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IMPROVING WATER AND SANITATION SERVICES IN THE MENA REGION (IWSMR)

**COMPLETION REPORT
OCTOBER 2013-SEPTEMBER 2015
(INCLUDES ANNUAL YEAR 2 PROGRESS REPORT AND
QUARTERLY PROGRESS REPORT 8)**

September 2015

This publication was produced for review by the United States Agency for International Development. It was prepared by Chemonics International Inc.

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QUARTERLY PROGRESS REPORT 8)**

**Contract No. EPP-I-00-04-00020-00
Task Order No. AID-263-TO-13-00003**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS

ACWUA	Arab Countries Water Utilities Association
AfWA	Africa Water Association
APR	Annual Progress Report
CAQA	Center for Accreditation and Quality Assurance
CIS	Certification Information System
HBRC	Housing and Building National Research Center
HCWW	Holding Company for Water and Wastewater
EWRA	Egyptian Water Regulatory Authority
ISD	instructional systems design
IT	information technology
IWSMR	Improving Water and Sanitation Services in the MENA Region
M&E	monitoring and evaluation
MENA	Middle East and North Africa
MERP	Middle East Regional Programs
MOU	memorandum of understanding
NUPAS	non-U.S. organization pre-award survey
O&M	operations and maintenance
PMP	performance monitoring plan
PR	program result
ROCTP	Regional Operator Certification and Training Program
TIA	Training Impact Assessment
TOT	training of trainers
USAID	United States Agency for International Development
WWTO	Wastewater treatment operator

EXECUTIVE SUMMARY

Need for improved utility management and operations and maintenance (O&M). Despite massive infrastructure investments, nearly millions of citizens in the Middle East and North Africa (MENA) region lack adequate access to potable water. Wastewater management in some areas is markedly worse. Once water-balanced MENA countries are now running water deficits. Regional governments and local utilities agree that the benefits of multimillion-dollar infrastructure investments will be short-lived without proper operations and maintenance (O&M) management by a capable and qualified workforce.

Operator certification in MENA. In Jordan, operator certification was championed by USAID under its Operations and Maintenance Training (OMT) Program. Jordan has proved to be a successful incubator of operator certification programs not only at the national level but also for the MENA region. USAID's Water and Wastewater Sector Support (WWSS) and Water Policy and Regulatory Reform (WPRR) programs put utility management at the forefront of programmatic objectives, leading to the establishment of Egypt's first operator certification system.

Arab Countries Water Utility Association (ACWUA). Supported by USAID, ACWUA has assumed regional leadership as a training provider and as a promoter of a harmonized and standardized accreditation approach. With 18 member countries and more than 100 member utilities in the MENA region, ACWUA is uniquely positioned to promote the scale-up of operator certification and training.

IWSMR. Based on the proven results of previous Jordan and Egypt programs, in October 2013, USAID/OMEP launched the 24-month IWSMR program to further enhance MENA water/wastewater manager, engineer, and operator performance over the two-year period from September 30, 2013 to September 29, 2015.

To achieve these results, IWSMR worked with ACWUA to build its capacity and establish a Regional Operator Certification and Training Program (ROCTP). Through pilot ROCTP courses, ACWUA introduced this innovative program which requires operators to study a standardized curriculum and demonstrate job knowledge and skills by passing professional tests leading to legally-recognized certification. ROCTP includes operator certifications in water treatment and distribution, wastewater treatment and collection, and utility management. IWSMR also assisted ACWUA in planning and piloting utility twinning exchanges focused on specific deficient utility O&M functions.

In addition, IWSMR implemented a capacity building program for ACWUA to facilitate the smooth implementation and sustainability of ROCTP and the twinning activities. The program included strategic business planning and information system assistance to the ACWUA Directorate in order to enhance organization capacity commensurate with standards necessary to receive independent USAID grants. The program included certified courses in train-the-trainers (TOT); and, curricula and test development emphasizing on-job application of practical skills.

Key IWSMR accomplishments. With ACWUA participation, IWSMR conducted and completed a comprehensive two-stage assessment and with ACWUA buy-in, agreed to

the Performance Monitoring Plan (Annex B) including associated Implementation Plans (Annex A). Details are presented in Section 2.

Program Result 1: Increased ACWUA capacity to carry out its mandate (IWSMR Component 1)

- **ACWUA Strategic Business Plan:** A working group of ACWUA board members was established to participate with IWSMR in developing the ACWUA Strategic Business Plan for 2015-19 with emphasis on regional operator certification and training. The final ACWUA Strategic Business Plan was officially approved by the board in January, 2015.
- **Certification Information System (CIS):** The ACWUA/IWSMR team collaborated in a local procurement of a customized CIS software product which launched in November, 2014, and was fully operational and in use by ACWUA in August/2015.
- **Capacity Development and Certification Unit:** During Year 2, ACWUA established a new ROCTP unit and designated staff were trained. This new unit is critical to the sustainable delivery of ROCTP services to members. A crucial part of the unit’s responsibilities was the activation and use of the CIS software. The activation of the CIS is enabling ACWUA’s management to plan for future ROCTP trainings needs and requirements.
- **Responsibility determination:** IWSMR assisted ACWUA in making improvements to their management and financial systems. An ACWUA Financial Manual was completed in February, 2015 and a Project Management Manual in July, 2015. USAID approved responsibility determination for ACWUA in September 2015 and initiated a direct grant of approximately \$300,000.

Program Result 2: Scaled-up operator certification programs to a regional level (IWSMR Component 2)

- **Interim Certification Platform and ROCTP Pilots:** ACWUA has agreed to adopt and abide by the current Jordanian certification process as implemented by the Center for Accreditation and Quality Assurance (CAQA). MOUs signed between ACWUA and Egyptian authorities: Housing and Building National Research Center (HBRC) and the Egyptian Water Regulatory Authority (EWRA) to continue to harmonize the Egypt and Jordan certification programs.
- **Certified Operators, Certified Trainers and Course/Test Developers:** The ACWUA/IWSMR team was able to implement the following training and testing:

ACWUA/IWSMR Training Summary

Training Courses	Trainees			Total	Passed
	Male	Female	%		
ROCTP WWT1	39	9	19%	48	47
ROCTP WD1	20	1	5%	21	20
ROCTP UM	13	12	47%	25	25
Pump O&M (ACWUA certified)	18	2	10%	20	20
TOT	80	28	26%	108	105
ISD (ACWUA certified)	12	3	20%	15	15
CIS (ACWUA certified)	6	6	50%	12	12
Total	188	61	25%	249	244



(Please see Training Course Report in Annex G for a list of all IWSMR/ACWUA trainings conducted during Years 1 and 2)

- Training Impact Assessment (TIA) – Using this comprehensive method of tracking O&M performance improvement at participating utilities, ACWUA determined that operators who successfully completed ROCTP pilots demonstrated improved job performance and self-esteem attributable to the training. A summary of TIA reporting can be found in Annex B.
- ROCTP Rollout Plan – This plan reflects demand from countries already enrolled in ROCTP and new countries that have requested ROCTP pilots.

ACWUA ROCTP Rollout Summary: October 2015 to December 2017

Member Utility	ROCTP Courses	ROCTP Level	Male	Female	Total
Expansion in Current Participating Utilities/Countries					
West Bank Water/Wastewater Utilities: 1- Nablus 2- Maythaloan 3- Coastal municipalities-Gaza 4- Water Authority 5- Tubas 6- Anabta	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16
		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
	Subtotals:	---	---	114	32
Lebanon Water/Wastewater Utilities: Beirut & Mt Lebanon	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16

Member Utility	ROCTP Courses	ROCTP Level	Male	Female	Total
Bekaa North Lebanon South Lebanon		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
Subtotals:	---	---	114	32	146
Yemen All water/wastewater utilities	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16
		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
Subtotals:	---	---	114	32	146
Jordan Yarmouk Water Company Miyahuna/Amman Company Aqaba Water Company	WWT	1	18	6	24
		2	12	4	16
	WWC	1	18	6	24
		2	12	4	16
	WT	1	18	6	24
		2	12	4	16
	WD	1	18	6	24
		2	12	4	16
UM	1	21	7	28	
Subtotals:	---	---	141	47	188
Egypt Holding Company (24 companies: Al Minyah, Cairo)	WWT	1	36	12	48
		2	24	8	32
	WWC	1	36	12	48
		2	24	8	32
	WT	1	36	12	48
		2	24	8	32
	WD	1	36	12	48
		2	24	8	32
UM	1	42	14	56	
Subtotal:	--	--	282	94	376
Total:	--	--	846	237	1,002
Scale-Up – New Utilities/Countries					
Iraq Ministry of Water Resources	WD	1	36	12	48
	Subtotal:	--	--	36	12
Oman Public Authority for Electricity and Water	WT	1	18	6	24
	WD	1	18	6	24
Subtotal:			36	12	48
Gulf States Bahrain, Saudi Arabia, Qatar, etc.	WWT	1	18	6	24
	WWC	1	18	6	24
	WT	1	18	6	24
	WD	1	18	6	24
	UM	1	18	6	24
Subtotal:	--	--	90	30	120
Tunisia/SONEDE	WD	1	6	6	12
Subtotal:	--	--	6	6	12
Total:			168	60	228

Member Utility	ROCTP Courses	ROCTP Level	Male	Female	Total
Grand Total (Current + New):	--	--	1,014	297	1,311

Program Result 3: Improved performance of regional water/wastewater utilities through leveraging USAID-funded improvements (IWSMR Component 3).

- Utility Twinning – The ACWUA/IWSMR team developed a Twinning Manual, facilitated the following utility twinning arrangements, and planned future virtual twinning arrangements. Upon the conclusion of the IWSMR program, ACWUA was in active negotiations to finalize the move forward twinning activities which began in June 2015.
- Revenue Streams for Twinning - ACWUA is using the Twinning Plan for ten future activities as a basis for discussions with interested donors such as GIZ and SIDA that are working directly with the partner utilities shown below to identify and secure adequate revenue streams to implement specific twinning activities and contribute to the long-term sustainability of the ACWUA twinning program. Upon conclusion of the IWSMR program, ACWUA was in active communication with the associated donors to secure support. In addition, ACWUA is seeking to expand in-kind contributions from the partner utilities to offset costs.

ACWUA Twinning Plan Summary

Pilot Jordan In-Country	Mentor Utility	Partner Utility	Target Utility Function	Initiation Date
Launched Activities in Stage 4				
1	Aqaba Water	Salt Water Directorate/ Balqa/WAJ	Management Maintenance System (MMS) Call Center	July 2015
2	Aqaba Water	Beirut Mt. Lebanon Water Establishment	Non-Revenue Water and Information Technology	July 2015
Launched Activities in Stage 3				
3	Aqaba Water	Zarqa Management Contract	Non-Revenue Water	June 2015
4	Aqaba Water	Karak	Data management	June 2015
5	Aqaba Water	Tafilah	Data management	June 2015
Planned ACWUA Activities*	Mentor Utility	Partner Utility	Target Utility Function	Planned Initiation Date
1	Aqaba Water	Bekaa/ Water Establishment (Lebanon)	Management Maintenance System	December 2015
2	Aqaba Water	South Lebanon Water Establishment (Lebanon)	Management Maintenance System	February 2016
3	SONEDE/Tunisia	Local Water and Sanitation Corporation/Aden (Yemen)	Non-Revenue Water	May 2016
4	SONEDE/Tunisia	Local Water and Sanitation Corporation/Sana'a (Yemen)	Non-Revenue Water	May 2016
5	Miyahuna/Jordan	Local Water and Sanitation Corporation/Sana'a (Yemen)	Management Maintenance System	October 2016
6	Miyahuna/Jordan	South Lebanon Water Establishment	Management Maintenance System	October 2016
7	El Minya/ HCWW/ Egypt	Yarmouk Water/Jordan	Total Safety Management	December 2016
8	Miyahuna/Jordan	Palestine Water Authority (PWA)/West Bank	Wastewater	December 2016
9	Aqaba Water	Alexandria Water Company/HCWW (Egypt)	IT Cloud	December 2016
10	Aqaba Water	Aswan/ HCWW (Egypt)	IT Cloud	December 2016

Recommendations for follow-up action post-IWSMR. Additional details are presented in Section 3 of this report.

1. *Intensify ACWUA capacity building.* Ensure the continued training of ACWUA Certification Unit staff.
2. *Plan and implement a comprehensive ROCTP/twinning marketing strategy.* Intensify ACWUA promotion of ROCTP and twinning activities.
3. *Secure ROCTP and twinning financial sustainability.* Secure the commitment of each participating utility, without exception, by requiring payment of fees at the time of enrollment.
4. *Promote ROCTP mandate and strengthen regional institutions.* Continue to focus attention on achieving institutional targets in ROCTP participating countries/utilities.
5. *Expand ROCTP content and courses.* Continue to expand ROCTP to meet demands for new courses.
6. *Explore distance-learning and online approaches for ROCTP delivery.* Develop, pilot, and conduct online training and testing.
7. *Increase ROCTP opportunities for women and youth.* Explore ROCTP options for women and young professionals and technicians in the water/wastewater sector.
8. *Actively support the tracking and reporting of ROCTP impact within the broader context of utility performance monitoring and reporting.* Continue to collect TIA data to demonstrate that ROCTP results contribute to utility performance improvement.

SECTION I. INTRODUCTION

1.1 Project Background

Regional water crisis. The Middle East and North Africa (MENA) region is one of the driest areas of the world and demand for water typically exceeds available resources. High birth rates and the need for economic, commercial, and agricultural development have exacerbated an already precarious water situation, where water requirements often exceed renewable supplies. Recent mass movements of refugees have contributed to making a bad situation worse.

To address these critical necessities, regional governments and international donors are investing heavily in water infrastructure rehabilitation and construction of new water and wastewater treatment plants; collection and distribution networks; and related smaller projects. Efficient water facility management, operation, and maintenance; control of non-revenue water and leakage reduction; and, conservation and rationing are helping to make the best use of limited water supplies.

Need for improved utility management and O&M. Despite massive infrastructure investments, millions of citizens in the MENA region lack adequate access to potable water. Wastewater management is markedly worse in some areas. Fiscal constraints and lack of political will hinder the sustainability of the sector and negatively impact public health. Once water-balanced MENA countries are now running water deficits.

Regional governments and local utilities agree that the benefits of multimillion-dollar infrastructure investments will be short-lived without proper management, O&M by a capable and qualified workforce. Academic theoretical education, while essential, must be complemented by practical, job-specific knowledge and skill acquired using effective training methods and materials customized for local needs. The critical conditions evident throughout the MENA region dictate more efficient use of water sector infrastructure and personnel.

Certification – United States and MENA. Beginning in the 1970s, the U.S. federal and local framework for water quality and environmental management began requiring water and sanitation service providers to employ qualified operators, creating in the process greater demand for operator training and certification programs accredited by state boards. Recently enabled certification programs and accreditation systems in Jordan and Egypt are largely based on these models, culminating efforts that began in the early 1980s, when USAID began investing heavily in the rehabilitation and expansion of infrastructure, sector reform, and the development of related institutions in these countries.

In Jordan, operator certification was championed by USAID under its OMT program, in close cooperation with the Ministry of Water and Irrigation and CAQA, which is responsible for accrediting programs, licensing public and private sector training providers, and, issuing certificates to qualified operators. Jordan has proved to be a successful incubator of operator certification programs not only at the national level but also for the MENA region. USAID programs launched in the past decade in Egypt stressed investments in O&M activities, regulatory development, efficiency improvements, and capacity building. USAID's Water and Wastewater Sector Support (WWSS) and Water Policy and Regulatory Reform (WPRR) programs put utility

management at the forefront of programmatic objectives, leading to the establishment of Egypt's first operator certification system.

Operator Certification

What is a water/wastewater operator? An operator is a manager, engineer, or technician with hands-on responsibility in a water/wastewater facility that safeguards public health, the environment, and the infrastructure.

What is operator certification? The goal of all operator certification programs is to ensure that skilled professionals are overseeing and taking action to treat and distribute safe drinking water and to protect the environment by collecting and treating wastewater.

Operator certification is the legal process by which a duly constituted body establishes minimum professional standards for the operation and maintenance of public water/wastewater systems and assesses the qualifications (education, experience) and job knowledge (written examination results) of operators to determine whether or not all specified requirements are satisfied.

What are the benefits of operator certification?

Employee benefits. Certification offers a mechanism for employees to receive recognition and credibility in their chosen career. The benefits of certification can include:

- Career advancement opportunities
- Higher wage earning opportunities
- Mechanism to demonstrate competency and professionalism
- Competitive advantage over non-certified individuals
- Enhanced professional reputation and prestige
- Demonstrated commitment to the field

Employer benefits. Employers use certification to:

- Screen potential new hires and select contractors
- Motivate employees to expand their knowledge and skills
- Increase competency level of employees
- Ensure ongoing continuing education for employees

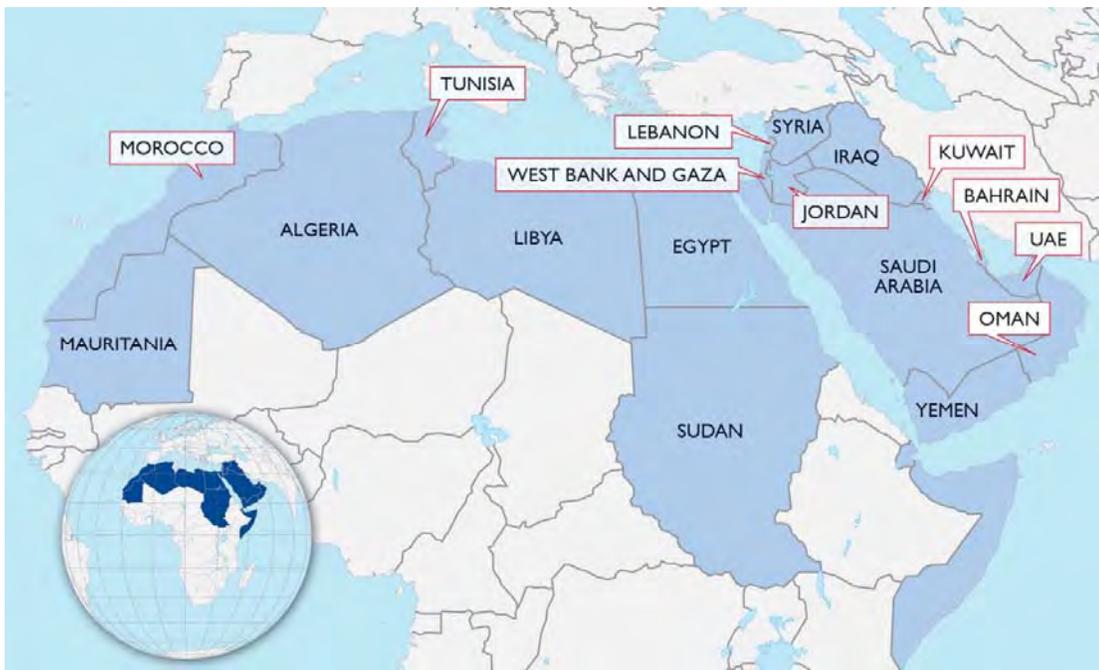
ACWUA - Supported by USAID, the Arab Countries Water Utility Association (ACWUA) has assumed regional leadership both as a training provider and as a promoter of a harmonized and standardized accreditation approach. OMT provided ACWUA with support in marketing and business planning for operator certification services, as well as upgrades to its website, print materials, and conference capabilities to promote operator certification throughout MENA. By 2012, the US Association of Boards of Certification (ABC) had accepted the Jordan and Egypt programs as well as ACWUA as full regulatory members, acknowledging their compliance with the highest certification program policies and standards.

ACWUA — Exchange Platform for Water and Wastewater Utilities in the Arab World

ACWUA, a registered NGO with permanent Secretariat offices in Amman, Jordan, was founded in 2007 as a result of an initiative by key water sector representatives. ACWUA has 18 member countries and more than 100 member utilities in the MENA region. Since ACWUA was founded, it has obtained the support from various donors including USAID, GIZ, and the UN. On July 30, 2009, ACWUA was officially launched as a Center of Excellence in the Arab water sector and in August 2012, was chosen to join the MENA Network of Water Centers of Excellence (MENA NWC) to lead the water supply and sanitation thematic group.

ACWUA partners with water supply and wastewater utilities in Arab countries to provide best practice service delivery to its members. ACWUA endeavors to:

- Serve as regional platform for exchange of knowledge and best practice amongst member experts and professionals
- Develop resources, facilitate training programs, and advocate for professional certification to enable member utility staff to perform their duties in a professional, reliable and cost-effective manner
- Promote standards of performance for the governance, management, operation and maintenance of water supply and wastewater utilities
- Support the interests of ACWUA members including the provision of advice and consultation in water legislation, policies, and sector management and reform
- Develop, promote and disseminate publications and other knowledge products to meet the needs of members and other regional professionals. (<http://www.acwua.org/>)



IWSMR program. Based on the proven results of the Jordan and Egypt programs, in October 2013, USAID/OMEF (now USAID/Middle East Regional Program office) launched the 24-month IWSMR program to further enhance MENA water/wastewater manager, engineer and operator performance over the two-year period from September 30, 2013 to September 29, 2015.

To achieve these results, IWSMR worked with ACWUA to build its capacity and establish a Regional Operator Certification and Training Program (ROCTP). Through three pilot ROCTP courses, this innovative program introduced a new approach to human resources development in the water sector region-wide, requiring operators to

demonstrate job knowledge and skills by passing professional tests, and by granting them state-recognized certification. ROCTP provides standardized training linked to best O&M practices for operator certifications in water treatment and distribution, wastewater treatment and collection, and utility management. IWSMR also assisted ACWUA in planning and piloting utility twinning exchanges focused on specific deficient utility O&M functions.

In addition, IWSMR implemented a capacity building program for ACWUA and its members to facilitate the smooth implementation and sustainability of ROCTP and the twinning activities. The program included planning and information system assistance to the ACWUA Directorate to enhance organization capacity commensurate with standards necessary to receive USAID grants as well as certified courses in train-the-trainers (TOT); and, curricula and test development emphasizing on-job application of practical skills.

1.2 IWSMR Achievement of Strategic Results

Program objective (PO)/program result (PR). IWSMR was built to achieve the following outcomes.



PR = Program Result IR = Intermediate Result

The program performance monitoring plan (PMP) and the three components laid out in the work plan and implementation plan to accomplish these results are directly aligned with the PRs above.

Key accomplishments. IWSMR executed an ambitious agenda within its tight two-year timeframe to rapidly build consensus, assess conditions, develop work plans, and implement a broad array of capacity building, sector coordination, and operator training activities.

“The conclusion of the two-year IWSMR program comes after seven years since the establishment of ACWUA and has boosted the exchange of knowledge and application of best practices among regional professionals. ACWUA seeks to facilitate these training programs and advocates for professional certification which is now a pillar the ACWUA Strategic Plan/2015-2019.”

— *Khaldon Khashman,*
ACWUA Secretary General

Key Accomplishments Timeline

Year 1	
October 2013	Project Startup
November 2013	IWSMR Work Plan - Year 1
December 2013	Twinning Coordination: GWOPA, AfWA, WaterLinks Asia
January 2014	CIS Parameters
February 2014	Assessment Report - Stage 1; IWSMR Implementation Plan
March 2014	ACWUA Strategic Business Plan – Bridging Memo 2014
April 2014	Interim Certification Platform – Approved by ACWUA Board; ACWUA/CAQA Agreement; Responsibility Determination – NUPAS Contract Award
May 2014	CB Training Plan - TOT and ISD; Jordan TOT 1; ROCTP Training Plan
June 2014	Egypt/Jordan Task Force – Needs Assessment
July 2014	CIS Contract – Local Procurement
August 2014	West Bank TOT; Yemen TOT; Task Force Technical Report and Recommended Actions
September 2014	Egypt TOT 1; IWSMR Annual Report - Year 1; IWSMR Work Plan - Year 2
Year 2	
October 2014	CIS Installation and ACWUA Staff Training; Lebanon TOT; West Bank ROCTP Pilot
November 2014	TIA Data Collection – Initiated
December 2014	Yemen ROCTP Pilot
January 2015	ACWUA Strategic Business Plan – Approved by Board; Egypt TOT 2; Task Force MOU (ACWUA - HCWW)
February 2015	ACWUA Certification Unit - Approved by Board; Jordan TOT 2; ACWUA Financial Manual Submitted to USAID
March 2015	Karak, Tafilah and Salt/AWC Twinning Negotiations
April 2015	Twinning Manual and Plan/IWSMR; CIS Regional Training
May 2015	Salt/AWC Twinning Pilot
June 2015	Lebanon Pump Station O&M Training
July 2015	ACWUA Project Management Manual (PMM); ACWUA Certification Unit – Established; ROCTP Manual; Staff Training
August 2015	CIS Fully Operational; IWSMR Demobilization Plan; Twinning Manual ACWUA 10 future Activities; Lebanon/ AWC Twinning Pilot
September 2015	Karak and Tafilah Twinning Pilots; TIA Pilot Reports (3); Assessment Stage 2 Report and ACWUA ROCTP Rollout Plan; ACWUA/Egyptian MOUs signed for continued cooperation; IWSMR Final Completion Report

With ACWUA participation, IWSMR conducted and completed a comprehensive two-stage assessment of ACWUA capacity; demand for ROCTP from ACWUA members; and twinning options. Based on the assessment findings, IWSMR, ACWUA and USAID built consensus and with ACWUA buy-in, agreed to Work and Performance Monitoring Plans (Annex B) including associated Implementation Plans (Annex A) that efficiently optimized scarce resources. The Implementation Plan Summary signed in April, 2014 between ACWUA and IWSMR and approved by USAID, incorporated PMP targets while serving ACWUA’s immediate training needs.

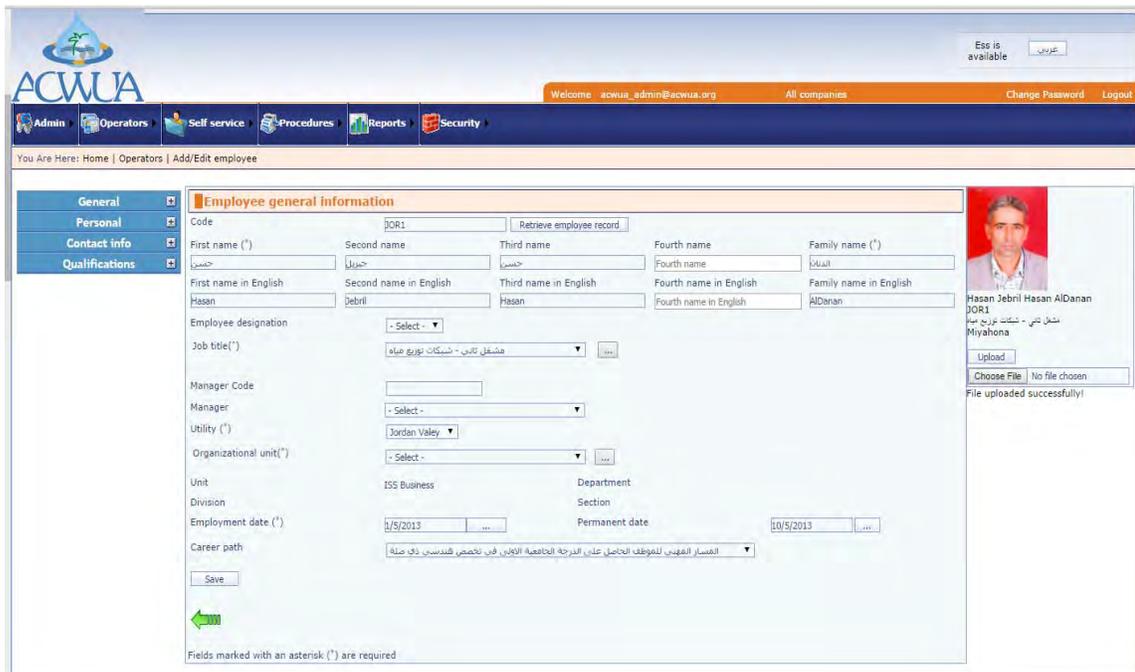
A summary of the key accomplishments is presented below in Section 2. The detailed Program Overview describes the methods and sequence of activities conducted to achieve these outcomes in a manner similar to IWSMR quarterly and annual reports.

Program Result 1: Increased ACWUA capacity to carry out its mandate (IWSMR Component 1)

- *ACWUA Strategic Business Plan.* A “bridging memo” to update the current ACWUA business plan for 2010-2014 emphasizing ROCTP was delivered and approved in Year 1. At ACWUA’s 6th Annual Best Practices Conference in December, 2013 a working group of ACWUA board members was established to participate with IWSMR in developing the ACWUA Strategic Business Plan for 2015-2019. This process included completion of a survey questionnaire and a series of meetings to review drafts. The final ACWUA Strategic Business Plan was approved by the board in Year 2.

Business Plan Analysis
<ul style="list-style-type: none"> • Current and potential contributions to the sector • Strengths, weakness, opportunities, and threats • Current and potential product and service offerings to enhance revenue • Governance and management structures • Financial management tools and practices • Knowledge sharing and analysis platforms • Actions to ensure long-term sustainability

Certification Information System (CIS). The ACWUA/IWSMR team collaborated closely to develop CIS specifications that formed the basis of a local procurement of a customized CIS software product. During Year 1, the CIS software was installed, tested and refined. The CIS was fully operational and in use by ACWUA in Year 2.

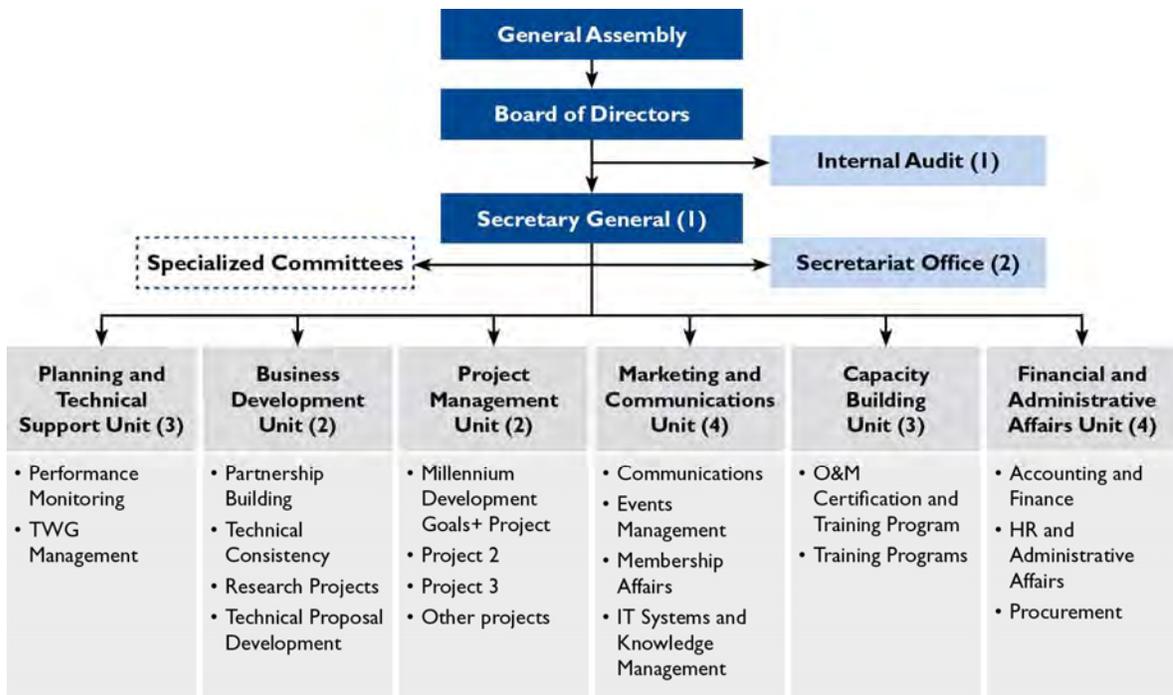


Capacity Development and Certification Unit. ACWUA requested that this activity be triggered by approval of the ACWUA Strategic Business Plan 2015-2019. During Year 2, IWSMR assisted ACWUA in determining the mission and structure of this new ACWUA unit and designated staff time to develop this new initiative.

- | ACWUA CIS Attributes |
|--|
| • Certification Framework and ROCTP Syllabus and Capacity Building courses (TOT, ISD) |
| • Country and Utility Profiles including quantities of potential ROCTP and Capacity Building trainees |
| • Training/Twinning Administration (Enrollment, Trainer Records, Test and Certification Records, etc.) |
| • Collaboration Tools (Calendar, Wiki, Blog, etc.) |
| • Reports and Tracking including ROCTP Training Impact Assessment (TIA) |

This new unit is critical to the effective and efficient delivery of ROCTP services to members and to program sustainability. As part of its responsibilities, the Unit has started uploading operator’s data into the CIS system enabling ACWUA’s management to plan for future ROCTPs trainings needs and requirements.

ACWUA’s New Organizational Structure - 2015



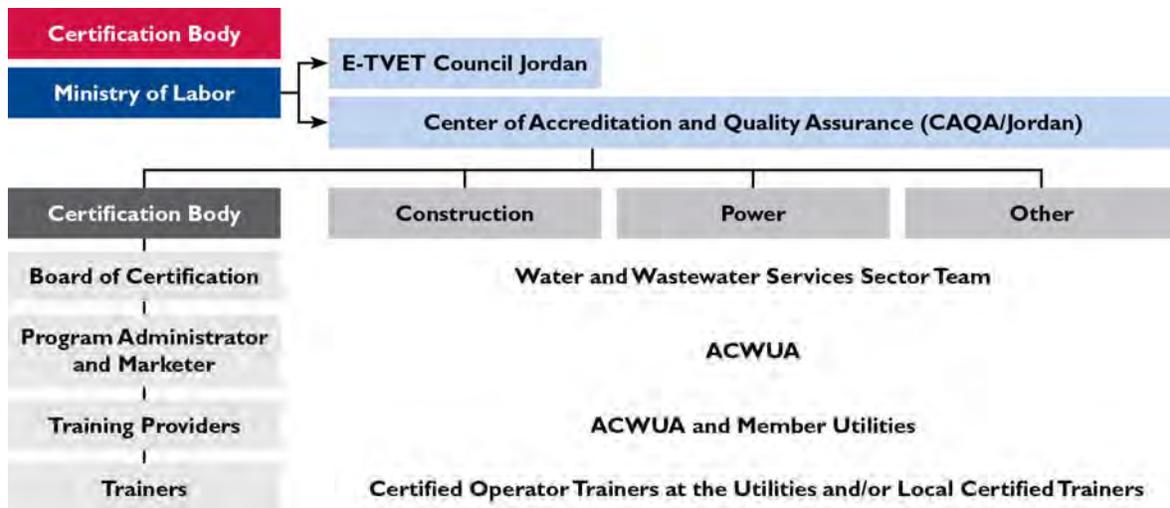
Responsibility determination. This high-priority activity proceeded quickly and smoothly during Year 1 with completion of a survey of ACWUA finance and management systems by a local firm. In Year 1, IWSMR assisted ACWUA in making improvements to their systems and related manuals which were reviewed and approved by USAID in Year 2. Upon project completion in September 2015, USAID approved the responsibility determination with an initial direct grant of approximately \$300,000 validating that ACWUA is worthy of receiving continued support from USAID. The important result will also encourage other interested donors to provide support to ACWUA. With this status, ACWUA will be well positioned to request the support necessary to ensure both adequate resources for ACWUA activities and long-term ROCTP sustainability.

Program Result 2: Scaled-up operator certification programs to a regional level (IWSMR Component 2)

IWSMR Assessment Report. The Stage 1 assessment conducted in Year 1 provided a comprehensive evaluation of ACWUA capacity to deliver ROCTP; approaches to scale-up ROCTP; and, practical options for improving utility performance through knowledge exchange and twinning methods. While the Stage 1 report ultimately emphasized data collection from 3 pilot countries (West Bank, Lebanon, Yemen) to accelerate implementation; Stage 2, completed in Year 2, covered all interested ACWUA member countries.

Assessment Purpose	
Identify ACWUA member countries and utilities that were interested in ROCTP and twinning	<ul style="list-style-type: none"> Analyze the operator certification and twinning markets, including needs, supply and demand, willingness and ability to pay, cost-benefit, existing curricula and delivery models, and potential impact on improved O&M performance.
Determine ACWUA's capacity to deliver and sustain ROCTP and twinning services.	<ul style="list-style-type: none"> Develop ROCTP implementation, pilot training, and twinning plans based on training needs, and including twinning options and opportunities, and gender inclusion. Interim Certification Platform and ROCTP Pilots – Early in Year 1, ACWUA agreed to adopt and abide by the current Jordanian certification process as implemented by CAQA while continuing to harmonize the Egypt and Jordan programs. In September 2015, MOUS were signed between ACWUA and Egyptian authorities to continue efforts to harmonize programs.

ROCTP Institutional Framework



Certified operators. With an interim certification platform in place, the ACWUA/IWSMR team was able to accelerate implementation of the 3 pilot operator courses for a total of 94 certified operators concluded in Year 2.

ACWUA/IWSMR Training Summary

	Male	Female	Percentage of Female Participation	Total	Passed
ROCTP WWT1	39	9	19%	48	47
ROCTP WD1	20	1	5%	21	20
ROCTP UM1	13	12	47%	25	25
Pump O&M (not certified)	18	2	10%	20	20
TOT	80	28	26%	108	105
ISD	12	3	20%	15	15
CIS (not certified)	6	6	50%	12	12
Total	188	61	25%	249	244

(See Annex G - Training Course Report for a list of all IWSMR/ACWUA trainings conducted during Year 1 and 2)

Certified trainers and course/test developers. Over the course of the program, IWSMR conducted seven Training-of-Trainers (TOT) events and one Instructional Systems Development thus providing ACWUA with 108 CAQA certified trainers and 15 ACWUA certified course/test developers upon whom ACWUA can rely in the future for trainings identified in the ROCTP rollout plan and for creating and/or revising curricula and tests after IWSMR.

Gender inclusion. ACWUA agreed to set a target of 25 percent female participation in all ROCTP, TOT, and other training and twinning activities. Given the unstable local political conditions and the cultural constraints affecting regional travel, IWSMR and ACWUA were able to achieve this target with a total of 56 women and 179 men participating in program activities. With active recruitment of female participants, IWSMR and ACWUA were able to achieve the target rate of 25 percent female participation averaged across all training.

Training Impact Assessment (TIA). This approach was initially developed during the USAID/Jordan OMT project, adopted by ACWUA and implemented during IWSMR. It is a comprehensive method of tracking O&M performance improvement at participating utilities by collecting quantitative operational and financial performance data as well as qualitative pre/post training and on-job opinion-based data from ROCTP certified operators and their supervisors. Operators who successfully completed ROCTP pilots and their immediate supervisors reported improved job performance and self-esteem attributable to the training. A summary of TIA reporting can be found in Annex B.



ROCTP participants conduct a field visit to a wastewater utility in Aqaba, Jordan.

All TIA survey (Nablus, Sanaa, BMLWE) were highly encouraging with majority of the operators/trainees who attended the ROCTP WWTO1 course reporting that after 6 months back on the job, their knowledge and skills had improved and that they were contributing to improved job performance as a result of the training. This was confirmed by their supervisors who agreed that the ROCTP course was having a significant positive impact on the job performance of the newly certified WWT operators and consequently improved work unit performance in general. Furthermore, O&M costs at the plants are dropping which cannot be directly attributed to ROCTP but it is a quantitative indication positive change.

ROCTP rollout plan. Assessment data was used to prepare the ACWUA ROCTP rollout plan which encompasses demand from countries already enrolled in ROCTP and new countries that have requested ROCTP pilots. The rollout plan includes a schedule for ACWUA to continue conducting ROCTP courses after IWSMR with donor support.

Program Result 3: Improved performance of regional water/wastewater utilities through leveraging USAID-funded improvements (IWSMR Component 3)

Utility twinning. As per the IWSMR scope of work, achieving this PR was accomplished via pilot ACWUA utility twinning arrangements where mentor utilities were matched with partner utilities seeking to adopt new work methods to overcome a specific local performance deficiency. During Year 2, the IWSMR/ACWUA team conducted 2 twinning arrangements as depicted in the table below.

Mentor Utility	Partner Utility	Twinning Intervention	Status
Aqaba Water	Salt (Jordan)	Call Center MMS	Launched-Stage 4
Aqaba Water	BMLWE (Lebanon)	NRW, SCADA, IT	Launched-Stage 4
Aqaba Water	Karak (Jordan)	Data Management	Launched-Stage 3
Aqaba Water	Tafilah (Jordan)	Data Management	Launched-Stage 3
Aqaba Water	Zarqa (Jordan)	Unaccounted for Water	Launched-Stage 3

Upon the conclusion of the IWSMR program, ACWUA was in active negotiations to move forward twinning activities which began in June 2015.

ACWUA twinning manual. At ACWUA’s request, IWSMR developed a twinning manual including all procedures and templates needed to plan and implement various types of twinning activities. ACWUA was trained on the use of the manual and is ready to continue providing high impact twinning opportunities to its members with continued donor support.

ACWUA Twinning Program and Process

Features	<ul style="list-style-type: none"> • Knowledge Exchange Participation: In-country and Multi-country Twinning Partners • Capacity Building: Developing the Mentor Utility; Empowered Responsible Participants; ACWUA Twinning Facilitators; Mentor and Partner Twinning Coordinators • Twinning Types and Delivery: Virtual Web-based; On-Site; Integrated • Revenue Generation for Long-term Twinning Sustainability • Monitoring, Evaluation, Follow-up and Reporting
Implementation	<ul style="list-style-type: none"> • Step 1 Identification - Identify and profile mentors and partners • Step 2 Introduction - Match mentors and partners • Step 3 Establishment - Plan the Twinning Activity • Step 4 Implementation – Start the Twinning Activity • Step 5 Expansion – Measure results; Support replication and scale-up
Products	<ul style="list-style-type: none"> • Training Plan and Schedule Templates • Twinning Survey Questionnaire and Request Forms • Twinning Agreement MOU; Joint Twinning Action/Work Agreement and Activity Budget • Knowledge Exchange Materials • Twinning Progress Reports

ACWUA twinning master plan. Applying the twinning approach described in the Twinning Manual, the IWSMR/ACWUA team prepared a detailed plan for the original 5 twinning pilots and conducted 3 twinning pilots jointly by IWSMR and ACWUA, and devised 10 additional virtual twinning candidate arrangements that ACWUA wishes to implement after IWSMR if donor support can be secured. For each of these twinning arrangements, the plan identifies the target utility functions, potential mentors and interested partners for as well as an estimated budget. Donors will find the twinning plan helpful in considering their support for these arrangements.

ACWUA Twinning Plan Summary

Pilot Jordan In-Country	Mentor Utility	Partner Utility	Target Utility Function	Initiation Date
Launched in Stage 4				
1	Aqaba Water	Salt Water Directorate/ Balqa/WAJ	Management Maintenance System (MMS) Call Center	July 2015
2	Aqaba Water	Beirut Mt. Lebanon Water Establishment	Non-Revenue Water and Information Technology	July 2015
Launched in Stage 3				
3	Aqaba Water	Zarqa Management Contract	Non-Revenue Water	June 2015
4	Aqaba Water	Karak	Data management	June 2015
5	Aqaba Water	Tafilah	Data management	June 2015
Planned ACWUA Activities*	Mentor Utility	Partner Utility	Target Utility Function	Planned Initiation Date
1	Aqaba Water	Bekaa/ Water Establishment (Lebanon)	Management Maintenance System	December 2015
2	Aqaba Water	South Lebanon Water Establishment (Lebanon)	Management Maintenance System	February 2016
3	Sonede/Tunisia	Local Water and Sanitation Corporation/Aden (Yemen)	Non-Revenue Water	May 2016
4	Sonede/Tunisia	Local Water and Sanitation Corporation/Sana'a (Yemen)	Non-Revenue Water	May 2016

5	Miyahuna/Jordan	Local Water and Sanitation Corporation/Sana'a (Yemen)	Management Maintenance System	October 2016
6	Miyahuna/Jordan	South Lebanon Water Establishment	Management Maintenance System	October 2016
7	EI Minya/ HCWW/ Egypt	Yarmouk Water/Jordan	Total Safety Management	December 2016
8	Miyahuna/Jordan	Palestine Water Authority (PWA)/West Bank	Wastewater	December 2016
9	Aqaba Water	Alexandria Water Company/HCWW (Egypt)	IT Cloud	December 2016
10	Aqaba Water	Aswan/ HCWW (Egypt)	IT Cloud	December 2016

- Revenue Streams for Twinning - ACWUA is using the Twinning Plan for ten future activities as a basis for discussions with interested donors such as GIZ and SIDA that are working directly with the partner utilities to identify and secure adequate revenue streams to implement specific twinning activities and contribute to the long-term sustainability of the ACWUA twinning program. Upon conclusion of the IWSMR program, ACWUA was in active communication with the associated donors to secure support. In addition, ACWUA is seeking to expand in-kind contributions from the partner utilities to offset costs.

1.3 IWSMR Overall Performance-Contractor's Assessment of Work Completed

PMP. IWSMR met and/or exceeded all performance targets agreed upon at the outset of the program. The previous section above describes accomplishment of major IWSMR capacity building and institutional milestones as well as quantitative TOT, ISD, ROCTP and twinning targets. The table below is a summary that constitutes Chemonics International/IWSMR prime contractor's assessment of work completed on this contract.

Annex B provides complete full details of the contractors overall program success.

The two-year IWSMR program was constrained by limited resources and uncontrollable political upheaval occurring throughout the MENA region. Under these circumstances, IWSMR presented USAID with the unique opportunity to assess:

- USAID's burgeoning relationship with ACWUA as a service provider
- The regional interest and performance impact of ROCTP and twinning
- ACWUA's capacity to effectively satisfy that demand

From the contractor's day-to-day perspective, ACWUA is a complex but professional and dedicated counterpart with great potential. IWSMR recognizes ACWUA's difficult mission of satisfying various member country interests and demands. As clearly demonstrated by the contractor's measureable level of work completed in collaboration with ACWUA, the association is certainly a promising and encouraging partner. Given appropriate and ongoing USAID support for the remainder of this decade, ACWUA is capable of evolving into a high-performing organization delivering a myriad of impactful services to its members.

ACWUA is especially positioned as a conduit for positive development of much needed performance improvement initiatives throughout the region's water and wastewater sector. Based on the brief and limited IWSMR scope, Chemonics International assesses ACWUA as a partner worthy of the active USAID support

commensurate with ACWUA's broad geographic influence and commitment to spreading best practices to its 18 MENA member countries and over 100 local utilities.

1.4 Implementation Challenges and Solutions

Described here are the main implementation issues faced by IWSMR and ACWUA during the two-year program period from October 2013 to September 2015. Completion Report, Section 3 – Recommendations for Follow-up Action, addresses the status of ACWUA's capacity and resources to sustain the ROCTP and Twinning activities at the end of the IWSMR program with specific recommended follow-on actions.

Training implementation and rescheduling of activities. Throughout the duration of the IWSMR program, the MENA region was dangerously unstable with broad political change and growing conflicts that directly and continuously impacted IWSMR regional planning and training implementation. Most notably, IWSMR had to coordinate closely with authorities in the West Bank and Yemen to reschedule ROCTP training that was affected by the local turmoil. In some cases, ROCTP training was delayed for months until conditions allowed IWSMR to proceed with implementation. Travel and visa restrictions further complicated all ROCTP, TOT and ISD training events. As adverse circumstances prevailed throughout the region, IWSMR and ACWUA remained flexible and committed to accommodating schedule changes necessary to advance all planned capacity building and ROCTP activities. IWSMR and ACWUA are proud to report that despite the frustrating local situation, all planned training courses and twinning activities were eventually conducted for the target utilities and participants.

"We would like thank USAID for their interest in cooperation between them and water establishments to exchange knowledge, experiences and to educate operators and supervisors at pumping stations and keeping them up-to-date."

— Moustafa al Habbal, specialist,
South Lebanon Water Establishment,
Saida, Lebanon, June, 11, 2015

ACWUA capacity. ACWUA is a young dynamic organization with motivated leadership and dedicated personnel who are struggling to provide high-impact products and services to its diverse membership during very difficult and complicated times for the MENA region. The IWSMR program set the stage for ACWUA to establish a sound footing as a training provider offering ROCTP and twinning services to its members. However, the limited scope and duration of the project was simply inadequate to enhance ACWUA's capabilities to a level that will guarantee sustainable success. The ACWUA staff needs additional on-job training and structured experience in direct ROCTP and twinning marketing, planning, coordination, delivery and impact assessment. Even with aggressive ACWUA buy-in, these complex functions have not yet been fully institutionalized within the association. New systems installed by IWSMR need further application, expansion and refinement over an additional multi-year period to assure that USAID's initial investment in ACWUA is deemed cost-effective and capable of providing sustainable ROCTP and twinning services.

IWSMR resources. IWSMR was a “small” project with limited resources and duration to accomplish a demanding scope of work. Budgets and timeframes were always tight dictating careful and collaborative planning with ACWUA and USAID to ensure a shared vision going forward based on optimizing resources to achieve results. Maintaining the delicate balance between expectations and the adequacy of funds was an ongoing IWSMR challenge especially as ACWUA requested additional support and IWSMR identified legitimate emerging needs. IWSMR again is proud to report that with careful budgeting and ACWUA understanding and cooperation, funding was adequate to fulfill all planned training events and deliverables.

“I consider the ACWUA Utility Management to be one of the best and most notable training courses that I have completed. My previous management training covered similar issues but the ACWUA UM was more comprehensive and broadened my thinking. The trainer had deep experience and utilized a wide variety of training techniques. This course will be very helpful to my career and useful to my organization—
— Eng. Majd al-Mrayat, Head of Follow-up Project Division, Jordan Valley Authority, Ministry of Water and Irrigation

Member inability to pay. ACWUA faces serious financial obstacles due to member utilities reporting that although they are willing, they are typically not able to pay fees for ROCTP, twinning services or testing and certification. Utilities have expressed willingness to make in-kind contributions and the IWSMR/ACWUA team has capitalized on this by training and certifying local utility operators as trainers who can conduct ROCTP courses at little or no cost to their employer. However, the initial costs for new TOT and ROCTP pilots and ACWUA’s coordination fee present potentially deal-breaking expenses for both ACWUA and its members. Utilities that have seen the benefit of ROCTP and twinning are ready to offer non-monetary in-kind contributions that do not substantially reduce or eliminate financial hurdles.

In addition, test administration, certification/licensing and quality control fees demanded by CAQA/Jordan have continually increased and are currently beyond the financial means of ACWUA and its members. During IWSMR, the program provided all pilot training, certification and twinning at no cost to utilities and paid the ACWUA coordination fees and CAQA expenses. IWSMR facilitated discussions between ACWUA and CAQA to reduce testing costs; however these remained unresolved at program completion.

During IWSMR, no secure solutions were found for ACWUA’s serious financial challenges as it strives to sustain ROCTP and utility twinning for the benefit of its members.

Long-term ROCTP and twinning sustainability. Over the course of the two-year program, successive IWSMR progress reports endeavored to raise and emphasize the issue of ACWUA and ROCTP sustainability in order to give USAID and other donors ample time to determine the extent to which they may continue to support ACWUA and ROCTP.

During the 24 months of IWSMR, only three of ACWUA’s 18 member countries participated in pilot ROCTP courses and in these cases, the pilots are limited to Operator Level 1 of a 4-level certification career path. The three-pilot limit was imposed purposefully in order to invest in, examine and benefit from the progress of targeted pilot programs and trainees. As reported here, within the IWSMR scope and

available resources, the program consistently took significant action to assist ACWUA in sustaining its nascent regional operator certification program and twinning activities.

Key among these actions were assistance to ACWUA in securing responsibility determination from USAID; encouraging ACWUA to provide training materials free of charge and to establish a ROCTP fee structure compatible with ability to pay; conducting a generous TOT program to make utilities self-sufficient in conducting training with their own qualified trainers to reduce costs; insisting on a MOU for each ROCTP Pilot securing buy-in commitment from participating utilities; persuading ACWUA to conduct multilateral twinning arrangements to allow mentors to simultaneously assist more than one partner to optimize results and budgets; and, implementing a Training Impact Assessment approach to convince utilities that ROCTP and twinning will yield positive performance improvements that justify their training investment.



Certified trainee, Eng. Ghada Safa, accepts a certificate from ACWUA SG, Khaldon Khashman, as the highest scoring trainee of the Jordan TOT training.

When looking forward beyond IWSMR, real concerns arise as to whether the limited IWSMR scope will have been enough to allow ROCTP and twinning to take root and prosper throughout the MENA as it has in Jordan where USAID conducted the five-year OMT project strictly focused on establishing the first legitimate and sustainable operator certification program in the region.

During its 24 months, IWSMR continued to assist ACWUA by all available means to secure the long-term future of ROCTP and utility twinning exchanges. However at program completion, the program feels compelled to notify USAID that upon conclusion in September 2015, ACWUA capacity, new trainer ability, and ROCTP scale-up, twinning expansion and enduring sustainability remain in question.

Section 3 of this completion report discusses ACWUA’s need for ongoing follow-on support to build member awareness and interest, and effectively address their need for ROCTP and twinning arrangements compatible with their ability to pay that will result in utility management and O&M performance improvement.

“Current national efforts are not enough to meet the need for the integration of regional water resource management efforts. The geopolitical context and the demographic shift in populations in the region have caused a rise in water demand that should give impetus to further collaboration. Organizations such as ACWUA can promote much needed regional cooperation and knowledge exchange to help overcome the critical challenges facing the region.”
— Hazam Al-Nasser, Minister of Water/Jordan



SECTION II. DETAILED PROJECT OVERVIEW

2.1 Summary of Baseline Conditions

During Quarter 1 (October to December 2013), IWSMR conducted an extensive assessment of the prevailing baseline conditions regarding water/wastewater sector performance, operator certification and training, and twinning knowledge exchange as well as ACWUA capacity to perform its mission and contribute to member performance improvement. The full assessment findings (Stage 1 and 2), using survey data and anecdotal opinion, can be found in the IWSMR technical references delivered along with this completion report.

The IWSMR assessment was confined to the main deficiencies falling within the manageable interest of ACWUA in the areas of O&M and utility management with focus on the reasons for the deficient capacity that IWSMR sought to address. These revolve mainly around staffing, skill levels, and qualifications among operators, managers, and technicians. Key findings are summarized here.

Regional Water/Wastewater Utility Management and O&M Performance

Sector policy, planning, and regulatory entities. The prevailing norm in ACWUA member countries is to concentrate and house policy, planning, and regulatory functions (and often service provision) under a single national ministry or agency. The distance between planners and local providers exerts little pressure on centrally appointed utility executives to make tough decisions, weakens governance and local accountability, and slows investment decisions. While many countries have effective environmental regulators, none have economic regulators for the water and wastewater sector, with the notable exception of Egypt. Efforts are underway to unbundle service provision from policy, planning through decentralization and increased utility autonomy in some ACWUA member countries such as Jordan, Egypt, Morocco, and Lebanon.

Utility cost recovery and O&M. With the possible exception of the profitable Beirut Mount Lebanon Water Establishment and the Aqaba Water Company, most ACWUA member utilities are incapable of recovering operating costs. Except in the oil-rich countries, where IWSMR's scope appropriately discouraged investment, utility O&M practices are hindered by lack of resources, resulting in sub-par O&M practices, uneven service levels and accelerated deterioration of treatment and network infrastructure. Many ACWUA members are keenly aware of these shortcomings and with donor assistance, are endeavoring to upgrade management practices, standardize O&M procedures, improve efficiency, contain costs, rationalize energy use, and optimize chemical use.

"A sustainable operators' certification program will upgrade the level of operators, increasing their skills, which will reflect in upgrading plant efficiency and the quality of water treatment, limiting pollution, maintaining public health, and thus serving the community."

— Dr. Eng. Amro Mostafa, Head of Sanitary and Environmental Engineering Research Institute, HBRC/Egypt

Skills gaps and weak human resources practices. ACWUA utility members emphasized that as their treatment facilities and networks expand to meet demand, management is often unable to adapt to new requirements and technologies. Most members agreed with the need for standardized procedures, clear functional and

position descriptions, and performance-based training programs and job aids to equip staff with new skills.



Lack of incentives to attract and retain qualified operators and managers. Except for the wealthy gulf countries, ACWUA member utilities reported difficulty attracting and retaining qualified managers and technical personnel. With guarded optimism, they expect certification to raise the profile of the sector and offer attractive opportunities for youth, new graduates, and women.

Legal and operational frameworks. ACWUA members recognize that regulatory actions are necessary to create mandatory operator training and certification and that even with the political will, the legal process to do so will be slow. To succeed regionally, the ACWUA ROCTP should be harmonized and standardized, customer-oriented, and cost effective to respond to the needs of ACWUA members.



Lebanon ROCTP participants visit the Water Purification Debayeh Plant. Trainees participated from all four of Lebanon's Water Establishments attended IWSMR's Water Distribution Training in March 2015.

Training, testing, and certifying entities. Egypt’s Housing Research and Building Center (HRBC) and Jordan’s CAQA, are the only examples of testing and certifying frameworks and bodies reported by ACWUA members. No other ACWUA members reported having a legally recognized certification framework or standardized operator training and testing.

Utility knowledge exchange and twinning. ACWUA members recognize that significant utility management and O&M expertise is present throughout the region but goes largely untapped by members who could benefit from a mentor utility. Members universally expressed interest in twinning arrangements that focused on their specific performance deficiencies.

Gender inclusion. ACWUA members are supportive of gender equality and female empowerment within the water/wastewater sector at all organizational and professional levels.

Women traditionally fill utility laboratory and administrative positions. The number of women in utility management and hands-on O&M positions is low. ACWUA members seek to increase women’s participation in ROCTP to advance their skills, and employment and advancement opportunities. ACWUA members noted that certain jobs may be not considered culturally acceptable for women such as maintenance of a water/wastewater facility, which has working hours considered unsuitable for women. However, members agree with and support the target of 25 percent female participation in ACWUA ROCTP and capacity building training such as TOT and ISD.

“While in the training, I learned a lot about mechanical and natural treatment, the trainer was so cooperative and communicated well. I built a good network with other utilities which will build long-term sustainability between both countries [Jordan and Yemen].”
— Lina Mohammed, Head of Chemistry Division, Sana’a Local Water Corporation, Yemen ROCTP Training in Amman, Jordan, December 2014

ACWUA – Capacity to Facilitate Performance Improvement

ACWUA mission. The primary purpose of the IWSMR assessment activity was to identify needs and gaps that can be effectively addressed and implemented within the IWSMR life of project through September 2015 to improve the capacity of the ACWUA to expand its business planning and operations to better perform its mission to spread Best Practices among members by:

- Establishing a sustainable regional operator certification platform
- Administering an operator certification training and testing program
- Fostering expanded best practices twinning exchanges among members and with external water and sanitation organizations

ACWUA baseline status. Having taken over the operators’ certification program upon the conclusion of the OMT/Jordan project, ACWUA assumed the role of regional ROCTP coordinator, marketer and implementer of operator certification and training services. OMT provided ACWUA with basic guidance as well as the ROCTP curricula and related materials to assist in fulfilling this new and demanding ACWUA role.

During Quarter 1, IWSMR conducted a highly focused baseline assessment of ACWUA’s performance to identify additional capacity needed for ACWUA to effectively run and sustain ROCTP on its own. The detailed ACWUA assessment

covered the items listed below along with specific performance improvement actions required to address institutional needs essential for ACWUA to be successful in implementing ROCTP and twinning activities.

ACWUA Operator Training and Certification Business/Commercial Model

ACWUA Functions, Systems, and Procedures

1. Training and Certification Program Management and Administration
2. Business Planning and Marketing Development
3. Monitoring and Evaluation
4. Financial Management
5. Knowledge and Information Systems Management
6. Communication, Outreach and Member Services

ACWUA Organizational Structure

1. Job Descriptions and Training Needs Assessment
2. Certification and Training Resources

ACWUA was fully cooperative throughout the assessment of its capacity to deliver and sustain ROCP and twinning services. The assessment identified extensive capacity building requirements and related actions which are described under Component 1 below.

2.2 Overall Description of Activities, Work Methods and Accomplishments (APR 2)

This section describes in detail the activities, methods and achievements as presented in the approved IWSMR work plans. Annex A – IWSMR Implementation Plan Timeline was developed with ACWUA to guide progress over the entire 24-month project. In its final form, the completed Implementation Plan provides a big picture of the IWSMR project.

ACWUA Incorporates Operator Certification into its Strategy

Facilitated by IWSMR, a 2014 update to ACWUA's current business plan (2010 – 2014), centers on the addition of a new strategic objective: "To disseminate the operator certification and training culture in the MENA region and to broaden its application through facilitating such services and making them available to utilities at minimum cost and maximum efficiency."

Component 1 – ACWUA Capacity Building

Update ACWUA strategic business plan. IWSMR implemented this activity in two stages: first, the 2014 part of the current Strategic Business Plan (2010 – 2014) was revised to emphasize the new ACWUA Regional Operator Certification and Training Program; and second, the ACWUA Strategic Business Plan for 2015-2019 was developed by working closely with the ACWUA Board of Directors. The output of the first stage was a "Bridging Memo," finalized in May, 2014. The memo served as a link to the next five-year plan and increased the ACWUA emphasis on certification (see box). This codified ACWUA commitment is essential to the long-term sustainability of the ROCTP.

Upon completion of the Bridging Memo, IWSMR developed the ACWUA's Strategic Business Plan for 2015-2019. During Year 1, ACWUA formed a business planning committee composed of five members of its Board of Directors, from the West Bank, Egypt, Lebanon, Jordan, and Tunisia empowered to develop and approve the new strategy. A series of meetings produced the ACWUA vision and mission statements as well as updated strategic objectives for the next five years, including a new objective for the establishment, support and sustainability of the ROCTP. A draft of the business plan and budget/financial model was completed by the end of Year 1, approved in January, 2015 during Arab Water Week, and uploaded on ACWUA's website. Business Plan implementation started immediately with the development of concept papers for future ACWUA work with an emphasis on sustainability and revenue generation.

**ACWUA Vision Statement
2015 – 2019 Business Plan**

"ACWUA, as an international center of excellence, will partner with water supply and wastewater utilities in Arab countries to build their capacities and reinforce the application of best practices in order to achieve their stated goals."

— Translation from approved business plan in Arabic

The ACWUA Strategic Business Plan for 2015-2019 is a concrete demonstration of ACWUA board commitment to standardized operator certification and training throughout the MENA region. This emphatic inclusion of ROCTP in the ACWUA strategy provides a solid basis for on-going support from USAID and will serve to attract assistance from other interested donors.

Develop a Certification Training Information System (CIS). The intent of the CIS is to enable ACWUA to track training and certification programs, store records and report impact. It is a database of curriculum, utility, trainee, and trainer data for participating ACWUA members throughout the region. The CIS allows managers, engineers, operators and technicians to review training options as well as training and certification files.

CIS Parameters - Developed

- Certification Framework and Courses
- Country Profiles
- Utility Profiles
- Training Administration (Enrollment, Trainer Records, Test Records, etc.)
- Collaboration Tools (Calendar, Wiki, Blog, etc.)
- Reports and Tracking

During Year 1, detailed parameters for the proposed system were outlined jointly by IWSMR and ACWUA with system specifications were further refined in a Request for Proposal (RFP) which was released to qualified Jordanian information technology (IT) firms. The RFP was released to three Jordanian IT firms in April, 2014. Following standard procurement procedures, a CIS contract was concluded with a local firm in June, 2014. CIS design and development began in July, 2014 and all milestones as outlined in the subcontract (see box) were completed on time. In September, the CIS underwent initial testing by IWSMR and ACWUA personnel.

CIS Development Milestones

- | | |
|--|------------------------|
| • Software designed | July 27, 2014 |
| • Software programmed | August 24, 2014 |
| • ACWUA hardware and server upgraded | August 28, 2014 |
| • Software tested | Sept. 30, 2014 |
| • Software installed; technical report submitted | Oct. 12, 2014 |
| • ACWUA staff training concluded | Oct-Nov, 2014 |
| • CIS operational | Nov 13, 2014 |
| • CIS Users Training | April 21-23, 2015 (Q7) |
| • CIS Design Upgrades | July-August, 2015 |

To be most effective, the CIS web-based system requires MSSQL server software which IWSMR procured thus ensuring proper installation on ACWUA's server. The CIS software was fully operational as per schedule in November, 2014. Committed to ensuring a user friendly system that will actually be utilized by administrators, IWSMR continued to support software updates and training through the life of project, as detailed below.

The ACWUA CIS is an organized and automated training management system that will contribute to ROCTP sustainability by allowing member countries, utilities and operators to efficiently monitor the credentials of technical employees and ensure full and long-term compliance with certification policies at their water/wastewater treatment and network facilities.

The CIS was demonstrated to ACWUA members during Arab Water Week (January 2015) and members were encouraged to begin populating the system with the required training data. IWSMR, in cooperation with ACWUA, conducted a CIS training course for 12 utility administrator trainees in April, 2015. After the training course, the system was put into a trial period that allowed trainees to access and practice utilization in order to provide feedback to IWSMR and ACWUA on design improvements. Minor design modifications that include automation of importing and exporting data related to operators career path, experiences, certifications and languages were then added in order to facilitate usage and auto-uploading of data files.



IWSMR exceeded its gender targets at the CIS training in April 2015, where women represented 50 percent of trainees.

Upon project completion, the CIS had full functionality and the system was in comprehensive use by ACWUA.

Determine the institutional requirements needed to establish a Capacity Development and Certification Unit within ACWUA. Developing the capabilities of ACWUA to effectively manage, operate and support ROCTP was essential to the reputation and long-term sustainability of the program. Smooth and efficient management of the ROCTP will encourage greater participation among ACWUA members from pilot countries and members contemplating implementation of operator certification at their water and wastewater facilities. Assessment – Stage 1 addressed ACWUA's capacity needs vis-à-vis ROCTP and twinning delivery and sustainability.

As a key part of the business planning process, ACWUA reviewed its overall organizational structure and human resources to guarantee that adequate, appropriate and trained staff is assigned to a new ACWUA Capacity Development and Certification Unit. This unit is responsible for the day-to-day management and operation of the ROCTP.

At the request of ACWUA, this task was postponed until after their new organizational chart was approved as part of the business planning process in January 2015 at the Arab Water Week.

Upon project completion, ACWUA had established and staffed the new unit based on job descriptions and ROCTP procedures developed with IWSMR.

Request a USAID pre-award survey to obtain a responsibility determination of ACWUA management systems. In accordance with Section 2.1.3 of the Task Order Scope of Work, upon discussions with USAID in February 2014, it was agreed that the best mechanism for this activity was an IWSMR-tendered contract to a USAID/Jordan approved auditing firm. Given its long history of grants (and sub-grants) to Jordanian institutions, USAID/Jordan recommended a short list of qualified local firms in March, 2014. IWSMR developed and released an RFQ and a contract was concluded in May, 2014.

The selected contractor objectively evaluated ACWUA's financial and management systems and submitted a non-US organization pre-award survey (NUPAS) of ACWUA in July, 2014 to IWSMR and USAID. Based on the findings, IWSMR worked with ACWUA to address noted shortcomings including documentation of existing accounting practices and weaknesses in selected internal control systems. In accordance with PwC's 16 point list of findings and recommendations of ACWUA's internal financial, organizational, and management systems, IWSMR supported ACWUA in responding to a majority of those recommendations. IWSMR subcontracted PwC to help ACWUA develop its financial manual. In May, 2015 IWSMR hired a consultant to develop ACWUA's Project Management Manual (PMM). The manual is written with USAID contract management in mind but also considers other donor requirements and ACWUA's current practices. IWSMR supported the adjustment of various human resource and other internal processes to incorporate proper segregation of duties for an organization of ACWUA's size.

These ACWUA management system improvements are necessary to submit a responsibility determination to USAID which is a pre-requisite to any direct USAID grants to ACWUA. This determination is a valuable element in ACWUA and ROCTP sustainability.

IWSMR has expanded existing water and sanitation activities in Jordan and Egypt, and supported ACWUA in scaling up operator certification for member countries and utilities across the MENA region. This ACWUA program is making considerable progress in water and sanitation management.

The IWSMR project is the latest extension of a prosperous and ongoing partnership between USAID and ACWUA. With IWSMR support, ACWUA has contributed to stronger, more sustainable utilities that are better able to serve consumers. Furthermore, this partnership has allowed USAID to support efforts that increase access to water and sanitation and improve water resource management.

These initiatives support a wide array of Arab countries to help meet demand and build a self-sufficient water sector. As ACWUA continues to develop its services and its reach, this organization's emerging role as a leader in developing regional water utilities is increasingly clear.

— Jim Barnhart, USAID/Jordan Mission Director,
IWSMR turnover event award ceremony,
September 7, 2015

The USAID/Jordan office, in coordination with the Middle East Regional Program Technical Office (formerly called the Office of Middle East Programs), informed IWSMR that the pre-award survey (NUPAS)

recommendations and ACWUA finance manual were under review.

IWSMR proceeded to procure assistance to ACWUA in making the additional changes to the

ACWUA Financial Manual specifically required for managing donor-funded activities. The fully revised ACWUA Financial Manual was submitted to USAID to complete its responsibility determination review. ACWUA with IWSMR support continued to implement NUPAS recommendations, and refine ACWUA's financial and policy manuals, and prepare a fact-finding report. A new ACWUA Project Management Manual was developed and forwarded to USAID.

Upon completion of the IWSMR project in September 2015, USAID approved the responsibility determination for ACWUA with an initial direct grant of approximately \$300,000. The responsibility determination is a validation that ACWUA is capable of receiving and effectively managing direct support from USAID and will also encourage other interested donors to provide support to ACWUA. With this status, ACWUA will be well positioned to request the support necessary to ensure both adequate resources for its activities and long-term ROCTP sustainability.



Lebanon ROCTP Trainees visit Chabrough Dam in Faraya in March 2015.





SUCCESS STORY

Improving ACWUA's Capacity to Serve its Members

ACWUA's New Certification Database, Business Plan, and Management Systems



IWSMR presents the ACWUA business plan at Arab Water Week, 2015, Dead Sea, Jordan



Operators at the West Bank ROCTP at Nablus Utility will benefit from ACWUA's new CIS system.



ACWUA's counterparts gather at the 3rd Annual Arab Water Week, January, 2015

With more than 106 utility members in 18 member countries the Arab Countries Water Utilities Association (ACWUA) serves a wide range of interests in utility water resource management, and training. IWSMR is supporting ACWUA's mandate through 3 critical tasks that directly promote sustainability, information exchange, and regional certification:

Certification Information System (CIS)

In December 2014 IWSMR completed installation of the CIS system; a web-based data information system housed within ACWUA's website. This automated training management system allows member countries, utilities, and operators to efficiently monitor the credentials of technical employees and ensure full and long-term compliance with certification policies at their water/wastewater treatment and network facilities. CIS stores vital training, recruitment records, and certification information. In 2015, utility administrators from the West Bank, Iraq, Lebanon, Egypt, and Yemen participated in a CIS training to ensure application, usage, and sustainability. "ACWUA is pleased to have such a system which will enable the usage of stored data in developing an operator peer network for utilities, information will definitely help utilities throughout the region." Khaldon H. Khashman, Secretary General, ACWUA.

Business Planning for Success

IWSMR provided technical assistance to ACWUA in developing its 2015-2019 Business Plan. Critical strategic objectives, such as, promotion of regional certification and identification of revenue streams were identified. ACWUA's Business Plan was approved by its Board of Directors at Arab Water Week 2015. IWSMR was excited to help craft a plan that promoted ACWUA's sustainability and built on the work of other partner organizations.

Management and Financial Sustainability

Committed to longevity, ACWUA has jump-started a mission of improved financial and management NGO systems. With IWSMR's support, ACWUA received a responsibility determination from USAID which will allow them to receive independent grant funding. ACWUA underwent an extensive audit with major systemic improvements. IWSMR and ACWUA have jointly produced a Finance Manual, salary scale, and completed the Project Management Manual for ACWUA in July.

Component 2 – Regional Water and Wastewater Operator Certification Program

Certification assessment and market analysis. The assessment of demand for ROCTP was divided into two stages to allow for rapid program activation within the 24-month IWSMR timeframe. Stage 1 focused on the countries and program elements directly related to the early implementation of three training pilots (in West Bank, Yemen and Lebanon). This stage was documented in an Assessment Report submitted in January, 2015. Stage 2, focused on gathering data from other interested ACWUA members using the following questionnaires and is documented in the ROCTP Rollout Plan submitted in August, 2015 (summary above):

Assessment Questionnaire Sections

1. Legislative Dimension (country level)
2. Training Resources (utility level)
3. Training Demand (utility level)
4. Training Supply (utility level)
5. Twinning Partnerships (utility level)

- Enrollment Form to Request Additional ROCTP Courses: This “ROCTP Rollout” form was developed for countries currently involved in ACWUA ROCTP: West Bank, Yemen, Lebanon, Jordan, and Egypt.
- Application Form for New ROCTP Pilot Courses: This “ROCTP Scale-Up” form was developed for ACWUA member countries that are not yet involved in ROCTP.

The questionnaire distribution included a description of ROCTP, outline of certification programs, and selection criteria and requirements. ACWUA also posted these materials on its website in order to facilitate easy access by interested members.

Response data were posted in the new CIS which confirmed no existing in-country initiatives to establish certification schemes, and no constraints preventing the recognition of CAQA/Jordan-issued certificates. Results for pilots also confirmed availability of training facilities in West Bank and Lebanon, but not in Yemen, and ability to pay on the part of the West Bank utility, but not Lebanon or Yemen. The assessment explored the following critical issues:

- Practical means to encourage greater participation by women and young professionals
- Potential distance/e-Learning options
- Willingness/ability to pay
- Cost-effective local test administration by available qualified in-country testing services under CAQA control

The questionnaires for Stage 2 were circulated to the below mentioned twelve additional member countries identified by ACWUA. Countries and results were consolidated in the ACWUA ROCTP rollout plan for implementation by ACWUA after the conclusion of the IWSMR project.

The ACWUA ROCTP Roll-out Plan is the most important output of the two-stage assessment process. ACWUA will sustain ROCTP by implementing this plan beyond the end of the IWSMR project. This plan provides a realistic number of ROCTP activities to continue in the first three pilot countries and to expand ROCTP to new pilot countries based on the results of Assessment Stage 2. The ACWUA ROCTP

rollout plan provides a platform for scale-up of ROCTP at a sustainable pace based on prevailing financial considerations and the degree to which USAID and other donors continue their support.

ACWUA ROCTP Rollout Summary: October 2015 to December 2017

Member Utility	ROCTP Courses	ROCTP Level	Male	Female	Total
Expansion in Current Participating Utilities/Countries					
West Bank Water/Wastewater Utilities: 1- Nablus 2- Maythaloan 3- Coastal municipalities 4- Water Authority 5- Tubas 6- Anabta	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16
		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
	Subtotals:	---	---	114	32
Lebanon Water/Wastewater Utilities: Beirut & Mt Lebanon Bekaa North Lebanon South Lebanon	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16
		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
	Subtotals:	---	---	114	32
Yemen All water/wastewater utilities	WWT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WWC	1	12	4	16
		2	10	2	12
	WT	1	12	4	16
		2	10	2	12
		3	5	1	6
		4	2	1	3
	WD	1	12	4	16
		2	10	2	12
	UM	1	12	4	16
	Subtotals:	---	---	114	32
Jordan Al-Yarmouk Water Authority Miyahuna/Amman Company Aqaba Water Company	WWT	1	18	6	24
		2	12	4	16
	WWC	1	18	6	24
		2	12	4	16
	WT	1	18	6	24
		2	12	4	16
	WD	1	18	6	24
		2	12	4	16
	UM	1	21	7	28
Subtotals:	---	---	141	47	188
Egypt	WWT	1	36	12	48
		2	24	8	32

Member Utility	ROCTP Courses	ROCTP Level	Male	Female	Total
Holding Company (24 companies: Al Menyah, Cairo)	WWC	1	36	12	48
		2	24	8	32
	WT	1	36	12	48
		2	24	8	32
	WD	1	36	12	48
		2	24	8	32
Subtotal:	--	--	282	94	376
Total:	--	--	846	237	1,002
Scale-Up – New Utilities/Countries					
Iraq					
Ministry of Water Resources	WD	1	36	12	48
Subtotal:	--	--	36	12	48
Oman					
Public Authority for Electricity and Water	WT	1	18	6	24
	WD	1	18	6	24
Subtotal:			36	12	48
Gulf States					
Bahrain, Saudi Arabia, Qatar, etc.	WWT	1	18	6	24
	WWC	1	18	6	24
	WT	1	18	6	24
	WD	1	18	6	24
	UM	1	18	6	24
Subtotal:	--	--	90	30	120
Tunisia/SONEDE					
	WD	1	6	6	12
Subtotal:	--	--	6	6	12
Total:			168	60	228
Grand Total (Current + New):	--	--	1,014	297	1,311

Formulate a market based, sustainable, regional training and certification approach. As detailed in the Assessment Report, the groundwork for a regional certification program was laid by USAID work in Jordan and Egypt, and by ACWUA's endorsement of the program among its members throughout the region.

The regional certification approach adopted by IWSMR is summarized as follows:

- CAQA was recognized as the interim testing and certifying agency, until country-specific certification frameworks are established in countries wishing to have their own certification authority. CAQA agreed to certify non-Jordanians who comply with CAQA requirements. More than one certifying authority is expected with Egypt being the next to offer services regionally.
- Use of the Jordanian training program was accepted for pilots and in the interim, until country-specific programs (competencies, training courses, tests, etc.) are established or until countries have adopted new ACWUA programs. Once country-specific frameworks are in place, after the conclusion of IWSMR, ACWUA will facilitate the development of these nascent programs.
- Measures were accepted to minimize ROCTP cost to utilities by: 1) promoting use of internal (utility) trainers; 2) providing USAID-funded training materials via ACWUA at no cost to the trainees, and 3) controlling operating costs of training events and, thus, ACWUA administrative and coordination fees.

- A Regional Operator Certification Task Force was established to assess, harmonize and update the programs in Jordan and Egypt for regional application. Participants included:
 - The Holding Company for Water and Wastewater Egypt (HCWW)
 - The Housing and Building National Research Center Egypt (HBRC)
 - Egyptian Water Regulatory Agency (EWRA)
 - CAQA
 - ACWUA
 - IWSMR

The task force met during Year 1 and developed a set of technical documents. These outputs, in addition to the information gathered for the Assessment Stage 2 as well as impact assessments of the pilot training programs, contribute to the regional responsiveness and the ROCP sustainability.

Upon project completion, ACWUA signed MOUs with the HBRC and EWRA Egyptian authorities to conclude agreements developed by the task force and continue efforts to harmonize the existing regional programs in Jordan and Egypt.

“The integration of Jordanian/Egyptian operator certification programs is the most challenging and important component for all Jordanian and Egyptian water and wastewater utilities and involved agencies. This is the first time the Operator Certification Program has been raised to a regional level and in compliance with CAQA standards.”

— *Khaldon Khashman,*
Secretary General, ACWUA

Implementation of training and proof of concept. Over the 24-month project period, ACWUA and IWSMR planned, implemented and evaluated a series of pilot training initiatives to test the approach and generate demand for ROCTP. Performance improvement impact of certification training pilots was monitored using a TIA adopted by ACWUA that includes both quantitative and qualitative survey methods. ROCTP courses were coupled with TOT courses to build cadres of capable trainers in the pilot countries and other potential markets identified by ACWUA. To further support regional program development, Jordanian and Egyptian subject matter experts participated in an Instructional Systems Design (ISD) course intended to facilitate further development of existing programs per the recommendations of the Regional Certification Task Force and preparation of new courses based on the assessment.

In coordination with GIZ/German Aid, ACWUA established a distance/e-learning platform which can be used in the future to upload and administer appropriate ROCTP courses. ACWUA staff were trained by GIZ in the use of the platform and ACWUA is capable of uploading training materials. During the IWSMR performance period, after consideration of conducting the pilot ROCTP Utility Manager course using the GIZ distance/e-learning platform, ACWUA decided to rely solely on traditional classroom instruction for all ROCTP training implemented with IWSMR. ACWUA plans to utilize its distance/e-learning capability post-IWSMR and will explore methods for remote ROCTP delivery.

Details of training implementation can be found in Annex G – Training Course Report while impact tracking is reported in Annex B – PMP and TIA Accomplishments.

Implementation of capacity building training. Capacity building training included the TOT events as well as an ISD course. While CAQA was able to accredit the TOT course, the ISD course could not be accredited as the course content fell outside of the CAQA purview.

A total of seven planned TOT events were conducted. Building on TOT progress, IWSMR completed the ISD course which included high performing TOT certified attendees:

1. Jordan (1st): May 18-22, 2014 (Q3) 22 of 23 participants passed
2. West Bank: Aug. 3-7, 2014 (Q4) all 12 participants passed
3. Yemen: Aug. 17-21, 2014 (Q4) all 12 participants passed
4. Egypt (1st): Sept. 28-Oct 2, 2014 (Q4) all 18 participants passed
5. Lebanon: Oct. 27-31, 2014 (Q5) all 12 participants passed
6. Egypt (2nd): Jan 18-22, 2015 (Q6); all 15 participants passed
7. Jordan (2nd): Feb 15-19, 2015 (Q6) all 15 participants passed
8. ISD conducted in Egypt: May 10-14, 2015 (Q7) ; all 14 participants passed



Trainees engage in active discourse on incorporating soft-skill techniques when developing materials.



ISD trainees break out into group design exercises.

Implementation of Regional Operator Certification Training Pilots. The following three Regional Operator Certification Training Pilots – Level 1 were conducted as per the IWSMR implementation plan:

1. *West Bank ROCTP Wastewater Treatment Operator Level 1 (WWTO-L1).* Conducted in West Bank, October 12-23, 2014; 22 trainees passed the test, 1 failed, and 1 did not complete the course. MOU signed with Nablus Water Establishment in October, 2014.
2. *Yemen ROCTP Wastewater Treatment Operator Level 1 (WWTO-L1).* Conducted in Aqaba, Jordan, December 7-18, 2014 for 24 trainees. All the 24 participants passed the certification test. MOU signed with Sanaa Water Authority in December, 2014.

3. *Lebanon ROCTP Water Distribution Operator Level 1 (WD-L1)*. Conducted in Beirut, March 2-6 and 16-20, 2015 for 21 trainees; 20 passed the certification test and one failed. An MOU was signed with the Director General of the Beirut Mt. Lebanon Water Establishment (BMLWE) and ACWUA on March 19, 2015.

4. *Lebanon Pump Station O&M*. This special unaccredited training course was conducted upon request from BMLWE for 24 operators during June, 2015 in coordination with the USAID Water Infrastructure Support and Enhancement for Lebanon project. This training which was not a part of the original IWSMR

“The course was very relevant to our field of work. The course was an opportunity to present and share the various trainee experiences, expertise and faced repair and maintenance cases and procedures were presented, discussed and shared. We learned many new theoretical and practical aspects related to our daily work tasks and the various cases we face on a daily bases”

— Zouheir Azzi, chief, Operating Department,
Beirut and Mount Lebanon Water Establishment,
Lebanon, June 11, 2015

work and implementation plans was in support of the expressed dire need of BMLWE. This level of ACWUA response to urgent member needs promotes ACWUA as a reliable training provider and therefor contributes to ROCTP sustainability. Pump Station O&M represents a potential new ROCTP course and is under review for retroactive accreditation by CAQA.



Certified TOT trainer and electro-mechanical engineer, Zaid Kharabsheh lead a team of 24 trainees in the 5-day O&M Pumping Station Training in Beirut, June 8-12, 2015

5. *Utility Management (UM)*. Conducted in Amman, Jordan, August 8-15, 2015 for 25 trainees from Jordan, Lebanon and Palestine. 13 trainees were male and 12 were female. All participants passed the course and were awarded certification.

Improved training materials and programs. Early IWSMR discussions with ACWUA and USAID concerning the assessment revealed that extensive work on materials development was not a high priority for ACWUA, since proven training materials are already in place from the Jordanian program.

During the first meeting of the Regional Certification Task Force, it was agreed that a Technical Subcommittee composed of the Egyptian Holding Company for Water and Wastewater, CAQA, IWSMR, and ACWUA, would review the following documents from the two existing certification programs:

- Program outlines
- Available certification training courses and materials
- Certifications tests, results, and evaluations
- Results of training evaluations

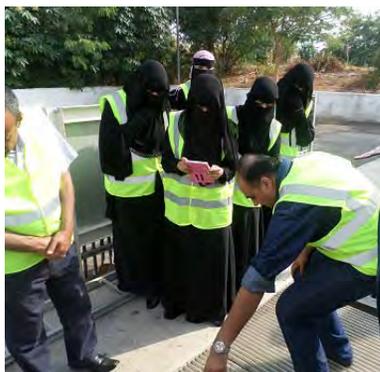
- Results of TIAs
- The IWSMR comparison report between the two programs
- The IWSMR Egypt mission report
- Any other available resources, which will be documented in the final report

After their review, the task force sub-committee members with the assistance of IWSMR developed a technical report documenting the gaps in the existing programs and their recommendations for improvements before regional application. The recommendations section of this report (below) lists potential new courses for ACWUA development and pilot implementation. The below two Component 2 Success stories were approved by USAID in Quarter 8.

SUCCESS STORY

Breaking Down Yemen Water Sector Gender Disparities

ACWUA's Regional Operators Certification Training Program Provides Opportunities for Women to Excel among Their Peers



ROCTP participants conduct a field visit to a wastewater utility in Aqaba, Jordan, December, 2014

"This is the first time in my life to travel outside Yemen, so that my brother joined me. I learned a lot about mechanical treatment. The trainer gave us a chance to participate and ask questions. I [also] built a good networking with other utilities to have a mutual cooperation with them in the future."
 — Lina Mohammed, Water Chemistry Division, Sanaa Water Authority

Overcoming gender disparities in the work place can be a challenging experience for women in the Middle East. This is especially true for women in the water and wastewater operations and management industry. In some of the more conservative communities, women struggle to advance and to compete for opportunities to build their capacity among their male peers. But women have been challenging the norms and seeking to develop professionally, even when it seems impossible.

IWSMR is committed to engaging women and youth to build their capacity in the water and wastewater industry. Of the 249 participants of IWSMR's training activities, almost 25 percent are women and 38 percent are young professionals between the ages of 25 and 35 years old.

When the IWSMR program held a Regional Operators Certification Training Program (ROCTP) course in coordination with the Arab Countries Water Utility Association (ACWUA) for 24 Yemeni wastewater utility operators in Aqaba, Jordan, it seemed unlikely that female participants would attend, given the restrictions for women traveling unaccompanied. However, 5 female participants from Yemen attended the two-week training event accompanied by male family members and determined to expand their knowledge of wastewater utility operations. The female participants contributed to the training discussions, actively engaged in site visits to water utilities, demonstrated their knowledge through group activities and successfully passed the rigorous Certification test at the end of the training. Female participants in IWSMR run training programs have a 97 percent passing rate on final certification tests.



SUCCESS STORY

Training Water Professionals to Become Industry Educators

Training of Trainers program Increases the MENA Region's Pool of Skilled Trainers



A female TOT trainee takes part in a presentation activity at the Egypt TOT. On average, women represent 26 percent of total participants in IWSMR training events.

By creating regionally recognized trainer and operator certification requirements for water utility operators and trainers, operations and management of water utilities will raise overall water sector standards across the region.

The materials and exams may have been challenging but you didn't hear much complaining in the room. Trainees from Jordan, Yemen, Egypt, Iraq, and the West Bank expressed a sense of determination and responsibility after attending one of the TOT events conducted by the IWSMR Program. Through the IWSMR program, ACWUA has adopted a TOT training model that allows each of ACWUA's utility members to nominate qualified personnel and receive TOT certification enabling them to teach new ACWUA ROCTP courses in support of improved Operations and Maintenance of water and wastewater facilities throughout MENA. These new trainers are also certified to teach other ACWUA classes and ACWUA is committed to using only certified trainers for all sponsored training events.

Over the course of two years, IWSMR successfully trained 249 participants in TOT, ROCTP, and other courses who having passed the exam are now certified ACWUA trainers. The pool of certified trainers ranges from Chemical Engineers, to Technicians, Inspectors, and HR Utility Managers. Committed to engaging women in the water sector, about 25 percent of total participants trained in each event are female. With IWSMR's help, ACWUA is utilizing TOT and ROCTP to build the foundation for a strong network of experienced, certified, and regionally recognized trainers and operators across its network of 18 countries.

"A sustainable operators' certification program will upgrade the level of operators, increasing their skills ... and the quality of water treatment...and thus serving the community," explained the Head of Sanitary and Environmental Engineering Research Institute from HBRC/Egypt. TOT events contribute to sustainable impact in the MENA water sector. Improving utility employee's training skills allows them to teach ROCTP courses that will lead to improved service delivery to the customer. It is no wonder trainees feel a sense of duty and pride conducting their invaluable work as newly certified ACWUA Trainers.

Component 3 – Utility Twinning and Leveraging Best Practices

As part of Assessment Stage 1, IWSMR conducted an extensive review of the literature pertaining to knowledge exchanges and twinning. As part of this effort, IWSMR made contact with the Global Water Operators' Partnerships Alliance (GWOPA), WaterLinks Alliance, and Africa Water Association (AfWA) to gather information and lessons learned regarding Water Operator Partnerships and twinning. IWSMR and ACWUA then reviewed preliminary recommendations for ACWUA knowledge exchange and twinning opportunities and formulated plans for ongoing assessment, recommendations, and action planning. These results served as the basis for developing a pilot twinning program.

Assessment, Stage 1 Contents for Component 3 – Twinning and Knowledge Exchange

- Criteria for selection of knowledge exchange activities
- Catalogue of knowledge exchange instruments and delivery modes
- Lessons learned from organizations with exchange/twinning experience, including WaterLinks
- Viability considerations for an ACWUA twinning program
- Recommendations for an ACWUA twinning and knowledge exchange

In Year 2, IWSMR and ACWUA collected additional information from member utilities on their needs and areas of focus for twinning arrangements, as inputs to a “match-making” process among utilities. IWSMR worked with ACWUA to develop a twinning procedures manual and a plan for implementation of five twinning activities.

Given the political instability in the region, ACWUA decided to focus the initial twinning pilots in Jordan engaging the Aqaba Water Company (AWC) in the role of mentor. As the industry leader in Jordan, AWC agreed to play a prominent role in ACWUA’s burgeoning twinning program. Conditions in the region continued to worsen and it was mutually agreed that by implementing three of the original five planned twinning pilots, ACWUA would gain adequate experience to continue the twinning program after the IWSMR project. ACWUA also decided to focus on virtual web-based approaches for future twinning exchanges to overcome regional circumstances currently obstructing effective on-site twinning exchanges.

Ultimately, the following five twinning activities engaging AWC, ACWUA and participating utilities were initiated by IWSMR, in accordance with section “2.3.3 Twinning arrangements” of IWSMR’s Task Order No. AID-263-TO-13-00003. As described in the Twinning Master Plan, the act of “twinning” refers to a long-term relationship established to occur over the course of potentially many months or years between the mentor and partner utility. Understanding this, IWSMR has necessarily interpreted “completed” in the Task Order to mean “launched.” IWSMR has laid the foundation for long-standing twinning knowledge exchanges that will grow and develop over an extended timeframe, rather than start and end within the brief duration of the project. IWSMR has successfully initiated 5 twinning activities. As defined in the Twinning Manual, two activities are currently in Step 4- Implementation Stage (BMLWE and Salt Directorate have MOUs signed with Aqaba Water and action plans produced). The remaining 3 activities are in the Step 3 Establishment Stage where the twinning activity is full planned. The five twinning pilot activities required by the IWSMR contract have been successfully established and are ready to receive continued investment from ACWUA.

Note that conditions were favorable to establish a twinning involving BMLWE/Lebanon, thus providing ACWUA with experience matching utilities from different countries.

ACWUA Twinning Plan Summary

Pilot Jordan In-Country	Mentor Utility	Partner Utility	Target Utility Function	Initiation Date
Launched in Stage 4				
1	Aqaba Water	Salt Water Directorate/ Balqa/WAJ	Management Maintenance System (MMS) Call Center	July 2015
2	Aqaba Water	Beirut Mt. Lebanon Water Establishment	Non-Revenue Water and Information Technology	July 2015
Launched in Stage 3				
3	Aqaba Water	Zarqa Management Contract	Non-Revenue Water	June 2015
4	Aqaba Water	Karak	Data management	June 2015
5	Aqaba Water	Tafilah	Data management	June 2015
Planned ACWUA Activities*	Mentor Utility	Partner Utility	Target Utility Function	Planned Initiation Date
1	Aqaba Water	Bekaa/ Water Establishment (Lebanon)	Management Maintenance System	December 2015
2	Aqaba Water	South Lebanon Water Establishment (Lebanon)	Management Maintenance System	February 2016
3	Sonede/Tunisia	Local Water and Sanitation Corporation/Aden (Yemen)	Non-Revenue Water	May 2016
4	Sonede/Tunisia	Local Water and Sanitation Corporation/Sana'a (Yemen)	Non-Revenue Water	May 2016
5	Miyahuna/Jordan	Local Water and Sanitation Corporation/Sana'a (Yemen)	Management Maintenance System	October 2016
6	Miyahuna/Jordan	South Lebanon Water Establishment	Management Maintenance System	October 2016
7	El Minya/ HCWW/ Egypt	Yarmouk Water/Jordan	Total Safety Management	December 2016
8	Miyahuna/Jordan	Palestine Water Authority (PWA)/West Bank	Wastewater	December 2016
9	Aqaba Water	Alexandria Water Company/HCWW (Egypt)	IT Cloud	December 2016
10	Aqaba Water	Aswan/ HCWW (Egypt)	IT Cloud	December 2016

The final completed twinning package prepared by IWSMR as a resource for all of ACWUA's future Twinning's includes

- ACWUA twinning manual
 - Twinning partners MOU template
 - ACWUA twinning master plan and schedule
- Revenue Streams for Twinning - ACWUA is using the Twinning Plan for ten future activities as a basis for discussions with interested donors such as GIZ and SIDA that are working directly with the partner utilities to identify and secure adequate revenue streams to implement specific twinning activities and contribute to the long-term sustainability of the ACWUA twinning program. ACWUA is in active communication with the associated donors to secure support. In addition, ACWUA is seeking to expand in-kind contributions from the partner utilities to offset costs.
- Upon completion of the IWSMR project, ACWUA was positioned to continue its twinning program utilizing direct grant funds being provided by USAID.



SUCCESS STORY

MOU Signed between AW and BMLWE marks the First Twinning for IWSMR for SCADA-Non-Revenue Water Information Technology

IWSMR-ACWUA Pilot Twinning Activity between AW and BMLWE to Improve Utility Performance



Aqaba Water and Beirut Mt. Lebanon Water Establishment sign an MOU for non-revenue water twinning exchange

As the MENA region faces water deficiency, water authorities in the region suffer significant pressure in providing sufficient water for their customers, mainly due to a lack of infrastructure to satisfy the population's need for water. IWSMR was able to engage various water authorities in the region through a pilot twinning activity in order to exchange ideas on improving water utility performance. The twinning meeting held in July 2015 rendered agreement that Aqaba Water (AW)/Jordan would serve as the mentor utility to Beirut Mt. Lebanon Water Establishment (BMLWE) in order to foster improvements to BMLWE System Control and Data Acquisition SCADA- Non Revenue Water Information Technology.

Aqaba Water (AW) is the major provider of water and sanitation in Aqaba that serves approximately 150,000 individuals, and BMLWE provides services to the greater Beirut and Mount Lebanon (GBML) region, the most populated region in Lebanon. The GBML region is directly affected by the existing water deficit. The MOU served as a ground-breaking agreement that establishes the relationship for an advantageous knowledge transfer in order to foster improved utility performance and O&M, with the end result being improved service delivery to BMLWE consumers. The Water Authority of Jordan/Salt Water Directorate (WAJ/SWD) served as the legal entity approving the regional MOU between both parties. IWSMR has initiated another MOU between AW and Salt Utility for improvements to their Management Maintenance System-Call Center. Twinning will continue to be a major priority for ACWUA's member countries in the coming years.

SECTION III. RECOMMENDATIONS FOR FOLLOW-UP ACTION

As emphasized throughout this report, IWSMR and ACWUA collaborated closely to accomplish the targets set out in the IWSMR PMP and the activities in the Work and Implementation Plans to contribute to the program's strategic objective. These achievements were accomplished within the context of a brief 24-month program and a shallow scope while navigating complex local instability.

These outcomes are noteworthy, but there is still much to be done before ACWUA can stand on its own and smoothly deliver effective ROCTP and twinning services to its members, and thus, make a significant sustainable contribution to improved regional O&M of water and wastewater facilities.

ROCTP and utility twinning are at the core of ACWUA's O&M performance improvement services. There is an extensive history documenting the needs for and the results of structured certification, training and knowledge exchanges. ACWUA cannot sustain the nascent ROCTP and utility twinning activities on its own and definitely requires further long-term support to continue improving sector O&M performance. Solutions for issues, such as, lack of incentives encouraging knowledge exchange amongst utilities do not exist and will need to be developed with ACWUA's support in the near future.

In addition to strongly recommending donor commitment of adequate resources to advance and sustain implementation of ACWUA's regional operator certification and training efforts, as well as its focused twinning arrangements; listed below are recommendations for specific and essential capacity building and training development follow-on work that will enhance impact.



3.1 Intensify ACWUA Capacity Building

Ensure the continued training of ACWUA Secretariat and Certification Unit staff:

- Support and train ACWUA staff in the full implementation of the ACWUA strategic business plan
- Build ACWUA ROCTP Certification and Twinning Unit; develop staff
- Continue TOT and effectively utilize local certified operator trainers to control costs
- Continue broadening needs assessment initiated by IWSMR

- Broaden CIS applications, access and use as required
- Apply ISO standards for ACWUA daily operations
- Establish intellectual property rights for ACWUA platforms, outcomes and products

3.2 Plan and Implement a Comprehensive ACWUA ROCTP/Twinning Marketing Strategy

Intensify ACWUA promotion of ROCTP, twinning, and other services.

- Develop a comprehensive ROCTP and Twinning Master Marketing Plan
- Promote the benefits of virtual Twinning for Utilities (10 planned activities) at orientations and conferences
- Enhance use of electronic web-based marketing techniques
- Make greater use of direct on-site marketing at member utilities
- Build cooperative relationships in the international certification and twinning community i.e. Association Boards of Certification (ABC), American Water Works Association (AWWA), WEFTEC-the water quality event, and International Water Association (IWA) to partner in knowledge exchange, and cooperation to meet ACWUA's objectives

3.3 Secure ROCTP and Twinning Financial Sustainability

Secure the commitment of each participating utility, without exception, by requiring payment of fees at the time of enrollment.

- Identify opportunities for cost-sharing whenever and wherever possible
- Work with member governments and utilities to budget for ROCTP and Twinning fees
- Identify alternative local certification authorities and testing services to reduce the high administration costs incurred by CAQA/Jordan
- Develop realistic incentives to encourage and foster knowledge exchange, i.e. public recognition or equal twinning exchanges.

3.4 Promote ROCTP Mandate and Strengthen Regional Institutions

Continue to focus attention on the following institutional targets in ROCTP participating countries/utilities:

- Establish effective mandatory and legally binding operator certification decrees/regulations encompassing both public and private sector operators;
- Monitor and follow-up new certification regulations and enforce stringent penalties for noncompliance;
- Promote certification reciprocity requiring inter-country recognition of operator certification credentials and the agreement from labor-importing members to only hire operators holding current and legally recognized certification credentials; and,
- Link promotion, salary and incentives to operator certification within utility HR systems to retain a skilled and professional workforce as well as protect the training investment.

3.5 Expand ROCTP Content and Courses

Continue to expand ROCTP to meet demands for the following illustrative courses:

- Water Utility Leadership Empowerment Program:
 - Public Private Partnerships including management and services contracts, Micro PSP, and BOT, and Performance Based Contracts
 - Monitoring and regulating private sector operation
 - Utility Business Planning
 - Improved financial performance and cost recovery for utilities
 - Utility Economic and Services Regulations
 - Civil Society and Public Engagement

- Numerous specialized courses based on existing U.S. certification materials, for example:
 1. Water Utility Systems:
 - Energy Efficiency for water and wastewater utilities
 - Non-Revenue Water (Basic & Advanced)
 - ✓ Physical losses
 - ✓ Commercial losses
 - ✓ GIS and Customers Management systems
 - ✓ Metering programs
 - ✓ Developing NRW strategies
 - District Zoning and Networks Management
 - Ground water well management and safe operation
 - Desalination technologies
 - Pumps & Pressure Management
 - ✓ Basic Electricity and Motors
 - ✓ Pumps and Components
 - ✓ Meters and Service Connections
 - ✓ Valves and hydrants
 - Master Plumber Program

 2. Wastewater Networks, Treatment, and Reuse:
 - Wastewater treatment technologies (i.e. MBR and other technologies)
 - Wastewater reuse and standards
 - Sludge treatment and reuse and source recovery
 - Management of wastewater plants and networks

 3. Industrial Wastewater Management:
 - Industrial wastewater inspection and auditing
 - Treatment of industrial wastewater
 - Managing and operating reuse schemes

 4. Water Quality and Laboratories Management:

- Water safety plans
 - Water quality sampling & monitoring
 - Laboratory accreditation programs
 - Microbiological analysis
 - Physical analysis
 - Chemical analysis
 - Isotopes analysis
- Exam study guides adapted with permission from existing publications
 - Ensure training assessments are completed to ensure accountability and course quality.

3.6 Explore E-Learning and Distance-learning Approaches for ROCTP Delivery

Develop, pilot and conduct on-line training and testing:

- Identify member utilities that have operators with reliable internet connectivity, equipment and expertise
- Identify appropriate pilot distance learning/on-line courses based on need.
- Research how to best configure a ROCTP course and test for distance learning/on-line management and delivery.
- Continue to leverage the relationships with California State University Sacramento (CSUS), Association of Boards of Certification (ABC), and other international associations regarding their experience, guidance and potential support for distance-learning options.
- Design, implement and evaluate viable distance learning/on-line ROCTP courses and tests in close coordination with CAQA.

3.7 Increase ROCTP Opportunities for Women and Youth

Explore ROCTP options for women and young professionals and technicians in the water/wastewater sector

- Establish a Female Operators Interest Group to provide a forum for women throughout the MENA region to share ideas and discuss issues of direct relevance to gender in the water sector.
- Promote the operator career in vocational education and university engineering by encouraging member utilities to conduct orientations and participate in events such as youth job fairs.
- Continue to disaggregate ROCTP performance data and track post-ROCTP promotions, salary increases and incentives on the basis of gender.

3.8 Actively Support the Tracking and Reporting of ROCTP Impact within the Broader Context of Utility Performance Monitoring and Reporting

As part of the utility measurement and benchmarking promoted by ACWUA, continue to collect TIA data to demonstrate that ROCTP results contribute to utility performance improvement.

- Implement the On Job Performance Improvement for Supervisors course.

- Continue to rigorously implement Training Impact Assessment (TIA) making sure that participating utilities are fully aware that they must supply TIA data as per collection requirements specified in the signed ACWUA/Utility ROCTP MOU.
- Encourage participating utilities to link ROCTP and TIA to salary increase, incentives, and promotions.
- Support further application of utility assessment tools developed by ACWUA to identify new possible ACWUA interventions of benefit to members.

SECTION 4. ADMINISTRATIVE ELEMENTS

4.1 Office Space and Operations

Over the life of project, IWSMR finance and administrative operations were implemented efficiently to support a multitude of successful training events, workshops, and meetings. In constant communication with ACWUA’s Communication and Programmatic units, IWSMR not only liaised with its client to ensure logistics and trainee recruitment, but was able to support ACWUA’s regional priorities and large scale events, such as, the Best Practices Conference and Arab Water Week 2015, to name a few. Co-location provided for the optimal use of time and money, as IWSMR could plan events on site with ACWUA. On the operations and finance front, IWSMR enjoyed successful completion of its Component 1, and utilizing IWSMR funds and staff time, was able to successfully support ACWUA in the completion of the NUPAS, the Financial Manual, and Project Management Manual. In accordance with USAID rules and regulations and standard Chemonics best practices, IWSMR employed a small level of consultant labor to ensure sound financial practices, M&E review, and general compliance all of which supported a healthy program over the life of project.

4.2 Procurement Life of Project

Over the span of 2 years, the project completed major commodities and services outlined in the Years 1 and 2 Work Plans. Most notable procurements include the Time and Materials Subcontract executed with Eco Consult, and Fixed Price Subcontracts executed with PwC and Integrated Standard Solutions for technical work under components 1 and 2. In Year 1 IWSMR procured one project vehicle, which is being directly disposed to its beneficiary, ACWUA. There were no notable commodity or fixed-price subcontract procurements completed in Quarter 8. Standard monthly expenses, such as, office rent, expendable supplies, communications and reproduction expenses were billed accordingly for July– September, 2015.

The following table contains an updated list of some anticipated procurements over the life of the project:

Procurements (Equipment, Materials, Services) Years 1 and 2

Commodity/Service for Year 1	Total Items	Total Amount Years 1 and 2	Destination	Timing
Project Vehicle	1	██████	Jordan	January 2014
Office Equipment, Office Make Ready and continued Maintenance	<ul style="list-style-type: none"> • Furniture • Phones • Office Supplies 	██████	Jordan	October 2013-September 2015
IT Hardware, Software, and Support Services	<ul style="list-style-type: none"> • Computers • Server • Software 	██████	Jordan	November 2013-September 2015
Eco Consult Time and Materials Subcontract	<ul style="list-style-type: none"> • 1 Long-Term and 1 Short-Term Personnel 	██████████	Jordan	October 2013-September 2015

Commodity/Service for Year 1	Total Items	Total Amount Years 1 and 2	Destination	Timing
Fixed Price Subcontracts	<ul style="list-style-type: none"> CIS PwC NUPAS PwC Finance Manual Professional Services 	██████████	Jordan	November 2013-August 2015
Twinning (BMLWE, Salt, Tafilah) Total materials/commodity related procurements	<ul style="list-style-type: none"> Materials and equipment purchases related to MMS Improvements 	██████████	Jordan, Lebanon	July 2015-September 2015

4.3 End of Contract Considerations

In accordance with the IWSMR policy manual and Chemonics' HR policies, all staff are being encouraged to use leave before their departure. In some situations, employees may need to stay until the project's closeout to ensure closeout related responsibilities are completed. In such situations, the home-office project management unit will submit a leave payout request to the Contracting Officer for consideration. In all circumstances, employees will be provided with a 30 days written notice from Chemonics informing them of their last day of employment based on the project's needs. All departures will be executed in accordance with local Jordanian labor law and Chemonics' policies.

The project management unit will work closely with all staff to provide professional development opportunities and will assist them in seeking new career placements to the fullest extent possible. This will include writing letters of recommendations to potential employers, and working closely with local staff to update their resumes.

Upon contract closure, IWSMR's long-term professional and local support staff include:

Name	Position
Othman Al-Kurdi	Chief of Party
Hisham Rawashdeh	Deputy Chief of Party/Training Specialist
Shourouq Alenezat	Program Development Coordinator
Rania Hijazi	Manager of Finance and Administration
Razan Al-Musa	Finance and Administration Assistant
Mohamed Khalilee	Project Driver

IWSMR short-term local professional staff during the life of project include:

Name	Position
Othman Al-Kurdi	Short-Term Senior Technical Advisor
Abdelbasit Abu Al-Thanim	ISD and Utility Management Trainer
Adi Najjar	TOT Trainer

Name	Position
Ahmad Abu-Saud	Salt Assessment Specialist
Arwa Mothaffar	Program Development Manager
Ayad AL-Ashram	Trainer – ROCTP and TOT
Mohammed Mahmaid	Trainer – ROCTP
Yasser Alhanaqta, Local STC Wastewater Trainer	Trainer – ROCTP
Ziyad Al-Taani, Local STC Trainer	Trainer- ROCTP
Zaid Yousef Al-Kharabsheh	O&M Pumping Station Trainer

SECTION V. FINANCIAL REPORT

5.1 Final Life of Project Financials

Quarter 8 of the IWSMR project has been completed with invoice submissions on the following dates:

Invoice 1: July 27, 2015 (June 2015 Invoice)
 Invoice 2: August 26, 2015 (July 2015 Invoice)
 Invoice 3: September 25, 2015 (August 2015 Invoice)

Please note, IWSMR's final invoice for September, will be submitted o/a October, 2015. IWSMR's project accruals through the end of final quarter eight are as follows:

Accruals as of September 29, 2015	
Total Funds Obligated	\$ 1,991,240
Total Actual Expenditures at End of Previous Quarter (as of June 30, 2015)	\$ [REDACTED]
Total Projected Expenditures in Current Quarter (April 01, 2015- June30, 2015)	\$ [REDACTED]
Total Life of Project Projected Expenditures at the end of Current Quarter (September 29, 2015)	[REDACTED]
Remaining Obligated Funds Available at End of Current Quarter (as of September 29, 2015)	[REDACTED]

5.2 Quarterly Financials (July 2015-September 2015)

The total budget under this task order is \$1,991,240.00 of which \$1,991,240.00 was fully obligated. Below is the estimated monthly expenditure summary for IWSMR during the final quarter 8 reporting period for all programmatic and operations costs.

Quarter 8 Project Expenditures for IWSMR				
Month	Total Amount Spent in Month	Total Amount Spent to Date	Obligated Amount Remaining	Total Contract Ceiling Amount Remaining
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	\$ [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

5.3 ECO Consult Subcontract Expenditures – Final Summary

In October 2013, ECO Consult began providing the IWSMR project with long-term and short-term labor. Below are Eco Consult's contributions during each quarter throughout the duration of the project:

- *Quarter 1.* ECO Consult personnel assisted the IWSMR team with developing the Annual Work Plan and Implementation Plan/Assessment report, updating

ACWUA's business plan, presenting at the ACWUA 6th Best Practices Conference in Algiers, Algeria, and designing pilot programs to expand regional certification services.

- *Quarter 2.* ECO Consult personnel assisted IWSMR with finalizing the Implementation Plan and Assessment report and supporting the update of ACWUA's business plan.
- *Quarter 3.* ECO Consult finalized the Bridging memo, as well as the Implementation Plan and Schedule. Zaid AlQaisi assisted in drafting the scope of work and RFP for the CIS, and reviewed the offers received by local companies. Mr. AlQaisi also supported the first TOT training event in Jordan and facilitated the taskforce meeting between the Egyptian and Jordanian certification programs to promote regional certification in late May-early June. Additionally, Ms. Lina Sheqem completed the Business Plan schedule and facilitated the first planning meeting for the 2015-2019 Business Plan with the ACWUA committee in June.
- *Quarter 4.* Zaid AlQaisi facilitated the taskforce meeting between the Egyptian and Jordanian certification programs to promote regional certification in August. The group reached a consensus and Mr. AlQaisi assisted with drafting the MOUs, He also continued to facilitate the West Bank and Yemen TOT training events on behalf of IWSMR. Additionally, Ms. Lina Sheqem continued to work on the final draft of the 2015-2019 Business Plan milestones and deliverables, which were presented at the Business Plan Committee Meeting in October.



At IWSMR's closeout event on September 7, 2015, HBRC and EWRA sign an MOU with ACWUA formalizing the Jordan-Egyptian Taskforce mission.

- *Quarter 5.* ECO Consult provided assistance with rolling out the ROCTP in the West Bank and Yemen, as well as the finalizing ACWUA's Business Plan. Additionally, Mr. Zaid AlQaisi oversaw the implementation of the CIS for ACWUA's computer systems, assisted in drafting and achieving signatures for the ROCTP MOU with the Nablus Municipality, and continued to liaise with ACWUA and CAQA counterparts to conduct the various training events. Additionally, Ms.

Lina Sheqem completed the final draft of the Business Plan for 2015-2019 and incorporated final comments from ACWUA's Board of Directors Business Plan Committee.

- Quarter 6.* Institutional Expert, Lina Sheqem, completed her scope of work and finalized ACWUA's 2015-2019 Business Plan. In January, she presented the Business Plan to ACWUA's Board of Directors at the 3rd Annual Arab Water Week in Dead Sea, Jordan. After over a year of preparation, the Plan was well received promptly approved by the Board of Directors. Eco Consult identified Hisham Rawashdeh as the new Training Specialist/DCOP. He also continued critical TIA collection from Nablus Municipality and Sanaa Local Water Corporation and supported the COP in multiple technical accomplishments.
- Quarter 7.* Hisham Rawashdeh, and contracted CIS designer, Integrated Standard Solutions (ISS), successfully hosted a CIS training for utility administrators from Lebanon, West Bank, Yemen, and Egypt in April 2015. The beneficiaries of the training have since provided their feedback for improving the design and functionality. Through Hisham, Eco Consult wrote the TIA report and has continued critical TIA collection from Nablus Municipality and Sanaa Local Water Corporation.
- Quarter 8.* Only 4 months post the Lebanon-ROCTP, Hisham will initiate collection with Beirut Mt. Lebanon Water Establishment from the water distribution ROCTP. Working closely with ACWUA's secretary general, Hisham and Othman collected Assessment II Form B feedback for nearly all solicited countries in order to inform IWSMR's rollout plan.

Quarter	Name	LOE (Days)	Combined Quarter Total
1	Zaid Al Qaisi/ LTTA	October – 5 days November – full month December – full month	████████
	Lina Sheqem/ STTA	October – N/A November – 4.44 days December – 4.48	
2	Zaid AlQaisi/ LTTA	January – full month February– full month March– full month	████████
	Lina Sheqem/ STTA	January – 9.13 days February – 2.00 days March – N/A	
3	Zaid AlQaisi/ LTTA	April – full month May – full month June – full month	████████
	Lina Sheqem/ STTA	May – 3.13 days June – 4.06 days	
4	Zaid AlQaisi/ LTTA	July – full month August – full month September – full month	████████
	Lina Sheqem/ STTA	July –4.06 days August – 7.5 days September – 13.13 days	
5	Zaid AlQaisi/ LTTA	October – full month November – full month December – 17 days	████████

Quarter	Name	LOE (Days)	Combined Quarter Total
	Lina Sheqem/ STTA	October – 12.50 days November – 9.00 days December – 5.00 days (estimate)	
6	Hisham Rawashdeh LTTA	January– N/A February – N/A March – 13 days	██████████
	Lina Sheqem/ Hisham Rawashdeh/ STTA	January– 3.38 days (Lina) February – 3.35 days (Lina) March – 5.00 days (Hisham)	
7	Hisham Rawashdeh LTTA	April– 21.67 May – 21.67 June – 21.67	██████████
8	Hisham Rawashdeh LTTA	July- 21.67 August- 21.67 September- N/A	██████████
Total			██████████

5.4 Contractual Elements

Modification No. 04 was received on July 22, 2015, during the eight and final quarter of the project. This administrative modification changed the Contracting Officer from Gwendolyn Ruffin to Doanh Q. Van. Notably, this administrative modification changed the contract key personnel to reflect Othman Al-Kurdi as COP and DCOP/Training Specialist as Hisham Rawashdeh. The modification also changed the location for inspection, acceptance of reports and deliverables and the Contracting and Technical Offices from the Office of Procurement USAID/Egypt to USAID/Middle-East Regional Platform (MERP) Frankfurt Support Center. In addition, the contract revised the addressee of reports under Section F.8 of the contract to the USAID/MERP Frankfurt Contracting Officer to USAID/MERP Frankfurt Contracting Officer Representative. The Payment Office was also changed to USAID/Serbia Controller’s office. Moreover, the AIDAR clause 752.7005 was updated for “Submission Requirements For Development Experience Documents (SEPT 2013).”

ANNEX A. IMPLEMENTATION TIMELINE

IWSMR Implementation Plan – Milestones	Year 1												Year 2											
	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	2013						2014						2015											
Activities	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
IWSMR PR 1/Component 1 – ACWUA Capacity Building																								
1.1 ACWUA Business Plan 2015-2019																								
ACWUA strategic business plan – bridging memo																								
Planning committee from board members																								
Develop draft business plan 2015-2019																								
Final draft of business plan by committee																								
Board approval																								
1.2 ACWUA CIS System																								
CIS parameters																								
RFP for local procurement/Jordan; contract award																								
CIS installation																								
ACUWA and ROCTP countries staff training																								
CIS fully operational																								
1.3 Establish Certification Unit within ACWUA Directorate																								
Job descriptions (included in the business-planning process)																								
ROCTP certification manual; staff development needs																								
M&E/Training Impact Assessment procedure																								
Unit operating budget																								
Certification program fee structure																								
ROCTP marketing and communication plan																								
Action plan for new unit																								
Board approval to create a new certification and training unit																								
Designate and train ACUWA staff																								
1.4 Pre-award Survey for Responsibility Determination																								
RFQ for local procurement; contract award																								
NUPAS report submitted to USAID																								
ACWUA financial manual submitted to USAID																								
ACWUA project management manual																								

IWSMR Implementation Plan – Milestones	Year 1												Year 2											
	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities	2013			2014									2015											
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
USAID carry out audit review																								
USAID responsibility determination – approved																								
IWSMR PR 2/Component 2 - Training Plan																								
2.1 Regional Certification Platform, Testing, and Training																								
ACWUA members accept CAQA/Jordan as interim certifier																								
ACWUA and CAQA certification agreement																								
2.2 Implementation of Capacity Building Training (TOT and ISD)																								
CB training plan and schedule (TOT, ISD)																								
2.2.1 Capacity Building – Training of Trainers																								
1. Jordan (two sessions)																								
2. West Bank																								
3. Yemen																								
4. Egypt (two sessions)																								
5. Lebanon																								
Instructional Systems Design (ISD) Training																								
1. ISD (conducted in Egypt)																								
2.3 Implementation of Certification Training and Proof of Concept																								
ROCTP pilot training plan; ACWUA agreement																								
1. West Bank/Nablus – Wastewater Treatment Operator 1																								
2. Yemen/Sanaa – Wastewater Treatment Operator 1																								
3. Lebanon/BMLWE – Water Distribution Operator 1																								
4. Lebanon/BMLWE – Pump Station O&M/Accreditation Pending																								
2.4 Encourage Greater Participation By Women																								
Female training participants – 25 percent																								
2.5 Define Requirements for a Sustainable Regional Platform																								
Egypt/Jordan taskforce – needs assessment																								
Technical report – recommended actions																								
MOUs and implementation by ACWUA																								
2.6 Distance / E-learning (Task shifted to GIZ support)																								
Delivery platform – GIZ software and support																								

IWSMR Implementation Plan – Milestones	Year 1												Year 2											
	Q1			Q2			Q3			Q4			Q5			Q6			Q7			Q8		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Activities	2013			2014									2015											
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
E-tutoring manual; ACWUA staff training (GIZ)																								
Upload selected certification training material (GIZ)																								
2.7 Assess improved service at participating utilities																								
TIA 1 – West Bank WWTO1 Pilot; data collection and report																								
TIA 2 - Yemen WWTO1 Pilot; data collection and report																								
TIA 3 - Lebanon WDO1 Pilot; data collection and report																								
IWSMR PR 3/Component 3 - Knowledge Exchange Plan (Twinning)																								
3.1 Twinning Preparation																								
Coordination: GWOPA, AfWA, and Water Links Asia																								
Twinning manual																								
Twinning plan/IWSMR: five pilot activities planned																								
Twinning plan/ACWUA: 10 future activities (Post-IWSMR)																								
3.2 Twinning Pilots Implementation																								
BMLWE/Lebanon and Aqaba Water Company/Jordan – Launched																								
Aqaba Water and WAJ/Salt Water Directorate – Launched																								
Karak/Jordan and Aqaba Water Company/Jordan (Launched-Stage 3)																								
Tafilah/Jordan and Aqaba Water Company/Jordan (Launched-Stage 3)																								
Zarqa/Jordan and Aqaba Water Company/Jordan (Launched-Stage 3)																								

Planning Underway

ANNEX B: FINAL QUANTATIVE PROJECT ACCOMPLISHMENTS – PERFORMANCE MONITORING PLAN AND TRAINING IMPACT ASSESSMENT

A. IWSMR Performance Monitoring Indicators

Program Objective: Improved water and sanitation services in the MENA region
Quality of W/WW treated: Noncompliance citations per year at participating utilities
PR 1: Increased ACWUA capacity to carry out its mandate
Milestone: ACWUA business plan updated; annual business plan targets met; certification unit established
IR 1.1: Improved management and information systems within ACWUA
Milestone: Training and certification information system (CIS) launched
Milestone: USAID Responsibility Determination secured
IR 1.2: Improved reliability of ACWUA's year-to-year revenue streams
Revenues generated from ACWUA Operator Certification and Training Program
PR 2: Scaled up operator certification programs to a regional level
Milestone: Interim regional certification platform established
Number of countries participating in the regional certification program
Number of operators obtaining regionally recognized certification
Percentage of operators passing standardized certification tests
Number of certified trainers (Training of Trainers - TOT graduates)
Number of certified operators obtaining new positions, promotions, or added incentives
Number of certified operators working in markets outside of their country of origin and country of certification
Change in technical and management skills due to obtaining operator certification
Change in job performance due to obtaining operator certification
Change in attitude, confidence and self-esteem due to obtaining operator certification
IR 2.1: Enhanced training materials and certification framework
Number of courses (materials) and tests approved by ACWUA and finalized for regional certification
PR 3: Improved performance of regional water and wastewater utilities by leveraging USAID-funded improvements
Utility performance measures selected for each twinning pair based on scope of partnership, e.g., collection rates, non-revenue water (NRW) rates
IR 3.1: Increased exchange between water and wastewater utilities
Number of twinning arrangements piloted
Change in technical and management skills attributed to twinning exchange
Change in job performance attributed to twinning exchange

IWSMR Performance, Years 1 and 2 – October 2013-September 2015			
Indicator	Years 1 and 2 2013-2015	Results Through September 2015	Disaggregation/Notes
Program Objective: Improved water and sanitation services in the MENA region			
Quality of W/WW treated: Noncompliance citations per year at participating utilities	Zero noncompliance citations	Nablus – 0 Yemen – 0* Lebanon - Pending	*As per TIA reporting, an alternate measure is used for Yemen which indicates compliance with WW quality standards
PR 1: Increased ACWUA capacity to carry out its mandate			
Milestone: ACWUA business plan updated; annual business plan targets met	Complete	2015-2019 Business Plan approved.	ROCTP is a key ACWUA strategic objective
IR 1.1: Improved management and information systems within ACWUA			
Milestone: Training and certification information system (CIS) launched	CIS launched	Fully operational in November 2014	Regionally launched, training officers at utilities populating with utility TOT and ROCTP data – All current
Milestone: USAID responsibility determination secured	Audit results	Project Management Manual and Finance Manuals	Initial Direct Grant to ACWUA of approx. \$300,000
IR 1.2: Improved reliability of ACWUA's year-to-year revenue streams			
Revenues generated from ACWUA Regional Operator Certification and Training Program (ROCTP)	TBD	\$53,763	Paid by IWSMR for ACWUA training administrative services
PR 2: Scaled up operator certification programs to a regional level			
Milestone: Interim regional certification platform established	Approved	Interim platform - approved	Jordan CAQA platform approved by ACWUA Board of Directors
Number of countries participating in the regional certification program (Full pilots based on MOUs)	Year 1 – 1 country Year 2 – 2 countries	Three countries in all participated	West Bank, Yemen, and Lebanon
Number of operators participating in regionally recognized certification program	Year 1 – 0 Year 2 –94	24 West Bank 24 Yemen 21 Lebanon <u>25 UM</u> 94 total	Female:4 ; Male:20 Female:5 Male: 19 Female:1 Male: 20 Female: 12; Male: 13
Percentage of operators passing standardized certification tests	Total Trainees Passing: 75%	98% (92 of 94)	Passing Grade: 60%, per CAQA policy, approved by ACWUA board of directors
Number of certified trainers (Training of Trainers/TOT course graduates) and number of qualified course/test developers (Instructional Systems Design/ISD course graduates)	Year 1 & 2 total – 109	TOT: 105 ISD: 15	TOT-Female:28;Male:77 ISD- Female:3; Male:12

Number of certified operators obtaining new positions, promotions, or added incentives	100	Unknown	Tracking and reporting only; ACWUA is Limited in it's ability to affect the internal HR policies and decisions of employers, Anecdotal feedback received suggests that numerous operators have received various rewards from employers, including recognition and monetary incentives from their supervisors. ACWUA's CIS portal tracks employees and their positions.
Number of certified operators working in markets outside of their country of origin and country of certification	4	Unknown	Tracking and reporting only; ACWUA is Limited in it's ability to affect the internal HR policies and decisions of employers, ACWUA will use the CIS system to track operators who work outside of their country of origin.
Change in technical and management skills due to obtaining operator certification	80%	Nablus: 80% Yemen: 87.5% Lebanon: 100%	The change in technical and management skills due to obtaining operator certification was \geq the set target (80%) in the three pilot countries.
Change in job performance due to obtaining operator certification	80%	Nablus: 80% Yemen: 100% Lebanon: 83.3%	The change in technical and job performance due to obtaining operator certification was \geq the set target (80%) in the three pilot countries.
Change in attitude, confidence and self-esteem due to obtaining operator certification	80%	Nablus: 80% Yemen: 75% Lebanon: 77.8%	The change in attitude, confidence and self-esteem due to obtaining operator certification was \leq the set target due to region instability affected operator's confidence in getting jobs elsewhere.
IR 2.1: Enhanced training materials and certification framework			
Number of courses (materials) and tests approved by ACWUA and finalized for regional certification	Year 1 & 2 total – 16 courses accredited by CAQA	1 TOT course and 1 CIS course accredited by CAQA. 1 O&M & 1 ISD course- Approved by ACWUA	14 ROCTP courses accredited: Operators – 13 Utility Manager – 1 TOT – 1 – Accredited CIS – 1 – Accredited Total: 16 Courses O&M – 1 – Accreditation pending ISD 1 - Unaccredited
PR 3: Improved performance of regional water and wastewater utilities by leveraging USAID-funded improvements			
IR 3.1: Increased exchanges between water and wastewater utilities			

Twinning Pilots – Planned for IWSMR Implementation	5	5	5 Twinning Pilots underway
Aqaba/Jordan – Mentor; Salt/Jordan – Partner Function: Call Center & MMS improvement	Joint Twinning MOU and Action Plan	MOU signed and Action Plan initiated	Launched and in Twinning Stage 4; Post IWSMR, ACWUA tracking and reporting progress
Aqaba/Jordan – Mentor; BMLWE/Lebanon – Regional Partner Function: NRW Reduced, SCADA Applied, IT Cloud applied and used	Joint Twinning MOU and Action Plan	MOU signed and Action Plan initiated	Launched and in Twinning Stage 4; Post IWSMR, ACWUA tracking and reporting progress
Aqaba/Jordan – Mentor; Karak/Jordan - Partner Function: Data Management	Joint Twinning MOU and Action Plan	MOU and Action Plan pending	Launched and in Twinning Stage 3; Post IWSMR, ACWUA tracking and reporting progress
Aqaba/Jordan – Mentor; Tafilah/Jordan – Partner Function: Data Management	Joint Twinning MOU and Action Plan	MOU and Action Plan pending	Launched and in Twinning Stage 3; Post IWSMR, ACWUA tracking and reporting progress
Aqaba/Jordan – Mentor; Zarqa/Jordan – Partner Function: Non-Revenue Water	Joint Twinning MOU and Action Plan	MOU and Action Plan pending	Launched and in Twinning Stage 3; Post IWSMR, ACWUA tracking and reporting progress
ACWUA Twinning Activities – Planned for implementation by ACWUA (Post-IWSMR)	10	10	For details, see Master ACWUA Twinning Plan

IWSMR Performance Indicator Reference Sheets

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: N/A			
Intermediate Result: N/A			
Indicator: Quality of W/WW treated: Noncompliance citations per year at participating utilities			
DESCRIPTION			
Definition: Treated water and effluent quality tested by external agencies according to established country standards. This indicator tracks the results of these tests.			
Unit of Measure: Occurrence of reported non-compliance			
Disaggregated by: Type of facility (Water or Wastewater Treatment); Country; Training/Certification Received			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: TIA reporting			
Data Source(s): Utility			
Frequency/Timing of Data Acquisition: Every 6 months			
Reporting of Data: TIA reports; IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1 & 2	0 Citation	0 West Bank 0* Yemen TBD - Lebanon	*As per TIA reporting, an alternate measure is used for Yemen which indicates compliance with WW quality standards
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 1. Increased ACWUA capacity to carry out its mandate			
Intermediate Result: N/A			
Indicator: ACWUA strategic business plan updated; Certification Unit established within the ACWUA directorate			
DESCRIPTION			
Definition: The current ACWUA business plan runs through 2014 – it will be updated. Following the 2014 update, the 2015-19 plan will be completed including structure and job descriptions for new ACWUA Capacity Building and Certification Unit.			
Unit of Measure: Milestone			
Disaggregated by: N/A			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: The ACWUA Secretary General is the immediate counterpart. A committee established within the ACWUA board to work directly with IWSMR on the draft plan, which will then be presented to the full board for approval.			
Data Source(s): ACWUA			

Frequency/Timing of Data Acquisition: Data will be collected from ACWUA headquarters and from members using a survey questionnaire and follow-up. This planning activity will be completed by April 2014.

Reporting of Data: ACWUA Strategic Business Plan – 2014 Update; 2015-19 including structure and job descriptions for new ACWUA Capacity Building and Certification Unit; Draft and Final. IWSMR quarterly and annual progress reports

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
1	Complete	Complete	Bridging Memo/2014 Update completed and approved. ACWUA Business Plan 2015-19 completed and approved.
2	Approved	Approved	Consensus agreement from ACWUA board Certification Unit established within the ACWUA directorate USAID Approval – ACWUA Responsibility Determination

THIS SHEET LAST UPDATED: September 2015

IWSMR Performance Indicator Description

Program Objective: Improved Water and Sanitation Services in the MENA region

Program Result: 1. Increased ACWUA capacity to carry out its mandate

Intermediate Result: 1.1 Improved management and information systems within ACWUA

Indicator: Training and certification information system (CIS) launched; ACWUA management and financial systems improved to secure USAID Responsibility Determination

DESCRIPTION

Definition: The web-based CIS will be the central repository for all data pertinent to the ACWUA operator certification, testing and training and twinning activities.

Unit of Measure: Milestone

Disaggregated by: N/A

PLAN FOR DATA ACQUISITION & REPORTING

Data Collection Method: CIS needs will be collected from ACWUA and compared with standard training management software. Parameters and specifications will be reviewed and approved by ACWUA.

Data Source(s): ACWUA needs; Standard training management software products; Similar systems in MENA.

Frequency/Timing of Data Acquisition: Data will be collected from ACWUA headquarters and from members. Actual certification, testing, training and twinning data will be entered into the fully operated CIS in Year 1.

Reporting of Data: The CIS will generate all standard reports including but not limited to certification, testing and training data disaggregated by country, utility, program, trainee, trainer, gender and cost. IWSMR quarterly and annual progress reports

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
1	CIS launched	Beta Version	Local contract awarded; CIS operational/under test
2	CIS functional	CIS in Use	CIS populated and in use by ACWUA and members USAID Responsibility Determination and Initial direct grant of \$300,000 Approved

THIS SHEET LAST UPDATED: September 2015

IWSMR Performance Indicator Description

Program Objective: Improved Water and Sanitation Services in the MENA region

Program Result: 1. Increased ACWUA capacity to carry out its mandate

Intermediate Result: 1.2 Improved reliability of ACWUA's year-to-year revenue streams

Indicator: Revenues generated from ACWUA Operator Certification and Training Program

DESCRIPTION

Definition: ACWUA will collect fees from the new revenue streams associated with provision of operator certification, testing and training services. These revenues will be based upon the number of trainees enrolled in various ACWUA programs, courses, twinning activities and tests.			
Unit of Measure: Jordanian Dinars/US Dollars			
Disaggregated by: Payment source			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Reports from the ACWUA financial department			
Data Source(s): ACWUA financial department			
Frequency/Timing of Data Acquisition: On going as fees received for certification, testing and training service.			
Reporting of Data: Monthly ACWUA financial reports. IWSMR quarterly and annual progress reports.			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	N/A	\$53,763 Collected	Based on actual ACWUA coordination fees for ROCTP and TOT enrollment and testing (Paid by IWSMR project)
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			
Indicator: Interim regional certification platform established			
DESCRIPTION			
Definition: Until each ACWUA member country has established its own legally recognized certification scheme; ACWUA will rely on an interim approach whereby operators from member countries/utilities will be certified by the Center for Accreditation and Quality Assurance (CAQA) in Jordan in accordance with their regulations. The ACWUA board must approve this interim approach.			
Unit of Measure: Milestone			
Disaggregated by: N/A			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Report from ACWUA Board of approval			
Data Source(s): ACWUA Board			
Frequency/Timing of Data Acquisition: No later than February 2014 (IWSMR month 5)			
Reporting of Data: IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1	Approved	Approved	Interim platform (CAQA/Jordan) approved by ACWUA Board
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			
Indicator: Number of countries participating in the regional certification program (Not including Jordan and Egypt)			
DESCRIPTION			

Definition: Participating countries must accept the ACWUA interim regional certification platform including CAQA certificates and tests as well as agree that these will be honored at such time that the country has its own certification platform. The country must agree to pay for all fees related to the training, testing and certification.

Unit of Measure: Number of countries; MOU between ACWUA and each country

Disaggregated by: Country

PLAN FOR DATA ACQUISITION & REPORTING

Data Collection Method: Report from ACWUA Secretary General (or delegate) of country agreement

Data Source(s): ACWUA Secretary General (or delegate)

Frequency/Timing of Data Acquisition: Upon MOU signing

Reporting of Data: IWSMR quarterly and annual progress reports

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
1	0 Country	N/A	Training conducted for a member utility in each country. These initial training programs were pilots to build ACWUA and regional capacity necessary for ACWUA to replicate on a sustainable basis.
2	3 Pilot Countries	3 Countries Participating	ROCTP Pilots: West Bank, Yemen, Lebanon

THIS SHEET LAST UPDATED: September 2015

IWSMR Performance Indicator Description

Program Objective: Improved Water and Sanitation Services in the MENA region

Program Result: 2. Scaled up operator certification programs to a regional level

Intermediate Result: N/A

Indicator: Number of operators obtaining regionally recognized certification

DESCRIPTION

Definition: Operators who meet the prerequisites, attend the designated ACWUA courses and pass the associated CAQA tests will obtain the regionally recognized interim CAQA certification as per CAQA regulations.

Unit of Measure: Number of operators passing CAQA tests

Disaggregated by: Country, certification program, level, gender, and institution/utility.

PLAN FOR DATA ACQUISITION & REPORTING

Data Collection Method: CAQA Certification and Testing Report via ACWUA Secretary General (or delegate)

Data Source(s): CAQA via ACWUA Secretary General (or delegate)

Frequency/Timing of Data Acquisition: Within 10 days after each CAQA test

Reporting of Data: IWSMR quarterly and annual progress reports

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
1	0	N/A	No Operator training in Year 1; Target: 25% women
2	96 ROCTP	94 ROCTP 72 Male 22 Female	By agreement the original 200 is divided between TOT and ROCTP and other certified trainings with no ROCTP operators trained Year 1; Actual: 24% Female

THIS SHEET LAST UPDATED: September 2015

IWSMR Performance Indicator Description

Program Objective: Improved Water and Sanitation Services in the MENA region

Program Result: 2. Scaled up operator certification programs to a regional level

Intermediate Result: N/A			
Indicator: Percentage of operators passing standardized certification tests			
DESCRIPTION			
Definition: The passing grade on CAQA tests is 60%. This indicator measures the percentage of operators who achieve the passing standard.			
Unit of Measure: Percentage of operators passing CAQA tests			
Disaggregated by: Country, certification program, level, gender, and institution/utility.			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: CAQA Certification and Testing Report via ACWUA Secretary General (or delegate)			
Data Source(s): CAQA via ACWUA Secretary General (or delegate)			
Frequency/Timing of Data Acquisition: Within 10 days after each CAQA test			
Reporting of Data: IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	75%	98% (92 of 94)	60% passing grade based on CAQA policy and approved by ACWUA board
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			
Indicator: Number of certified trainers			
DESCRIPTION			
Definition: The ACWUA strategy is to provide each participating country/utility with the capacity of conducting training on their own with operators who have also received CAQA certification as qualified trainers. This approach will help to ensure the sustainability of training by making utilities self-sufficient. Selection of TOT candidates will be from the top performing operators based on their test results.			
Unit of Measure: Percentage of operators attending Training of Trainers (TOT) course and passing CAQA TOT test			
Disaggregated by: Country, certification program, level, gender, and institution/utility.			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: CAQA Certification and Testing Report via ACWUA Secretary General (or delegate)			
Data Source(s): CAQA via ACWUA Secretary General (or delegate)			
Frequency/Timing of Data Acquisition: Within 10 days after each CAQA test			
Reporting of Data: IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1 & 2	109	105 TOT 15 ISD	Course iterations: TOT - 7; ISD - 1
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			

Indicator: Number of certified operators obtaining new positions, promotions, or added incentives			
DESCRIPTION			
Definition: As per USAID request, IWSMR and ACWUA will track this indicator only. No target will be assigned			
Unit of Measure: Number of certified operators who experience a change in employment status/salary			
Disaggregated by: Country, certification program, level, gender, and institution/utility.			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Data posted by utilities to ACWUA CIS			
Data Source(s): Participating utilities (Operators may have access to post based on ACWUA Board approval of this procedure)			
Frequency/Timing of Data Acquisition: Quarterly			
Reporting of Data: CIS reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	N/A (100)	Unknown	Tracking via ACWUA CIS only; ACWUA to report directly to USAID. Numerous certified operators have received rewards from employers.
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			
Indicator: Number of certified operators working in markets outside of their country of origin and country of certification			
DESCRIPTION			
Definition: As per USAID request, IWSMR and ACWUA will track this indicator only. No target will be assigned.			
Unit of Measure: Number of certified operators who obtain employment abroad			
Disaggregated by: Country, certification program, level, gender, and institution/utility.			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Data posted by utilities to ACWUA CIS			
Data Source(s): Participating utilities (Operators may have access to post based on ACWUA Board approval of this procedure)			
Frequency/Timing of Data Acquisition: Quarterly			
Reporting of Data: CIS reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	N/A (4)	Unknown	Tracking via ACWUA CIS only; ACWUA to report directly to USAID.
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			

Indicator: Change in technical and management skills due to obtaining operator certification and/or participation in twinning			
DESCRIPTION			
Definition: Qualitative measure as reported by the trainee and his/her supervisor in response to TIA questionnaire and interview			
Unit of Measure: Percentage reporting degree of improvement in technical and management skills			
Disaggregated by: Country, certification program, level, twinning, gender, and institution/utility, trainee, supervisor			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: TIA questionnaires and interviews (CIS may allow posting)			
Data Source(s): Trained operators and their immediate supervisors at participating utilities			
Frequency/Timing of Data Acquisition: Upon completion of training and at 6-month interval thereafter.			
Reporting of Data: CIS reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	80%	Nablus: 80% Yemen: 87.5% Lebanon: TBD	Trainees and supervisors reporting positive improvement via TIA in Year 2 for ROCTP.
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			
Indicator: Change in job performance due to obtaining operator certification and/or participation in twinning			
DESCRIPTION			
Definition: Qualitative measure as reported by the trainee and his/her supervisor in response to TIA questionnaire and interview			
Unit of Measure: Percentage reporting degree of improvement in job performance			
Disaggregated by: Country, certification program, level, twinning, gender, and institution/utility, trainee, supervisor			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: TIA questionnaires and interviews (CIS may allow posting)			
Data Source(s): Trained operators and their immediate supervisors at participating utilities			
Frequency/Timing of Data Acquisition: Upon completion of training and at 6-month interval thereafter.			
Reporting of Data: CIS reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	80%	Nablus: 80% Yemen: 100% Lebanon: TBD	Trainees and supervisors reporting positive improvement via TIA in Year 2 for ROCTP.
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: N/A			

Indicator: Change in attitude, confidence and self-esteem due to obtaining operator certification			
DESCRIPTION			
Definition: Qualitative measure as reported by the trainee and his/her supervisor in response to TIA questionnaire and interview			
Unit of Measure: Percentage reporting degree of improvement in attitude, confidence and self-esteem resulting from obtaining certification			
Disaggregated by: Country, certification program, level, gender, and institution/utility, trainee, supervisor			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: TIA questionnaires and interviews (CIS may allow posting)			
Data Source(s): Trained operators and their immediate supervisors at participating utilities			
Frequency/Timing of Data Acquisition: Upon completion of training and at 6-month interval thereafter.			
Reporting of Data: CIS reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
1, 2	80%	Nablus: 80% Yemen: 75% Lebanon: TBD	Trainees and supervisors reporting positive improvement via TIA in Year 2 for ROCTP. Yemen result due to effects of local instability on job security
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 2. Scaled up operator certification programs to a regional level			
Intermediate Result: 2.1 Enhanced training materials and certification framework			
Indicator: Number of courses (materials) and tests finalized for regional certification			
DESCRIPTION			
Definition: Operator certification and training courses/tests approved by the ACWUA Board and finalized for regional use. Each ACWUA course includes: Trainee Guide; Trainer Guide; Visual Aids; and, Tests (Controlled by CAQA)			
Unit of Measure: Operator certification programs, courses, and associated tests: <ul style="list-style-type: none"> • Water Treatment Operator – 4 Courses (1 per operator level) • Water Distribution Operator – 3 Courses • Wastewater Treatment Operator – 4 Courses • Wastewater Collection Operator – 2 Courses • Utility Manager – 1 Course • Pump Station O&M – 1 Special Course requested by Lebanon (pending CAQA accreditation) • TOT – 1 Course • ISD – 1 Course (accredited by ACWUA, not CAQA) • CIS – 1 Course 			
Disaggregated by: Course delivery type: traditional classroom training and/or distance learning.			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Report of ACWUA Board approval of programs, courses, tests			
Data Source(s): ACWUA Secretary General (or delegate)			
Frequency/Timing of Data Acquisition: ACWUA approval			
Reporting of Data: CIS status reports: programs, courses, tests. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes

1, 2	16	16 as listed above; Plus 2 unaccredited courses	<p>CAQA accredited All ROCTP courses, TOT and CIS. CAQA was unable to accredit ISD as the job of Training Developer is not in the CAQA system, however, ACWUA accredited this course. O&M is pending CAQA accreditation. Total Courses = 18.</p> <p>At ACWUA's request, all IWSMR ROCTP pilots were conducted as traditional classroom instruction. In the future/post-IWSMR, ACWUA will use the GIZ platform for distance/e-learning pilots.</p>
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 3. Improved performance of regional water and wastewater utilities by leveraging USAID-funded improvements			
Intermediate Result: N/A			
Indicator: MOU and Action Plan containing specific utility performance measures selected for each twinning activity based on scope of partnership; Improvement tracked in ACWUA Twinning Progress Reports			
DESCRIPTION			
Definition: Each twinning activity (bilateral; multilateral) targets improvement in a specific utility function e.g., treatment efficiency, collection rates, non-revenue water (NRW) rates. Depending upon the function identified for the twinning exchange, specific quantitative indicators will be determined and included in the twinning agreement MOU signed by ACWUA and the partner utilities.			
Unit of Measure: As per indicators specified in the MOU			
Disaggregated by: Twinning partner utilities as required			
PLAN FOR DATA ACQUISITION & REPORTING			
Data Collection Method: Twinning MOU and Action Plan; Methods as appropriate for the agreed indicators			
Data Source(s): TBD as appropriate for the agreed indicators			
Frequency/Timing of Data Acquisition: Upon completion of the twinning activity and at 6-month interval thereafter			
Reporting of Data: CIS Twinning Reports. IWSMR quarterly and annual progress reports			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
2	5 Twinning Pilots – MOU & Action Plan	2 pilots launched with Signed MOUs Action Plans; 3 in planning negotiations	Activities underway. ACWUA to track and report progress against specific twinning activities.
THIS SHEET LAST UPDATED: September 2015			

IWSMR Performance Indicator Description			
Program Objective: Improved Water and Sanitation Services in the MENA region			
Program Result: 3. Improved performance of regional water and wastewater utilities by leveraging USAID-funded improvements			
Intermediate Result: 3.1 Increased exchange between water and wastewater utilities			
Indicator: Number of twinning arrangements piloted			
DESCRIPTION			

Definition: A twinning arrangement links a mentor utility that excels in a particular function with one or more partner utilities that recognize their need to improve in the specified function. Twinning arrangements can be bilateral involving a pair of utilities; or, multilateral, where one mentor utility shares its practices with more than one partner utility. Whether bilateral or multilateral, each exchange is counted as a single twinning arrangement.

Unit of Measure: Number of twinning arrangements (bilateral; multilateral)

Disaggregated by: Utility function, country, gender, and institution/utility.

PLAN FOR DATA ACQUISITION & REPORTING

Data Collection Method: MOUs; Twinning Completion Reports

Data Source(s): ACWUA Secretary General (or delegate); CIS Twinning Reports

Frequency/Timing of Data Acquisition: Upon signed of twinning MOUs and completion of twinning activity

Reporting of Data: CIS Twinning Reports. IWSMR quarterly and annual progress reports

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
2	5 Twinning Pilots	2 pilots launched with Signed MOUs Action Plans; 3 in planning negotiations	10 additional twinning activities planned for implementation by ACWUA after IWSMR

THIS SHEET LAST UPDATED: September 2015

B. Training Impact Assessment Description and End-of-Project Status

As the project name indicates, the goal of IWSMR is improving overall water and wastewater utility performance, operation and maintenance (O&M) and service delivery throughout the MENA region. To contribute to this outcome, IWSMR is assisting ACWUA to establish a regional operator certification and training program including highly defined career paths stipulating detailed need-to-know competencies. This competency hierarchy is supported by a standardized training and testing program customized for particular regional needs from successful U.S. models.

Status. During Year 1, IWSMR initiated the process to take advantage of the Training Impact Assessment (TIA) approach developed by the USAID/Jordan OMT Project for use by ACWUA to assess the impact of ROCTP courses on improved utility O&M performance. As per the approved IWSMR Work Plan and Implementation Plan/Year 1 and 2, the ROCTP courses took place in Year 2 commencing with the Wastewater Treatment Operator Level 1 course.

The initial three ACWUA ROCTP pilots underwent the full TIA data collection, analysis, and reporting process as described below and as documented in related TIA reports.

TIA Report 1/Brief – West Bank Nablus Wastewater Treatment Plant. The West Bank Nablus Wastewater Treatment Plant results of the TIA survey were highly encouraging with 80 percent of the operators/trainees who attended the ROCTP WWTO1 course and completed the TIA form reporting that after six months back on the job, their knowledge and skills had improved and were contributing to improved job performance as a result of the training. This was confirmed by their supervisor who agreed that the ROCTP course was having a significant positive impact on the job performance of the newly certified Nablus WWT operators, and consequently improved work unit performance in general. Furthermore, O&M costs at the WWTP are dropping which cannot be directly attributed to ROCTP but it is a quantitative indication of positive change. See full details in the associate TIA report.

TIA Report 2/Brief – Sanaa/Yemen Wastewater Treatment Plant. Due to the recent unstable conditions in Yemen and difficulties communicating with concerned staff and trainees in Sana'a wastewater treatment plant, there was a delay in receiving required data and feedback for the TIA at the six month interval set for the post training – on job follow up. The Sana'a Wastewater Treatment Level 1 training course was held in Aqaba/Jordan (Dec. 7-18, 2014) and the pre training survey was conducted on the first day of the training course. However, the first on-job TIA was conducted after eight months of the training. Results are contained in this report.

Substantial decreases were reported in O&M cost. The acting plant manager explains this as due mainly to the local instability which forced cuts in costs in employee allowances including transportation and overtime allowance, etc. In addition, there have been reductions in the electricity and fuel costs due to intermittent short plant shutdowns and the complete shutdown caused by electrical power and fuel shortages.

TIA results for Yemen were solidly positive. 100 percent of operators confirmed the direct relevance of the training; an increase in the knowledge and job skills; an increase in the self-esteem and confidence on-the job; newly acquired technical skills as a result

of the training that enabled them to better perform their jobs; and, that they could see the positive impact of the training on the actual on-site job performance. These results were further confirmed by the immediate supervisor of the certified operators.

TIA Report 3/Brief – Beirut and Mt Lebanon Water Utility. Upon completion of the IWSMR project, ACWUA was actively engaged in collecting TIA quantitative data from the Lebanon pilot. This report was limited to analysis of qualitative operator and supervisor pre and post-training survey results.

Results continued to be encouraging in providing evidence validating that the ACWUA ROCTP training effectively increases the job-knowledge of trainees enabling them to improve their performance leading directly to positive performance impacts on their work and that of their work unit.

Operators confirmed the success of the training in developing trainees technical and management skills, where 100 percent in the post-training survey agreed that they had acquired new technical skills as a result of the training that enabled them to better perform their jobs; and, 100 percent agree that they had acquired new ways for solving work problems and organizing people and tasks as a result of the training. In addition, 100 percent of operators agreed that the training had given them the confidence to apply new knowledge on their jobs. After six months back on the job, 83 percent of the operators continued to indicate that they could see improvements in their performance and the performance of their work unit as a result of the training.

Regarding supervisor support of the operators in application of their new knowledge and skills on the jobs, only 50 percent of the operators indicated their agreement of receiving such support. ACWUA should consider conducting orientation for supervisors to ensure that operators receive support in application of new knowledge and skill obtained during training.

In close alignment with staff, the supervisor opinions confirm the success of the program in improving operator knowledge and understanding of their field as well as confidence that enabled them to better do their jobs and manage work relations better. Furthermore supervisors observed that operators are demonstrating improved job performance which is a strong validation that the ROCTP training is having a beneficial impact at the Beirut & Mount Lebanon Water Establishment and that further investment in ACWUA ROCTP training is justified.

Purpose. Although the reporting of results achieved by operator trainees on standardized certification tests provides an indication of the degree of learning that has been accomplished, it does not show the impact of the training on the job and any associated O&M performance improvement by the work unit or the facility as a whole. Therefore, in Year 2 IWSMR is assisting ACWUA in implementing and institutionalizing the TIA approach to measure and report the O&M performance impacts of certification and training at utilities and facilities participating in the ACWUA operator certification and training program. Initially the TIA will be applied at pilots to be conducted by the IWSMR project. ACWUA is committed to continue to apply TIA as ACWUA proceeds to scale-up ROCTP at additional member utilities.

This TIA will collect both quantitative and qualitative utility data using 2013 as the pre-training O&M performance baseline and compare that with the post-training O&M

performance impact at pilot facilities. The findings of this assessment will be used to further improve the training program and to assist managers in supporting training and certification to achieve the greatest results.

Theory. There is wide recognition that capacity building and training are prerequisites to development. However, most evaluations of capacity building stop well short of attributing benefits specifically to training. Most only go so far as to claim that the capacity building made a significant contribution to achieving objectives. The IWSMR project and ACWUA are committed to the assessment of the ROCTP impact on the O&M at treatment and network facilities. The approach to be used here is based on the following basic assumptions:

- Improving human capacity through relevant training (formal or informal) is inherently valuable and absolutely necessary for the achievement of performance improvement.
- Given a supportive organizational environment, individual employees will apply newly acquired knowledge and skills on the job.
- The effects of these changes in practice and/or behavior can be observed, described, often measured based on the controls and accomplishments reported.
- These effects can have a positive impact on productivity, efficiency, and cost of services or outputs delivered.

The ultimate beneficiaries of the training and certification, apart from the trainees in terms of greater self-esteem and financial reward, are the water/wastewater utilities and their customers. It is accepted here that improved individual performance will lead collectively to facility O&M that ensures greater compliance with potable water, effluent quality, and environmental standards as well as protecting the investment in treatment and network infrastructure and contributing to its sustainability.

Enabling environment. The greatest variable when considering attribution is the enabling environment, which plays a key role in determining the degree to which employees are encouraged and supported in the on-job application of new knowledge, skills, behaviors, and practices. As a rule of thumb, performance improvement interventions that, along with relevant high-quality training, include a nurturing management commitment, securing related financial resources, and providing access to the necessary tools and spare parts will be more successful in achieving and demonstrating measurable results.

The IWSMR project and ACWUA program advocate strongly for an operator training and certification program that adopts a pro-active change strategy that recognizes the importance of the enabling environment in achieving performance impacts. The managers of ACWUA member utilities that participate in operator certification pilots and training will sign a joint MOU with ACWUA and IWSMR stating that they fully understand the purpose of the ROCTP courses, that they will abide by the program prerequisite conditions, and that they will encourage on-job application of newly acquired ROCTP knowledge and skills by the trained operators. IWSMR and ACWUA will conduct orientations to kickoff training at each site to secure management buy-in commitment.

Assessment design. Most training takes place in an organizational setting, typically in support of skill and knowledge requirements originating in the workplace. This

certainly applies to the ACWUA operator training and certification program. The job performance competencies, knowledge, and skills supported by the ACWUA program are based on the need-to-know criteria developed by the Association of Boards of Certification (ABC) by conducting on-going job task assessments of US and Canadian treatment plant and network operators. The ABC criteria have been reviewed by local subject matter experts in Jordan and Egypt and tailored to the specific needs and requirements of MENA operators.

The important relationship between training and the workplace has been adhered to in the design of the ACWUA training and certification program. Using this relationship as a framework, the following four basic points can be identified at which the IWSMR project will take measurements, conduct assessments, and reach judgments: Before Training; During Training; After Training or Before Returning to the Job; and, On-the-Job at the Facility.

Collecting data at these four points provides an understanding of the effectiveness of the training and the impact on performance at the plant. Collecting data before training establishes the performance baseline and provides a picture of the performance improvement expectations of operator trainees, their supervisors, and company managers. Any changes in performance resulting from the operator training and certification program will be measured against this initial 2013 baseline for the IWSMR ROCTP pilots.

Testing during and after training measures the degree of new learning taking place as well as the reaction of the trainees to the instruction itself – in other words, how well the trainees liked the training. Monitoring the trainees when they are back on the job measures changes in behavior or the degree to which newly learned practices are being applied. The measureable quantitative and qualitative results of the trainee application of new practices can provide an assessment of the training impact on individual, work unit, and overall plant performance.

Quantitative measures. Practical indicators of measureable facility performance typically available at MENA utilities have been determined with the cooperation of ACWUA and regional utility managers using 2013 as the baseline. Within the international water sector, baseline and performance data collection is encouraged in the following utility functions: Operations and Maintenance, Finance, Customer Service, and Human Resources/Staff Training. As well as tracking ROCTP implementation and operator certification and training via the ACWUA Certification Information System and the IWSMR PMP, indicators which are linked directly to the IWSMR results framework PR3 – Improved performance of regional water and wastewater utilities through leveraging USAID-funded improvements are being applied for the initial ACWUA pilots including:

- Quality of water/wastewater treated – Non-compliance Citations/Year
- Major Unplanned Shut-downs (service interruptions)/Year
- Emergency Actions (unit; facility)/Year
- Accident Reports (unit; facility)/Year
- Operating Costs (unit; facility)/Year
- Maintenance Costs (unit; facility)/Year

Qualitative measures. In addition to collecting facility performance data, the training impact assessment also collects qualitative, opinion-based input from trainees and their supervisors/managers using standardized surveys and interviews for pre- and post-training comparison. For all IWSMR ROCTP pilots, on-the-job observation of trainee practical application and performance improvements at their facilities will be conducted periodically relying primarily on cost-effective survey versus interview methods to assess use of new knowledge and skills. These surveys require the respondent to provide their opinion on the following issues: Relevance of Training; Language of Instruction; Improved Knowledge/Understanding; Improved Attitude/Confidence and Self Esteem; Improved Technical Skills; Improved Management Skills; and Impact of Training on the Job.

Frequency. The initial indicators and survey data gathering were associated with ROCTP pilot implementation commencing in Year 2. The current ACWUA TIA procedures call for impact data collection as follows: Trainee – Pre/Post (6 months; annual); Supervisor and Manager Pre/Post (6 months; annual); On-Site Observation of Performance (associated with Interview). The data collection periods are flexible and recognizing that IWSMR will end in September 2015, the project intends to accelerate qualitative data collection for TIA reporting purposes.

TIA capacity building. Initial application of the TIA approach was led by IWSMR. In the course of Year 2, as ACWUA staff became familiar with the TIA, it was transferred to ACWUA responsibility so that ACWUA could continue to track and report training impact on a long-term sustainable basis.

ANNEX C. ANNUAL FINANCIAL STATUS REPORT

IWSMR Life of Project Expenditures – Years 1 and 2

Contractor: Chemonics International Inc.			
Activity Name: Improving Water and Sanitation Services in the MENA Region (IWSMR)			
Contract No.: AID-EPP-I-00-04-00020			
Task Order No.: AID-263-TO-13-00003			
Total Contract Value: \$1,991,240.00			
Current Obligation: \$1,991,240.00			
Average Monthly Burn Rate Life of Project: \$81,883.81			
Total (Estimate) Spent Life of Project: \$1,965,211.50			
Final Pipeline Analysis			
Year 1 Expenditures by Month	Total Expenditures	Remainder	
October 2013	\$21,654.62	\$21,654.62	\$1,969,585.38
November 2013	\$47,882.93	\$69,537.55	\$1,882,315.25
December 2013	\$90,433.80	\$159,971.35	\$1,831,268.65
January 2014	\$82,655.77	\$242,627.12	\$1,748,612.88
February 2014	\$85,518.29	\$328,145.41	\$1,663,094.59
March 2014	\$46,723.59	\$374,869.00	\$1,616,371.00
April 2013	\$40,252.12	\$415,121.12	\$1,576,118.88
May 2014	\$54,930.24	\$470,051.36	\$1,521,188.64
June 2014	\$102,822.57	\$572,873.93	\$1,418,366.07
July 2014	\$62,169.55	\$635,043.48	\$1,356,196.52
August 2014	\$100,873.90	\$735,917.38	\$1,255,322.62
September 2014	\$58,036.46	\$793,953.84	\$1,197,286.16
October 2014	\$107,686.21	\$901,640.05	\$1,089,600
November 2014	106,253.23	\$1,007,893.28	\$983,346.72
December 2014	\$136,711.59	\$1,144,604.87	\$846,635.13
January 2015	\$125,898.35	\$1,270,503.22	\$720,736.78
February 2015	\$39,501.80	\$1,310,005.02	\$681,234.98
March 2015	\$66,666.23	\$1,376,671.25	\$614,568.75
April 2015	\$90,051.95	\$1,466,723.20	\$524,516.80
May 2015	\$83,371.35	\$1,550,094.55	\$441,145.45
June 2015	\$107,079.04	\$1,657,173.59	\$334,066.41
July 2015	\$71,856.79	\$1,729,030.38	\$262,209.63
August 2015	\$102,123.70	\$1,831,154.08	\$160,085.93
September 2015	\$134,057.42	\$1,965,211.50	\$26,028.51 (Estimate)

ANNEX D. PROJECT BIBLIOGRAPHY – REPORTS SUBMITTED

Deliverables Submitted to USAID per Contract Requirements

Report No.	Title of Report	Submission Date
01	Year 1 Work Plan – September 30, 2013-September 29, 2014	November 27, 2013
02	Performance Monitoring Plan (PMP)	November 27, 2013
03	1 st Quarterly Progress Report	January 15, 2014
04	Quarterly Financial Report	January 15, 2014
05	Assessment Report and Implementation Plan	January 31, 2014
06	IP Review Summary Agreement	April 01, 2014
07	2 nd Quarterly Progress Report	April 15, 2014
08	Quarterly Financial Report	April 15, 2014
09	Branding and Marking Plan	June 16, 2014
10	3 rd Quarterly Progress Report	July 15, 2014
11	Quarterly Financial Report	July 15, 2014
N/A	Year 2 Work Plan – September 30, 2014-September 29, 2015	September 22, 2014
12	Annual Progress Report Year 1	October 29, 2014
13	5 th Quarterly Progress Report	January 15, 2015
14	Quarterly Financial Report	January 15, 2015
15	PwC Financial Manual Update	February 10, 2015
16	6 th Quarterly Progress Report	April 22, 2015
17	Quarterly Financial Report	April 22, 2015
18	7 th Quarterly Progress Report	July 15, 2015
19	Quarterly Financial Report	July 15, 2015
20	Draft Completion Report/APR 2	July 29, 2015
21	Demobilization/Disposition Plan	July 30, 2015
22	Assessment 2 Report and ROCTP Rollout Plan	September 25, 2015
23	Twinning Manual and Master Twinning Plan	September 25, 2015
24	Training Impact Assessment (TIA) Summary Report	September 25, 2015
25	Completion Report/Annual Progress Report Year 2	September 28, 2015

Other Reports Prepared by IWSMR

Report	Prepared By	Preparation Date
Short-Term Technical Assistance Consultant Trip Reports for Howard Sokoloff, Elyse Wesbey, Courtney Mallow	Howard Sokoloff, Elyse Wesbey, Courtney Mallow	November 25, 2013 December 12, 2013 August 06, 2014
Algiers ACWUA Best Practices Conference Trip Report	Adi Najjar, former Chief of Party	December 15, 2013
Egypt-Jordan Taskforce Meeting Trip Report	Zaid AlQaisi, Deputy Chief of Party / Training Specialist	August 20, 2014
West Bank TOT Trip Report	Ayad Al-Ashram, TOT Trainer	August 27, 2014
Yemen TOT Trip Report	Ayad Al-Ashram, TOT Trainer	August 27, 2014
Egypt TOT Trip Report	Zaid AlQaisi, Deputy Chief of Party / Training Specialist	October 16, 2014
West Bank ROCTP Report	Eng. Yasser Alhanaqta, Trainer	November 21, 2014
Yemen ROCTP Report	Mohammed Mahamid, Trainer	January, 2015
PwC Final Financial Manual Report	PwC	February 10, 2015
M&E Specialist Consultant Report	Peggy Ochandarena	July 8, 2015
Lebanon ROCTP Report	Ayad Al-Ashram, Trainer	April 2015
Instructional Systems Design (ISD) Report	Abdelbasit, Trainer	May 2015
O&M Pumping Station Training Report	Zaid AlKarabsheh, Trainer	August 2015
Utility Management Training Trip Report	Abdelbasit, Trainer	August 2015
Closeout Consultant Trip Report	Elyse Wesbey Nadine Habel John Battaile	September 2015

ANNEX E. TECHNICAL ASSISTANCE ACTIVITIES

IWSMR Technical Assistance-Consultation Services for Years 1 and 2 Activities

Technical Assistance Activity	Name of Consultant/Specialist	Duration and Location of Assignment	Challenges, Achievements, and Results
IWSMR Work Planning and Assessment	Howard Sokoloff, Senior Technical Advisor and Assessment Team Leader	Amman, Jordan November 1-15, 2013	The consultant drafted a work plan between IWSMR, ACWUA, and USAID, including training and twinning targets, and IWSMR Budgetary planning. Consultant presented steps forward for the assessment and implementation phase of IWSMR and ACWUA's strategic business plan.
Egypt Taskforce Meeting I	Ahmad Azzam, ACWUA Training Coordinator; Zaid AlQaisi, Deputy Chief of Party; Mohammed Irshaid, CAQA Tester	Cairo, Egypt March 2-6, 2014	Meeting between the Holding Company for Water and Wastewater, ACWUA, and the Center for Accreditation and Quality Assurance (CAQA) to discuss a regional certification training program. The trip resulted in the establishment of a taskforce to work on the regional certification program's design and sustainability.
Training of Trainers (TOT) Event 1 –Jordan	Adi Al-Najjar, Chief of Party, and Certified TOT Trainer	Amman, Jordan May 18-22, 2014	As the first of six TOT events, the joint IWSMR-ACWUA team launched its first training course for 24 Jordanian and Iraqi participants. Ninety-one of all participants passed the test and received their TOT certification. Two participants (one male and one female) dropped out before finishing the training event, which decreased the passing level of the overall training event. Twenty-one percent of participants were female.
Business Plan Committee Meeting I	Lina Sheqem, Institutional Expert	Amman, Jordan June 17-18, 2014	Completed the Bridging memo, which serves as a link to the next five-year plan and increases the organization's emphasis on certification, and Business Plan schedule. The committee also came to an agreement on the plan's vision, mission, and strategic objectives, including the establishment, support, and sustainability of the Regional Operators Certification Training Program (ROCTP).
Annual Director Visit/Technical Check-In	Kathleen Sheridan, Director, IWSMR PMU	Amman, Jordan June 23-July 3, 2014	The director of the IWSMR PMU visited the field office to assist and guide with technical activities. Ms. Sheridan ensured the continued implementation of technical activities while identifying and training the new chief of party.
TOT Event 2 – West Bank	Ayad Al-Ashram, Trainer	Amman, Jordan August 3-7, 2014	The trainer conducted 35 hours of training over the course of five days to 12 West Bank participants. The pre-test given to participants before the course showed an average score of 44 percent, which is below the passing score. After the course, participants took the certification post-test. The group had an average score of 87 percent and all 12 participants passed the certification test.

Technical Assistance Activity	Name of Consultant/Specialist	Duration and Location of Assignment	Challenges, Achievements, and Results
TOT Event 3 – Yemen	Ayad Al-Ashram, Trainer; Zaid AlQaisi, Deputy Chief of Party/Training Specialist; Ahmad Azzam, ACWUA Training Coordinator; Eng. Emad Malkawi, CAQA Tester	Sana'a, Yemen August 16-22, 2014	The trainer conducted 35 hours of training over the course of five days to 12 local Yemen participants from the public and private sector. The pre-test given to participants before the event indicated a 30 percent average among the group. After the course, participants took the certification post-test. The group had an average score of 79 percent and all participants passed the certification test.
Egypt Taskforce Meeting II	Zaid AlQaisi, Deputy Chief of Party; Khaldon Khashman, ACWUA Secretary General; Mohammed Irshid, CAQA Director	Cairo, Egypt August 12-15, 2014	Members of the technical subcommittee of the Egypt-Jordan taskforce discussed and agreed upon a regional certification program. The group signed a consensus to using ACWUA learning materials and core competencies to develop the regional program.
Jordan Taskforce MOU Meeting	Eng. Mohamed Nabeel Abdel Salam, HBRC Representative; Eng. Sobhy Abd Al-Kadel, EWRA Representative; Eng. Amr Mostafa, HBRC Representative; Kladoun Khashman, ACWUA Secretary General; Zaid AlQaisi, Deputy Chief of Party	Amman, Jordan September 16-18, 2014	Members of the Egypt-Jordan taskforce met to finalize and sign Memorandums of Understanding with ACWUA for the purpose of advancing Egyptian and Jordanian certification programs.
TOT Event 4 – Egypt	Zaid AlQaisi, IWSMR DCHIEF OF PARTY; Ahmad Azzam, ACWUA HR Training Director; Mohammed Irshid, CAQA Director	Al-Minya, Egypt September 28-October 2, 2015	The training, held at the Al-Minya Water Company, included 18 participants, 27 percent of whom were women. Trainees were selected from various Egyptian water utilities governorates. All trainees passed their certification tests after five days of intensive training. Training included hands-on and interactive group exercises, tutorials on training theory, peer-presentations, and individual study assignments.
West Bank ROCTP	Arwa Al-Mothaffar, Chief of Party; Ahmad Azzam, ACWUA HR Training Director; Yasser Alhanaqta, Trainer; Mohammed Irshid, CAQA Director	Nablus, West Bank October 11-26, 2014	The first of three IWSMR ROCTPs focused on wastewater treatment operator Level 1 training with pre- and post-training tests. The event signaled the start of IWSMR's TIA data collection pilots.
TOT Event 5 – Lebanon	Arwa Al-Mothaffar, Chief of Party; Ahmad Azzam, ACWUA HR Training Director; Ayad Al-Ashram, Trainer; Mohammed Irshid, CAQA Director	Beirut, Lebanon October 26-31, 2014	The first Lebanon TOT was attended by operators, HR representatives, and industry professionals, and a majority of trainees from Beirut's Mt. Lebanon Water Establishment.
Yemen ROCTP	Zaid AlQaisi, Deputy Chief of Party, Ayad-Al Ashram, Trainer, Ahmad Azzam, ACWUA HR Training Director	Aqaba, Jordan December 7-18, 2014	The second ROCTP, held in Jordan for security reasons, was held in conjunction with Aqaba Water Company and focused on WWT-Level 1.

Technical Assistance Activity	Name of Consultant/Specialist	Duration and Location of Assignment	Challenges, Achievements, and Results
TOT Event 6 – Egypt	Zaid AlQaisi, Deputy Chief of Party; Ahmad Azzam, ACWUA HR Training Director; Emad Qtaishat, Ms. Heba, and Mr. Irshid, CAQA Representatives	Cairo, Egypt January 18-23, 2015	The second Egypt TOT enlisted Eng. Ayad Al-Ashram as trainer. Third-country national trainees from Tunisia and Algeria participated.
TOT Event 7 – Jordan	Ayad-Al Ashram, Trainer; Mustafa Nasereddin, ACWUA Director of Programs; Ahmad Azzam, ACWUA HR Training Director	Amman, Jordan February 2015	This more senior level TOT was attended by industry representatives and officials in the local sector, serving as an important training for ACWUA's local contingency and increasing Jordan's pool of certified TOT trainers.
Lebanon ROCTP	Othman Al-Kurdi, Chief of Party; Duaa Alkhreisha, Coordinator; Eng. Zaid El Tanni, Trainer; Ahmad Azzam, ACWUA HR Director; Mohamed Irshaid and Mohamed Batineh, CAQA.	Beirut, Lebanon March 2-20, 2015	The third and final ROCTP pilot had participation from all four of Lebanon's water establishments and focused on water distribution systems.
Certification Information System (CIS) Training	West Bank, Yemen, Lebanon, and Jordan reps; ISS Director; Hisham Rawashdeh, Deputy Chief of Party	Amman, Jordan April 21-23, 2015	Nine representatives from West Bank, Lebanon, Yemen, Egypt, and Jordan attended. These CIS administrators attended a three-day workshop to learn how to navigate the web-based CIS system. This course helped enforce application and usage of this operator knowledge sharing network and record database for ACWUA member countries.
Instructional Systems Development (ISD) Training	Hisham Rawashdeh, Deputy Chief of Party; Abdelbasit, Trainer; Khaldon Khashman, ACWUA SG; Ahmad Azzam, HR and Training Director	Amman, Jordan May 10-14, 2015	This ISD course held for seven Jordanian trainees and six local Egyptian trainees taught high-level water industry professionals and operators how to design and develop training course material and become future course/test developers.
O&M Pumping Station Training	Othman Al-Kurdi, Chief of Party; Eng. Zaid Kharabsheh, Trainer; Ahmad Azzam, ACWUA HR Director; Mohamed Irshaid and Mohamed Batineh, CAQA.	Beirut, Lebanon June 8-12, 2015	Twenty-four participants from all four of Lebanon's water establishments attended this training, requested by the BMLWE director general. Although not accredited by CAQA, this new course produced new training material for their consideration to add this as a certified course in the future.
Twinning Activity 1 – Beirut Mt. Lebanon Water Establishment (BMLWE) / Aqaba Water / ACWUA	Othman Al-Kurdi, Chief of Party; Khaldon Khashman, ACWUA SG; Joseph Nasir, BMLWE Director General; Dr. Naem Saleh, AW Director General	Beirut, Lebanon July 28-August 1, 2015 September 13-17, 2015 September 20-23, 2015	Three-day meeting to discuss SCADA upgrade for BMLWE and sign MOU with Aqaba Water in July. Two follow-up trips were conducted in September to Beirut (13th-17th) and to Aqaba (September 20-23rd) to have the Non-Revenue, IT, and O&M representatives design the Twinning Action Plan.

Technical Assistance Activity	Name of Consultant/Specialist	Duration and Location of Assignment	Challenges, Achievements, and Results
Twining Activity 2 - Salt Water Directorate-WAJ/Aqaba Water/ACWUA	Othman Al-Kurdi, Chief of Party; Khaldon Khashman, ACWUA SG; Ahmad Azzam, ACWUA HR Training Director; Eng. Tawfiq Habashneh, WAJ Secretary General; Dr. Naem Saleh- AW Director General; Ahmad Abu Soud, AW IT Representative	Beirut, Lebanon July 28-August 2015 September 19, 2015	The Salt Utility MOU was discussed and signed with Aqaba Water in Beirut in July, and the follow-up Twining Action Plan and MMS Center disposition was complete in September.
Utility Management Training	Othman Al-Kurdi, Chief of Party; Hisham Rawasdeh, Deputy Chief of Party; Ahmad Azzam, ACWUA HR Training Director; Emad Qtaishat and Mr. Irshid, CAQA Reps; Mr. Abdelbasit, UM Trainer	Amman, Jordan August 08-15, 2015	Twenty-five trainees from Jordan, Egypt, Lebanon, and West Bank attended this training course. Twelve participants were women, representing nearly 50 percent of passing trainees. The course was certified by the CAQA.

ANNEX F. TRAINEE REPORT

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
TOT 1-Jordan May 18-May 22, 2014	Dr. Jarrah AlZubi	ACWUA	MDG + Head and Technical Advisor	86%
	Mr. Ahmad AlAzzam	ACWUA	Director of Human Resources and Training	80%
	Eng. Hassan Al Sheyab	MIYAHUNA	Network Engineer Immunity Sewage	78%
	Eng. Abdullah Al Jarrah	MIYAHUNA	NEW Manager/ Jordan Water Company	67%
	Eng. Majeda Al Zoubi	MIYAHUNA	Quality Control & Assurance Manager/ Jordan Resources Company	89%
	Eng. Jihad Jamous	Arabtic Jardine Group	Director of Operations, AJ Infrastructure & Environment	83%
	Eng. Ayham Obeidat	Arabtic Jardaneh Group	Water and Wastewater Engineer	88%
	Eng. Jomanah Al-Btoush	Arabtic Jardaneh Group	Water and Wastewater Engineer	91%
	Eng. Hisham Alkhateeb	Consulting Engineering Center	Resident Engineer	0%
	Eng. Zakaria Al – Tarawneh	Al Ghaith Company for Environmental Consulting	Manager	80%
	Eng. Lama Al Masalha	Water Center of Excellence	Center Manager of Water Center of Excellence	0%
	Eng. Sharhabil Maswadeh	Vocational Training Corporation (VTC)	Water Expert	87%
	Eng. Yahya Al Zyoud	Water Center of Excellence	Water Trainer	84%
	Eng. Ghada A Safa	Water Authority of Jordan (WAJ)	Engineer / Technical Affairs / Study & Design Directorate	96%
	Eng. Muayyad Elbado	Water Authority of Jordan (WAJ)	Engineer	80%
	Eng. Asma'a Al – Wahadneh	Water Authority of Jordan (WAJ)	Engineer	86%
	Eng. Muhammad Bataineh	Center of Accreditation and Quality Assurance (CAQA)	Licensing and Accreditation Department	82%
	Eng. Saddam Khleifat	ECO Consult	Technical Manager – Water Supply and Utilities	86%
	Eng. Saja Khashman	ECO Consult	Senior Analyst	88%
	Eng. Ayyid H. Al – Saaidi	Ministry of Water Resources - IRAQ	Engineer / Center Studies and Engineering Designs/ Director of Designs/ Karbala	74%
	Eng. Hussein Al – Masoodi Eng. Ashraf AlSheyab	Ministry of Water Resources - IRAQ	Senior Engineer/ Stations Department/ Irrigation in Baghdad	66%
	Eng. Ashraf AlSheyab	Water Authority of Jordan (WAJ)	Head of Operation and Maintenance of Desalination Plants	83%
	Eng. Waleed Al Hajodeh	Water Authority of Jordan (WAJ)	Engineer	63%
Eng. Jumaa Al Atti	Water Authority of Jordan (WAJ)	Head of Operations of Water Systems	65%	
TOT 2 West Bank August 3-August 7, 2015	Eng. Ibrahim Abu Seiba	Jericho Municipality	Head of WWTP	80%
	Eng. Sanaa Salah	Jericho Municipality	Sewerage and study networks Engineer	84%
	Eng. Elias Abu Mohor	Applied Research Institute (ARIJ)	Engineer on charge of projects implementation	74%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Eng. Lamia Hamayel	Al-Bireh Municipality / Palestine	Head of Wastewater Section	76%
	Eng. Raed Yacoub	WBWD	Planning Manager	74%
	Eng. Nibal Najjar	Jerusalem Water Utility - Ramallah / Al -Bireh Municipality	Projects Management Section Supervisor - WW Project Manager	76%
	Eng. Emil Abdou	JWU - Ramallah / Al-Bireh Municipality	Operation and Maintenance Supervisor	74%
	Eng. Manal Taha	Municipal Development & Lending Fund	Environment Officer	78%
	Eng. Sameer Mousa	WBWD	IT & Technical Support Manager	70%
	Eng. Mohammed Maree	Palestinian Hydrology Group	Project Manager	70%
	Eng. Adnan Amoudi	Nablus	Water operation Manager	61%
	Mr. Ziyad Fuqaha	PWA	Training & Development Director General	76%
TOT 3- Yemen August 17-21, 2014	Eng. Mansoor Qasem	Sana'a Water & Sanitation Local Corporation(SWSLC)	General – Director Deputy	73%
	Eng. Hani AL-Koli	Sana'a Water & Sanitation Local Corporation(SWSLC)	General – Director Deputy	70%
	Eng. Fares Hubaish	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	73%
	Eng. Fuad AL-Awzari	Sana'a Water & Sanitation Local Corporation(SWSLC)	Engineer - Technical Administration	60%
	Mr. Yunes AL-Sukari	Sana'a Water & Sanitation Local Corporation(SWSLC)	Head Division of Maintenance	64%
	Eng. Khalil AL-Darwbi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Regional Engineer	63%
	Eng. Muhammed AL-Komaim	Sana'a Water & Sanitation Local Corporation(SWSLC)	Civil Engineer – Technical Administration	74%
	Eng. Muna Mubarak	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Consultant for the Director – General	60%
	Mr. Mohammed Bowrji	Sana'a Water & Sanitation Local Corporation(SWSLC)	Head Division of Laboratory	68%
	Mr. Ibrahim AL-Haimi	Sana'a Water & Sanitation Local Corporation(SWSLC)	General Manager Deputy for Technical Affairs & Urban Water Supply	82%
	Eng. Faroq Mohsen	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	71%
	Eng. Basma AL-Jaradi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Civil Engineer in Planning and Design Administration	68%
TOT 4- Egypt September 28- October 2, 2014	Eng. Khaled Abdelall	Water and sanitation company - Al Minia	Engineer	73%
	Eng. Mohamed Elsary	Water and sanitation company - Al Minia	Head of Commercial Sector	70%
	Eng. Magdy Gerges	Water and sanitation company - Al Minia	Branch Manager	66%
	Eng. Nahed Mohamed	Water and sanitation company - Al Minia	Measurement and Meter General Manager	60%
	Eng. Essam Nasralla	Water and sanitation company - Al Minia	Head of sanitation	72%
	Eng. Shima Ali	Water and sanitation company - Al Minia	Engineer at the Technical Office	79%
	Salma Abd- Baki	Water and sanitation company - Al Minia	Chemist	74%
	Eng. Mohamed Radwan	Water and sanitation company - Al Minia	Technical Support Engineer	82%
	Tarek Ahmed	Water and sanitation company - Aswan	Chemist Lab Manager	75%
	Eng. Ragab Ahmad	Water and sanitation company - Al Uqsur	Water network Manager	71%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Mohamed Elmasry	Water and sanitation company - Al-Sharqieh	General Manager - Technical Administration	72%
	Eng. Alaa Talib	Water and sanitation company - Al-Sharqieh	Head of Information System Sector	72%
	Mohamed AbdelAziz	Water and sanitation company - Al-Sharqieh	Chemist Manager	78%
	Eng. Mahamoud Mohamed	Water and sanitation company - Qena	Head of Operation and Maintenance Sector	83%
	Mahmoud Ismail	Water and sanitation company - Qena	Central Lab Manager	77%
	Eng. Menshawy Mohamed	Water and sanitation company - Qena	SCADA Manager	72%
	Nahed Endraose	Water and sanitation company - Qena	Lab General Manager	82%
	Neama Hamada	Water and sanitation company - Qena	Chemist at Central Lab	70%
West Bank ROCTP Certification Pilot Training Wastewater (WWTO-Level 1) October 12- 23, 2014	Seham Nasser Abu – rabee	Nablus Municipality	Engineer	85%
	Elias Riad Abu Mohor	Applied Research Institute (ARIJ)	Head of Projects Department	97%
	Anwar Ibrahim Qader	Sarra	Technician	71%
	Amer Mohammed shanteer	Nablus Municipality	Technician	94%
	Osama Moh'd Abedel-Hafez	Anza Village Council - Jenin Village	Operator	91%
	Adel Salim Yasin	Palestinian Water Authority (PWA)	WW Dept. Manger	94%
	Besan Osama Shonnar	Palestinian Water Authority (PWA)	Policies and Technical Support Manager	97%
	Ibrahim Ahmed Abu Sibaa	Jericho Municipality	W.WT.P Manager	99%
	Omran Jamal Khalaf	Jericho Municipality	Operator	97%
	Mohammad Lotfi Shata	Jenin Municipality	T.P Manager	79%
	Eissa Hamdan Dababat	Tubas Joint Water & Sanitation Services (JWSSC)	Executive Director	99%
	Khaled Ahmed Makhzoum	Nablus Municipality	Technician	73%
	Abdelhamid Samir Shami	Jerusalem Water Utility (JWU)	WW Engineer	100%
	Hala Mohammed Barhumi	Palestinian Water Authority (PWA)	Director & Standards Specifications Department	98%
	Salam Ahmad Abu Hantash	Palestinian Water Authority (PWA)	Head of Water Harvesting Section	98%
	Rafat Hamdan Awad	West Bank Water Department	Operator	77%
	Amjad Ali Radwan	Palestinian Water Authority (PWA)	Projects Engineer, WWTP Operator	93%
	Shadi Hasan Hatar	Joint Services Council for West Jenin	Technician	92%
	Mohammad Daoud Al Qadi	Water Supply & Sewage Authority (WSSA) – Bethlehem	Operator	83%
	Majdi Shaker Shaheen	Palestinian Water Authority (PWA)	W&WW Projects Operator and Supervisor	95%
	Izzeddin Mohammad Mefleh	Beit Dajan Village Council	Technician	0%
	Anas Asa'd Baraq	Nablus Municipality	Electrical Eng.	99%
	Amjad Moh'd Shanteer	Nablus Municipality	Technician	85%
Mohammed Ali Salameh	Beit Dajan Village Council	Operator	0%	
	Adel Ali Sayed Ahmad	Bekaa Water Establishment	Head of Chemistry Department	68%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
TOT 5-Lebanon October 27-31, 2014	Sleiman Touma Al Jammal	Bekaa Water Establishment	Head of Lab Department	81%
	Hiba Ahmad Abdul Hamid Dannaoui	North Lebanon Water Establishment	Tripoli Water Authority Manager	78%
	Bassam Michel Alagha	North Lebanon Water Establishment	Zgarta Water Department Manager	68%
	Rasha Ibrahim Bazzi	South Lebanon Water Establishment	Head of Water distribution Department - Saida	76%
	Hussein Mohammed Al ghoul	South Lebanon Water Establishment	Head of Legal affairs Department	71%
	Pierre Hani Najem	South Lebanon Water Establishment	Production/ Transport and wastewater department	75%
	Abdo Souleiman Adaimi	Beirut and Mount Lebanon Water Establishment	Chief of distribution Department in Maten	75%
	Elie Michel Boulos	Beirut and Mount Lebanon Water Establishment	Chairman of collection	61%
	Elias Roukos El Hajj	Beirut and Mount Lebanon Water Establishment	Topograph	64%
	Oumaya Bahij Daou	Beirut and Mount Lebanon Water Establishment	Head Division of Social and Medical Affairs	62%
	Toni Joseph Adaime	Beirut and Mount Lebanon Water Establishment	Procurement and Contracts Department	63%
Yemen ROCTP Certification Training Wastewater Treatment (WWTO-Level 1) December 7-18, 2015	Ahmed Yahya Ali Wahas	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	69%
	Yahya Abdulrahman Esmail Al-Mutawakel	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	61%
	Naef Ahmed Ali Mohammed AL-Akhali	Sana'a Water & Sanitation Local Corporation(SWSLC)	Lab Technician	84%
	Abdul kareem Mohammed Ali AL-Shami	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	61%
	Taha Abdulkareem Ali Hameed Aldeen	Sana'a Water & Sanitation Local Corporation(SWSLC)	Design & Studies Administration Manager	94%
	Fares Abdo Saleh Hubaish	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	86%
	Yahya Mohammed Ali AL-Sharafi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	67%
	Abdulwahab Esmail Rashed Salah	Sana'a Water & Sanitation Local Corporation(SWSLC)	Deputy Director – Sanaa Wastewater Utility	94%
	Noria Hasan Qasem Ghallab	Sana'a Water & Sanitation Local Corporation(SWSLC)	Water Lab Head Division	94%
	Manar Abulbaqi Hussein Salah	Sana'a Water & Sanitation Local Corporation(SWSLC)	Biological Analyst	93%
	Murad Abduljalil Mohmmed Saeed Al-Akhali	Sana'a Water & Sanitation Local Corporation(SWSLC)	Technical Manager	78%
	Shehab Abdullah Abdulrahman AL-hakimi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Head of the wastewater & maintenance division	76%
	Ebrahim Salem Ahmed AL-Garadi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Treatment Utility Operation Technician	76%
	Nabil Saleh Nasser Saleh AL-Gahafi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Lab Treatment Utility Technician	60%
	Abdulsalam Ali Mohammed Al-Naggar	Sana'a Water & Sanitation Local Corporation(SWSLC)	Shifts Utility Supervisor	62%
	Osamah Mohsen Mohesen AL- Halli	Sana'a Water & Sanitation Local Corporation(SWSLC)	Electrical Technician - Generators Utility Operator	69%
	Saleem Ali Musleh Yahya Al-Halli	Sana'a Water & Sanitation Local Corporation(SWSLC)	Wastewater Operator Technician	66%
	Waleed Saleh Ali Khairan	Sana'a Water & Sanitation Local Corporation(SWSLC)	Shifts Utility Supervisor	61%
	Nasser Mansoor Ahmed Al-Shadadi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Treatment Basins Administration Director	85%
	Mohammed Mahmood Fadhli Al- Suwailehi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Microbiology Lab Supervisor – Basin Treatment	95%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Ansaf Nasser Awadh Al-kazmi	Sana'a Water & Sanitation Local Corporation(SWSLC)	Microbiology Head Division	74%
	Shawqi Hashem Hemmat Ali	Sana'a Water & Sanitation Local Corporation(SWSLC)	Treatment Basins Deputy Manager	92%
	Nehal Mohammed Hael Saeed	Sana'a Water & Sanitation Local Corporation(SWSLC)	Treatment Basins Lab Head Division	95%
	Lina Fadhel Mohammed Makki	Sana'a Water & Sanitation Local Corporation(SWSLC)	Wastewater Chemistry Head Division	91%
TOT 6 Egypt January 18-22, 2015	Nagwan Zaky	Wastewater in Cario	Electrical Maintenance Manager	67%
	Khaled Shaheen	Wastewater in Cario	Complex Manager	61%
	Musalm Abd Alghni	Wastewater in Cario	Al Salem Plant Manager	67%
	Mohammad Abdelall	Wastewater in Cario	Maintenance & operation Manager	63%
	Tarik Abdel Azziz	Wastewater in Cario	Arab Abu Musad Plant Manager	85%
	Mai Hassan	Cairo water	Plant Administration Manager	69%
	Atef Mohammed	Al Giza	Electrical Engineer	60%
	Saber Ahmad	Al Giza	Quality & Plant Head Division	61%
	Amel Abbou	Algeria	Assistant Director for Operation & Maintenance	69%
	Ahcene Hamdani	Algeria	Training Center Manager at Water Utility	61%
	Mohamed Bennacer	Algeria	Training Center Unit Manager at Water Utility	80%
	Mohamed Ahmadi	National Company for investment & Water Distribution	Al Zahra'a Region Head Division	74%
	Faleh Harbaoui	National Company for investment & Water Distribution	General Inspection Manager	63%
	khaoula Chaabane	National Company for investment & Water Distribution	International Cooperation Head Division	62%
TOT 7-Amman, Jordan February 18-22, 2015	Jumana I. A. Al - Ayad	Miyahuna	Communication & Water Awareness Manager	90%
	Wesam Swailem Al-Hiary	Miyahuna	Head Division of Water & Sanitation / East Amman	78%
	Hamza Mohammad Al-Yasen	Aqaba Water	Head Division of Plants & Water Resources	80%
	Anas Ghazi Al Khateeb	Aqaba Water	Projects Supervising Engineer	86%
	Hassan Al Hazaymeh	Yarmouk Water Company	Director General Assistant	62%
	Malek Yasin A. AlRawashdeh	Water Authority of Jordan (WAJ)	ASG for W.W & Sanitation	81%
	Bassam Saleh	WAJ	Assistant Secretary General for water affairs	82%
	Mohammed H. Sallam	WAJ	Non – Revenue Water Manager	67%
	Khalid J. H. Alobaidiyn	WAJ	Assistant secretary general For Administration Affairs	78%
	Rania Shaban	WAJ	Director of Training and Development	86%
	Hiyam Al-Sa'aydeh	WAJ	Quality Manager for Laboratories and Quality Sector	74%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Maha Halalsheh	Jordan University	Associate Researcher at Water, energy and Environmental Centre	80%
	Muna Abu Dalo	Jordan University for Science & Technology (JUST)	Associate Professor	70%
	Dana Daqqaq	ACWUA	Communication Manager	82%
	Mustafa Nasereddin	ACWUA	Director of Program & Technical Services	76%
Lebanon ROCTP Pilot Certification Training Water Distribution (WWD) March 1-16, 2015	Ziad Badih Abou Nakoul	Beirut and Mount Lebanon Water Establishment	Pipe Project Implementation Supervisor	90%
	Fadi Azzam Khlaf	Beirut and Mount Lebanon Water Establishment	Head Division & Engineer of Distribution	99%
	Ahmad Yousef Sarhal	Beirut and Mount Lebanon Water Establishment	Head Engineer of Plants	96%
	Salman Ali Sobh	Beirut and Mount Lebanon Water Establishment	Head Engineer of Plants	99%
	Abdo Souleiman Adaime	Beirut and Mount Lebanon Water Establishment	Chief of distribution Department in Maten	99%
	Elias Roukos Elhajj	Beirut and Mount Lebanon Water Establishment	Topograph	94%
	Rasha Ibrahim Bazzi	South Lebanon Water Establishment	Head of Water distribution Department - Saida	96%
	Ali Hassan Chbib	South Lebanon Water Establishment	Trainer	90%
	Pierre Hani Najem	South Lebanon Water Establishment	Head of Production, Transport & Wastewater Utility	92%
	Ramzi Shawki Ramadan	South Lebanon Water Establishment	Head of Projects & Studies Utility	99%
	Wassim Nasser Omar	South Lebanon Water Establishment	Engineer in the Projects & Studies Utilities	99%
	Yehia Karaki	South Lebanon Water Establishment	Trainer in the Control Department	87%
	Elias Khamis	Bekaa Water Establishment	Distribution Controller	77%
	Georges Joseph Al Kozah	Bekaa Water Establishment	Distribution Controller	96%
	Ali Mohammed Entobly	Bekaa Water Establishment	Distribution Controller	91%
	Hamza Mohammed Al Housseiny	Bekaa Water Establishment	Maintenance & Distribution Department	95%
	Antonios Adel Kassouf	Bekaa Water Establishment	Head Division of the Financial & Administration Department	95%
	Ali Haider Al Kerdy	Bekaa Water Establishment	Maintenance & Distribution Department	96%
	Mohammed Ghassan Dabliz	North Lebanon Water Establishment	Distribution Controller	98%
	Abdul rahman Ibrahim Kantar	North Lebanon Water Establishment	Distribution Controller	96%
Mohammed Suleiman Ahmad	North Lebanon Water Establishment	Networks Administrator	0%	
Certification Information System (CIS) *ACWUA Certification, attendance	Mr.Saher Nimer Al Abed	Miyahuna	HR Officer	N/A
	Ms.Faten Farhan Qaqesh	Aqaba Water Company	Head of Training Department	N/A
	Ms. Ruba Al Jallad	WAJ/Water Authority of Jordan	Developer	N/A
	Ms.Khitam Khalil Izraqi	WAJ/Water Authority of Jordan	Data Entry	N/A

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
based April 21-23, 2015	Mr. Hisham M. Hamdan	Yarmouk Water Company	Head of Training Department	N/A
	Ms.Rabia Abdallah Abou Rjeily	Beirut & Mount Lebanon Water Establishment	HR Manager	N/A
	Mr. Mohamed Saker	HCWW/Holding Company for water and wastewater	Information analysis and database engineer	N/A
	Mr. Ahmed El kenawy	HCWW/Holding Company for water and wastewater	Specialist HR/General Administration	N/A
	Mr. Mohannad Tawil	Jerusalem Water Undertaking	Administrative director	N/A
	Mr. Hani Kaoli	Sanaa Water & Sanitation Services Local Corporation	Unknown	N/A
	Ms. Sarah Awamleh	ACWUA	Coordinator	N/A
	Ms. Sarah Abu Salim	ACWUA	Analyst	N/A
Instructional Systems Design (ISD) *ACWUA Certified course with practical evaluations conducted (in lieu of tests) May 10-14, 2015	Dr. Jarrah Mahmoud Ahmad AL Zubi	Arab Countries Water Utilities Association (ACWUA)	MDG + Head and Technical Advisor	Practical Evaluations
	Mr. Mohammed Rasool Husam ALQtaishat	University of Jordan	Assistant Professor/Chemical Engineering Department	Practical Evaluations
	Dr. Naser Mohammad Abdullah Almanaseer	Al-Balqa' Applied University	Assistant Professor of Civil Engineering –Climate and Water Resources	Practical Evaluations
	Mr. Nedal Mousa Hassan Al Oran	Balqa Applied University	Assistant professor in Environmental Sciences	Practical Evaluations
	Ms. Maha Mohammad Ibrahim Halalsheh	University of Jordan	Associate Researcher at the Water, energy and Environment Centre	Practical Evaluations
	Mr. Ghazi Abdul Razeq Salameh Abu Rumman	King Abdullah II Center for Excellence/ICT International Pty Ltd	Research Scientist/Approved Assessor	Practical Evaluations
	Mr. Mohammad Hani Ahmad AL Mahameed	Aqaba Water Company	Training Specialist	Practical Evaluations
	Mr. Ahmed Kenawy	HCWW	HR Manager	Practical Evaluations
	Mr. Mohamed Mahmoud Elsayed	Sanitary Drainage Co. For Greater Cairo	manger of Electrical maintenance Dep. at elamyeria station	Practical Evaluations
	Mr. Walid Said Ismail	Cairo Water Company	Assistant manager of Leak detection department	Practical Evaluations
	Mr. Khalid Said Ahmad Saied	Cairo Water Company	Electrical Engineer	Practical Evaluations
	Ms. Eman Yahia Saed Khader	HCWW	HR Officer	Practical Evaluations
	Mr. Mohamed Ahmad Talaat	Cairo Holding Company for Wastewater Treatment	Manger for al shrouk city wastewater management (station-sewerage networks)	Practical Evaluations
	Ms. Noha Ibrahim EL-Dessouky	HCWW	NP	Practical Evaluations
O&M Pumping Stations *ACWUA Certified, attendance based June 8-11, 2015	Mr. Joseph Aboud	Beirut and Mount Lebanon Water Establishment	Chief of Jbeil Stations	N/A
	Mr. Samer Aoun	Beirut and Mount Lebanon Water Establishment	Chief of Operating Unit/Department of Jbeil stations	N/A
	Ms. Nancy Naser	Beirut and Mount Lebanon Water Establishment	Head of Technical Department	N/A
	Mr. Zouheir Azzi	Beirut and Mount Lebanon Water Establishment	Chief of Operating Department	N/A
	Mr. Ali Farhat	Beirut and Mount Lebanon Water Establishment	Head of Stations Unit	N/A
	Mr. Slaman Soboh	Beirut and Mount Lebanon Water Establishment	Head of South Beirut stations	N/A

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Mr. Ryad Domyati	Beirut and Mount Lebanon Water Establishment	Specialist	N/A
	Mr. Joseph Bou Faysal	Beirut and Mount Lebanon Water Establishment	Chief of Maintenance Department	N/A
	Mr. Ahmad Serhal	Beirut and Mount Lebanon Water Establishment	Director of the Stations engineering Dep.	N/A
	Mr. Ziyad Boustany	Beirut and Mount Lebanon Water Establishment	Director of the Maintenance Department	N/A
	Mr. Fawaz Ayoubi	North Lebanon Water Establishment	Director of the Maintenance Department	N/A
	Mr. Georges Sarkis	North Lebanon Water Establishment	Electrical technician	N/A
	Ms. Hala Habbouchi	North Lebanon Water Establishment	Engineer/Chief of procurement department	N/A
	Mr. Elia Bardawil	Bekaa Water Establishment	Operator/Stations	N/A
	Mr. Bassam El Baradii	Bekaa Water Establishment	Technician	N/A
	Mr. Bassam Salman	Bekaa Water Bekaa Water Establishment	Specialist	N/A
	Mr. Ramzi Ramadan	South Lebanon Water Establishment	Director of Studies and projects Unit	N/A
	Mr. Maroun Choufani	South Lebanon Water Establishment	Head of Production Unit	N/A
	Mr. Jalal Zouwehid	South Lebanon Water Establishment	Engineer	N/A
	Mr. Moustafa al Habbal	South Lebanon Water Establishment	Specialist/Pumping Station/Saida	N/A
Utility Management August 8-15, 2015	Eng. Rania Alshamaileh	Water Authority of Jordan	NP	78%
	Eng. Muna Al gharibeh	Water Authority of Jordan	NP	68%
	Mr. Rabee' Alamireh	Water Authority of Jordan/Tafeleh	NP	81%
	Eng. Saad Mohammad Jaber Alshurafa	Yarmouk Water Company	NP	60%
	Eng. Suhair Salhab	Yarmouk Water Company	NP	70%
	Eng. Mohamad Naser Fawaz Albataineh	Aqaba Water	NP	86%
	Mr. Nabeel Jamal Mudahai Abu Tayeh	Aqaba Water	NP	76%
	Eng. Asama' "Mohamad Ameen" Mahmood Saleh	Aqaba Water	NP	70%
	Mr. Ahmad Sami Mohamad Al tahat	Yarmouk Water Company	NP	61%
	Eng. Khloud Bashtawi	Jordan Valley Authority	NP	83%
	Eng. Majd Mrayat	Jordan Valley Authority	NP	79%
	Eng. Sana Al qudah	Jordan Valley Authority	NP	91%
	Ibrahim Garagreh	Water Authority of Jordan/Tafileh	NP	94%
	Eng. Abeer Alaidi	Water Authority of Jordan/Karak	NP	62%
	Eng. Wafa Abdullah Al dmour	Water Authority of Jordan/Karak	NP	79%
	Eng. Jamal Alkharabsheh	Water Authority of Jordan/Salt	NP	62%
	Mr. Riad Khlaifat	Water Authority of Jordan/Ma'an	NP	61%
	Eng Dania Alrafaia	Water Authority of Jordan/Ma'an	NP	63%
	Eng. Mahmood Al Alwneh	WAJ	NP	61%
	Mr. Raed Mohammad Abd Alrahim Samara	Joint Service Council South West of Bethlehem	NP	68%

Training Course	Name of Trainee	Name of Employer	Trainee/Job Title	Test Score
	Mr. Emil Ghasan Emil Abdo	Jerusalem Water Utility	NP	74%
	Mr. Mohamad Hesham Mustafa Afify	HCWW	NP	68%
	Ms. Rima Dally	Bekaa Water Establishment	NP	93%
	Ms. Hiba Dannaoui	North Lebanon Water Establishment	NP	80%
	Ali Mohammad Ali Harb	South Lebanon Water Establishment	NP	62%

ANNEX G. TRAINING COURSE REPORT

Training Course	Location	Dates	Trainer	Number of Participants	Female		Male		Passed/Certified
					Number of Female Participants	Percentage	Number of Male Participants	%	Total
TOT-CAQA Certification									
Training of Trainers (TOT1)	Amman, Jordan	May 18-22, 2014	Adi Al Najjar	24	5	21%	19	79%	22
Training of Trainers (TOT2)	West Bank (in Jordan)	August 3-7, 2014	Ayad Al Ashram	12	4	33%	8	76%	12
Training of Trainers (TOT3)	Sana'a, Yemen	August 17-21, 2014	Ayad Al Ashram	12	2	17%	10	83%	12
Training of Trainers (TOT4)	Al-Minia, Egypt	September 28-October 2, 2014	Zaid Al Qaisi	18	5	28%	13	72%	18
Training of Trainers (TOT5)	Beirut, Lebanon	October 27-31, 2014	Ayad Al Ashram	12	3	25%	9	75%	12
Training of Trainers (TOT6)	Cairo, Egypt	January 18-22, 2015	Ayad Al Ashram	15	3	21%	12	79%	14
Training of Trainers (TOT7)	Amman, Jordan	February 18- 22, 2015	Ayad Al Ashram	15	6	40%	9	60%	15
SubTotal Certified									105
ROCTP-CAQA Certification									
Certification Pilot Training (WWTO L1)	Yemen (in Jordan)	December 7-18, 2014	Mohammad Al Mahamid	24	5	20%	19	80%	24
Certification Pilot Training (WWTO L1)	Nablus, West Bank	October 12-23, 2014	Yasser Al Hanaqta	24	4	17%	20	83%	23
Certification Pilot Training Water	Beirut, Lebanon	March 2-21, 2015	Zaid Ta'nni	21	1	4%	20	96%	20

Training Course	Location	Dates	Trainer	Number of Participants	Female		Male		Passed/Certified
					Number of Female Participants	Percentage	Number of Male Participants	%	Total
Distribution (WD)									
Utility Management	Amman, Jordan	August 8-15, 2015	Abdulbasit Abu Thanian	25	12	48%	13	52%	25
SubTotal Certified									92
ISD-ACWUA Certification									
Instructional Systems Design (ISD) *Attendance based. Practical evaluations conducted in lieu of tests	Cairo, Egypt	May 10-14, 2015	Abdulbasit Abu Thanian	15	3	21%	12	79%	15
SubTotal Certified									15
Other Training Courses-ACWUA Certification									
CIS Training *Attendance based	Amman, Jordan	April 21-23, 2015	Ahmad Al Hasan	12	6	50%	6	50%	12
O&M Pumping Stations *Attendance based	Beirut, Lebanon	June 8-11, 2015	Zaid Alkharabsheh	20	2	10%	18	90%	20
SubTotal Certified									32
Grand Total Certified Trainees									244

