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Drought, food supply fears boost small-scale irrigation – study

By: Reuters
Published: 24 Aug 12

Farmers in South Asia and sub-Saharan Africa are increasingly taking up small-scale irrigation schemes as drought threatens the security of food supplies, a report by the International Water Management Institute (IWMI) said.

"With food security back on the international agricultural agenda, and climate change increasing the uncertainty of rainfall, it is an opportune time to reconsider investments related to irrigated agriculture," the study said on Friday.

Small-scale irrigation technology, such as motorized pumps and hosing to access groundwater, could cost a sub-Saharan African smallholder $250 or more but could improve crop yields by between 75% and 275%, the report said.

"Factors are working to potentially move the world into another food crisis like 2007-2008, triggered by a US drought and the late onset and irregularity of the South Asian monsoon," Colin Chartres, IWMI director general, said in an interview.

"If there is more investment in small-scale irrigation, it means food supply in those countries is more secure. It won't replace the need for staple cereal crops, but it gives farmers more insurance against a food crisis."

Small-scale irrigation schemes usually cover areas less than 2 hectares. Farmers largely initiate and finance irrigation equipment individually or in small groups and use low-cost technologies such as buckets, watering cans and pumps.

In Ghana, around 185 000 hectares are under small-scale irrigation schemes, benefiting half a million smallholders, and some 170 000 farmers in Burkina Faso water vegetable crops in the dry season using small-scale irrigation, the IWMI estimates.

Vegetable production has nearly tripled in the Burkina Faso to 160 000 tonnes in 2005 from 60 000 tonnes in 1996 and is still growing, the report said.

FOOD, WATER TOP THE AGENDA

Food and water security are high on the world's agenda as the United States experiences its driest summer since the 1930s, sending grain prices to all-time highs and raising the spectre of a food crisis such as in 2008.

Climate change is also increasing the uncertainty of rainfall, meaning that groundwater supplies are not being replenished and rainwater is difficult to collect to feed crops.

The majority of the world's poor live in South Asia and sub-Saharan Africa and most of these people live in rural areas and work in agriculture.

Sub-Saharan African agricultural productivity is the lowest in the world, mainly due to poor water availability, access and management, while frequent droughts, flood-prone terrains and waterlogging after monsoons hinder productivity in South Asia.

So far, investors have largely focused on large-scale irrigation schemes, run by the government or big companies, which collect water over several thousand hectares in dams.

But doubling the area under large-scale irrigation in sub-Saharan Africa would only raise the contribution of irrigated agriculture to food supply to 11% by 2050 from the current 5%, the report said.

Small farmers in sub-Saharan Africa and South Asia are increasingly trying to access shallow groundwater, rivers, lakes and reservoirs or harvest rainwater to cultivate their land rather than waiting for dams to replenish water supplies.

Investment in motorized pumps in sub-Saharan Africa could benefit 185-million people and generate net revenues up to $22-billion a year, the report estimated.

Upfront costs could be cut by giving farmers access to loan capital and offering subsidies, while equipment costs could be reduced through leasing, rural credit cards, micro-finance and savings groups, the IWMI said.

The world currently extracts around 4 000 cubic kilometres of fresh water per year, and 70% - 80% of this is used for food production.

"If we continue with business-as-usual practices, we would almost need to double that (extraction) amount by 2050 and we don't have it to extract," Chartres said.

"We are going to have to come up with ways of making water go much further if we are going to grow 70% more food by 2050 on about 10% less water than we use today."

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