



2013 Highlights

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 WLI Newsletter

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). The goal of WLI is to improve the livelihoods of rural households through pilot testing integrated water and land management strategies, focusing initially on selected benchmark sites in Egypt, Iraq, Jordan, Lebanon, Palestine, Syria, Tunisia, and Yemen.

The year 2013 witnessed progress both in research and overall operations of the Initiative. Two bilaterally funded programs for Iraq and Tunisia were launched offering new opportunities and models for engagement of US and regional research capacities. The research agenda was strengthened with increased collaboration and partnership. During 2013 the United States Department of Agriculture-Agricultural Research Service (USDA-ARS) increased its engagement in the WLI taking a prominent role in the WLI Tunisian Program.

Results demonstrated through pilot testing included improved water productivity, reducing agricultural water demand, as well as increased production efficiency, in line with the United States Agency for International Development's (USAID) new *Water and Development Strategy*. Pressing conceptual and methodological challenges were tackled through regional knowledge exchange events that brought together experts from National Agricultural Research and Extension Services (NARES), ICARDA scientists, as well as Regional and US university partners.

WLI's regional thematic research groups on water use efficiency, decision support tools and models for integrated water and land management, and socio-economics were all reinitiated and reactivated during the reporting year. Various knowledge dissemination strategies were also pursued, including field days to demonstrate results of pilot tested strategies, journal

publications (both peer reviewed and published in regional journals) through which WLI contributed to international research and development *fora*, posters, and newsletters. A regional Working Paper Series was outlined and several issues drafted. A Country Research publication series to be supported by ICARDA was also announced. Highlights of progress made towards WLI's three expected outputs are presented below.

Pilot testing integrated water and land use strategies

At the field level, over 950 ha of land was brought under improved technologies or management. A list of technologies tested during the year is presented below.

Country	Improved technologies or management practices
Jordan	Marab for barley, water harvesting technologies (6 types), and drought resistant shrubs
Palestine	Water harvesting techniques (4 types), new crop varieties, cultivation practices including fertilizer application and direction of ploughing
Lebanon	Water harvesting for cactus, conservation agriculture, good ag. practices, IPM, deficit irrigation and introduction of new varieties (grape, apricot and cactus)
Syria	Green manuring and fertigation, deficit irrigation, new high value crops
Tunisia	Water harvesting practices, livestock feed and watering strategies including marginal water use and cactus, supplemental irrigation, alley cropping, deficit irrigation, use of saline water
Yemen	Supplemental irrigation
Iraq	Deficit irrigation, surface and sub-surface drio, greenhouses, organic fertilizers and amino acids. Livestock and forage production
Egypt	Irrigation water scheduling, soil improvement

Various system level monitoring, mapping and modeling activities were also undertaken, including watershed stream flow and land suitability mapping; analysis of land cover change and ground water survey data; estimating evapotranspiration volumes; reviewing policies, etc.

Preliminary strategic recommendations emerging during 2013 focused on understanding and improving current and future water balance scenarios which form the basis for land and water management planning and subsequent recommendations for policy makers. Climate scenarios and cost benefit analysis of adaptation options to improve agricultural water management were introduced to the WLI research agenda through the WLI Tunisia program. The WLI Iraq program proposed to connect agricultural water management to value chain analysis through the Harmonized Support for Agricultural Development (HSAD) project. Strategic attention to water sustainable value chains was also proposed for an enlarged WLI activity in Yemen. Strategic recommendations were supported by land cover, land use and land suitability maps.

Enhancing knowledge, skills and qualifications

In 2013, close to 600 stakeholders at the benchmark sites benefited from short term training to enhance their qualifications, skills and capacities to develop and implement improved strategies for water and land management. Efforts to place three postdocs are underway. Through a regional knowledge exchange workshop, research team members explored the further application of various decision support tools, including Crop-Water response models, Water Evaluation and Planning (WEAP), as well as the Soil and Water Assessment Tool (SWAT), ModFlow and simple GIS-based tools for the development and analysis of climate change scenarios.

The WLI teams in Jordan and Palestine benefited from the Student Exchange Program that brought PhD students from University of Illinois at Urbana Champaign (UI-UC) and Texas A& M University (TAMU) to work on SWAT modeling as it applies to arid regions. Two regional knowledge exchange workshops were organized to discuss challenges in selecting and applying methodologies and research tools. Engagement of regional universities increased in 2013, with the American University in Cairo (AUC) developing a training activity on agribusiness, and the American University of Beirut (AUB) drafting a proposal to support the analysis of compiled field data and remotely sensed imagery. The University of Florida (UF) also engaged in research on women empowerment in the Jordanian Badia in close collaboration with the National Center for Agricultural Research and Extension (NCARE). Significant progress was also made in disseminating knowledge generated during the course of the program. A total of 18 scientific publications were developed to completion

during the year with some already published in international and regional journals. WLI's contribution to UNESCO's 2013 publication on International Cooperation on *Water Sciences and Research Free Flow* was promoted during World Water Week in Stockholm (Article available online at <http://digital.tudor-rose.co.uk/free-flow>). Country research papers reflecting the results from three years of work through the WLI programs in partnering countries are also under development.

Improving livelihoods of rural households

Pilot tested water and land management strategies are designed to improve the livelihoods of rural communities in partnering countries. A livelihood Assessment Framework was adopted in collaboration with ICARDA's Social, Economic, Policy and Research Program (SEPRP). Efforts to trace and project WLI's contributions towards improvements in the five capitals: natural, human, physical, financial, and social also began in the reporting year. Selected indicators from USAID's Feed the Future Initiative were adopted and used to target and track contributions towards improvements in these capitals. Among the most critical indicators is the gross margin per unit of land and water. This is calculated based on the volume of agricultural water consumption, as well as amount of investment required from the household budget for the production of targeted commodities, and the amount contributed.

Socio-economic characterizations of the benchmark sites in Lebanon and Syria were completed during the year. Plans for 2014 include a regional standardization database on livelihood characterization, and gender mainstreaming to ensure that the challenges and opportunities available for men and women are taken into full consideration during the development of water and land management strategies and their dissemination at a later stage. Sex disaggregated datasets will help the WLI further identify community needs and how technology is being adopted locally. Efforts to assess potential effects of these strategies on household income and other household assets will also continue.

For more information please visit the WLI website at <http://temp.icarda.org/WLI/> or contact the Project Manager, Mr. Kristofer Dodge at K.Dodge@cgiar.org