



PRESS RELEASE
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Blue Revolution Key to Getting “More Crop per Drop” and Strengthening Food Security

Worldwatch Institute’s Nourishing the Planet team highlights low-cost, small-scale initiatives to effectively manage water resources in agriculture

Washington, D.C.— Increasing demand for water continues to threaten the livelihood of millions of small-scale farmers who depend on water for their crops. At a time when one in eight people lacks access to safe water, the Worldwatch Institute’s Nourishing the Planet project (www.NourishingthePlanet.org) points to low-cost, small-scale innovations to better manage this vital resource. Worldwatch’s recently released *State of the World 2011: Innovations that Nourish the Planet* report showcases initiatives to increase the availability of water for crops that can help farmers improve crop productivity and become more food-secure.

Seventy percent of the world’s freshwater is used for irrigation, and global water resources are drying up as climate change takes hold and population growth continues. Sixty percent of the world’s hungry people live in South Asia and sub-Saharan Africa—most of them on small farms—where they do not have a reliable source of water to produce sufficient yields. “In sub-Saharan Africa, for example, only 4 percent of the cultivated land is currently equipped for irrigation, compared with 18 percent in the rest of the world. But there is great potential to expand irrigation with small-scale solutions,” says Danielle Nierenberg, Nourishing the Planet co-project director.

The Green Revolution of the 1960s led to a near tripling of global grain production and a doubling of the world’s irrigated area. It also demanded vast quantities of water. Agricultural investments have tended to focus narrowly on increasing crop yields, but there has been relatively little research and investment in ways to make better use of scarce water resources.

“As global food markets become increasingly volatile, efficient water management on farmers’ fields can help strengthen food self-sufficiency in the long-term,” says Nierenberg. Affordable innovations that boost agricultural development and meet the increasing demand on already-scarce water resources while also mitigating the impacts of climate change are more important than ever.

Over the past 15 months, the Nourishing the Planet team conducted on-the-ground research in 25 countries in sub-Saharan Africa. Researchers met with over 250 farmers' groups, scientists, NGOs, and government agencies that are working to alleviate hunger and poverty while also protecting the environment. "These innovations highlight agriculture's untapped potential to address some of the world's most daunting problems, especially in sub-Saharan Africa, where hunger and poverty are deeply entrenched," says Brian Halweil, Nourishing the Planet co-project director.

In sub-Saharan Africa, 95 percent of cropland depends on rain, and climate scientists predict that rainfall on the continent will decline in the coming decades. "Rain-fed areas with low agricultural yields, such as much of Africa, hold the biggest potential for getting 'more crop per drop,'" says Sandra Postel, director of the Global Water Policy Project and *State of the World 2011* contributing author.

Nourishing the Planet recommends three models for effective water management that can be replicated and scaled-up around the world:

Human-powered pumps. The foot-operated treadle pump enables 2.3 million farmers in the developing world—some 250,000 in sub-Saharan Africa—to boost crop productivity, improve harvest reliability, and raise incomes. The original \$35 version can irrigate 0.2 hectares with ground water; newer models can irrigate up to 0.8 hectares and cost no more than \$140 installed. These devices already generate \$37 million a year in profits and wages. In Zambia, International Development Enterprises worked with farmers to determine the most effective type of pump. The Mosi-O-Tunya pump is manufactured locally and delivers 25 percent more water per second than older versions.

Affordable micro-irrigation. A suite of low-cost drip irrigation technologies is helping farmers use limited water supplies more efficiently, often doubling water productivity. These systems deliver water directly to the plant roots through perforated pipes or tubes, and can come in the form of \$5 bucket kits, \$25 drum kits, or \$100 shiftable drip systems that irrigate up to 0.2 hectares. Solar-powered micro-irrigation drip systems are also making their debut in West Africa. One study found that after a year of using these systems, villagers in Benin had higher incomes and protein in their diets. Children attended school more often, since they no longer needed to spend their day collecting water.

More effective use of rainfall. Conservation tillage methods that leave the soil intact; timely weeding and mulching; and planting vegetative barriers all help to maximize green water, or rainwater stored in the soil and plants as moisture. Rainwater harvesting using small earthen dams and other methods also helps maximize rainwater utility. Supplementing these practices with irrigation may produce optimal results. In Kenya, Maasai women are working with the U.N. Environment Programme and the World Agroforestry Centre to build rooftop catchment tanks, which provide water for their households and save women time collecting water.

Satisfying the water requirements of the future while also coping with population growth, increasing consumption, persistent poverty, and a changing climate will take a commitment well beyond what has materialized to date. Support—and research and investment—from

governments, development agencies, and international and national NGOs can help make such technologies more accessible to smallholder farmers.

State of the World 2011: Innovations that Nourish the Planet is accompanied by informational materials including briefing documents, summaries, an innovations database, videos, and podcasts, all available at www.NourishingthePlanet.org. The project's findings are being disseminated to a wide range of agricultural stakeholders, including government ministries, agricultural policymakers, and farmer and community networks, as well as the increasingly influential nongovernmental environmental and development communities.

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Notes to Editors:

The accompanying policy brief based on the chapter, “Getting More Crop per Drop,” by Sandra Postel, published in *State of the World 2011*, is available [here](#).

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For review copies of *State of the World 2011: Innovations that Nourish the Planet*

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About the Worldwatch Institute:

Worldwatch is an independent research organization based in Washington, D.C. that works on energy, resource, and environmental issues. The Institute's *State of the World* report is published annually in more than 20 languages. For more information, visit www.worldwatch.org.

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