.-60 m head	1	42,500.00
	purchasing injection pump for permanganate potassium	1	7,500.00
	purchasing injection pump for Alum	3	180,000.00
	purchasing normal 1/2" valves	40	1,800.00
	purchasing ruler balance for hooked Chlorine cylinder 1Ton.	1	2,550.00
	purchasing Alum line screen net 50mm.	3	6,000.00
	Print out the necessary records for all model/extension facilities	50	500.00
	Print out the necessary instructions. SLD, P&ID for model/extension facilities	100	500.00
NRW	Chamber construction for installation of NRW equipment	9	95,247.00
	Acoustic Rods for leak detection	10	15,000.00
Other	Approximate expenses for the Project by company such as office and JICA Car fuel and maintenance, workshops, etc. ...		15,000.00
	Total		**946,892.00**
	Grand Total		**3,000,992.00**

ANNEX 8: Evaluation Design Matrix (1)

(1) Progress and Process of Project Implementation

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key questions				
Project Implementation	Progress on producing expected Outputs	Has the Output 1(*) been produced? (*) Output 1: "human Resource Development through collaboration among water supply companies in Sharkiya, Gharbia and Minufia Governorates in strengthened"	Whether Output Indicator "a. More than 3 members from each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are approved as trainers by Steering Committee"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether Output Indicator "b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team" has been achieved	Project reports, C/P, and Japanese experts	Desk review and interviews
			The effect that the Output 1 activities has brought about on the collaboration and capacity building of 3 water supply companies.	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
		Has the Output 2(*) been produced? * Output 2: "based on the experiences of SHAPWSCO, SOPs are developed and utilized at the model facilities in Gharbia and Minufia Governorates"	Whether the Indicator "a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation"has been met (as well as whether the criteria for rating, which was unclear at the time of Mid-term Evaluation, has been selected)	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether the Indicator "b. The model facilities are operated and maintained based on SOP"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether the Indicator "c. Improvement of PIs for the model facilities are evaluated based on SOP"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
		Has the Output3(*) been produced? *Output 3: "the institutional skills and experiences of SHAPWASCO for NRW reduction are transferred to NRW teams at the model areas in Gharbia and Minufia Governorates"	Whether the Indicator "a. More than 80% of NRW team members rates understanding of trainings more than 3 on the 5-scale evaluation"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether the Indicator "b. Water balance analysis is conducted properly for the 3 model areas"has been achieved (as well as whether the criteria for rating, which was unclear at the time of Mid-term Evaluation, has been selected yet)	The results of water-balance analysis, Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key questions				
			Whether the Indicator "c. 100% of detected leakage is repaired at the model area"has been achieved, and how this % improved in comparison with the past.	Project reports, C/P, Japanese experts, customer centers at each C/P agencies	Desk review, questionnaire, and interviews
		Has the Output4(*) been produced? *Output 4: "the water distribution management capacity is improved in Sharkiya Governorate as an advanced model"	Whether the Indicator "a. Water distribution is managed based on SOP at the model areas"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
			The progress on the procurement of equipment necessary for Output 4 activities	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether the Indicator "b. Issues on water distribution capacity are reported to top management of SHAPWASCO"has been achieved, and the example of the effects that the attainment of this Indicator has brought about.	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
		Has the Output0(*) been produced? *Output 0: "the project is managed and coordinated properly"	Whether the Indicator "a. Agreement on the coordination among SHAPWASCO・GHAPWASCO・MCWW is prepared"has been achieved.	Project reports, C/P, and Japanese experts	Desk review and interviews
			Whether the Indicator "b. Project activities are regularly monitored based on PO/APO"has been achieved.	Project reports, C/P, Japanese experts, monitoring reports	Desk review and interviews
	Progress on attaining Project Purpose	Has the Project Purpose(*) been or is likely to be achieved? *Project Purpose: "management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia	Whether the Indicator "Performance Indicators(Pis) in the fields of management capacity of operation and maintenance are improved at the model areas/facilities" in 3 target provinces has been achieved.	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
	Prospect of realising Overal Goal	Is the Overall Goal(*) of this Project likely to be attained? *Overall Goal: "management capacity of operation and	Whether the Indicator "PIs in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates" has been achieved.	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
	Provision of Inputs	Have the planned inputs been provided by Egyptian partners?	1) Assignment of counterpart personnel ・Project Director (Chairman, HCWW)		

Evaluation Questions		Information/data for verification	Data source	Data collection method
Key questions				
		•Project Manager (Vice Chairman, HCWW) •Co-project Managers (Chairman of SHAPWASCO, GHAPWASCO, MCWW) • SOP Team • NRW Team	Project reports, C/P, and Japanese experts	Desk review and interviews
		2) Office space and facilities for the experts	Project reports, C/P, and Japanese experts	Desk review and interviews
		3) Equipment	Project reports, C/P, and Japanese experts	Desk review, interviews, and direct observation
		4) Provision of information necessary for the Project implementation	Project reports, C/P, and Japanese experts	Desk review and interviews
		5) Local Cost	Project reportsand Japanese experts	Desk review and interviews
	Have the planned inputs been provided by Japanese partners?	1) Japanese experts • Chief advisor/water supply planning • NRW reduction management • Leakage detection • Water Treatment • Water quality • Electrical equipment • Mechanical equipment • Distribution network • Others (if necessary)	Project reports, C/P, and Japanese experts	Desk review and interviews
		2) Local Expert	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
		3) Equipment	Project reports, C/P, and Japanese experts	Desk review, direct observation and interviews
		4) Training in Japan	Project reports, C/P, and Japanese experts	Desk review and interviews
		5) Local Cost	Project reports, C/P, and Japanese experts	Desk review and interviews

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key questions				
Implementation Process	Overall progress of the Project activities	Have the activities since the Mid-term Review been implemented on time and as planned?	Whether any gap is observed between the planned and actual implementation schedule	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
	Project Management	Is the project management appropriate and functioning?	Whether the roles, responsibilities, and information flow are clear to the stakeholders	Documents showing the implementation arrangements , C/P, Japanese experts, and JICA office	Desk review, questionnaire, and interviews
			To what extent the monitoring and information-sharing system is defined and functioning		
		Do project participants maintain amicable and regular communication?	Communication between the Japanese(*) and Egyptian partners (*)including both Japanese experts and JICA office	Project reports, C/P, Japanese experts, JICA office	Desk review, questionnaire, and interviews
			Communication among Egyptian stakeholders (HCWW・SHAPWASCO・GHAPWASCO・MCWW)	Project reports, C/P, Japanese experts, JICA office	Desk review, questionnaire, and interviews
			Communication among Japanese stakeholders including JICA headquarters, its office in Egypt, and Project experts	Project reports, JICA office, and Japanese experts	Desk review and interviews
		How strongly do the Project participants recognize and feel the sense of ownership of the Project?	Progress on project activities and provision of inputs by the Egyptian partners	Project reports, JICA office, Japanese experts, and the progress on implementing project activities and provision of inputs	Desk review and interviews
			Cooperation gained from Egyptian partners for the smooth implementation of the Project		
	Participants' expertise, and roles and responsibilities	Are the skills and the scope of responsibilities of the Japanese experts appropriate and sufficient?	Expertise of the Japanese experts, their role and responsibilities, and the level of their commitment to the Project	C/P and JICA office	Questionnaire and interviews
		Were their method of skills transfer relevant?	The relevance of the design and of the method of training and lectures	Project reports and C/P	Desk review, questionnaire, and interviews
		Are the expertise and the scope of responsibilities of the Egyptian partners appropriate and sufficient?	Expertise of Egyptian partners, their roles and responsibilities, and the level of participation	Project reports, JICA office, and Japanese experts	Desk review, questionnaire, and interviews
	Other issues affecting the implementation process	Has the PDM been revised during the Project? If so, did it contribute to improving the project management /implementation?	• The changes made to the PDM • Progress on the activities after the revision	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews

Evaluation Questions		Information/data for verification	Data source	Data collection method
Key questions				
	To what extent have the recommendations from the Mid-term Review been followed up?	Status of implementing the recommendations from the Mid-term Review	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
	Any other issues affecting the project implementation and management?	Whether the assumptions in the PDM has been satisfied	Project reports, C/P, and Japanese experts	Desk review, questionnaire, and interviews
		Changes in the policies and the organizational structures of the Egyptian government		
		Other factors outside of the Project's activities or jurisdiction, such as political or economic situation or natural disasters		
		(The effects of) measures taken to deal with the negative external factors		

HCWW: Holding Company for Water and Wastewater SHAPWACO: Sharkiya Potable Water and Sanitation Company

GHAPWASCO: Gharbia Potable Water and Sanitation Company MCWW: Minufia Company for Water and Wastewater C/P: Counterparts

ANNEX 8: Evaluation Design Matrix (2)

(2) Evaluation of Performance by Organization for Economic Cooperation and Development's Evaluation Criteria

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key Questions				
Relevance	Relevance to the Priority	Is the Project focus consistent with the current development policy of Egypt? Is there any policy change since the Mid-Term Review?	Consistency of the Project focus with Egypt's development plan/sector strategy	Policy documents, C/P, Japanese experts, Mid-terme Evaliation Reports, and other donors	Desk review and interviews
		Is the objective/focus of the Project consistent with Japan's/JICA's assistance policy? Are Japan's assistance policies confirmed in the Mid-Term Review still valid?	Priority given to water- and waste water management within Japan's aid policy	Ministry of Foreign Affairs' homepage, JICA's assistance policy, Mid-term Evaluation report	Desk review and interviews
		Is the Project Purpose consistent with the technical assistance needs of the target groups?	Consistency wit the technical assistance needs of C/P organizations (HCWW・SHAPWASCO・GHAPWASCO・MCWW)	Project reports, C/P, Japanese experts, Mid-term Evaluation Rport	Desk review, interviews, and questionnaire
	Relevance to the Needs	Was the selection of target groups appropriate?	The roles that the C/P organizations (SHAPWASCO・GHAPWASCO・MCWW) play in water- and waste-water management in Egypt. The roles that project participants play within their organizations	Project reports, C/P, Japanese experts, Mid-term Evaluation Rport	Desk review and interviews
	Relevance of the Project Design/Approach	Is the Project design appropriate as a solution to the issues faced by the C/P organizations?	The design of the PDM, progress on producing Outputs, implementation process, and the opinions of stakeholders	Project reports, C/P, Japanese experts, Mid-term Evaluation Rport	Desk review, interviews, and questionnaire
		Does Japan have comparative advantages in the field of assistance it provides through this Project?	Stakeholder consultations on Japan's comparative advantage in water- and waste-water management.	C/P, Japanese Experts, JICA Office, and other donors	Desk review and interviews
Effectiveness / Efficacy	Level of Attainment of the Project Purpose	How likely is it for the Project to achieve its purpose of "management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates"?	Level of attainment of performance indicators, results of stakeholder interviews	Level of attainment of performance indicators	------

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key Questions				
		What factors or activities particularly contributed to the progress toward attaining Project Purpose?	Level of attainment of performance indicators, the results of stakeholder interviews	Project reports, C/P, and Japanese experts	Desk review and interviews, and questionnaire survey
	Contributions of Project Outputs to the Achievement of Project Purpose	Were the level of Outputs sufficient to achieve the Project Purpose?	Level of attainment of performance indicators	Level of attainment of performance indicators	———
		If the Project Purpose has not been achieved, what were the impediments?	Political and economic factors as well as the occurance of natural disasters	Project reports, C/P, and Japanese experts	Desk review and interviews, and questionnaire survey
Efficiency	Progress on generating expected Outputs	Did the schedule of the Project implementation follow the agreed Plan of Operation?	Comparison of planned and actual implementation schedule	Level of attainment of performance indicators, PO, Project reports, Mid-term Evaluation Report,C/P, Japanese experts	Desk review and interviews, and questionnaire survey
		Were there any activities or factors that particularly contributed – or threw an impediment – to producing Outputs?	Level of attainment of performance indicators, implementation process, and the results of stakeholder interviews	Project reports, C/P, Japanese experts, Mid-term Evaluation Rport	Desk review and interviews, and questionnaire survey
	Contributions of Project Activities to the generation of expected Outputs	Was the scope of Project Activities adequate to producing all expected Outputs?	Level of attainment of performance indicators, results of stakeholder interviews	The level of attainment of performance indicators, examination of implementation process, project documents, C/P, Japanese experts, and JICA Office	Desk review and interviews, and questionnaire survey
		Were there external factors that affected the achievement of Output?	Factors that affected the project implementation (such as natural disasters and policy change)	The level of attainment of performance indicators, examination of implementation process, project documents, C/P, Japanese experts	Desk review and interviews, and questionnaire survey
	Quality, Quantity, and Timing of inputs	Were the inputs from Japanese partners adequate in terms of quantity, quality and the timing?	Inputs provided and its effect on the efficiency of activities; evaluation of implementation process	C/P, the level of attainment of project inidicators, Project reports	Desk review and interviews, and questionnaire survey

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key Questions				
		Were the inputs from Egyptian partners adequate in terms of quantity, quality and the timing?	Inputs provided and its effect on the efficiency of activities, and the evaluation of implementation process	Level of attainment of the Performance Indicator, Project reports, Japanese expert, and JICA office	Desk review and interviews, and questionnaire survey
	Factors contributing to Efficiency	Were the assumptions for this Project envisaged in the PDM satisfied?	Whether the assumptions in the PDM were satisfied	Project reports, Mid-term Review Report, C/P, and Japanese experts	Desk review and interviews, and questionnaire survey
		Has any effort been made to increase efficiency? Were the resources other than that of the Project explored and utilised?	Records of cooperation with other JICA schemes and with other donors	Project reports, Mid-term Evaluation Report, C/P, Japanese experts, and JICA office	Desk review and interviews, and questionnaire survey
Impact	Prospect on realising Overall Goal	How likely is the Overall Goal of "management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates" to be achieved?	Level of attainment of performance indicators The likelihood to achieve the performance indicator of "central and local government budget for development of water supply facilities is allocated appropriately" The results of stakeholder interviews	Project document, C/P, Japanese experts, JICA office, Mid-term Evaluation report	Desk review and interviews, and questionnaire survey
	Spillover effects	Has any spillover effect been observed during the Project implementation? For negative effects, what countermeasures have been taken?	The positive/negative influence observed in the model areas or in the workplaces of the project participants Impacts on environment Impacts on other government policies and institutions Imacts on gender, human rights, social equity, and culture In the case negative impacts are observed, countermeasures that were taken against these measures	Project reports, Japanese experts, C/P	Desk review and interviews, and questionnaire survey

Evaluation Questions			Information/data for verification	Data source	Data collection method
	Key Questions				
Sustainability	Policy and institutional framework that supports sustainability	Is there a long-term policy framework in place to promote the activities that this Project has supported?	Wheter the government policies or initiatives are in favour of further improvement of water- and wastewater management in Nile Delta	Egypt's water- and wastewater management strategy, C/P, Japanese experts, and JICA office	Desk review and interviews, and questionnaire survey
		How concrete is a plan to continue the Project activities and disseminate the outcome of this Project?	Whether a plan is in place to utilise the output of this Project	Project documents, Japanese experts and C/P	Desk review and interviews, and questionnaire survey
	Organzational and financial arrangements	Do C/P organizations have willingness and plan to sustain and disseminate the outputs of this Project?	Whether C/P organizations have plans on future activities and human resources allocation necessary for these activities	Project documents, Japanese experts and C/P	Desk review and interviews, and questionnaire survey
		Is the budget necessary for future activities secured?	Whether any budget plan is in place to carry out the future activities	Project documents, Japanese experts and C/P	Desk review and interviews, and questionnaire survey
	Sustainaibility of skills	Are the skills that the C/Ps gained through Output 1-4 activities likely to remain and be utilised by the C/P organizations?	The extent to which the activities at the model facilities are consistent with the SOP The level of attainment of the PI by each C/P organization Results of stakeholder interviews	The level of attainment of performance indicators, examination of implementation process, C/P, and Japanese experts	Desk review and interviews, and questionnaire survey
		Are the equipment provided by the Project likely to be managed and utilised?	The extent to which the equipment is utilised/ the existence of future management plan	C/P and Japanese experts	Desk review and interviews, questionnaire survey, and direct observation
	Other factors contributing or hindering Sustainability	Are there other activities than this Project that contribute to the sustainability of this Project?	The existence of other related projects by Egyptian government organizations, JICA, and other donors	C/P, Japanese experts and JICA office	Desk review and interviews, and questionnaire survey
		Are there any other concerns that potentially affect the Project's sustainability?	Political situation, the results of stakeholder interviews etc	Project documents, Japanese experts, C/P and JICA office	Desk review and interviews

ANNEX 9. List of Key People Met

HCWW	
Mr. Mamdouh Raslan	Chairman/ Project Director
Dr. Salah Bayoumi	Vice Chairman/Project Manager
Dr.Rifaat Abdel Wahaab	Head, Research & Development Sector
SHAPWASCO	
Ayman Abd El Kader	Chairman/Project Co-Manager
Alae El Din Mohamed	Head of C/P team/Headquarters (HQ)
Mohamed Atef	Assistant for head of WDM team/HQ
Mostafa Ibrahim	Assistant for head of WDM team/HQ
Tamer Kamel Hussein	Assistant for head of WDM team/HQ
GHAPWASCO	
Mahmoud Zaki	Chairman /Project Co-Manager
Adel Attia	Head of C/P team
Ahmed El Maleh	SOP team leader/HQ
Rizk El Fiky	SOP member/HQ
Mohamed Masood	SOP member/HQ
Gad Abdel Monsef Gad	SOP member/HQ
Huessein Youssef Shahin	Station manager / Mahalet Marhoum IMRP
El Mohamady Mekawy	Senior technician / Mahalet Marhoum IMRP
Ahmed Shoieb	Samanoud WTP
Ahmed Rabee'	NRW team leader/HQ
Omar Salah El Din	NRW member/HQ
Salah Mohamed El Sawahly	NRW member/HQ
Saeed Abou Ali	Santa WTP
Abdel Hameed Ahmed Omar	Santa WTP
Abdel Hady Saeed El Hebeishy	Santa WTP
MCWW	
Mohamed Naguib	Chairman/ Project Co-Manager
Ayman Bassyouni	Head of SOP team/HQ
Mohamed Fawzy Awad	Assistant for head of SOP team/HQ
Mohamed Fathy	Assistant for head of SOP team/HQ
Khaled Kazamel	Assistant for head of SOP team/HQ
Saeed Abdelfattah	Assistant for head of SOP team/HQ
Adel Ibraheem	Assistant for head of SOP team/HQ
Mohamed El Shafey	Assistant for head of NRW team/HQ
Mohamed Fawzy Bader	Assistant for head of NRW team/HQ
Ahmed El Showny	Assistant for head of NRW team/HQ
Donors	
Tony De Seta	Team Leader, Inproved Water and Wastewater Programme
Ernst Doering	Water and Wastewater Management Programme Coordinator
Project Office	
Katsumi FUJII	Japanese Expert/Team Leader
Mitsuhito OMORI	Japanese Expert
Tomohiro SHIMIZU	Japanese Expert
Atsushi KATO	Japanese Expert
Mohamed Nagi Gaber	Project Facilitator (SHAPWASCO)
Mohamed Abdel Kader Abouzekry	Project Facilitator (GHAPWASCO)
Mohammed Abd El-kader Abd El-Ghany	Project Facilitator (MCWW)
JICA Egypt Office	
Shiro NAKASONE	Senior Representative
Koichi MIZUKUSA	Representative

別添4　無収水管理に関する PI の達成状況

◎= sufficient　　○ = satisfactory

Pilot areas	Before Project	Targets	After project	Level of achievements on target	Level of Improvement as compared to before Project	Justification for Limited Progress
1. Gharbia						
Tanta	40.1%	28.0%	24.7%	◎		
El Mahalla El Kobra	27.1%	20.3%	22.0%	---	○	
Zefta	21.2%	15.9%	21.0%	---	---	○ • No major leak was detected in this area, thus little effect on the % of NRW. • The network in Zefta is relatively new compared to other pilot areas, with less number of connections (242) and less leaks. Zefta was nevertheless selected as a pilot area, following the stakeholders' conclusion that the first pilot area is preferably small in size.
2. Minufia						
Shebeen	19.6%	14.7%	16.5%	---	○	
Quesna	29.8%	22.3%	22.5%	---	◎	
Barket El Sab'a	27.1%	20.3%	20.2%	○	---	

Overall assessment:　The performance is generally satisfactory, if not up to initial expectation. The number of pilot areas that achieved the target was limited to two; however, overall improvement has been observed in 5 out of 6 areas. The justification for the limited progress in Zefta was found appropriate.

ナイルデルタ地域上下水道公社運営維持管理能力向上プロジェクト
評価グリッド（1）

（1）実績の検証・実施プロセス

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
実績の検証	アウトプットは計画どおり産出されているか。	アウトプット1:「シャルキーヤ県・ガルビーヤ県・ミヌフィア県において上下水道公社の連携を通した人材育成が強化される。」	指標「a. More than 3 members each of SOP/NRW teams in SHAPWASCO・GHAPWASCO・MCWW are approved as trainers by Steering Committee」の達成状況	プロジェクト進捗報告書、C/P、専門家	文献調査、インタビュー調査
			指標「b. More than 20 times of seminars/workshops are organized under inter-company cooperation by the Project team」の達成状況	プロジェクト進捗報告書、C/P、専門家	文献調査、インタビュー調査
			成果1の活動が、3公社の連携関係や人材育成にもたらした効果の事例	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査、質問票
		アウトプット2:「シャルキーヤ県の事例を参考に、ガルビーヤ県・ミヌフィア県のモデル施設において運転・維持管理に係るSOPが作成・運用される。」	指標「a. More than 80% of SOP team members rates understanding of trainings more than 3 on the 5-scale evaluation 」の達成状況（中間レビュー時には不明確であった評価基準が、その後決定されたかも併せて確認）。	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			指標「b. The model facilities are operated and maintained based on SOP」の達成状況	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			指標「c. Improvement of PIs for the model facilities are evaluated based on SOP」の達成状況	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
		アウトプット3:「シャルキーヤ県上下水道公社の無収水削減に係る技術・経験がガルビーヤ県・ミヌフィア県のモデル地区の職員に移転される。」	指標「a. More than 80% of NRW team members rates understanding of trainings more than 3 on the 5-scale evaluation」の達成状況（中間レビュー時には不明確であった評価基準が、その後決定されたかも併せて確認）。	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			指標「b. Water balance analysis is conducted properly for the 3 model areas」の達成状況	水収支分析の結果、プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査、質問票

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
			指標「c. 100% of detected leakage is repaired at the model area」の達成状況（過去の漏水対応状況との比較も）	プロジェクト報告書、専門家、C/P、各C/P機関のカスタマーセンター等	文献調査、インタビュー調査、質問票
		アウトプット4:「先行事例として、シャルキーヤ県上下水道公社の配水管理に係る能力が強化される。」	指標「a. Water distribution is managed based on SOP at the model areas」の達成状況	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			アウトプット4に必要な資機材の調達の状況	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			指標「b. Issues on water distribution capacity are reported to top management of SHAPWASCO」の達成状況、及び指標の達成がもたらした効果の事例	プロジェクト報告書、専門家、C/P	文献調査、質問票、インタビュー調査
		アウトプット0:「プロジェクトが適切に管理・調整される。」	指標「a. Agreement on the coordination among SHAPWASCO・ GHAPWASCO・MCWW is prepared」の達成状況	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			指標「b. Project activities are regularly monitored based on PO/APO」の達成状況	プロジェクト報告書、専門家、C/P、モニタリング報告書　等	文献調査、インタビュー調査
	プロジェクト目標の達成見込みはあるか。	プロジェクト目標:「シャルキーヤ県・ガルビーヤ県・ミヌフィア県のモデル地区・施設において上水道施設の運営維持管理能力が向上する。」	3県のモデル地区・施設における指標「Performance Indicators in the fields of management capacity of operation and maintenance are improved at the model areas/facilities」の達成状況	プロジェクト報告書、専門家、C/P	文献調査、質問票、インタビュー調査
	上位目標の達成見込みはあるか。	プロジェクト目標:「シャルキーヤ県、ガルビーヤ県、ミヌフィア県において上水道施設の運営維持管理能力が向上する。」	指標「Performance Indicators in the fields of management capacity of operation and maintenance are improved in Sharkiya, Gharbia, and Minufia Governorates」の達成見込み	プロジェクト報告書、専門家、C/P	文献調査、質問票、インタビュー調査
	投入は計画どおりか。	エジプト側による投入	1）カウンターパートの配置 ・プロジェクト・ダイレクター(Chairman, HCWW) ・プロジェクト・マネージャー （Vice Chairman, HCWW ） ・共同プロジェクト・マネージャー （Chairman of SHAPWASCO, GHAPWASCO, MCWW） ・ SOP Team ・ NRW Team	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
			2) 専門家用執務室の提供	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			3)機材の供与	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査、直接観察
			4)プロジェクト実施に必要な情報の提供	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
			5)ローカルコスト	プロジェクト報告書、専門家、C/P	文献調査、インタビュー調査
		日本側による投入	1) 日本人専門家の派遣 ・ Chief advisor/water supply planning ・ NRW reduction management ・ Leakage detection ・ Water Treatment ・ Water quality ・ Electrical equipment ・ Mechanical equipment ・ Distribution network ・ その他 (必要に応じて)	プロジェクト報告書、専門家	文献調査、インタビュー調査
			2) ローカルエキスパート	プロジェクト報告書、C/P、専門家	文献調査、質問票、インタビュー調査
			3) 機材供与	プロジェクト報告書、専門家	文献調査、インタビュー調査、直接観察
			4) 本邦研修	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査
			5) ローカルコスト	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査
実施プロセス	**活動**は計画どおりに実施されているか。	中間レビュー以降の活動は計画通りに行われているか。	実績と計画との比較結果	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
	プロジェクトの実施体制に問題はないか。	実施体制は適切に機能しているか。	役割分担や連絡指示系統の明確さ	実施体制図、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票
			モニタリングや情報共有の体制と実施状況		

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
		関係者のコミュニケーションは円滑か。	エジプト側と日本側(専門家及びJICA事務所)のコミュニケーション	プロジェクト報告書、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票
			エジプト側関係者間（HCWW・SHAPWASCO・GHAPWASCO・MCWW）でのコミュニケーション	プロジェクト報告書、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票
			日本側関係者間（JICA本部、エジプト事務所、専門家）のコミュニケーション	プロジェクト報告書、JICA事務所、専門家	文献調査、インタビュー調査
		関係者のプロジェクトに対する認識・オーナーシップは高いか。	エジプト側による活動や投入の実施状況	プロジェクト報告書、JICA事務所、専門家、投入及び活動の実績	文献調査、インタビュー調査
			プロジェクトの円滑な実施に対するエジプト側関係者の協力		
	プロジェクト関係者の配置・専門性は適切か。	専門家の能力や配置は適切か。	専門家人材の専門性	C/P、JICA事務所	文献調査、インタビュー調査、質問票
			役割分担		
		技術移転の手法は適切か。	技術移転の手法や研修内容の適切性	プロジェクト報告書、C/P	文献調査、インタビュー調査、質問票
		C/Pの専門分野や配置は適切か。	エジプト側C/Pの専門性、役割分担等	プロジェクト報告書、JICA事務所、専門家	文献調査、インタビュー調査、質問票
	その他	PDMの修正はあったか。修正はプロジェクトの運営・実施改善に貢献したか。	・PDMの修正の有無 ・修正後の活動の進捗	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
		中間レビューの提言は、どの程度実施に移されているか。	提言の実施状況	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
		その他、プロジェクトの実施過程で生じている問題はあるか。	PDMの外部条件の影響	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
			エジプト側の政策や組織体制の変化の有無		
			政治・経済状況、自然災害等の外部条件の影響		
			問題に対して講じた対応策とその効果		

HCWW: Holding Company for Water and Wastewater　SHAPWACO: Sharkiya Potable Water and Sanitation Company

GHAPWASCO：Gharbia Potable Water and Sanitation Company　MCWW：Minufia Company for Water and Wastewater　C/P：Counterparts

ナイルデルタ地域上下水道公社運営維持管理能力向上プロジェクト
評価グリッド(2)

(2)経済開発協力機構の5項目基準による評価

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
妥当性	優先度	プロジェクトの内容は、エジプトの開発政策に合致しているか。中間評価で確認された方針に変更はないか。	エジプトの国家開発計画・水道分野政策との整合性	政策文書、C/P、専門家、中間レビュー報告書、その他関係機関	文献調査、インタビュー調査
		プロジェクトは日本の援助政策・JICAの援助実施方針と合致しているか。中間評価で確認された方針に変更はないか。	日本の援助政策における上下水道分野支援の位置づけ	日本外務省資料、JICA援助方針、中間レビュー報告	文献調査、インタビュー調査
	必要性	プロジェクト目標は、受益者の技術協力ニーズに合致しているか。	C/P機関(*)の技術協力ニーズへの合致 (*)HCWW・SHAPWASCO・GHAPWASCO・MCWW	プロジェクト報告書、C/P、専門家、中間レビュー報告書	文献調査、インタビュー調査、質問票
		ターゲットグループの選定は妥当であったか。	C/P機関(SHAPWASCO・GHAPWASCO・MCWW)がエジプト国の上下水道事業に果たすC/P機関の役割 プロジェクト参加者が各所属機関で果たす役割	プロジェクト報告書、C/P、専門家、中間レビュー報告書	文献調査、インタビュー調査
	アプローチの妥当性	プロジェクトの設計は、C/P機関が直面する課題への対応策として適切であったか。	PDMの構成、成果の産出状況、実施プロセスの検証結果、関係者意見	プロジェクト報告書、C/P、専門家、中間レビュー報告書	文献調査、インタビュー調査、質問票
		日本の技術の優位性はあるか。	日本の経験が活かせる事業であったか。	C/P、専門家、JICA事務所、他ドナー 等	文献調査、インタビュー調査
有効性	プロジェクト目標の達成	プロジェクト実施の結果、プロジェクト目標「シャルキーヤ県・ガルビーヤ県・ミヌフィア県のモデル地区・施設において上水道施設の運営維持管理能力が向上する。」は達成が見込まれるか。	実績の検証結果、関係者所感	実績の検証結果	------
		プロジェクト目標の達成に貢献した要因は何か。	実績の検証結果、関係者所感	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
	アウトプット→プロジェクト目標の因果関係	アウトプットは、プロジェクト目標達成に十分であったか。	実績の検証結果	実績の検証結果	-------
		プロジェクト目標達成を促進・阻害した外部要因はあるか。	政治経済の状況、自然災害や政策の変更等	プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
効率性	アウトプットの産出状況	プロジェクト活動は計画通り実施されたか。	実績と計画の比較結果	実績の検証結果、PO、プロジェクト報告書、中間レビュー報告書、C/P、専門家	文献調査、インタビュー調査、質問票
		アウトプットの産出に貢献した要因、あるいは阻害した要因は何か。	実績の検証結果、関係者所感	プロジェクト報告書、C/P、専門家、中間レビュー報告書	文献調査、インタビュー調査、質問票
	活動→アウトプットの因果関係	活動内容は、アウトプットを産出するのに十分であったか。	実績および実施プロセスの検証結果、関係者所感	実績および実施プロセスの検証結果、プロジェクト報告書、C/P、専門家	文献調査、インタビュー調査、質問票
		アウトプット産出に影響を及ぼす外部条件はあったか。	活動に及ぼした他の要因の有無（自然災害や政策の変更等）	実績および実施プロセスの検証結果、プロジェクト報告書、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票
	投入の量・質・タイミング	日本側の投入は、量・質・タイミングともに適切であったか。	投入の実績と効果・実施プロセスの検証の検証結果	実績の検証結果、プロジェクト報告書、C/P	文献調査、インタビュー調査、質問票
		エジプト側の投入は、質・量・タイミング共に適切であったか。	投入の実績と効果、実施プロセスの検証の検証結果	実績の検証結果、プロジェクト報告書、専門家、JICA事務所	文献調査、インタビュー調査、質問票
	外部要因の影響	PDMの外部要因は満たされたか。	以下の外部条件の影響の有無 ・「研修を受けた SHAPWASCO, GHAPWASCO, MCWWが、継続して業務に従事する」 ・「幹部の交代がプロジェクトの実施に影響しない」 ・「HCWW, SHAPWASCO, GHAPWASCO, MCWWからの予算が計画通り割り当てられる」	プロジェクト資料、中間レビュー報告書、C/P、専門家	文献調査、インタビュー調査、質問票
	その他	他の日本のリソース、他ドナーのリソースの活用はあったか。	他のJICAスキームとの連携 他ドナーとの役割分担	プロジェクト資料、中間レビュー報告書、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
インパクト	上位目標達成の見込み	上位目標の指標「Management capacity of operation and maintenance of water supply facilities is improved in Sharkiya, Gharbia and Minufia Governorates」の達成見込み	実績の検証結果 外部条件「Central and local government budget for development of water supply facilities is allocated appropriately」が満たされる見込み 関係者意見	プロジェクト資料、C/P、専門家、JICA事務所、中間レビュー報告書	文献調査、インタビュー調査、質問票
	波及効果	プロジェクトの実施により、想定外の波及効果や負の影響は生じたか。負の影響が出た場合、それにどう対処したか(する予定か)。	対象地域やプロジェクト関係者の職務・職場環境等への影響 環境への影響 政策・法律・制度等の整備への影響 ジェンダー、人権、貧富等社会・文化的側面への影響 負の影響に対して講じられた(協議された)対策	プロジェクト資料、専門家、C/P	文献調査、インタビュー調査、質問票
持続性	政策・制度面	本プロジェクトが支援した活動を今後も継続するための長期的政策枠組みは存在するか。	ナイルデルタ地域水道事業を支援する政策やイニシアティブの有無	エジプトの水道分野政策、C/P、専門家、JICA事務所	文献調査、インタビュー調査、質問票
		本プロジェクトの活動を継続・普及する具体的な取り組みがどの程度具体化されているか。	本プロジェクト成果の今後にかかる計画の有無	プロジェクト資料、専門家、C/P	文献調査、インタビュー調査、質問票
	組織・財政面	各C/P機関は、プロジェクトの成果を継続・普及する意志や計画を有しているか。	今後の活動や人員配置に関する計画の有無	プロジェクト資料、専門家、C/P	文献調査、インタビュー調査、質問票
		活動の継続・普及に必要な予算の確保は行われているか。	上記計画に必要な予算計画の有無	プロジェクト資料、専門家、C/P	文献調査、インタビュー調査、質問票
	技術面	成果1～4を通じてプロジェクトが移転した技術は、各C/P組織に定着する見込みか。	SOPに基づく活動の実施状況 各C/P機関によるPIの達成状況 関係者意見	成果・実施プロセスの検証結果、C/P、専門家	文献調査、インタビュー調査、質問票
		供与機材は適切に管理・活用される見込みか。	機材の使用状況、今後の管理計画等	C/P、専門家	文献調査、インタビュー調査、質問票、直接観察

評価設問			必要な情報・データ	情報源	データ収集方法
評価項目	大項目	小項目			
	その他	本事業の持続性を推進する関連活動はあるか。	政府他機関・JICA・他ドナーによる他の関連事業の有無	C/P、JICA事務所、専門家	文献調査、インタビュー調査、質問票
		持続性を阻害するその他の要因はあるか。ある場合、プロジェクトが施せる対策はあるか。	政治情勢や関係者意見	プロジェクト資料、C/P、JICA事務所、専門家	文献調査、インタビュー調査

別添　6　質問票　（カウンターパート用）

The Project for Improvement of Management Capacity of Operation and Maintenance for Water Supply Facilities in Nile Delta Area

FINAL EVALUATION QUESTIONNAIRE

Evaluation Questions	Your Responses
1. Overall Project Performance	
1.1 To what extent did the Project achieve its objective of "Management capacity of operation and maintenance of water supply facilities is improved at the model areas/facilities in Sharkiya, Gharbia and Minufia Governorates"?	[ ] To a great extent (85-100 %) [ ] To some extent (65-85%) [ ] Only marginally (50-65%) [ ] Less than above (below 50%)
1.2 This Project is composed of the activities to achieve four key Outputs (*), and designed to transfer skills and experiences of SHAPWASCO to other participating corporations. Was this project design appropriate in improving the performance of water supply facilities in Nile Delta? (*) 1) Human resource development through collaboration among water supply companies 2) Operations & maintenance based on SOP 3) Measures against non-revenue water, and 4) Water distribution management.	[ ] Very appropriate [ ] Appropriate to some extent [ ] Appropriate only in some aspects [ ] Not very or at all appropriate
1.3 How satisfied are you with the progress and achievements of this Project?	[ ] Very satisfied [ ] Satisfied to some extent [ ] Satisfied only in some aspects [ ] Not very or at all satisfied
1.4 How satisfied are you with the level of improvement of the Performance Indicators (PIs) at model areas/facilities in 3 governorates?	[ ] Very satisfied [ ] Satisfied to some extent [ ] Satisfied only in some aspects [ ] Not very or at all satisfied
1.5 Are there PIs that you feel was more difficult to attain than other indicators? If so, please explain why you feel so.	[ ] Yes, there are PIs that are more difficult to attain than others. [ ] No, all the PIs are equally easy/difficult in attaining. If "Yes", why so? [ ]
1.6 Which of the Project activities did you find particularly useful in improving the work in the model areas or facilities?	(Please list the activities that are particularly useful) ● ● ●

1.7 Was there any help or influence from outside of the Project that also facilitated the project activities?	(Please list the factors other than the Project that helped the activities) ● ● ●
1.8 Were there factors outside of this Project that had negative impact on the Project activities? If there were, please describe what they were and to what degree they affected the activities.	Description of negative factors and how it affected the Project:
1.9 Are there efforts that you or your organization has made to mitigate those negative impacts?	Description of your efforts:
1.10 Was it easy for GHAPWASCO and MCWW to apply SHAPWASCO's knowledge and experiences to their operations? If not, please explain what was difficult and how you overcame that difficulty.	[ ] Easy [ ] Not easy [ ] Sometimes easy, sometimes not If not yes, what was difficult and how did you overcome that difficulty? [ ]
1.11 In the past 3 years, did you observe any change in the number or quality of the customer claims in the model areas?	[ ] Yes, many changes [ ] Yes, some changes [ ] No, I did not observe much changes
1.12 How do you rate the quality of the training? Choose from below your rating for each training course listed in the right column. 1 = Excellent 2 = Good 3 = Fair 4 = Poor	[ ] Training on SOP in Egypt [ ] Training on NRW in Egypt [ ] Other training in Egypt [ ] Training in Syria [ ] Training in Japan Your comments on the training:
1.13 Was the scope of activities and the inputs relevant, if the project objectives, outputs, budget and the duration of cooperation are given?	[ ] Very relevant [ ] Relevant to some extent [ ] Relevant only in some aspect [ ] Need improvements in the scope of activities and/or inputs
1.14 If you are asked to redesign the Project with the same performance targets, budget, and timeframe as it is now, how would you do it?	Your suggestion(s) for redesigning the Project activities:
1.15 To what extent is this Project known to other water supply corporations in Egypt? What do they say about this Project?	[ ] Widely known [ ] Known by some [ ] Not much known yet Comments on this Project made by other corporations: [ ]
2. Progress and Outputs of the Project	
2.1 Operations and maintenance (O&M) of water supply facilities based on Standard Operation Procedure(SOP)	
2.1.1 How important is it for your organization to improve O&M of water supply facilities and why?	Your comments:

2.1.2 How satisfied are you with the current level of improvement of the PIs related to SOP activities?	[ ] Very satisfied [ ] Satisfied to some extent [ ] Satisfied only in some aspects [ ] Not very or at all satisfied
2.1.3 Are there PIs that you feel were more difficult to attain than other SOP indicators? If so, please explain why you feel so.	[ ] Yes, there are PIs that are more difficult to attain than others. [ ] No, all the PIs are equally easy/difficult in attaining. If "Yes", why so? [ ]
2.1.4 To what extent is the SOP followed at the model facilities in your governorate?	[ ] Perfectly followed [ ] Generally followed [ ] Followed sometime [ ] Followed hardly ever
2.1.5 To what extent has the model facilities acquired the culture of implementing O&M based on SOP?	[ ] To a great extent [ ] To some extent [ ] Only slightly [ ] Less than above
2.1.6 Was there any Project activity, or efforts made by your organization, that were particularly helpful in promoting SOP-based O&M?	Description of activities or efforts that promoted SOP-based O&M:
2.1.7 Are you satisfied with the way and quality of the technical advice and supervision by the Japanese experts for SOP? Please provide your comments on their skills and approaches.	Your comments on Japanese experts:
2.1.8 Are you satisfied with the role and the skills of the SOP trainers from SHAPWASCO?	Your comments on SHAPWASCO trainers:
2.2 Activities to reduce Non-revenue Water(NRW)	
2.2.1 How important is it for your organization to reduce NRW and why?	Your comments:
2.2.2 How satisfied are you with the level of improvement of the PIs for NRW?	[ ] Very satisfied [ ] Satisfied to some extent [ ] Satisfied only in some aspects [ ] Not very or at all satisfied
2.2.3 Are there PIs that you feel were more difficult to attain than other NRW indicators? If so, please explain why you feel so.	[ ] Yes, there are PIs that are more difficult to attain than others. [ ] No, all the PIs for NRW are equally easy/difficult in attaining. If "Yes", why so? [ ]
2.2.4 To what extent have GHAPWASCO and MCWW acquired the habit of implementing the detection before a leak is reported?	[ ] They acquired the habit very well [ ] They acquired the habit to some extent [ ] They acquired some of the habits, but not others. [ ] They know the practice, but still need to make it a habit
2.2.5 Was there any Project activity, or efforts made by your organization, that were particularly helpful in promoting NRW reduction?	Description of activities or efforts that promoted NRW reduction:

2.2.6 Are you satisfied with the way and quality of the technical advice and supervision by the Japanese experts for NRW? Please provide your comments on their skills and approaches.	Your comments on Japanese experts for NRW:
2.2.7 Are you satisfied with the role and the skills of the NRW trainers from SHAPWASCO?	Your comments on SHAPWASCO trainers for NRW:
2.2.8 Does your organization have a plan to take any measures to address the concerns identified in the water balance analysis (for example, if the analysis recognises the inaccuracy of the micro-meters as a major source of NRW, would you take any action on that concern)?	[ ] Yes, we have a plan to do so [ ] No, we don't plan to at this moment
3. Project Management and Implementation Process	
3.1 Did all the project participants from your organization have clear understanding on the project purpose, activities, and their own role and responsibility?	[ ] Yes, all of them. [ ] Yes, most of them [ ] Well, some of them [ ] No, not many of them
3.2 Do you find the amount of reporting, communication, and information-sharing by the Japanese experts as sufficient?	[ ] Yes, sufficient. [ ] With some experts yes, with other experts, no. [ ] No, it was not sufficient
3.3 Was it easy to gain understanding and cooperation from Egyptian stakeholders? Please provide your response for each stakeholder shown in the right-hand column.	1) Cooperation among 4 participating corporations: [ ] Easy [ ] Not easy [ ] Depends on corporations 2) Cooperation from the staff of your organization involved in the Project: [ ] Easy [ ] Not easy [ ] Depends on staff 3) Cooperation from the residents of model areas: [ ] Easy [ ] Not easy [ ] Depends on corporations
3.4 To what extent was the collaboration among HCWW, SHAPWASCO, GHAPWASCO and MCWW strengthened through this Project?	[ ] Strengthened a lot [ ] Strengthened to some extent [ ] Slightly strengthened [ ] Not strengthened much
3.5 To what extent did the training and seminars co-hosted by the HCWW, SHAPWASCO, GHAPWASCO and MCWW promote experience-sharing among these organizations? Please share the experiences of other corporations that you learned and applied to the work of your organization.	[ ] To a great extent [ ] To some extent [ ] Promoted only slightly [ ] They did not contribute to experience-sharing Examples of experiences of other organizations that you applied to your work:
3.6 Was all your staff who participated in this Project motivated? If there are efforts that you made or the incentives necessary to motivate them, please describe in the right-hand column.	[ ] Yes, all of them [ ] Yes, most of them [ ] Well, some of them [ ] No, not many of them Examples of efforts or incentives necessary to motivate your staff:

4. Activities after the Project	
4.1 What is your organization's plan to utilise the project experiences for your future activities? Please describe in detail.	Your plan for utilising project experience:
4.2 Do you have plans to disseminate the project activities to more of the facilities/areas? If so, please describe your plan (e.g. to which areas you wish to disseminate and within how many years).	Description of your plan for disseminating project activities:
4.3 How confident is your organization with the management capacity for O&M of the water-supply facilities in your governorate?	[ ] Very confident [ ] Confident to some extent [ ] Confident only in some aspects of O&M. [ ] Not very confident
4.4 Are the activities that your organization started in newly-selected model facilities/areas in good progress? Are there difficulties in disseminating the Project activities?	[ ] Yes, activities are making good progress [ ] No, activities are not making as much progress as we have wished If no, describe the difficulties: [ ]
4.5 Is the current arrangement for project implementation and management (i.e staff allocation within your organization, way of collaboration among corporations etc) appropriate also for after the Project? Is there a need for improvement for the future?	[ ] Yes, the current arrangement is appropriate for future [ ] Improvements are necessary for the future Your suggestion to improve project management and implementation arrangement:
4.6 Please describe the current procedure for obtaining the budget for the Project activities.	Procedure for obtaining the budget:
4.7 Is the same level of budget expected to be secured for your future SOP/NRW activities?	[ ] Yes [ ] No [ ] Unknown
4.8 Are there any government or donor projects that are related to this Project?	Description of other related projects:

(If there are other issues we need to know from you, please use this space to add your comment.)

THANK YOU FOR YOUR COOPERATION.

別添７　質問票分析結果（概要）

「ナイルデルタ地域上下水道公社運営維持管理能力向上プロジェクト」終了時評価

1.　質問票調査の概要

【調査の目的】

１）事前にプロジェクト側、特にエジプト側カウンターパート（C/P）の問題意識を大枠で把握し、調査計画の具体化に役立てる。２）質問票形式で事前にプロジェクト側に評価設問を提示することで、その後の聞き取り調査の実施効率化を図る。３）調査手法の多様化を通し、文献調査では聴取できない現場の声、時間的制約や場の雰囲気等の要因で聞き取り調査では収集しきれない情報や意見の効率的な収集を図る。

【回答者】　以下の 10 名から回答を得ている。

- カウンターパート側：　HCWW 副総裁、GHAPWASCO・MCWW・SHAPWASCO 総裁(*)の計４名（*）３公社総裁が着任間もなかったため、プロジェクト実務に関わった C/P が総裁と内容を協議しながら回答)。
- 日本側：　プロジェクト総括・SOP 担当専門家・NRW 担当専門家の計 3 名（WDM については総括が回答)。また日本側が雇用し、ガルビーヤ、ミヌフィーヤ、シャルキーヤ各県に配置されたプロジェクト・ファシリテーター3 名。

【質問内容】

- 「１．プロジェクト全体に対する評価（Overall Project Performance)」、「２．プロジェクトの進捗と成果（Progress and Outputs of the Project)」、「３．プロジェクトの運営と実施プロセス（Project Management and Implementation Process)」、「４．プロジェクト後の活動（Activities after the Project)」について、選択式と記述式を組み合わせた回答を依頼した。
- 回答者の活動の内容によって質問量・内容に差異をつけた。C/P（特に GHAPWASCO と MCWW）に対しては詳細な質問回答を依頼し、既に意見交換を開始していた日本側チームに対しては、比較的簡易な質問票を送付した。

【回答の取りまとめ・記載方法】

- C/P の回答結果を中心に集計し、日本側チーム（日本人専門家およびプロジェクト・ファシリテーター（FP））の回答の中から有用なコメントを適宜引用・追加した。
- 詳細な集計は別紙で行ったため、本文書では、概要と分析結果のみを記載した。
- 上段には総論を、下段には各論を記載。

別添資料 7

2. 調査結果

1. プロジェクト全体に関する評価（「Overall Project Performance」）

【プロジェクト目標の達成度】

回答者は､プロジェクト目標(「３県のモデル地区･施設で上下水道施設の維持管理能力が向上する」)の達成状況および成果の産出状況に一定以上満足し、評価している。

- 「プロジェクト目標の達成状況」:「大変よく達成（85～100%)」が４回答者中２名（HCWW、SHAPWASCO)、「ある程度達成（65～85%)」が２名（GHAPWASCO、MCWW)。
- 「活動の進捗・成果の達成状況に対する満足度」についても「大変満足」が２名、「ある程度満足」が２名（回答者の内訳は同様）であり、活動・進捗に対する CP の一定以上の満足度を示している。
- プロジェクトの主な受益者である GHAPWASCO・MCWW の評価は、他の２公社に比べて若干低めである。プロジェクトの技術的な課題を把握している分、現実的な評価であると思われる。

【PI の達成状況全般】

１）PI の改善状況全般に対する満足度は、公社によって異なる。

２）一部の回答者は、特定の PI の改善を課題であると感じている。

- 「３県各公社のモデル地区における PI の改善度に対する満足度」： HCWW は「大変満足」、MCWW は「ある程度満足」、GHAPWASCO は「一部の PI にのみ満足」、SHAPWASCO は「NA」と回答し、プロジェクトに対する関わりや活動内容を異にする公社間で、認識に差異が見られる。
- 「改善が他の指標よりも課題であると感じる PI の有無：以下の指標の達成が課題であると認識されている。
  - ✧ 薬品の投入量削減は原水の質に左右されるため困難（GHAPWASCO）
  - ✧ モデル地区によっては配水網が老朽化しており、NRW 削減が困難（GHAPWASCO）
  - ✧ 「1000 件毎のクレーム件数」は、顧客のニーズや一時の感情の変化に左右されるため、困難（SHAPWASCO）
- 薬品投入量削減の難しさについては、日本人専門家や PF も同様の意見を表明している。本課題克服に向け、どのような取り組みを行うべきか、現地調査においても協議が必要である。
- 配水網管理、特に「低水圧の割合」の達成については、C/P や井戸（浄水場）オペレーターに対するより長期の訓練の必要性が PF より指摘されている。
- エジプト側から言及された課題とは別に、日本側チーム（専門家・PF）からは、課題として水道メータの洗浄・交換（(顧客の同意を要するため)・誤差（現実的な水収支分析が困難となるため）が課題として挙げられており、その詳細と対応策について現地調査においても協議が必要。

【活動を促進・阻害した要因】

１）施設における業務改善を促進した要因として、回答者は主に、１）日本人専門家からの移転された技術と、２）プロジェクト実施に対する他部署からの協力を挙げている。この回答から推測して、プロジェクトの活動・成果がプロジェクト目標の達成に貢献した可能性が高く、またプロジェクトに対する社内の評価や、円滑な実施に対する総裁のコミットメントも高いと思われる。

２）エジプトの国内情勢がプロジェクトの進捗に負の影響を及ぼしたと C/P は感じている。

- 「業務改善に最も役立った活動」：GHAPWASCO・MCWW によれば、「P&ID の作成」「調査や

OJT を通して施設設計の問題を理解できたこと」「プロジェクトから供与された流量計の使用」「水収支分析」「データの記録と分析」「ラボと、ラボでの研究結果の活用」「モニタリング計画」等。

- 「プロジェクト以外で業務に役立った活動」:「他の部署からの支援」「苦情ホットラインの存在により、漏水探知活動の幅が広がった」「IWSP からの機材供与」等。
- 「負の影響を及ぼした外部要因」として、4 中 3 公社が「政治状況/2011 年 1 月および 2013 年 6 月の情勢」と回答した他、「人員不足（GHAPWASCO・MCWW)」、「活動実施中、一部の人から積極的な協力が得られなかったこと（MCWW)」も指摘されている。負の影響緩和のために行った努力や工夫として、「広報部との協力による意識向上活動」等（MCWW)。

【活動・投入の内容・範囲】

「総じて適切であるものの改善の余地あり」と認識されている。

- 「活動・投入の範囲（プロジェクトの目標・内容・予算規模や協力期間に鑑みて適切か)」: HCWW・SHAPWASCO は「大変適切」「MCWW・GHAPWASCO」は「ある程度適切」と回答。
- 「プロジェクトの内容改善に対する提案（現在と同じ目標設定・予算規模・協力期間でプロジェクトの内容を修正する場合、どのような変更を加えるか)」: MCWW・GHAPWASCO から以下の回答を得た。なお HCWW・SHAPWASCO は、現在の設計が適切と回答している。
  - ✧ SOP 活動を、既存の施設に対する活動と、建設中の施設に対する活動とに二分する。これにより、建設後早い段階で SOP を導入し、施設設計の問題を建設者側に提案できる。
  - ✧ NRW のモデル地区を、全ての Markez から一つずつ選択する。
  - ✧ 研修分野・活動分野を広げる（SHAPWASCO 以外の公社での遠隔監視システム導入、水理解析等)。
- ガルビーヤ県に配置されたプロジェクト・ファシリテーター（PF）は、「上層部に対する働きかけを、より多く活動に組み込む」ことを提案。日本人専門家は、同じ目標設定と協力規模であれば、現在の設計が最適と回答している。
- 日本人専門家および SHAPWASCO の講師に対する評価は高く、4 公社とも「大変満足」としているが、同時に派遣期間が短いと指摘されている（分野別の専門家評価は、下記２．で言及)。

2. プロジェクトの進捗と成果（「Progress and Outputs of the Project 」）

2.1 標準作業手順書（SOP）に関する活動　（GHAPWASCO・MCWW 回答）

【活動の進捗と PI の達成状況】

1）一部の PI 達成に課題が残るものの、SOP に基づく施設維持管理はある程度浸透し、実施されていると回答者は感じている。

2）SOP 活動の実施状況・成果に対し、MCWW が GHAPWASCO より若干高い満足度を示している。

3）日本人専門家・SHAPWASCO 講師に対する満足度は高い。

- 「SOP 関連の PI の改善度に対する満足度」: 2 社とも「ある程度満足」と回答。
- 「改善が他の指標よりも課題であると感じる SOP 関連の PI の有無」: 以下の課題が言及された。
  - ✧ 薬品の投入量削減は原水の質に左右されるため困難（GHAPWASCO、日本側関係者も同意見）
  - ✧ 一部の指標は施設の設計と矛盾しており、達成が困難（例：必要以上に大きなポンプが設置されている施設におけるエネルギー消費量の削減　等（日本側も同意見))
- 「モデル施設における、SOP に基づく操作の実施」: MCWW では「完璧（Perfectly followed)」に、GHAPWASCO では「大体（Generally followed)」において実施されている模様。また SOP に基

づいて操作を行う文化は、MCWW 内には「十分浸透」し、GHAPWASCO でも「ある程度浸透」したとのことである。

- 「SOP を浸透させるための工夫」: GHAPWASCO は「各種計測器材の提供」「SOP の実施に向けたモデル施設の改修」を実施している。また MCWW においても、正確さをもってデータ収集・分析を実施すること、機材の維持管理や計画や目標の管理に注意が払われている。
- 「日本人専門家の指導方法や質」: 2 社とも「大変満足」と回答。その理由として「作業の計画性や正確さ」「最良の結果を得るまで諦めない姿勢」等が言及されている。評価が高い分、専門家数の増加、特に水理解析・遠隔監視分野での専門家の増強に対する要望もでている。SHAPWASCO の講師に対しても同様、両者とも「大変満足」と回答している。

2.2 無収水（NRW）管理活動 （GHAPWASCO と MCWW のみ回答）

【活動の進捗と PI の達成状況】

1）漏水を計画的に探知する習慣は十分に身に付いたと両公社ともに感じている。
2）SOP 活動の実施状況・成果について、GHAPWASCO は MCWW より干高い満足度を示している。
3）日本人専門家・SHAPWASCO 講師に対する満足度は高い。

- 「NRW 関連の PI の改善度に対する満足度」: GHAPWASCO は「大変満足」、MCWW は「ある程度満足」と回答。回答に対する説明、特に MCWW の NRW 活動については十分な情報が得られていないため、現地調査で確認が必要。
- 「漏水が報告される前に進んで探知する文化」: 2 社ともに自社内に十分浸透したと感じている。
- 「NRW の実施に特に役立った活動・自分たちが行った工夫」: 以下が言及されている。
  - ✧ 漏水調査や水収支分析の実施（MCWW）
  - ✧ 支局作業員に対する漏水探知技術の研修（MCWW）
  - ✧ 他の公社に知見を普及するセミナーの実施（GHAPWASCO）
  - ✧ 音聴棒の追加購入（GHAPWASCO・MCWW）
  - ✧ 県内全支局での NRW 削減ユニットの設立（現在作業進行中）（GHAPWASCO）
- 日本側からの指摘によれば、水道メータの精度の低さと、配水ブロック化が容易でないことが、NRW 関連の PI 達成を困難にしている。また NRW・SOP に共通して、先にプロジェクトを経験していた SHAPWASCO が、「この活動を行えば改善する」と実例を交えて説明したことが功を奏した。
- プロジェクトで実施したモデル地区の水収支分析から確認された問題に対し、MCWW は何らかの措置を講ずる予定を立てているとの由であり、詳細を現地調査で確認する。
- 「NRW 担当日本人専門家の指導方法や質」: 2 社とも「大変満足」と回答しているが、同時に派遣の期間が短かったと指摘している。SHAPWASCO の講師についても、両者「大変満足」とのこと。

2.3 配水管理（WDM） （SHAPWASCO、および一部の質問について HCWW が回答）

活動が本格化していないため、質問調査から得られた詳細は限られている。

- 「シャルキーヤ県における配水管理の重要性」: SHAPWASCO はこれを「顧客の水に対する需要を満たし、浄水場の水供給能力を把握するために大変重要」と認識している。そのため本プロジェクトの活動を通して浄水施設の業務管理と水量・水圧の調整を学び、顧客の満足度改善を図ることを期待している。
- 「WDM にかかる活動が遅延している理由」: SHAPWASCO は「機材・ソフトウエアの技術的な問題、およびエジプトの治安情勢」としている。活動の推進のために SHAPWASCO がこれまで行っ

た措置は、機材の調達先への現状照会・催促等。

- SHAPWASCO・HCWW によれば、PDM の指標「4.b 配水管理の問題が SHAPWASCO の上層部に報告される」が指標に追加された理由は「問題解決の簡易化・迅速化」「効率化」を図るためである。現状としてこの指標がどの程度達成されているかについて、SHAPWASCO は「未達成（not yet)」、HCWW は「to some extent」としているが、HCWW については設問の意図が十分に伝わっていない感があり、現地調査において再度確認が必要である。

3. プロジェクトの運営体制・実施プロセス（「Project Management and Implementation Process」）

【活動に対する理解・協力・コミュニケーション】

1）活動内容に関するプロジェクト参加者の理解度は高い

2）日本人関係者と C/P 全般とのコミュニケーションは総じて良好

3）公社間のコミュニケーションも良好

4）関係者によっては、実務レベルにおいて、一部の公社職員やモデル地区からの協力取り付けを困難と感じている。

- 「<u>各公社のプロジェクト参加者による活動内容・目標・役割分担の理解</u>」：４中３公社（MCWW・SHAPWASCO・HCWW）が「全員が理解」、GHAPWASCO のみ「ほとんどが理解」したと回答。
- 「<u>日本人専門家との情報共有/コミュニケーション/報告</u>」：４社全てが「十分である」と回答。また日本人専門家および PF も、エジプト側関係者のプロジェクトに対する理解とコミュニケーションは十分であったと回答している。
- 「<u>４公社間の協力」「公社職員からの協力</u>」：４社とも「理解・協力の取り付けは容易」と回答。しかしモデル地区の住民からの強力について、GHAPWASCO は「モデル地区による」、MCWW は「困難」であったとしている。日本人専門家・PF からは、一部の職員およびモデル地区からの協力の取り付けが困難であったとの回答を得ている（ただし、何を期待するかによって回答も異なる、との注釈もあり）

【公社間の協力・連携（成果１関連活動）】

公社間の連携促進に成果１の活動はある程度貢献したが、貢献度に対する認識は公社によって異なる。

- 「<u>プロジェクト活動を通した公社間の連携強化</u>（成果１）」：HCWW・SHAPWASCO は「非常に強化された」、GHAPWASCO・MCWW は「ある程度強化された」と回答。
- 「<u>プロジェクトで実施した研修やセミナーが、公社間の経験共有に役立った度合い</u>」：HCWW・SHAPWASCO は「非常に役立った」、GHAPWASCO・MCWW は「ある程度役立った」と回答しており、「１．プロジェクト全体の評価」の一部の設問と同様、プロジェクトへの関わり方や活動内容によって、満足度に差異が見られる。
- 「<u>他の公社の経験を学び、実践した例</u>」：GHAPWASCO は、経験を機材調達や流量計設置所の設計・建設に生かしている。また MCWW についても、SHAPWASCO で実施された研修（流量計の設置や使用、漏水探知等）を自社の活動に応用している。

【参加者のモチベーション】

公社職員のモチベーションはある程度確保されてきたが、一部の公社については実務者に対する資金的インセンティブの必要性を感じている。

- 「<u>プロジェクトに参加した職員のモチベーション</u>」：４中３公社（MCWW・SHAPWASCO・HCWW）は「全員」、GHAPWASCO は「ほとんど」がモチベーションを持って業務を遂行していると回答。

- 各公社が「モチベーションの維持や向上のために行った工夫」:「機材の供与（MCWW)」「作業の円滑化（HCWW)」等。「必要であったインセンティブ」として、GHAPWASCO は「資金的インセンティブ」を挙げている。その理由として、担当職員が通常勤務時間後に残って作業を行っている、或いはプロジェクトにフルタイムでコミットしていることを指摘している。

4. 今後の活動について（「Activities after the Project 」）

【今後の活動計画・戦略】

1）GHAPWASCO・MCWW は、今後の活動についてある程度明確なビジョンを持っている。また既に着手した活動の展開についても、順調に進捗している。

2）プロジェクト活動が本格化していない SHAPWASCO、および HCWW については、再度ロードマップの確認が必要。

各公社より回答のあった今後の活動計画は以下の通り。

1）GHAPWASCO

- ✧ SOP：活動を県内全ての施設（新設の施設を含む）に展開する。プロジェクトの経験を業務に活かす。また経験をセミナーやワークショップを通して普及する。
- ✧ NRW：県内全域に活動を展開すると同時に、HCWW と協力し他県にも展開する。更に県内全支局に NRW 部を設立する。
- ✧ 現在県内他地域で実施中の SOP・NRW の活動は、順調に進捗している。

2）MCWW

- ✧ 本部に新設された SOP 部が、SOP 活動のフォローと県内支局への普及を実施する
- ✧ ５ヵ年計画に沿って、地理情報システム（GIS）を更新する
- ✧ 配水網の問題点や弱点を確認し、必要なインフラの交換や更新を行う。
- ✧ 現在県内他地域で実施中の SOP・NRW の活動は、順調に進捗している。

3）SHAPWASCO：（遠隔監視による）配水量モニタリングを県内全域に拡大する。

4）HCWW は「普及活動を行う」との由であるが、詳細な回答が得られていない。

【技術力の持続性】

各公社・専門家・PF 共に、各公社が修得した技術力を評価している。

- 「プロジェクトで修得した技術力」について、GHAPWASCO・SHAPWASCO・MCWW は「大変自信がある」と回答。これら３公社の施設維持管理能力について、HCWW は「ある程度」自信があると回答している。
- 専門家・PF は、各公社には既に「専門家の指導なしにモデル地区・施設で活動を実施する能力が十分備わっている」との回答している。

【実施体制の持続性】

各公社は、「活動の内容や手続きのあり方」「公社間の連携」等に改善の必要性を認識している。
日本人専門家については「リーダーシップ/オーナーシップ」を、PF については「組織体制」「資金的インセンティブ」が今後の持続性に重要であると感じている。

- 「今後の活動普及にあたり、現在の実施体制について改善すべき点」について、以下の意見が寄せられている。下記以外にも、日本人専門家から有用な意見が提示されているところ、質問票集計結果一覧を参考願いたい。

- ✧ GHAPWASCO：「他の公社との連携の継続」「目標設定・進捗の共有を目的とする公社間定例会の実施」
- ✧ MCWW：「プロジェクトの経験を元に、一部の調査等不要な活動や手続きを見直す必要性あり。また活動の普及を見据えて、活動の手順を整理しなおす必要がある（詳細は要確認）。」
- ✧ HCWW：「ワーキンググループ等の整備」
- ✧ PF（ガルビーヤ）：GHAPWASCO 内における人材の確保と組織体制の改善
- ✧ PF（ミヌフィーヤ）：講師陣に対する交通手段の確保と資金的インセンティブの供与

- 「持続性の確保する上で大切な措置」：専門家・PF からそれぞれ以下の意見が寄せられている。
  - ✧ 十分な予算と強いリーダーシップ（日本人専門家）
  - ✧ 自分たちで SOP 技術を広めていくと言う心構えと意識（日本人専門家）
  - ✧ 自社にとって最良の方針を自ら確立すること（日本人専門家）
  - ✧ GHAPWASCO における SOP・NRW 部の設立/日本人専門家によるフォローアップ（PF）
  - ✧ 人員の増強、WDM チームの設立、機材管理の予算の確保（PF）
  - ✧ HCWW への働きかけ（PF）

【予算の確保・機材の維持管理】

1）予算は各公社レベルの決済で確保されるとのことであり、今後も総裁からの継続的な支援が肝要。

2）C/P は「予算は確保できる」と予測しているが、裏付けの確認が必要。

- 「活動予算の確保」：各公社の総裁の決済で承認されるとの由（GHAPWASCO/MCWW からの回答）であり、今後の活動に対し総裁のコミットを得る重要性を改めて示唆している。
- SHAPWASCO については、今後の活動予算を「Rehabilitation Plan」の予算から確保できるとしているが、詳細については確認が必要である。
- 「今後の活動に対する予算」：４公社とも「確保できる見通し」としているが、エジプトの情勢や補助金削減の流れの中で、これまで予算が確保されてきた経験がどの程度今後の見通しに有用か、再度確認・判断する必要がある。

【外部リソース活用の可能性】 IWSP 以外のリソースの確認が必要。

「政府や他ドナーが行っている関連協力の有無」：欧州連合のプロジェクトである IWSP が、１）タンタの施設や配水網の改修、２）漏水探知機材の提供を行われているとの回答を GHAPWASCO より得ている。他の公社については、関連協力は存在しないとの回答を得ているが、ドナーへの聞き取り調査で詳細を確認する。