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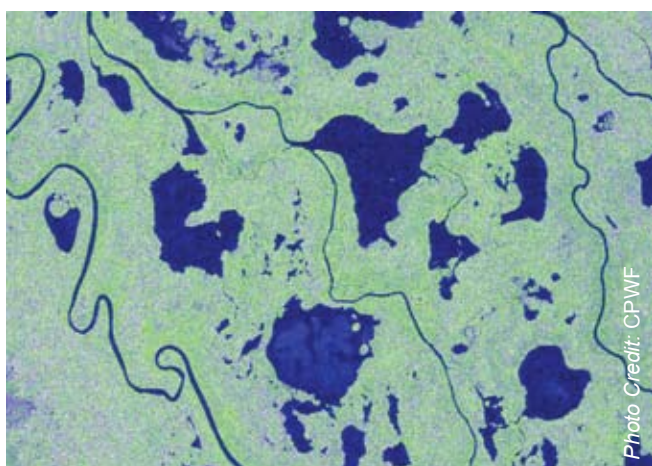
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# Finding ways to boost productivity and reduce poverty through better water management in Africa

## Water management in Africa

Project researchers gathered basic data and used it to identify actions with high potential to reduce poverty and increase productivity. Across sub-Saharan Africa, rain-fed agriculture accounts for more than 95% of farmed land. Water productivity, 'the volume of crop produced per drop,' tends to be low in rain-fed farming systems, while losses from evaporation are high. Land is often degraded, crops frequently fail because of prolonged dry spells, drought or floods, and few methods are in place for managing water more effectively. This low productivity results in food insecurity and poverty. Working from regional bases in Pretoria, Accra and Addis Ababa, IWMI undertakes projects concerned with water availability and access, productive water use, water quality, health and environment, and water and society with national and international partners.





*Mapping hydronomic zones helps researchers better understand interventions that can have optimal impacts in the Nile Basin.*

## Overcoming the drought of data

Because basic data are so often not available, many projects involve gathering and analyzing information. The recently completed Nile Basin Focal Project involved ten countries and covered an area of 3.3 million square kilometers (km<sup>2</sup>).

Using this data, researchers produced maps showing that water used in the Blue Nile is primarily for grasslands and rain-fed farming. Except in Egypt, water productivity and grain yields, particularly in rain-fed areas, are low. Researchers identified a number of agricultural water management solutions to increase productivity including wells with motorized pumps, spate irrigation – where floodwater from mountain catchments is diverted from riverbeds (*wadis*) and spread over farmland areas – and building micro-dams.

The findings were presented to the Nile Basin Initiative (NBI) at its 10<sup>th</sup> anniversary meeting in 2009. “Currently, the NBI is concentrating on ‘blue water’ irrigation,” says Seleshi Bekele Awulachew, Head, IWMI East Africa and Nile Basin office. “Our findings show that integrated agricultural water management that incorporates rain-fed agriculture is crucial for economic growth, as most people rely on rainwater for agriculture.”

## Increasing wealth with irrigation

IWMI scientists investigated the potential to boost Gross Domestic Product (GDP) in Ethiopia through irrigation. Of over 7 million hectares that could be irrigated, less than 10% has been exploited. The project sought to quantify the current and future direct benefits of irrigation to the national economy as well as

analyze the economic viability of investment in irrigation infrastructure.

## Working with partners

In western Africa, IWMI scientists are working with national institutions in Ghana to reduce the number of people who get ill or die from eating vegetables contaminated with wastewater. Farmers in and around African cities increasingly use wastewater to irrigate their crops, because it is the only water available to them. By identifying points along the food supply chain where contamination occurs, researchers are helping advise authorities on the best actions to take, for the least cost, to avoid its citizens getting sick. The World Health Organization (WHO) is using these trials to test its new guidelines on using wastewater for irrigation, while the Food and Agriculture Organization of the United Nations (FAO) is using them to develop modules for farmer field schools.

## Donors and collaborators

The CGIAR Challenge Program on Water and Food (CPWF) funded the Nile Basin Focal Project. IWMI, International Livestock Research Institute (ILRI), WorldFish Center, Nile Basin Initiative (NBI) and Eastern Nile Technical Regional Office (ENTRO) collaborated to implement the project.

The project, Impact of Irrigation on Poverty and Environment, was funded by the Austrian Government. The project was implemented by IWMI, Universität für Bodenkultur Wien (BOKU), Arba Minch University (AMU), Haramaya University (HU), Ethiopian Institute of Agricultural Research (EIAR), and Austrian Research Centers (ARC) Seibersdorf in collaboration with the Ministry of Water Resources and the Ministry of Agriculture and Rural Development in Ethiopia.

In its efforts to improve water quality in urban areas, IWMI works with WHO, FAO, the Department of Water and Sanitation in Developing Countries at the Swiss Federal Institute of Aquatic Science and Technology, University of Copenhagen, London School of Hygiene and Tropical Medicine, and Emory University in Atlanta, besides many others, including national partners.

## For more information

### Nile Basin Focal Project:

[bfpnile.iwmi.org/](http://bfpnile.iwmi.org/)

### Impact of Irrigation on Poverty and Environment project:

[eastafrika.iwmi.org/impact-of-irrigation-on-poverty-and-environment.aspx](http://eastafrika.iwmi.org/impact-of-irrigation-on-poverty-and-environment.aspx)

[eastafrika.iwmi.org/projects.aspx](http://eastafrika.iwmi.org/projects.aspx)

### The use of wastewater in agriculture:

[www.iwmi.org/Theme3/](http://www.iwmi.org/Theme3/)

[www.idrc.ca/openbooks/475-8/](http://www.idrc.ca/openbooks/475-8/)