



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



Newsletter

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The goal of 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.

The year 2012 was marked with a number of important events for WLI, including an external evaluation of the Initiative, hiring of a new manager, and development of bilaterally funded programs for Iraq and Tunisia. Additional bilateral funds were also secured through the Middle East Partnership Initiative (MEPI) and Modernizing Extension Advisory Services (MEAS) to support WLI activities in Jordan. The main challenges encountered were security-related, particularly in Syria, and to a lesser degree in Egypt, Lebanon and Yemen. Nevertheless, many achievements were made, in spite of the disruptions, uncertainties and destruction of various research sites and facilities. The following are summaries of achievements categorized by the three main expected outputs of WLI.

Pilot testing integrated water and land use strategies

At the field level, over 1690 ha of land was brought under improved technologies or management practices. The WLI team developed and/or tested over 40 technologies currently under different phases of development (under research, under field testing, and made available for transfer). Technologies developed aimed to reduce water demand and increase water productivity. In Egypt, this work focused on the challenge to accurately measure water delivery to fields in traditional flood irrigation systems, exploring the use of systems for recording of pump operation times as a means to estimate volumes of water applied. Pumping

costs for different crops, which are associated with groundwater depth, as well as agricultural water demand, were also studied by the WLI Yemen team through a socio-economic survey. In Iraq, Lebanon and Syria, the research teams experimented with regulation of irrigation water application using surface and subsurface drip irrigation systems, and succeeded to identify opportunities for reduced water application without loss of production. Increased volumes of water for productive use were provided through the construction of water harvesting structures in Jordan and Palestine.

At the water basin scale, GIS decision-support tools were generated, refined and used by research teams in all seven countries. These varied according to the needs identified at the benchmark sites, but included land suitability maps for various crops and agro-ecosystems, as well as use of the Soil Water Assessment Tool (SWAT) and Water Evaluation and Planning (WEAP).

Enhancing knowledge, skills and qualifications

Efforts to enhance knowledge focused on farmers and national researchers. A total of 288 key stakeholders at the benchmark sites benefited from short-term training supported through WLI to enhance their qualifications, skills and capacities to develop and implement improved strategies for management of land, water and livelihoods. This was done through field days/demonstration sites, and targeted trainings. In addition six graduate students from the region were supported through WLI to conduct research at selected benchmark sites in Jordan, Syria and Iraq. A PhD student from the University of Illinois at Urbana Champaign (UIUC) also began his research at the benchmark site in Jordan in close collaboration with the National Center for Agricultural Research and Extension (NCARE), University of Jordan (UJ), and ICARDA. Research toolkits were developed by graduate students from the

University of Florida (UF) for use by WLI teams to analyze the contributions of men and women to rural livelihoods, to conduct online research, and to design scientific posters. Three regional and several national trainings also took place in Iraq, Lebanon and Palestine during the reporting year.

The WLI research team members made significant progress towards the development of publications over the course of the year. Four draft scientific publications are under development by the Egypt team, and five draft scientific papers are under development by the Iraq team. In Jordan, some reports were produced by UF. In Lebanon, the team is in the process of finalizing a report and a scientific paper on the irrigation of eggplants. Four research reports are under development in Palestine to be completed in early to mid-2013. The research team in Syria has produced four publications (three in Arabic and one in English), and is making effort to publish more. Several draft reports have also been submitted by the WLI team in Yemen for review by ICARDA scientists.

Improving livelihoods of rural households

Contributions towards strengthening the WLI livelihood assessment framework were made by ICARDA's Social, Economic, Policy and Research Program (SEPRP) during 2012, focusing on the five capital assets associated with the Sustainable Livelihoods Framework: human, physical, natural, financial and social (Scoones 2009). Templates for conducting focus group discussions to identify roles of men and women in rural livelihoods were tested in Jordan. The refined discussion questions will be shared with other WLI partnering countries to collect additional data to complement existing socio-economic database in the respective sites.

During this year, the WLI teams identified a core set of indicators corresponding with these five capitals and assets, and continued work on the compilation of baseline data. Socio-economic characterizations of selected benchmark site were completed in Egypt and Lebanon. A socio-economic focal point was identified by the SEPRP team to assist the WLI team in their efforts to analyze economic water productivity.

Improvements in gross margins per hectare were made through the introduction of various water and land management strategies. For instance, in Iraq this was achieved through greenhouse technologies that increased water use efficiency and yield; in Lebanon through the introduction of improved irrigation technologies to grow eggplants; and in Palestine through improved food processing practices.

Table 1: Comparison of average net revenue of tomatoes grown year-round in greenhouses and those grown off-season through traditional practices in Iraq

	Productivity (Ton)	Price US \$ per ton	Total revenue per ha (US \$)	Total cost per ha (US \$)	Net revenue per ha (US\$)
Eggplants grown in greenhouses/ha	54	750	40,500	18,000	22,500
Traditionally grown eggplants/ha	7	330	2150	1,900	2511

All achievements were celebrated through the 4th Regional Coordination Meeting and the 5th Steering Committee Meeting held in Cairo, Egypt in November 19-21, 2013.

For more information please visit the WLI website at <http://temp.icarda.org/WLI/> or contact the Project Manager, Dr. Caroline King at c.king@cgiar.org

Reference:

Scoones I., (2009), Livelihoods perspectives and rural development. *Journal of Peasant Studies* 36(1):171–196.