



The Daugherty Water for Food Global Institute at the University of Nebraska

## **Strategic Direction | 2024-2028**

*Revised: September 30, 2024*

### **Mission and Vision**

The Daugherty Water for Food Global Institute's mission is to have a lasting and significant impact on achieving more food security with less pressure on scarce water resources by conducting scientific and policy research, using the research results to inform policy makers, and sharing knowledge through education and communication. Our vision is for a food and water secure world: one in which global food security is ensured without compromising the uses of water to meet other vital human and environmental needs.

### **Progress**

Since its founding at the University of Nebraska in 2010, the institute has grown to become a globally preeminent and influential research organization focused on improving water management in agricultural and food systems. Our comparative advantage is that we are the only research entity in the world whose activities explicitly span from smallholder settings to high productivity commercial agriculture, and include addressing human and ecosystem health in these systems. We recruit world-class researchers who provide mentoring and support to promising early career professionals.

Partnerships are key to our success, our reputation, and our impact pathways. Our global professional network allows us to facilitate, convene, and lead multiple strategic partnerships and creative collaborations. Our worldwide collaborators include local, state, and national government agencies, multilateral organizations, for-profit and nonprofit private-sector enterprises, and educational and research institutions.

### **Goals**

Over the next decade to 2034, we will build on our strong foundation. We will strengthen our actions and recognition as global thought leaders in water management in agricultural and food systems and related human and ecosystem health. To succeed, we will make Nebraska the global focal point for developing career opportunities and leadership trajectories for people working in water and food security. Our commitment is to:

- Take a systems-based, interdisciplinary approach to our three focus areas:
  - Water management for high-productivity commercial agriculture
  - Smallholder agricultural water management
  - Environmental and human health in agricultural systems

- Build needs-based multidisciplinary programs with clearly defined impact pathways
  - For our partners outside of the University of Nebraska System, we will:
    - Develop projects and creative partnerships, including with the CGIAR system and multilateral donors, with entrepreneurial ecosystems, and with nonprofit and for-profit enterprises
    - Provide engagement, capacity building, and mutual learning opportunities, as well as access to a talent pipeline for Nebraska and the world
  - For our partners within the University of Nebraska System, we will leverage our networks to support our students, faculty, and staff for collaboration and professional development
- Use our research and policy analysis results to inform decision- and policymakers, water managers, and influencers in food and water security through strategic communication and engagement activities

### **Direction**

The institute has a dedicated core staff which is small (dozens of people) when compared to many of our strategic partners (who employ hundreds or thousands of people). We are part of the University of Nebraska System and incorporate the regional, integrative activities of the federally-established Nebraska Water Center and the Water Sciences Laboratory, which is the largest university-based water chemistry lab in the United States. We also incorporate the Water, Climate and Health program of the University's College of Public Health. To achieve our ambitions, we must recognize the opportunity cost of our time and personnel, concentrate our efforts where we can use our strengths to produce significant local and global impacts, and lean into our strategic partnerships.

The institute recognizes the opportunity it has to create a talent pipeline for the next generation of food and water security professionals. We can provide world-class experiential learning opportunities for students as well as mentoring and growth opportunities for early career researchers. We will continue to serve the State of Nebraska and draw upon our physical location in an agricultural state with decades-long expertise in water policy, economics, and governance, as well as in drought mitigation and management.

### **Focus Areas**

1. Water management for high-productivity commercial agriculture
  - The institute is a trusted expert in technology and management practices related to high-productivity commercial agriculture. We will continue to innovate practices, technologies and decision support systems that can be applied and integrated into water-wise and climate-smart agricultural systems that are both productive and sustainable. This includes use of our network of water and carbon-equivalent flux towers and relevant analytical tools, as well as analyzing and catalyzing the entrepreneurial ecosystem.

## 2. Smallholder agricultural water management

- The institute has growing recognition for its expertise in understanding and strengthening the sustainable scaling of productive smallholder agriculture. This includes research on improved water management and on the enabling finance, business, and policy environment. Through our collaborations and strategic partnerships, our intent is to support the development of resilient agricultural systems that protect those most vulnerable to the effects of climate change and other shocks; provide capacity building and professional development to local partners; create new equitable livelihood opportunities; and increase nutritional security at the household, community and national levels. Our leadership of the Feed the Future Innovation Lab for Irrigation and Mechanization Systems provides a platform to develop and deepen global research and outreach networks centered around equitable, market-based pathways to commercialize smallholder production.

## 3. Environmental and human health in agricultural systems

- The institute works to ensure that efforts to improve water and food security also advance public health and protect ecosystem integrity, drawing on the university's leadership in regenerative agriculture, natural resources management, water stewardship, water quality analysis, drought mitigation, nutrition and public health. We will collaborate with internal and external partners to increase our knowledge regarding the challenge of water quality degradation in Nebraska and elsewhere in the world. This includes collecting and analyzing water quality samples; characterizing the issues using the best available scientific knowledge and tools; developing and testing potential solutions in at-risk areas; understanding the relationship between water quality and potential health issues; and studying the interconnections between water related shocks and human health. We will continue to support and convene events, address questions from stakeholders and facilitate constructive dialogue.

## **Cross-Cutting Areas**

### • Education and capacity building

- The institute will intentionally and strategically increase emphasis on developing the knowledge, skills and capabilities of the next generation of water and food leaders. We will create a pipeline of talented professionals, while also building capacity in relevant industries and other stakeholder and partner organizations. In collaboration with colleagues across the University of Nebraska System and our external partners, we will develop mission-relevant education and professional development opportunities. These educational opportunities may include degree programs, certificates, courses, workshops and microcredentials to be offered in person, online and in hybrid formats. The majority will be offered by other University of Nebraska units or external partners in collaboration with DWFI. These will include experiential learning opportunities, entrepreneurship programs, and strong engagement with industry and other partners.

- Communication & convening
  - The institute’s communications activities play a key role in developing its brand reputation and industry authority; ensuring brand awareness and recognition; and ultimately, contributing to changes in knowledge, action or condition. Our communications team is integrated with our research and policy work throughout project life cycles. This helps the institute to facilitate its research, policy, education and development goals through strategic and integrated multichannel communication with the institute’s audiences at the regional, national and international levels. Additionally, the communications team plays an important role through its event management and development activities, including for our Global Conferences. As a whole, our communication and convening activities allow us to engage with new partners and to provide enhanced support to existing partners. We will continue to develop mission-relevant communications activities, analyzing their effectiveness and adapting strategies as the changing technology and media landscape alter how to best reach our key audiences.