

Issue 99 | May 3, 2013 | Focus on Water and Food Security

The interdependence between food security and water resource management is significant. Food and Agriculture Organization (FAO) statistics state that globally agriculture consumes 70 percent of available freshwater resources and that global population growth projections of 2 to 3 billion people over the next 40 years, combined with changing diets, are expected to increase food demand 70 percent by 2050. Based on current use patterns, agricultural water consumption will increase by approximately 19 percent to feed a larger global population of 9.1 billion people. This issue of the Weekly contains USAID's new strategy on water development, reports on water and wastewater management for urban agriculture, and country studies from Ethiopia, India, Jordan, and other countries.

REPORTS

- **USAID Water and Development Strategy 2013–2018.** 2013. ([Full text](#)) | ([Summary](#))
The goal of USAID's Water and Development Strategy is to save lives and advance development through improvements in water supply, sanitation, and hygiene (WASH) programs, and through sound management and use of water for food security. The strategy's operating principles provide the foundation for how water issues will be integrated into USAID programming. These principles, consistent with the USAID Policy Framework, are essential to improving the outcomes of water programming.
- **Coping with Water Scarcity: An Action Framework for Agriculture and Food Security,** 2012. FAO. ([Full text](#))
Water scarcity is both a relative and dynamic concept and can occur at any level of supply or demand, but it is also a social construct: its causes are all related to human interference with the water cycle. The three main dimensions that characterize water scarcity are: a physical lack of water availability to satisfy demand; the level of infrastructure development that controls storage, distribution, and access; and the institutional capacity to provide the necessary water services.
- **Economic Performance of Water Storage Capacity Expansion for Food**

Security. *J. Hydrol.* 1(5) 2013. A Gohar. ([Full text](#))

Little peer-reviewed research to date has analyzed the economic benefits of water storage capacity expansion as a mechanism to sustain food security over long periods of variable climate and growing food demands. This paper develops and applies an integrated water resources management framework that analyzes impacts of storage capacity expansion for sustaining farm income and food security in the face of highly fluctuating water supplies.

- **Growing Greener Cities in Africa**, 2012. FAO. ([Full text](#))

Developing sustainable market gardens to serve African cities requires that policymakers first recognize the sector's current contribution to the urban food supply and to urban livelihoods. Then they will need to zone and protect land and water for market gardens and encourage growers to adopt eco-friendly "Save and Grow" farming practices that produce more while reducing food contamination risks and protecting the environment.

- **The Impact of Irrigation on Nutrition, Health, and Gender: A Review Paper with Insights for Africa South of the Sahara**, 2013. L Domenech. ([Full text](#))

The assessment of irrigation potential must go beyond large scale versus small scale to integrate concerns regarding environmental sustainability, resource use efficiency, nutrition and health impacts, and women's empowerment. The hypothesis underlying this review paper is that how irrigation gets deployed will be decisive not only for environmental sustainability and poverty reduction, but also for health, nutrition, and gender outcomes.

- **On-Farm Practices for the Safe Use of Wastewater in Urban and Peri-Urban Horticulture: A Training Handbook for Farmer Field Schools**, 2012. FAO. ([Full text](#))

This handbook is a field guide for training urban and peri-urban vegetable farmers in safe practices when using wastewater in vegetable production. It is designed to provide complete information, knowledge, and skills for safer and successful production of vegetables in urban and peri-urban farming systems.

- **Productive Sanitation and the Link to Food Security**, 2012. R Gensch, Sustainable Sanitation Alliance (SuSanA). ([Full text](#))

This fact sheet provides information on the link between sanitation and agriculture as well as related implications for health, the economy, and the environment. It presents examples of treating and using treated excreta and wastewater in a productive way and describes the potential for urban agriculture and resource recovery in rural areas.

- **Water-Energy-Food Security Nexus**, 2012. East West Institute. ([Video](#))

A panel of experts discuss the questions: What major gains can be achieved through private sector involvement in addressing water-energy-food security? What are the

critical issues that inhibit private sector involvement?

- **Water, Sanitation and Hygiene: The Missing Link with Agriculture**, 2013. D Tsegai, University of Bonn. ([Full text](#))

The authors discuss a holistic approach to the WASH and agriculture sectors. The paper reviews the body of literature dealing with WASH and irrigation agriculture, synthesizes the remarks, and concludes with suggestions to unravel the “nexus” between WASH and agriculture for a long-term health and nutrition impact.

- **Water Security Framework**, 2012. WaterAid. ([Full text](#))

WaterAid defines water security as: “Reliable access to water of sufficient quantity and quality for basic human needs, small-scale livelihoods, and local ecosystem services, coupled with a well managed risk of water-related disasters.” This report focuses on the provision of water for basic human needs while acknowledging other water uses (e.g., agriculture, industry, livelihoods, ecosystem services, and the environment) are important and closely interlinked.

COUNTRY STUDIES

- **Ethiopia –Voices from the Source: Struggles with Local Water Security in Ethiopia**, 2013. M Dessalegn, Overseas Development Institute. ([Full text](#))

This assessment explored local water security in two very different sites in rural Ethiopia—a pastoral district in the eastern Somali region (Shinile), and a somewhat remote agricultural district in the south (Konso). Social relations emerge as critical for ensuring water security in a context where many face long and difficult journeys (and long lines) to access water, exacerbated by frequent drying and/or breakdown of sources.

- **India–Cities as Sources of Irrigation Water: An Indian Scenario**, 2012. P Amerasinghe, International Water Management Institute. ([Full text](#))

Growing Indian cities have the potential to support their peri-urban futures by providing irrigation water for food production. While the practice of peri-urban agriculture using city water is not a new phenomenon in India, its full potential has not been explored due to poor/marginal quality and lack of adequate institutional arrangements and dialogue for its effective use.

- **Jordan–Impact of Climate and Land Use Changes on Water and Food Security in Jordan: Implications for Transcending “The Tragedy of the Commons.”** *Sustainability*, (5) 2013. J Al-Bakri. ([Full text](#))

This study investigates the impact of climate change and land use change on water resources and food security in Jordan. Results indicate that problems of water scarcity and food insecurity would be exacerbated by climate change and increased population growth. To move from the tragedy of the commons towards transcendence, the study emphasizes the need for adaptive measures to reduce the impacts of climate change

on water resources and food security.

- **Nigeria–Pollution as a Threat Factor to Urban Food Security in Metropolitan**

Kano, Nigeria. Food and Energy Security, Apr 2013. M Dawaki. ([Full text](#))

According to this report, urban agriculture has multiple advantages and disadvantages. No one can doubt its significant contribution to the economy of the farmers and the state in terms of generating employment and income, as well as subsidizing the cost of vegetables in the city, but its overall consequences on the environment could be disastrous in the long term. The use of wastewater and municipal waste has resulted in soils that are fertile in some areas but also high in levels of toxic materials.

- **South Africa–Improving Crop Yield and Water Productivity by Ecological Sanitation and Water Harvesting in South Africa.** *Env Sci Tech*, Mar 2013. J

Andersson. ([Abstract](#), [author email](#))

This study quantifies the potential effects of a set of technologies to address water and fertility constraints in rain-fed, smallholder agriculture in South Africa, namely in situ water harvesting (WH), external WH, and ecological sanitation (Ecosan, fertilization with human urine).

Each WASHplus Weekly highlights topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at dacampbell@fhi360.org.



About WASHplus - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.

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