



# WLI Newsletter

Issue 3/ 2014



International Center for Agricultural Research in the Dry Areas (ICARDA), The Middle East and North Africa (MENA) Water and Livelihoods Initiative (WLI) aims to improve the livelihoods of rural households and communities in areas where water scarcity, land degradation, water quality deterioration, food insecurity and health problems are prevalent in eight participating countries including Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, Tunisia, and Yemen. The research activities are being conducted at the respective benchmark sites through National Agricultural Research and Extension Services (NARES).

WLI also partners with United States Department of Agriculture – Agricultural Research Service (USDA-ARS), the International Water Management Institute (IWMI), national and regional universities, as well as six U.S. universities; Texas A&M (TAMU), University of California – Davis (UC Davis), University of Florida (UF), University of Illinois at Urbana Champaign (UIUC) and Utah State University (USU). The partners provide targeted training, participate in applied research, and provide technical assistance in accordance to their areas of expertise.

WLI's main objective is to develop and pilot test integrated water and land management strategies in the benchmark sites for scaling out and up in similar

newsletter provides a glimpse into the activities of WLI partners during the period Jan

er, research activities both at the basin level and farm level were executed bringing a total of 1,924 farmers under improved technologies or practices. Basin level researches carried out include:

• Assessing irrigation sustainability and soil degradation in Egypt.

- Watershed modeling, and introduction and evaluation of new drought tolerant plants in Jordan.
- Fertilization of papaya, dissemination of lipid, and supplemental irrigation of spate irrigated sesame in Yemen.
- On-going water accounting of the Orontes river in Lebanon and Syria
- Development of soil and land suitability maps in Iraq.

At the farm level, research at the benchmark sites focused on analyzing soil degradation, improving on-farm management of water and land resources including:

- Assessing water requirements for various crops and plants
- land re-greening & re-vegetation,
- Comparing and evaluating different irrigation management systems
- Analyzing the effects of using saline water for growing vegetables and crops,
- Spatial analysis and hazard mapping of soil degradation, and
- rainwater micro-harvesting techniques,

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

Around 28 water and land management technologies or management practices were under research, 32 technologies were under pilot testing, and 18 new technologies or management practices were made available for transfer during this period (see reporting of technologies, hectares and numbers of farmers using them in quarterly report) ([http://www.icarda.org/wli/reports\\_QuarterlyReports.html](http://www.icarda.org/wli/reports_QuarterlyReports.html)).

In Iraq, in depth research expanded to include soil dilution to prepare soil for further biological analysis. A replication activity was also conducted in Iraq to study the effect of applying surface and sub-surface drip irrigation and white Agralic screen in increasing water productivity and yield under protected agriculture. Mapping intervention site in Jordan as well as extracting Normalized Deviation Vegetation Index (NDVI) to locate the impact of water harvesting on vegetation growth were conducted.

In Lebanon, a comparison study on the growth rate of three local grapevine varieties in semi-arid region were conducted under controlled glass house conditions. It was noted that Obeidi variety gave the highest percentage of success (70%) followed by the Tfeifihy variety (51%) whereas Beitamouni variety gave the lowest survival rate (40%). In Palestine, barrel and trench techniques were tested to produce silage using available crop and vegetable byproducts. 30 farmers expressed an interest in practically applying the barrel technique for silage production as they were able to produce more than 200 silage barrels to feed their sheep.

The team in Tunisia focused on quantification of benefits in terms of enhanced Benefit/Cost ratio through characterization of livelihoods and household strategies for adaptation to climate change, economic assessment of climate change effects on agro-ecosystems and cost-benefit analysis of adaptation measures for farmers. The Yemeni team continued working on biophysical and socio-economic studies including the dissemination of lipid forage. The data collection process, for the two fields that were planted with lipid forage in 2013, was completed in this quarter with a total obtained yield of 295 and 280 ton/ha, while the water use efficiency were 22 and 15.8 kg/m<sup>3</sup> respectively.

### **Enhancing Knowledge, Skills and Qualifications**

The Bio-physical team conducted a training course for two days for local male farmers in Iraq on soil and water management and protected agriculture. The training aims at promoting sustainable livelihoods in farming communities. Cultivation of Medicinal and Herbal Plants training course was conducted in Jordan to enable local communities to realize the importance and benefits of Medicinal and Herbal Plants, define the most important medical plants, and gain the skills of medicinal and herbal plants cultivation and backing process. In Palestine, thirty farmers and animal breeders were invited to a field visit to theoretically and practically demonstrating the benefits of using two silage production techniques (Barrel and trench techniques) utilizing byproducts to feed their sheep.

### **Improving livelihoods of rural households**

In line with the recommendations of the Socio-Economic Characterization Study, the Syrian team continues to study the farmers' willingness to adopt modern irrigation systems. The socio-economic team is actively working towards publishing a study based on the socio-economic survey conducted previously. As farmers in Abyan's Delta select their cultivated crops depending on the economic returns achieved rather than water use efficiency of crops being irrigated, the socio-economic team in Yemen are conducting a research study to demonstrate to farmers the importance of considering water productivity as an indicator when selecting a crop for cultivation. The study is being implemented on a number of cultivated fields of vegetables and crops in different regions of the Abyan's Delta.

### **WLI Egypt Implementers Meeting**

The WLI – Egypt coordination meeting was held in the period of March 03-05, 2014 in Egypt to introduce Dr. Ali Ismail as the new national coordinator for the WLI Egypt and also Kris Dodge as the new regional manager for the WLI. Partners from NWRC, ARC, AUC, Ain Shams University and ICARDA discussed the 2014 implementation strategy for the WLI. This meeting was also conducted to introduce some of the WLI Egypt capacities, highlight available resources, and understand priorities that can match these resources.

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