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Working to ensure a water and food secure world

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Working to ensure a water and food secure world.



Water for Food
DAUGHERTY GLOBAL INSTITUTE
at the University of Nebraska



Growing world, growing challenges

We're going to need a bigger table. We'll have 200,000 more people at the global dinner table tonight than were there last night. By 2050, we'll have nearly 10 billion people to feed. And, our population is not only growing, it's growing wealthier. As more people move out of extreme poverty, there will be mounting demand for a wider range of foods, including meat and dairy products. Increasing populations and urbanization will require more water for human and environmental uses.

Escalating populations, rising incomes and competition for water are just a few of the constraints to ensuring food and water security for future generations. There are also the devastating effects of climate change — turning farmland into deserts, intensifying crop water demands and causing wide fluctuations in water supplies. Concerns for groundwater sustainability are growing, as water tables in many parts of the world

are depleted due to over pumping. Nearly a third of the world's cropland is losing topsoil faster than new soil is forming, making land less fertile and reducing yields. And while advances in agricultural research and technology have helped improve crop production for decades, it is deeply dependent on water, consuming 70 percent of the world's freshwater withdrawals.

Solutions through partnerships and innovation

The daunting issues surrounding water and food are globally important. With a generous





gift from the Robert B. Daugherty Foundation, the University of Nebraska founded the Water for Food Global Institute in 2010 to address the universal challenge of achieving food security while maintaining water supplies to meet other vital necessities for people and the environment. Located in one of the world's major farmland regions and in a state known for its technological and institutional innovation, the University of Nebraska has nearly 150 years of leadership in agriculture and water management. The institute leverages the University's expertise and extends it through strong international partnerships with other universities, businesses, non-governmental organizations and foundations, and government agencies. It works through research and policy development, education and communication to enhance knowledge, build capacity and develop effective techniques to sustainably manage water and increase food security. The institute's impact is achieved through the work of more than 100 faculty fellows, associate fellows, post-doctoral researchers and students in a wide variety of fields who pursue projects focused on increasing water and agricultural productivity.

Focused approach

The Water for Food Institute works to bridge the worlds of large-scale and smallholder agriculture, concentrating on impact areas that are vital to water and food security both in Nebraska and globally:

- *Closing Water and Agricultural Productivity Gaps*, building on the pioneering work of the Global Yield Gap and Water Productivity Atlas, as well as the University's expertise in plant breeding and biotechnology development, to reduce productivity gaps in crop and livestock systems.
- *Improving Groundwater Management for Agricultural Production*, drawing on the vast experience of Nebraska's water governance institutions and farmers, focusing on scientific and policy research to improve understanding of the human and natural dynamics of groundwater.
- *Enhancing High Productivity Irrigated Agriculture*, working in partnership with the private sector, NGOs and social entrepreneurial groups to provide research, technology transfer, education and outreach to further the goal of increasing water productivity in all forms of irrigated agriculture.
- *Freshwater and Agricultural Ecosystems and Public Health*, ensuring that efforts to improve water and food security also advance public health and protect ecosystem integrity, advancing the University's expertise in natural resources management, water quality analysis and public health.



Measurable impacts

The Water for Food Global Institute seeks to ensure a food and water secure world: helping farmers everywhere increase production while using water more effectively, contributing scientific and policy research that informs decision-making and educating future leaders.

Success is measured through changes in knowledge (e.g. as a result of research results shared at conferences or other engagement activities), action (e.g. changes in policies or practices that result from knowledge gained), and condition (e.g. improvements in water and food security that result from actions taken). Following the objectives and benchmarks set in its five-year strategic plan, the institute has a strong foundation and clear direction for achieving results.

From research projects literally in the soil, to satellite moisture sensor technology in space, from policy development in community meetings, to education shared through the Water for Food Global Conferences, the institute is producing results that matter — increasing food security with less stress on scarce water resources. Like millions of families around the globe, we want to put dinner on the table ... for everyone.

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