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## Small-Scale Irrigation Nets Large-Scale Payoff

by Joe DeCapua

A new study shows small-scale irrigation systems could boost farmers' incomes by billions of dollars in sub-Saharan Africa and South Asia. The research was discussed at the World Water Week conference in Stockholm.

The study comes from the **International Water Management Institute**, winner of this year's Stockholm Water Prize. It said small-scale irrigation systems can protect millions of farmers from the effects of climate change and help ensure food security.

The institute said food prices are rising globally due, in part, to a failed monsoon season in Asia and a widespread, prolonged drought in the United States.

Timothy Williams, the institute's director for Africa, said prior to 2008 the world enjoyed a long period of low and stable food prices.

"That situation lulled the world into a point where investment in agricultural research declined. The stocks of food that were held around the world declined. And then bad weather in some of the major producing countries and speculation by commodity traders all led to a situation where we found ourselves in 2008," he said.

That was the beginning of the food crisis that extended into 2009. Since then, higher, more volatile food prices have become the norm.

"The forecast indicates that the era of low food prices is over. We will be experiencing increased food prices over the next few years. And what that does is to increase the vulnerability of very poor people in developing countries, who spend about three-quarters of their income on purchasing food," said Williams.

The report – *Water for Wealth and Food Security* – says the use of "smallholder water management techniques could increase crop yields up to 300 percent in some cases." Williams said that's a good return on low-cost investments.

"It includes the use of motorized pumps to access groundwater. It includes rainwater harvesting. It includes the construction of small reservoirs that a group of farmers can jointly use to irrigate their land. It also includes farming of low lying valley bottoms where there is residual moisture stored in the soil that can allow them to be able to farm all year round and not only during the rainy season," he said

The techniques are in contrast to the expensive dams and large-scale irrigations systems that were introduced in the 1960s, when many countries gained independence.

Williams says small-scale irrigation systems would be a major benefit to women farmers, who produce much of the food in developing countries.

"By providing access to women farmers you not only improve agricultural production, you also improve the household nutrition. Because women farmers, in addition to producing food for the market, also will have the opportunity to grow a variety of crops – not only staple crops – but also vegetables and fruits that can produce a balanced diet," he said

However, Williams said even though these systems cost only a few hundred dollars upfront, that's a few hundred dollars too much for many women farmers. Williams says that's why the **International Water Management Institute** promotes equity in financial aid. One example is a revolving loan that covers upfront investment costs with gradual repayments.

The irrigation systems are part of the three-year AgWater Solutions Research Initiative, which was funded by the Bill & Melinda Gates Foundation. It includes a number of international partners, such as the U.N. Food and Agriculture Organization and the International Food Policy Research Institute.

World Water Week is an annual event sponsored by the [Stockholm International Water Institute](#).

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