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FURTHER ADVANCING THE BLUE REVOLUTION INITIATIVE (FABRI)

**QUARTERLY PROGRESS REPORT NO. 6:
DECEMBER 15, 2012 – MARCH 14, 2013**

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ACRONYMS

ABRI	Advancing the Blue Revolution Initiative
ACWUA	Arab Countries Water Utilities Association
AFR	Africa
AfWA	African Water Association
AfYWP	Africa Young Water Professionals
AWW	Africa Water Week
AMCOW	African Ministers' Council on Water
APS	Annual Program Statement
AYWP	Africa Young Water Professionals
CDE	Camerounaise des Eaux
CKS	Communications and Knowledge Sharing
COP	Chief of Party
COR	Contracting Officer's Representative
CSR	Corporate Social Responsibility
DAI	Development Alternatives, Inc
DEC	Development Experience Clearinghouse
EPA	Environmental Protection Agency
ETIC	Euphrates-Tigris Initiative for Cooperation
FABRI	Further Advancing the Blue Revolution Initiative
GIS	Geographical Information System
GWOP	Global Water Operators Partnerships Alliance
GWRI	Grand Water Research Institute
IAV	Institute of Agronomy and Veterinary Science Hassan II
ICA	Independent Consultant Agreement
ICARDA	International Centers for Agricultural Research in Dry Areas
ICBA	International Center for Biosaline Agriculture
IDA	International Desalination Association
IMU	Interim Management Unit
INRGREF	National Institute for Research in Rural Engineering, Water and Forestry
IQC	Indefinite Quantity Contract
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Agency
JUST	Jordan University of Science and Technology
MEDRC	Middle East Desalination Research Center
MENA NWC	Middle East and North Africa Network of Water Centers of Excellence
NASA	National Aeronautics and Space Administration
NCARE	National Center for Agricultural Research and Extension
NRW	Non-Revenue Water
NWRC	National Water Research Center
NWSC	National Water and Sewerage Corporation in Uganda
OMEF	Office of Middle East Programs
ONEP	National Office of Potable Water
ORSAM	Middle Eastern Center for Strategic Studies
OSU	Oregon State University
PEER	Partnerships for Enhanced Engagement in Research
PO	Purchase Order

PR&D	Policy, Research and Development
PWA	Palestinian Water Authority
QEERI	Qatar Environment and Energy Research Institute
QNFSP	Qatar National Food Security Program
R&D	Research and Development
RFA	Request for Applications
RSS	Royal Scientific Society
SDE	Senegalese des Eaux
SIWI	Stockholm International Water Institute
SQU	Sultan Qaboos University
STC	Scientific and Technical Council
SWSC	Swaziland Water Services Corporation
TFDD	Transboundary Freshwater Dispute Database
TOR	Terms of Reference
TRG	Training Resources Group, Inc.
USAID	United States Agency for International Development
USG	United States Government
USGS	United States Geological Survey
USU	Utah State University
WASH	Water, Sanitation, and Hygiene
WATSAN	Water and Sanitation
WESI	Water and Environmental Studies Center
WLI	Water Livelihood Initiative
WWW	World Water Week
YWP	Young Water Professionals

EXECUTIVE SUMMARY

The Sixth Quarterly Progress Report provides an implementation update on the six key activity results which support improved management of water in the Middle East and Africa, project management updates, and any major issues faced and how they were resolved.

Technical Program

Result 1: Middle East and North Africa Network of Centers of Excellence Established and Operating. During this quarter, the Nominating Committee announced the seven members of the MENA NWC Founders Committee. The Founders Committee held its first meeting in Washington, D.C. from March 18-20, 2013. FABRI also received six proposals for the Policy, Research, and Development (PR&D) Grants Program during this period. FABRI issued a modified Annual Program Statement (APS) and met with three research teams in the Middle East to discuss proposals. It is also moving ahead on funding three unsolicited proposals outside the PR&D Grants Program. FABRI finalized the MENA NWC Private Sector Partnerships brochure. In addition, FABRI disseminated the “Opportunities for Private Sector Partnership with MENA NWC” (private sector mapping) report for Jordan to the MENA NWC Research Centers.

Result 2: Integrated Water Resources Management Programming Strengthened. In addition to a groundwater proposal received in the previous quarter, FABRI received one new proposal relating to the use of reclaimed wastewater for agriculture during this quarter. FABRI followed the development of five proposals in progress related to IWRM.

Result 3: Access to Clean Water and Sanitation Improved in Target Countries. During the sixth quarter, FABRI delivered two seven-day NRW audit training workshops, one in English in Uganda and one in French in Senegal. In addition to the workshops, water utility audits were also conducted in Douala, Cameroon, Entebbe and Jina/Iganga, Uganda, and Dakar, Senegal. FABRI and AfWA completed the Communications and Knowledge Sharing (CKS) Workshop report from the November 2012 meeting in Conakry, Guinea. FABRI also released the Annual Program Statement (APS) for the African Young Water Professionals (AfYWP) Grants Program. The grants program will support a broad range of initiatives that address the challenges and opportunities related to NRW, urban sanitation, and CKS in Sub-Saharan Africa.

Result 4: Research and Development Capacities in Irrigation, Groundwater Management, and Drought Risk Assessment and Mitigation Strengthened. In addition to a groundwater proposal received in the previous quarter, FABRI received one new proposal relating to the use of reclaimed wastewater for agriculture during this quarter. FABRI also followed five proposals in progress relating to irrigation, groundwater management, and drought risk assessment and mitigation

Result 5: Transboundary Water Cooperation Strengthened in Key River Basins. The Water Conflict Management Program at Oregon State University has submitted a draft report on transboundary water cooperation worldwide. Ten cases reveal how parties worked collaboratively to address international water disputes under a project umbrella. The report indicates the limits of the successful efforts and how they might be used to design a project under FABRI in the Tigris-Euphrates basin. The report will be completed in the next period.

Result 6: Technical and Outreach Capacity of USAID Staff in Water and Sanitation Programming Enhanced. FABRI proposed a side session at the September 2013 World Water Week in Stockholm. The session was accepted by the Stockholm International Water Institute (SIWI) and it will be called “Using Partnerships to Solve Middle East Water Challenges.” It will be lead by the Middle East and North Africa Network of Water Centers of Excellence (MENA NWC).

Project Management

During the sixth quarter, FABRI issued a purchase order (PO) to Malcolm Farley Associates, an IQC subcontract to the University of California-Davis, task orders to Valu Add Management Services and the University of Florida, and an Independent Consultant Agreement (ICA) to Norval Stanley Peabody III.

Issues and Remedies

Three issues faced by project management include: The project members faced covering expenses out of their personal accounts during international visits. Young water professionals in the Middle East could be more engaged in research activities. And the current budget for the project does not reflect actual commitments and the time is too short for implementation. As remedies, team members who travel now use Visa Convenient Cards that allow the company to add \$10,000 to their accounts. The cards are used for all expenses, except individual costs by the cardholder who is travelling. The project will design and carry out two new small grants programs that involve young scientists. One specifically is targeted to young water scientists in the Network’s Centers. And project management is currently realigning the original proposal budget to bring it into line with actual costs and commitments. The realignment will also include a one-year, no-cost extension.

1. INTRODUCTION

Water plays a pivotal role in the political, economic and social lives of nations and people. Many countries, including those in the Middle East and Africa, are facing common water challenges- drought, inefficient agricultural water use, groundwater management, inadequate or poor quality water supply, weak or absent mechanisms for sharing transboundary water, etc. Such challenges can lead to conflict within communities and among countries, as well as have negative health, financial and social impacts on populations.

To help respond to these regional water challenges, FABRI is providing technical support to USAID's Middle East and Africa bureaus, fulfilling all requests at the highest technical standards. In this capacity, FABRI has launched and established a new regional water network called the Middle East and North Africa Network of Water Centers of Excellence (MENA NWC), strengthened integrated water resources management programming, improved the long-term viability of water and sanitation service providers, rationalized water allocations and use, encouraged collaboration among riparians in transboundary river basins, and raised USAID visibility in water and sanitation.

Partnerships form the foundation of all aspects of this initiative. FABRI develops partnerships—between and among the scientific community, governments, universities and research institutions, the private sector, and civil society—to achieve the project's goals and to ensure that the water sector in the Middle East and Africa is capable of sustaining, and building on those achievements after FABRI has closed. We are forging intellectual and financial partnerships among the water sector's major players to create an integrated process that spans the identification and design of new approaches and technologies to their production and adoption. Continued investments and advances in the water sector will improve economic output, agricultural returns, and public health and ease economic burdens and alleviate human suffering.

FABRI's core result is the launch of the Middle East and North Africa Network of Water Centers of Excellence (MENA NWC). This initiative is an outcome of President Obama's call to establish Centers of Excellence in the Muslim World during his June 2009 "New Beginnings" speech in Cairo. Secretary Clinton also mentioned the initiative during her World Water Day speeches in 2010 and 2011.

MENA NWC links technical and research institutions across the region, encouraging them to work together and with outside counterpart institutions on critical water challenges. The Network strives to foster partnerships that build and exchange regional science and technology capacity to improve water resources planning and management; and develop and disseminate policy tools and technical and management interventions that expand water supply, manage demand, and dramatically increase its efficient and productive use.

A network of cooperating institutions are facilitating collaborative activities, including competitive grants programs, capacity building, institutional twinings, exchanges, fellowships, communications, and knowledge management. The Network is the main vehicle for FABRI's goal to strengthen the water sector in the Middle East and North Africa.

Additionally, FABRI is supporting innovative WASH activities in Africa, focusing on providing institutional support to two regional associations to test and share successful approaches in non-revenue water and on setting national policies to enhance sanitation programs throughout Africa.

FABRI's sixth quarterly report outlines the program's achievements and plans to build regional capacity of various actors from the water sector in the Middle East and Africa.

2. PROGRESS DURING THE QUARTER

FABRI has six major objectives:

- **Result 1: Establish an operational Middle East and North Africa Network of Centers of Excellence (MENA NWC).** FABRI is supporting the creation of the MENA NWC by acting as the Interim Management Unit until a Secretariat is established. The initiative will establish MENA NWC organization, leadership, and finances, as well as manage collaborative, technical, and capacity-building activities via Policy, Research, and Development (PR&D) Grants. Through the MENA NWC, FABRI aims to integrate research and development capacity in the member Centers with the development and dissemination of applied technologies and practices for innovative approaches, systems, and technologies to address water issues important to the region. An important piece of this work is the development of a communications and knowledge sharing plan to support the sustainability of the Network.
- **Result 2: Strengthen Integrated Water Resources Management Programming.** FABRI is strengthening the legal and regulatory framework for IWRM and implementing methodologies to improve and promote the efficient use of water resources through the MENA NWC IWRM Thematic Partnership.
- **Result 3: Access to Clean Water and Sanitation Improved in Target African and Middle Eastern Countries.** FABRI is strengthening the performance of water and sanitation service providers by working with regional “platforms” and associations. The goal is to provide them with innovative and tangible support to improve financial, economic, and operating efficiency, including development of association Business Plans, Non-Revenue Water initiatives, capacity building, and communications and knowledge sharing programs.
- **Result 4: Strengthen Research and Development Capacities in Irrigation, Groundwater Management, and Drought Risk Assessment and Mitigation.** FABRI is working with one of the MENA NWC Thematic Partnerships to identify the most promising and regionally-relevant technologies and techniques for efficient, productive use of water in agriculture; engaging the leading experts in these technologies to transfer knowledge to MENA NWC institutions; and developing and presenting outreach activities in target countries to encourage government engagement and private sector partnerships around the most successful approaches.
- **Result 5: Strengthen Transboundary Water Cooperation in Key River Basins.** Through Oregon State University, FABRI is conducting an analysis of transboundary cooperation approaches and applying study findings to the Tigris-Euphrates basin. The results will be used to identify, design and implement one or two pilot projects.
- **Result 6: Enhance Technical and Outreach Capacity of USAID Staff in Water and Sanitation Programming.** FABRI will strengthen USAID staff capacity in this area by providing materials and insights based on our non-revenue water and sanitation programs in Africa.

The following section describes the progress that FABRI has made on each of these objectives during the quarter.

RESULT 1: MIDDLE EAST AND NORTH AFRICA NETWORK OF CENTERS OF EXCELLENCE ESTABLISHED AND OPERATING

Requirement 1.1: Support Establishment of MENA NWC

This activity is completed.

Requirement 1.2: Design a Trust Fund of Endowment to Help Ensure the Sustainability of the Network

There were no Requirement 1.2 activities conducted during the sixth quarter, as FABRI is waiting for USAID approval to proceed with the Founders Committee planning.

Requirement 1.3: Support Operations of the MENA NWC Secretariat

During the period, the FABRI COP continued to serve as Acting Director of the Network's Secretariat. He has been in regular and frequent communication with participating Centers. In addition, FABRI is proceeding with one key component of the Network: the five-year business plan. The business plan will set a course for the Network's financial sustainability by determining its anticipated expenditures and revenue stream. To that end, FABRI will recruit experts to assist in the plan's development.

During the period

Planned Activities for the Seventh Quarter:

- Complete a first draft of the MENA NWC business plan with a team planning meeting scheduled for early June

Requirement 1.4: MENA NWC Founders Committee Established

During this quarter, the Nominating Committee announced the seven members of the MENA NWC Founders Committee:

- Hady Amr, Deputy Assistant Administrator, Bureau for the Middle East, U.S. Agency for International Development
- Samir Bensaid, Director General, International Institute for Water and Sanitation, National Office for Electricity and Potable Water (ONEE-IEA)
- Thameur Chaibi, Head of Department of Rural Engineering, National Institute for Research in Rural Engineering, Water, and Forestry (INRGREF)
- Manar Fayyad, Professor, Department of Chemistry, The University of Jordan
- Harvey Perlman, Chancellor, The University of Nebraska-Lincoln
- Muwaffaq Saqqar, Water and Environment Consultant Engineer, Arab Fund for Social and Economic Development
- Jill Shaunfield Smail, Science and Technology Advisor, Bureau of Near East Affairs, U.S. Department of State

The seven members of the Founders Committee represent diverse skill sets, experiences and nationalities. The Nominating Committee considered more than 40 candidates from the Middle East, U.S. and North Africa for positions on the Founders Committee.

The Founders Committee held its first meeting in Washington, D.C. from March 18-20, 2013. Over the course of three-days of meetings the Committee discussed the Network's governance and financial structures, fundraising strategy, business plan, and legal registration. The Interim Management Unit (IMU) made presentations on the Network's Policy, Research and Development (PR&D) grants program and capacity building and knowledge sharing initiatives. It also provided strategic advice on the Network's 5-year business plan and the legal considerations for registering the network. Key agreements of the Founders Committee include:

- Elected Muwaffaq Saqqar as Chair and Harvey Perlman as Vice Chair of the Founders Committee
- Elected a subcommittee to develop a list of content for the MENA NWC website.
- Approved two new small grants programs. The Young Water Scientist Partnerships Small Grants program will stimulate collaboration between the Network's young water research scientists and the Water Innovation Prizes will fund innovative water research projects and foster scientific partnerships between Network's water professionals.
- Approved a revised vision, mission statement, and strategic objectives for the Network.
- Approved Thematic Partnership meetings on groundwater and the food-water-energy nexus to develop research priorities.

Following the conclusion of the meetings in Washington D.C., the University of Nebraska-Lincoln hosted a visit to its Robert B. Daugherty Water for Food Institute. The Founders Committee members learned about the Institute's research, education and policy initiatives and explored areas for collaboration.

Planned Activities for the Seventh Quarter:

- Convening the second Founders Committee meeting in Rabat, Morocco in June 2013
- Preparation of a briefing book for committee members which will include an analysis of legalizing the network in specific countries; a framework for the Network's website; a draft 5-year business plan; a fundraising strategy; and, revised governance documents regarding the Founders Committee, Board of Directors, and Secretariat

Requirement 1.5: Technical, Demonstration Activities of the Network Launched

Accepted and Reviewed Proposals. This quarter, FABRI received six proposals for the Policy, Research, and Development (PR&D) Grants Program. Including the previous quarter, FABRI has received a total of seven proposals as of March 14, 2013.

Proposals relating to the Food-Energy-Water Nexus, Non-Conventional Water, and Water Supply and Sanitation Thematic Partnerships are summarized in the table below. Proposals relating to Integrated Water Resources Management are presented in Result 2, and proposals relating to Irrigation, Groundwater Management, and Drought Risk Assessment and Mitigation are presented in Result 4.

The PR&D Grants Selection Committee is chaired by Sarah Tully (USAID), and includes Jill Shaunfield (Department of State), Peter Reiss (FABRI), and Kenneth Ludwa (FABRI). Committee members reviewed each proposal, prepared a written evaluation and scoring, and made an award/decline decision by consensus. The Committee decision is informed by external expert reviews. Each proposal's award/decline status is summarized in the table below and the tables in Results 2 and 4. The Selection Committee recommended two proposals for provisional award.

Tracked Research Proposal Development. FABRI continued to track progress on the Policy, Research, and Development (PR&D) Grants Program. Proposals in progress are summarized in the table below and the tables in Results 2 and 4. As of March 14, 2013, at least eleven teams were preparing proposals.

Proposals Relating to Water-Food-Energy Nexus, Water Supply and Sanitation, and Non-Conventional Water

PROPOSAL TOPIC	PARTICIPATING CENTERS	EXTERNAL PARTNERS	STATUS
Submitted Proposals			
<i>Water-Food-Energy Nexus</i>			
Water, Energy, and Food Nexus: a Basis For Strategic Planning for Natural Resources Sustainability-Challenges for Application in the MENA Region	QEERI INRGREF UJ	Purdue	Invited to resubmit by FABRI
<i>Non-Conventional Water</i>			
Enhancing Cost Recovery in Wastewater, Greywater and Fecal Sludge Management through Safe Reuse	IWMI SQU JUST An Najah	UC/Davis Holding Company for Water and Wastewater (Cairo)	In review
Use of Green Nanoparticles as a Biofouling-Resistant Agent in Reverse Osmosis Desalination	JUST ONEE	University of Rhode Island University of Toledo-Ohio Georgia Tech	Selection Committee recommended resubmit
<i>Water Supply and Sanitation</i>			
Expanding Access to Sanitation for Unsewered Communities in Middle East and North Africa Countries	ONEE RSS UJ IAV	R&D Maroc	Selection Committee recommended provisional award
Proposals in Progress			
<i>Non-Conventional Water</i>			
Solar Pumping and Desalination	UJ An Najah	USU	In progress
<i>Water Supply and Sanitation</i>			
Developing and Applying NRW Reduction Decision Support Criteria and Tools	ACWUA UJ		In progress
<i>Water-Food-Energy Nexus</i>			
Water Footprint	UJ		In progress

Modified Annual Program Statement. Based on final and draft proposals submitted by the Centers, and feedback from the Centers, FABRI issued a modification to the APS on March 7, 2013. The most significant changes are:

- Emphasis that most awards will be in the range of \$400,000 to \$450,000. Only in exceptional circumstances will the Program make awards at or near the maximum of \$750,000.
- Change to the definition of external collaborators, to "any research entity participating on the project in a research capacity that is not one of the eighteen MENA NWC Centers."

- Simplification of the technical proposal format.
- Elimination of the language prohibiting salaries for researchers.

Other vital program conditions remain the same: funding pool, priority research areas, proposal due date, performance period, and teaming requirements.

Met with Research Teams to Support Proposal Development. Three research teams, supported by the PR&D Grants Program, met in person to work on proposals:

- In Oman, Sultan Qaboos University (SQU) hosted a meeting with INRGREF, the University of Jordan, and the University of Florida in February 2013 to develop a proposal on Optimizing the Use of Treated Wastewater in Irrigation. Grants Program Manager Kenneth Ludwa attended.
- In Qatar, the Qatar Environment and Energy Research Institute (QEERI) hosted a meeting with the University of Jordan and INRGREF in February 2013 to develop a proposal on Modeling the Food-Water-Energy Nexus. Grants Program Manager Kenneth Ludwa attended.
- The International Center for Biosaline Agriculture (ICBA) hosted a meeting with INRGREF and SQU in February 2013 in Dubai to prepare a proposal on Application of Near-Real Time Soil Monitoring for Irrigated Agricultural Systems. Grants Program Manager Kenneth Ludwa attended.
- In Jordan, research scientists from the Institute of Agronomy and Veterinary Science Hassan II (IAV) and the National Institute of Rural Engineering, Water, and Forestry (INRGREF) met the National Center for Agricultural Research and Extension (NCARE) to discuss their joint proposal on basin management and climate change. Peter Reiss attended.

Unsolicited Proposals. In addition to the PR&D Grants Program, FABRI is also considering funding three research projects that were initially conceptualized by groups outside MENA NWC. However, according to the terms of the activity, at least two Network Centers must be incorporated into the research project as significant partners. The three proposed research projects include:

- **Combatting the Emerging Impacts of Harmful Algal Blooms on Desalination Plants: Bloom Detection, Forecasting, and Strategies for Impact Reduction.** The proposal is led by MEDRC, partnering with Woods Hole Oceanographic Institution (USA), the National Oceanic and Atmospheric Administration (USA), University of California Santa Cruz (USA), SQU (Oman), and the Regional Organization for the Protection of the Marine Environment (Kuwait). The objective of this project is to develop a forecast and early warning capability for harmful algal blooms (HABs) to support desalination plant operators, and manuals and action plans for HAB response. The project will develop satellite remote sensing indices for early warning of HABs, numerical modeling to predict transport of potential blooms to the area of desalination intakes, development of an approach to combine satellite data with the model, a demonstration of this integrated product, and development of methods and training to transfer the approaches and algorithms to the region. The requested budget is about \$750,000.
- **The Global Yield Gap and Water Productivity Atlas for Jordan, Morocco, and Tunisia.** The University of Nebraska is already conducting a global yield gap analysis to compare the optimal agricultural productivity in a country with the actual and explain the reasons for the gap. The Bill and

Melinda Gates Foundation is financing the study in 12 countries in Sub-Saharan Africa and South Asia and the Daugherty Water for Food Institute at UNL is financing the study in two countries in South America. In the Middle East, the study will engage Centers in Morocco, Tunisia, and Jordan. Scientists from IAV, INRGREF, and NCARE will take part in this capacity building effort. The cost of the study is roughly \$400,000.

- **Radar Probing of Groundwater in Hyper-Arid Environments: Understanding Aquifer Dynamics in High Discharge Areas.** As conceived by the California Institute of Technology in association with the Jet Propulsion Laboratory in Pasadena, the study will map the ground deformation associated with water table depth variation over segments of the North African and coastal aquifers in Morocco and Oman where high discharge rates are observed. The study will map the depth of the water table and explore radar capability to monitor the water freshness from signal decay measurements in high discharge zones. The study uses technologies first developed for use on Mars. Network Centers include the Institute of Agronomy and Veterinary Science Hassan II in Morocco and Sultan Qaboos University in Oman. The requested budget is roughly \$800,000.

Planned Activities for the Seventh Quarter:

- FABRI will receive proposals, convene the Selection Committee, evaluate proposals, advise Centers of award decisions, negotiate grant terms, and award grants.
- FABRI is tentatively planning a meeting of the Groundwater and Water-Energy-Food Nexus Thematic Partnerships in May 2013 to identify and prioritize proposals in these areas.
- FABRI will negotiate subcontracts with MEDRC, UNL, and Caltech in order to launch three three studies.

Requirement 1.6: Network Strengthening Through Private Sector Participation

During this quarter, FABRI finalized the MENA NWC Private Sector Partnerships brochure. In addition, FABRI disseminated the “Opportunities for Private Sector Partnership with MENA NWC” (private sector mapping) report for Jordan to the MENA NWC Research Centers.

As the member Centers progressed in preparing their proposals for the research grants, FABRI provided technical assistance in identifying partnerships with the private sector and worked closely with some Research Centers on opening dialogue and communication channels with private firms. FABRI also provided advice and guidance on how to engage the private sector in the research proposals that were planned for submission and/or submitted by Research Centers to the MENA NWC PR&D Grants Program. For example, the Jordan Water Company, Miyahuna, expressed interest in partnering with the Queen Rania Al Abdallah Center for Environmental Sciences and Technology at Jordan University for Science and Technology (JUST), on a research project entitled “Support to research on the use of green nanoparticles as a biofouling- resistant agent in Reverse Osmosis desalination”. The Jordan Water Company provided a signed letter of interest that was submitted as part of the Center’s research proposal to the MENA NWC PR&D Grants Program.

The FABRI Private Sector Partnerships Specialist participated in the business planning meetings that took place in Amman in February 2013 and provided needed inputs and support to the business planning meetings with the Centers on aspects related to partnerships with the private sector.

Planned Activities for the Seventh Quarter:

- Initiate private sector mapping in Morocco.

- Continue work on the MENA NWC Business Plan.
- Continue to provide support to Research Centers by facilitating dialogue and communications with private businesses.

RESULT 2: INTEGRATED WATER RESOURCES MANAGEMENT PROGRAMMING STRENGTHENED

FABRI will implement Result 2, Integrated Water Resources Management (IWRM) Strengthening, through MENA NWC research projects. As described in the results for Requirement 1.5, FABRI received proposals and tracked research teams' proposal progress during the sixth quarter. In addition to a groundwater proposal received in the previous quarter, FABRI received one new proposal relating to the use of reclaimed wastewater for agriculture. FABRI followed five proposals in progress related to IWRM (see table below).

Proposals Relating to Integrated Water Resources Management (IWRM)

PROPOSAL TOPIC	PARTICIPATING CENTERS	EXTERNAL PARTNERS	STATUS
Submitted Proposals			
Mainstreaming of Watershed and Crop Modeling in the Decision Making Process to Improve Land and Water Productivity in Morocco and Tunisia	ICARDA IAV INRGREF	TAMU Eawag	Selection Committee declined
Proposals In Progress			
Adapting the latest METRIC and GIS Technologies to Improve Water Resources Management at Large Scale: Impact of Climate Variability and Policy Implications in Jordan, Morocco and Tunisia	IAV INRGREF NCARE	CNRST, Morocco	In progress
Conjunctive Use of Treated Wastewater and Conventional Water Resources to Sustain Agricultural Production and Mitigate Environmental Pollution: Diagnosis and Optimization	SQU INRGREF UJ	University of Florida	In progress
Assessment of Environmental and Health Hazards of Using Treated Wastewater for Agriculture	INRGREF IAV		In progress

Planned Activities for Seventh Quarter:

- FABRI expects to receive at least two proposals focusing on IWRM. FABRI will convene the Selection Committee, evaluate proposals, advise Centers of award decisions, negotiate grant terms, and award grants.

RESULT 3: ACCESS TO CLEAN WATER AND SANITATION IMPROVED IN TARGET COUNTRIES

Non-Revenue Water Program

During the sixth quarter, FABRI delivered two seven-day NRW audit training workshops, one in English in Uganda and one in French in Senegal. The purpose of the workshops was to provide hands-on experience in conducting water utility audits and writing of the audit reports. Fourteen of the fifteen NRW Program Task Force members attended one of these trainings.

In addition to the workshops, water utility audits were also conducted for the Camerounaise Des Eaux (CDE), in Douala, Cameroon; the two operational area offices of the National Water and Sewerage Corporation (NWSC) in Entebbe and Jina/Iganga, Uganda; and Senegalese Des Eaux (SDE) in Dakar, Senegal.

AfWA Business Plan

The AfWA Business Plan is nearing completion, as the AfWA Executive Board has now sent in their detailed comments for its revision. The plan will be presented to the Board by the AfWA Secretary General at the next Scientific and Technical Council meeting in Tanzania in May.

Communications and Knowledge Sharing

FABRI and AfWA completed the Communications and Knowledge Sharing (CKS) Workshop report from the November 2012 meeting in Conakry, Guinea. The French and English versions of the report were distributed to workshop participants and to USAID via DropBox and they will also be posted on the AfWA website. During the workshop, participants formed the following three working groups: website development; benchmarking; and technical publications. In February 2013, the Website Working Group leader, Geraldine Logmo, drafted a terms of reference (TOR) to hire a consultant who would be hired by AfWA to develop an interactive AfWA website. She distributed the TOR to the working group for review. When the TOR is finalized, it will be sent to AfWA and FABRI for review and implementation.

Young Water Professionals

During this period, FABRI received USAID approval to issue the Annual Program Statement (APS) for the African Young Water Professionals (AfYWP) Grants Program, which was released on March 16, 2013, by Sylvain Usher, AfWA Secretary General. The grants program will support a broad range of initiatives that address the challenges and opportunities related to NRW, urban sanitation, and CKS in Sub-Saharan Africa.

Planned Activities for the Seventh Quarter:

- Conduct four NRW audits for utilities in Benin, Zambia (2), and Gabon.
- Complete utility audit reports for all audits conducted during the previous two quarters.
- Complete the final draft of the business plan for AfWA, including financial forecasts and revenue streams, for presentation at the next STC and Executive Board meeting in Tanzania in May 2013.

Requirement 3.2: Improve the Operating Environment for Water and Sanitation Service Providers

USAID is continuing to work with donors to determine the appropriate focus of the effort in sanitation.

Planned Activities for the Seventh Quarter:

- Determine the design of the program in agreement with USAID.

Requirement 3.3: Improve the Financial Sustainability of the Water and Sanitation Sector

FABRI will strengthen the financial sustainability of water utilities through the development of performance improvement plans to reduce physical and commercial losses and the preparation of investment plans for utilities that enable them to raise funds for capital improvements. Due to the overwhelmingly positive response from the business planning exercise with AfWA, FABRI has decided to extend this work to the participating utilities and to relate business planning to overall investment needs. In addition, FABRI will design a financial non-revenue water diagnostic tool to complement the on-going utility audits.

Planned Activities for Seventh Quarter:

- Submit Standard 3.3 Plan for Improving Financial Sustainability of the Water and Sanitation Sector in AFR and MENA Target Countries.
- Design a financial NRW diagnostic tool to complement the utility audits.

RESULT 4: RESEARCH AND DEVELOPMENT CAPACITIES IN IRRIGATION, GROUNDWATER MANAGEMENT, AND DROUGHT RISK ASSESSMENT AND MITIGATION STRENGTHENED

Requirement 4.1: Conduct Identification and Analysis of U.S., Regional, and International Water Programs Aimed at Promoting Efficient, Productive Use of Water in Agriculture in the MENA Region

FABRI will implement Result 4 through MENA NWC research projects. As described in the results for Requirement 1.5, FABRI received proposals and tracked research teams' proposal progress during the sixth quarter. In addition to a groundwater proposal received in the previous quarter, FABRI received one new proposal relating to the use of reclaimed wastewater for agriculture. FABRI also followed five proposals in progress relating to irrigation, groundwater management, and drought risk assessment and mitigation (see table below).

Proposals Relating to Irrigation, Groundwater Management, and Drought Risk Assessment and Mitigation

PROPOSAL TOPIC	PARTICIPATING CENTERS	EXTERNAL PARTNERS	STATUS
Submitted Proposals			
Guidelines for Artificial Groundwater Recharge Using Flood Farming	UJ ICBA	UNL	FABRI declined
Improved, Efficient and Environmentally Friendly Water Supply for Agricultural Irrigation Based on Reclaimed Wastewater	Technion NCARE	Al Quds University, Ministry of Agriculture Extension Service (Israel)	Selection Committee recommended provisional award
Proposals in Progress			
Halting Uncontrolled Agricultural Practices to Secure Groundwater Quality, the Case of Faria Catchment, Palestine	An Najah ICARDA	USU	In progress
Managed Aquifer Recharge Using Treated Wastewater	SQU UJ RSS	UNL JPL	In progress
Application of Near-Real Time Soil Monitoring for Irrigated Agricultural Systems in MENA	ICBA INRGREF SQU NCARE	ICT	In progress
Developing Partnerships and Innovative Technologies to Improve Water Use Efficiency at River Basin Scale in Jordan, Morocco and Tunisia	INRGREF NCARE IAV	UC Davis	In progress
Raising the Economics and Productivity of Water in Tunisia and Jordan	ICARDA INRGREF RSS	UC Davis	In progress

Planned Activities for Seventh Quarter:

- FABRI expects to receive several proposals focusing on irrigation, groundwater management, and drought risk assessment and mitigation. FABRI will convene the Selection Committee, evaluate proposals, advise Centers of award decisions, negotiate grant terms, and award grants.

RESULT 5: TRANSBOUNDARY WATER COOPERATION STRENGTHENED IN KEY RIVER BASINS

Requirement 5.1: Conduct Analysis of U.S. and Regional Transboundary Water Cooperation Programs, with a Focus on the Euphrates, Tigris, and Nile Basins

During the fifth quarter, Oregon State University's Program in Water Conflict Management and Cooperation led by Prof. Aaron Wolf prepared the first draft of an assessment of regional transboundary water cooperation programs. The Program houses the Transboundary Freshwater Dispute Database (TFDD), the largest collection of information on transboundary conflict and cooperation in the world. Faculty at OSU have extensive experience in culling the world's experience in cooperating across international boundaries for focused analytic studies.

FABRI's transboundary efforts begin with a careful analysis of U.S. and regional transboundary programs and interventions to reveal which ones made the greatest contribution to promoting effective transboundary cooperation. This assessment will:

- Provide a focal point for valuable conversations among riparians and donors about the extent and nature of transboundary cooperation;
- Identify key parties and approaches;
- Inform and guide the design of a pilot project in the Tigris-Euphrates basin under Requirement 5.5; and
- Confirm USAID's commitment to foster collaboration and reduce water conflicts in transboundary contexts in the Middle East.

The Program in Water Conflict Management and Cooperation at Oregon State University is now carrying out the assessment. The Program houses the Transboundary Freshwater Dispute Database (TFDD), the largest collection of information on transboundary conflict and cooperation in the world. Faculty at OSU have extensive experience in culling the world's experience in cooperating across international boundaries for focused analytic studies.

OSU's Program in Water Conflict Management and Cooperation, under direct supervision of the FABRI chief of party and with the support of regional experts, is now preparing a report that assesses the recent history of collaborative transboundary water projects to determine those that provide the most appropriate lessons for the current situation on the Tigris-Euphrates basin. Those lessons will in turn inform the design of a pilot project (Requirement 5.5).

Planned Activities for Seventh Quarter:

- Finalize the final report from Oregon State University for submission to USAID and for widespread dissemination.

Requirement 5.5: Launch Pilot Project in Key River Basin

USAID has asked FABRI to provide a full-time expert to assist it with Mekong River Commission support. Klomjit Chandrapanya will serve as Senior Mekong Affairs Advisor. The Advisor will prepare a comprehensive long-term, external engagement strategy for RDMA to promote fair and effective governance of water, food, and energy in the GMS as it relates to development of hydropower on the Mekong River. She is also responsible for strategy execution and coordination, including developing a five-year Plan of Action to implement the RDMA's Mekong External Engagement Strategy that specifies key activities, required tasks, responsible actors, and due dates, and for communications and outreach. The proposed work begins on 1 May 2013.

Planned Activities for Seventh Quarter:

- Complete all contracting requirements to bring on the employee.

RESULT 6: TECHNICAL AND OUTREACH CAPACITY OF USAID STAFF IN WATER AND SANITATION PROGRAMMING ENHANCED**Requirement 6.2: Increase USAID's Visibility and Outreach on Water Issues**

FABRI proposed a side session at the September 2013 World Water Week in Stockholm. The session was accepted by the Stockholm International Water Institute (SIWI) and it will be called "Using Partnerships to Solve Middle East Water Challenges." It will be lead by the Middle East and North Africa Network of Water Centers of Excellence (MENA NWC). The session will highlight the activities of a new, exciting water research entity that brings together 18 regional and international centers in the MENA region to solve longstanding water challenges.

Planned Activities for Seventh Quarter:

- Prepare for the side session at World Water Week in September 2013

3. PROJECT MANAGEMENT

The period of performance for the FABRI task order is September 15, 2011 through September 29, 2014.



During this period, FABRI issued a purchase order (PO) to Malcolm Farley Associates to cover Malcolm Farley's participation in the audit workshops in Kampala, Uganda in January and Dakar, Senegal in February. FABRI issued an IQC subcontract to the University of California-Davis which has a ceiling amount of [REDACTED] and a period of performance through September 29, 2014. FABRI issued a task order to ValuAdd Management Services for the participation of Philip Giantris on the MENA NWC Business Planning Activity. FABRI issued a task order to the University of Florida for the participation of Sandra Russo in the development of a Capacity Building Initiative and Action Plan for the MENA NWC centers. FABRI also issued an Independent Consultant Agreement (ICA) to Norval Stanley Peabody III for his participation as a proposal reviewer for the MENA NWC PR&D Grants program.

In the coming period, FABRI plans to issue an Independent Consultant Agreement to Harrison Mutikanga and to hire Klomjit Chandrapanya as a full-time employee based in Bangkok. FABRI plans to issue a task order to the University of Florida to cover Dr. Jeff Ullman's time working with the Middle East research centers. FABRI plans to extend the subcontract with Utah State University for another year and to issue an 18-month institutional strengthening grant to AMCOW. FABRI also hopes to begin issuing grants under the MENA NWC PR&D Grants program.

4. ISSUES AND REMEDIES

Issue 1: The project members faced covering expenses out of their personal accounts during international visits.

Remedy: Team members who travel now use Visa Convenient Cards that allow the company to add \$10,000 to their accounts. The cards are used for all expenses, except individual costs by the cardholder who is travelling.

Issue 2: Young water professionals in the Middle East could be more engaged in research activities.

Remedy: The project will design and carry out two new small grants programs that involve young scientists. One specifically is targeted to young water scientists in the Network's Centers.

Issue 3: The current budget for the project does not reflect actual commitments and the time is too short for implementation

Remedy: Project management is currently realigning the original proposal budget to bring it into line with actual costs and commitments. The realignment will also include a one-year, no-cost extension.

5. STANDARDS AND DELIVERABLES SUBMITTED

Requirement	Standard or Deliverable	Date of Submission to USAID
1.1	<ul style="list-style-type: none"> Acceptance letter from Sultan Qaboos University and other Centers 	During first period
1.1	<ul style="list-style-type: none"> Workshop to launch implementation of MENA NWC 	12/5-8/11
1.4	<ul style="list-style-type: none"> List of candidates for Founders Committee prepared 	2/21/12
1.4	<ul style="list-style-type: none"> CVs compiled for each candidate and shared with nominating committee 	2/21/12
2.1	<ul style="list-style-type: none"> Plan for strengthening legal and regulatory framework for IWRM in target countries 	3/14/12
2.2	<ul style="list-style-type: none"> Plan for evaluating and testing methodologies to promote efficient use of water resources 	3/14/12
3.1	<ul style="list-style-type: none"> Draft plan for strengthening capacity and performance of water and sanitation providers in AFR and MENA target countries 	8/15/12
3.2	<ul style="list-style-type: none"> Draft plan for improving operating environment for water and sanitation providers in AFR and MENA target countries 	In process
3.3	<ul style="list-style-type: none"> Draft plan for improving financial sustainability of water and sanitation sector in AFR and MENA target countries submitted within nine (9) months after award 	In process
4.1	<ul style="list-style-type: none"> Plan for conducting the identification and analysis provided within thirty 30 days after the award 	10/14/11
5.1	<ul style="list-style-type: none"> Plan for conducting the analysis provided within 30 days after award 	10/19/11
5.1	<ul style="list-style-type: none"> Assessment of transboundary water cooperation programs 	Delayed due to political turmoil
5.4	<ul style="list-style-type: none"> Pilot project design for transboundary water activity 	Delayed due to political turmoil
Section F.2(b) Deliverables	<ul style="list-style-type: none"> 90 day work plan completed within 30 days of Task Order award 	10/14/11
	<ul style="list-style-type: none"> First annual work plan completed and delivered within 60 days of task order award 	11/11/11
	<ul style="list-style-type: none"> Performance Monitoring Plan 	3/15/12
	<ul style="list-style-type: none"> FABRI Year One Annual Progress Report 	11/1/12
	<ul style="list-style-type: none"> FABRI Year Two Work Plan 	11/1/12
	<ul style="list-style-type: none"> Quarterly Progress Report No. One 	1/18/12
	<ul style="list-style-type: none"> Quarterly Progress Report No. Two 	4/10/12
	<ul style="list-style-type: none"> Quarterly Progress Report No. Three 	7/15/12
	<ul style="list-style-type: none"> Quarterly Progress Report No. Four 	10/19/12
<ul style="list-style-type: none"> Quarterly Progress Report No. Five 	1/10/13	

ANNEX 1: PROJECT DELIVERABLES SUBMITTED TO THE DEVELOPMENT EXPERIENCE CLEARINGHOUSE (DEC)

DELIVERABLE	DATE SUBMITTED
Quarterly Progress Report No. One	12/11/12
Quarterly Progress Report No. Two	12/11/12
Quarterly Progress Report No. Three	12/11/12
Quarterly Progress Report No. Four	12/11/12
Final Event Report - Nairobi Non-Revenue Water Conference	12/11/12
Final Event Report – FABRI/PEER Proposal Writing Workshop	12/11/12

ANNEX 2: PERFORMANCE INDICATORS

Intermediate Result (IR)	Sub IR	Indicator	ME or AFR	Standard Indicator Number	2013 Target	Final Target	Actual (Cumulative) as of March 14, 2013
1. Regional Science and Technology Capacity in Water Management Increased through Establishment of MENA NWC	1.1 MENA NWC Governance Structure Established	1.1.1 MENA NWC legally registered	ME	NA	yes	yes	no
		1.1.2 Number of essential governance structures established and operative (Founders Committee, Steering Committee, Board of Directors, Secretariat)	ME	NA	3	4	1
	1.2 MENA NWC Financially Sustainable	1.2.1 Business plan developed and approved	ME	NA	yes	yes	no
		1.2.2 Financial support pledged from donors, private sector, and other sources	ME	NA	\$10M	\$25M	\$0
		1.2.3 Number of types of pledged donors (bilateral, multilateral, foundations, corporate, individual) demonstrates diversity of funding sources	ME	NA	3	4	0
	1.3 MENA NWC Technical Program Addressing Critical Regional Water Issues	1.3.1 Number of technologies or management practices under research as a result of USG assistance	ME	4.5.2-39a	10	10	0
		1.3.2 Number of technologies or management practices under field testing as a result of USG assistance	ME	4.5.2-39b	8	10	0

Intermediate Result (IR)	Sub IR	Indicator	ME or AFR	Standard Indicator Number	2013 Target	Final Target	Actual (Cumulative) as of March 14, 2013
		1.3.3 Number of technologies or management practices made available for transfer as a result of USG assistance	ME	4.5.2-39c	0	4	0
		1.3.4 Number of government agencies, private sector firms, and/or civil society organizations partnering with Network Centers on research and development projects	ME	NA	20	20	0
		1.3.5 Number of young and women researchers engaged in MENA NWC supported research activities	ME	NA	30	40	0
		1.3.6 Number of private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based organizations that applied new technologies or management practices as a result of USG assistance	ME	4.5.2-42	0	12	0
		1.3.7 Number of visits to the MENA NWC website	ME	NA	10,000	25,000	0
		1.3.8 Number of fans on the MENA NWC Facebook Page	ME	NA	1,000	5,000	0

Intermediate Result (IR)	Sub IR	Indicator	ME or AFR	Standard Indicator Number	2013 Target	Final Target	Actual (Cumulative) as of March 14, 2013
	1.4 MENA NWC Strengthened through Private Sector Participation	1.4.1 Number of private sector partners participating in MENA NWC	ME	NA	12	15	0
2. Integrated Water Resource Management Programming Strengthened	2.1 IWRM Legal and Regulatory Frameworks Strengthened	2.1.1 Number of government agencies, utilities, and service providers involved in IWRM research activities	ME	NA	5	8	0
	2.2 IWRM Methodologies Implemented	2.2.1 Number of private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based organizations (CBOs) that applied new technologies or management practices as a result of USG assistance	ME	4.5.2-42	2	6	0
3. Access to Clean Water and Sanitation Expanded in Target Countries	3.1 Water and Sanitation Service Provider Performance Strengthened	3.1.1 Number of water operator partnerships facilitated	AFR	NA	6	9	0
		3.1.2 Number of private sector sanitation service providers that have improved management practices as a result of USG assistance	AFR	4.6.2-9	6	9	0
		3.1.3 Number of service providers implementing water loss programs with USG assistance	AFR	3.1.8.1-2	25	50	26

Intermediate Result (IR)	Sub IR	Indicator	ME or AFR	Standard Indicator Number	2013 Target	Final Target	Actual (Cumulative) as of March 14, 2013
		3.1.4 Number of private sector sanitation interventions started with USG assistance	AFR	NA	8	15	0
		3.1.5 Number of visits to African water associations' newly designed websites	AFR	NA	10,000	25,000	0
		3.1.6 Number of fans of the Facebook pages of the African water associations	AFR	NA	1,000	5,000	0
	3.2 Water and Sanitation Service Operating Environment Improved	3.2.1 Number of governments developing national sanitation strategies	AFR	4.6.1-17	15	15	0
	3.3 Water and Sanitation Sector Financial Sustainability Improved	3.3.1 Number of governments developing plans to obtain outside financing for utility investments	AFR	NA	6	9	0
		3.3.2 Number of innovative solutions or mechanisms for mobilizing financing for non-revenue water and sanitation programs	AFR	NA	3	5	0
4. Research and Development Capacities in Irrigation, Groundwater Management, and Drought Risk Assessment and Mitigation Strengthened	4.1 Best Practices for Efficient, Productive Use of Water in Agriculture Identified.	4.1.1 Number of technologies or management practices under research as a result of USG assistance	ME	4.5.2-39a	10	10	0
		4.1.2 Number of technologies or management practices under field testing as a result of USG assistance	ME	4.5.2-39b	8	10	0

Intermediate Result (IR)	Sub IR	Indicator	ME or AFR	Standard Indicator Number	2013 Target	Final Target	Actual (Cumulative) as of March 14, 2013
		4.1.3 Number of technologies or management practices made available for transfer as a result of USG assistance	ME	4.5.2-39c	0	4	0
5. Transboundary Water Cooperation Strengthened in Key River Basins	5.1 Analysis of Transboundary Cooperation Identifies Model Programs and Interventions	5.1.1 Number of trans-boundary water resources sustainability assessments undertaken	ME	4.5.2-41e	2	2	0
	5.2 Transboundary Pilot Project Launched	5.2.1 Number of exchanges (government-to-government, non-government-to-non-government; non-government-to-government)	ME	NA	2	4	0
6. Technical and Outreach Capacity of USAID Staff in WASH Programming Enhanced	6.1 WASH Technical and Outreach Capacity of USAID Staff Increased	6.1.1 Number of WASH training events for USAID staff	ME/AFR	NA	2	3	0
		6.1.2 Number of USAID staff trained in WASH	ME/AFR	NA	60	90	0
		6.1.3 Number of WASH guidance materials updated or developed	ME/AFR	NA	4	6	0
	6.2 USAID WASH Visibility and Outreach Increased	6.2.1 Number of conferences and outreach events facilitated or supported	ME/AFR	NA	4	6	1