



## **Solutions to agricultural water management: support smallholder irrigation**

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Irrigation and water management play an essential role in improving agricultural productivity and farmers' income in semi-arid regions, particularly under a changing climate. According to the FAOstat database and country statistics only 4-6% of the cultivated area in sub-Saharan Africa is equipped with irrigation and/or drainage facilities, making agricultural production vulnerable to droughts and floods. However, the official statistics describe only part of the agricultural water management landscape. Instead of relying on canal infrastructure provided by the public sector, an increasing number of smallholders take matters in their own hand and access local water sources using simple technologies such as watering cans, buckets and small motor pumps. Access to water allows them to supplement rainfed production by producing vegetables in the dry season. These smallholder private irrigators (sometimes referred to as the informal irrigation sector) fall outside the official statistics and largely remain under the radar screen of government officials and donors.

Smallholder private irrigation is initiated and financed by individual farmers or small informal groups of farmers, mostly without outside support from government, donors or NGO's. Using buckets, treadle pumps or small motorized pumps they access nearby water sources such as shallow wells, streams, lakes, small reservoirs and waterharvesting ponds. They irrigate small areas, typically less than one hectare, with cash crops (fruits and vegetables) sold on the local market. It provides millions of small poor famers in Asia and SSA with additional income and provides millions of city dwellers with fresh produce. Small farmers with access to water for agriculture have substantial higher incomes and better food security than those who solely depend on rainfed production. Reported increases in annual family income varied from by 250-950 dollars, a substantial sum for poor farmers. Not surprisingly the small private irrigation sector is growing much faster than the public irrigation sector, despite the lack of outside support.

The proliferation of smallholder private irrigation is largely spontaneous, anarchic and unregulated. While this has advantages it does also raise concerns on equity and gender, efficiency and the environment. Generally the better-off farmers have better access to water sources, information and technology than their poorer counterparts who face high upfront investment costs, absence of proper financing, and limited access to necessary information to make the right investment and marketing choices. This is particularly true for women farmers. The uncontrolled proliferation of small pumps and ponds can also lead to environmental damage and conflicts between upstream and downstream water users. The risks of conflicts over resources and environmental problems are aggravated by the individualistic and anarchic nature in which smallholder private irrigation spreads.

This presentation argues that the right investments in small private irrigation will increase access to agricultural water for small farmers who need it most while safeguarding the water resource base. The presentation outlines several solution pathways to maximize the benefits while addressing equity and environmental concerns.

This presentation is based on the results from the "Agricultural Water Management (AWM) Solutions project. For more information and findings please visit: [www.awm-solutions.iwmi.org](http://www.awm-solutions.iwmi.org)