



Water and Livelihoods Initiative (WLI) Middle East and North Africa (MENA)

Improving Rural Livelihoods through Sustainable Water and Land-use Management in
the MENA Region: Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, Tunisia, and Yemen



WLI Newsletter

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The goal of Water and Livelihood Initiative (WLI) is to improve the livelihoods of rural households and communities in areas where water scarcity, land degradation, water quality deterioration, food security and health problems are prevalent in eight participating countries including Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, Tunisia, and Yemen. The main objective is to develop and pilot test integrated water and land management strategies in the benchmark sites for scaling out and up.

The WLI is funded by the United States Agency for International Development (USAID) and managed by the International Center for Agricultural Research in the Dry Areas (ICARDA). Research activities at the respective benchmark sites are led by the National Agricultural Research and Extension Services (NARES). Other partners include a consortium of US universities including Texas A&M (TAMU), University of California – Davis (UC Davis), University of Florida (UF), and University of Illinois at Urbana Champaign (UIUC); United States Department of Agriculture – Agricultural Research Service (USDA-ARS); as well as the International Water Management Institute (IWMI). This newsletter provides a glimpse into the progress made by WLI partners during the period Oct – Dec 2013.

During the quarter, Research activities both at the basin and farm level were executed bringing a total of 1,913 ha of land under improved technologies or management practices. Basin level research carried out in the time period includes modeling of the irrigation system in Egypt, calibration of the SWAT model in Jordan, monitoring of groundwater resources in Yemen, water accounting of the Orontes River in Syria, and development of soil and land suitability maps in Iraq.

At the farm level research at the benchmark sites focused on improving water productivity and soil management by pilot testing various water and land management strategies including introduction of silage and hydroponic production systems, water harvesting, deficit and supplemental irrigation, use of agralic for protected agriculture, and seeking

alternative income generating opportunities to reduce continued pressure on natural resources.

Strategies, tools and mechanism for integrating management of land and water

Over 10 water and land management technologies were under pilot testing during this period spanning over 1913 ha of land (see reporting of technologies, hectares and numbers of farmers using them in quarterly report)

(http://www.icarda.org/wli/reports_QuarterlyReports.html).

Efforts to identify potential impacts of the strategies continued with particular focus on physical, social, financial, human and natural capitals.

Expansions in scope of research included Soil and farm surveys to study crop patterns for summer seasons at each mesqa and their potential impact on water consumption in Egypt, develop suitability maps that reflect the distribution of soil microorganisms intended to reduce fertilizer applications and estimate water requirement for different crops in Iraq, and calibration of the watershed model using Soil Water Analysis Tool (SWAT) cup, data collection, modification of parameters used in the model to suit dry conditions in the Badia of Jordan. In Palestine, Emphasis was placed on introduction of silage and hydroponic production systems, water harvesting, and efforts to rehabilitate degraded areas. Experiments at the Muktarria station in Syria continued during the reporting period focusing on deficit irrigation using drip irrigation to grow sorghum among other activities including monitoring soil moisture during the growing period, and covering the panicles during the genetic growth period to obtain clean seeds and prevent attack from birds.

Out-scaling proven successful strategies progressed at varying speeds and intensities. In Jordan the team out-scaled pilot tested and proven water harvesting technologies to North Jordan. Among outscaled technologies are the vallerani contour ridges, stone walls, water spreading, and ponds. In Lebanon, the team focused on rainwater micro-harvesting techniques where they continue to pilot test the najarims to increase water availability at the household level before deciding to outscale. Field level activities in Yemen focused on dissemination of pilot tested and proven technologies

including supplemental irrigation techniques for spate irrigated sesame and lipid forage (*Cenchrus Ciliaris*). Four farmers were identified during the quarter to adopt the proposed technologies.

Enhancing Knowledge, Skills and Qualifications

Activities targeted farmers, national research institutions, and graduate students. At the farm level, 16 local Iraqi farmers were trained on using sub-surface drip irrigation to grow vegetables under protected agriculture and 21 Jordanian members of three CBOs were trained on agricultural marketing and basic introduction to informational technologies

A Jordanian student from University of Jordan assisted in training fellow researchers from NCARE and ICARDA on how to install various instruments to ensure accurate data collection. A coordination meeting was held at the LRC in Hebron where WLI teams from partnering institutions including Applied Research Institute of Jerusalem (ARIJ), Land Research Center (LRC), and National Agricultural Research Center (NARC) met to discuss the 2014 workplan and agree on specific tasks to be accomplished by the respective institutions. Collaboration efforts with the USDA-ARS has resulted in a six months placement of a post-doctoral scientist – Dr. Mohamed Annabi from the National Institute for Agricultural Research of Tunisia (INRAT) to work with Dr. Ashok Alva on “Effects of Climate Change on Tunisian Agriculture: modeling soil and crop parameters” at the Forage Crop Research Unit, USDA-ARS, Prosser, WA. Two other students from the National Agronomic Institute of Tunisia (INAT) are also making similar arrangements to work with researchers in USDA-ARS.

Improving livelihoods of rural households

In order to develop a comparison of household-level benefits from different available irrigation management practices and livelihood strategies, the WLI team in Iraq expects to begin assessing potential economic benefits of using improved water management strategies for rural households in the second quarter following a planned training on Cost Benefit Analysis (CBA) scheduled in the near future.

In Syria, the team continued to explore and introduce alternative income generating options. According to the report 63% of the women in the benchmark sites grow and prepare medicinal and aromatic plants in their home gardens, while 28% of women collect these plants from the wild. The team is promoting production of these medicinal plants in small plots of land using drip irrigation techniques. In the reporting quarter, medicinal crops were planted by farmers in the community as high value cash crops that can increase household income.

In Tunisia, The team designed and tested a questionnaire for a survey to be conducted in Zoghmar. The survey will be useful to determine farm incomes of different productions systems, compare incomes between the baseline production system (barley and livestock) and alternatives for adaptation. Data collected will be useful in quantifying benefits in their calculation of benefit/cost ratio. A sample of 100 households was stratified among different production systems, farm types, and zones. The analysis is underway.

WLI 5th Regional Coordination Meeting

The 5th WLI Annual Coordination Meeting was organized to appraise the research progress made by partnering countries, to exchange knowledge on state of the art technologies in water and land management, to refine WLI’s research plans for 2014 and align them with on-going changes within ICARDA and the region, and to refine and establish clear terms of reference for regional thematic areas of research. The meeting was attended by representatives from the United States Agency for International Development (USAID), WLI’s research teams in Egypt, Iraq, Jordan, Lebanon, Palestine, Tunisia, and Yemen; partnering Regional and US Universities including University of Florida (UF), University of California-Davis (UCD), the American University of Beirut (AUB), and Jordan University (JU); experts from the United States Department of Agriculture-Agricultural Research Service (USDA-ARS); Ministry of Water –Jordan; Mercy Corps (MC) – a potential partner for WLI; and selected scientists from ICARDA. All the PowerPoint presentations used during the meeting can be accessed through the WLI website http://icarda.org/wli/reports_RegionalCoordinationMeetings.html

Other Activities

Field visits

Mr. Kristofer Dodge, the new WLI Manager visited the benchmark sites in Tunisia, the West Bank and Egypt during the reporting period in order to follow up on program implementations and to discuss and finalize proposed workplans for the year.

Resource Mobilization:

A joint proposal was developed by WLI and Mercy Corps (MC) Jordan towards the Request for Proposal (RFP) issued by USAID under “Securing Water for Food in Jordan”. The proposal is built upon the partnership between ICARDA and MC to use their respective strengths to scale out proven water and land management strategies to the three agricultural ecosystems in Jordan including the Badia, the Jordan Valley, and the Highlands.

For more information please, visit the WLI website at <http://www.icarda.org/wli/>