



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



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Smart water management can help avert climate-induced food shortages

Uncertainty over precise impact of rising temperatures and extreme weather should not stall efforts to adapt water management and food production systems, say scientists

(Warsaw, Poland – November 15th 2013) - Climate change will have a “profound” impact on water resources that could have serious knock-on effects for agriculture, according to a new report published today.

Produced by scientists at the International Water Management Institute (IWMI), the report argues that while the exact impact of climate change on water resources requires ongoing research, the development of more resilient food production systems based on smarter water use is the most robust response.

“It’s quite simple: for the world to feed 9.6 billion people in 2050, it needs to significantly improve water management to produce more food, meet the increasing demands of other water users and address the challenges created by climate change,” said Peter McCornick, deputy director general for research at IWMI and one of the lead authors of *Tackling Change: future-proofing water, agriculture and food security*.

“The threat needs to be taken very seriously.”

The report, which synthesizes years of IWMI research, was funded by CGIAR’s Climate Change, Agriculture and Food Security Research Program (CCAFS), a multi-million dollar, global effort to help smallholder farmers adapt to climate change. Funding was also provided by CGIAR’s Water, Land and Ecosystem Program (WLE). Publication coincides with the United Nations International Year of Water Cooperation, which aims to focus public attention on water issues worldwide.

Mounting pressure

With around 95% of farmers in sub-Saharan Africa already depending on often unreliable seasonal rains, and sharp declines in groundwater in parts of Asia largely due to demands from agriculture and competition from industry and cities, water shortages are likely to make food production in these areas increasingly precarious.

Now, projected rises in average temperatures, more extreme weather and changes in precipitation patterns are expected to exacerbate the problem, further affecting vast swaths of arable land. But uncertainty over exactly what the effects will be should not stall efforts to reduce the risks to farmers, the authors warn.

“What’s certain is that these changes, from climate and other factors, are not going to wait for us,” continued McCornick. “This means we have to be clear about our priorities and make significant investments in ‘no-regrets’ solutions—for improving water storage and water access and sustainably boosting farm productivity—that make sense regardless of the impact of climate change.”

“If we’re not proactive, we’re very likely to see climate change intensify the stresses on our water resources, especially in many of the world’s poorest and most water-scarce countries. As well as threatening food production at the farm level, this could also cause lasting damage to complex ecosystems that currently support hundreds of millions of people.”

The report details a range of options for governments and communities to “future-proof” food production, which, if combined, could significantly improve the use of water in agriculture. These range from small-scale methods for storing rainwater on-farm and using it more efficiently to large infrastructure investments, such as dam and reservoir construction. Underground water storage to capture floodwater is highlighted as one promising new avenue of research.

The report also stresses the need for more equitable access to water for women and marginalized groups to ensure they are not disproportionately burdened by the effects of climate change. It also flags the need for improved institutional processes to ensure water management policies are implemented effectively.

“We’ve seen that we can enhance livelihoods and food security through a research agenda that explicitly links improved agricultural water management, food security and climate change and that works to understand and reduce the vulnerabilities of farming households,” continued McCornick. “Now we need to re-double efforts to fine-tune and implement these solutions, to build the resilience of smallholders and the food production system as a whole.”

Tackling change: Future-proofing, water, agriculture and food security is published today. You can download a copy here:

http://www.iwmi.cgiar.org/Publications/Books/PDF/tackling_change_future-proofing_water_agriculture_and_food_security_in_an_era_of_climate_uncertainty.pdf

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The **International Water Management Institute (IWMI)** is a non-profit, scientific research organization focusing on the sustainable use of water and land resources in developing countries. It is headquartered in Colombo, Sri Lanka, with regional offices across Asia and Africa. IWMI works in partnership with governments, civil society and the private sector to develop scalable agricultural water management solutions that have a real impact on poverty reduction, food security and ecosystem health. www.iwmi.org

CGIAR is a global research partnership that unites organizations engaged in research for sustainable development. CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring more sustainable management of natural resources. It is carried out by the 15 centers who are members of the CGIAR Consortium in close collaboration with hundreds of partner organizations, including national and regional research institutes, civil society organizations, academia and the private sector (www.cgiar.org).

The [CGIAR Research Program on Climate Change, Agriculture and Food Security \(CCAFS\)](#) seeks to overcome the threats to agriculture and food security in a changing climate, exploring new ways of helping vulnerable rural communities adjust to global changes in climate. CCAFS brings together the world's best researchers in agricultural science, climate science, environmental and social sciences to identify and address the most important interactions, synergies and trade-offs between climate change and agriculture. CCAFS is implementing a uniquely innovative and transformative research program that addresses agriculture in the context of climate variability, climate change and uncertainty about future climate conditions.