

ICBA, US research centers lead \$4m project to help MENA region respond to drought

Dubai, UAE, July 13, 2016: The Dubai-based International Center for Biosaline Agriculture (ICBA), the National Drought Mitigation Center at the University of Nebraska-Lincoln and the Robert B. Daugherty Water for Food Global Institute at the University of Nebraska are co-leading a \$4-million research effort. The project is designed to help the Middle East and North Africa region balance water consumption and increase agricultural productivity, with a focus on drought management.

The U.S. Agency for International Development is funding the one-year MENA Regional Drought Management System project through March 2017. One million dollars of the total grant is designated for the research activities conducted by the NDMC, WFI and UNL's Center for Advanced Land Management Information Technologies.

The project has two major parts: improved drought monitoring information and working with stakeholders across the water-scarce region to understand how this information can improve decision-making, said Michael Hayes, drought center director and principal investigator for the project.

"This project is a great opportunity for the University of Nebraska to capitalize on our strengths related to drought, water efficiency and remote sensing in the region," Hayes said.

Researchers include a team of experts from the drought center; Brian Wardlow, CALMIT director; Christopher Neale, institute director of research; and collaborators from the University of Maryland and the USDA Agriculture Research Service. Together they are developing composite drought indices for the region that individual countries may use to improve planning. Composite indices incorporate data collected from satellite remote sensors with data collected on the ground. For their part, scientists at ICBA are generating monthly maps.

"Our role is to produce the daily, satellite-based evapotranspiration product," Neale said. With support from UNL's Holland Computing Center, Neale and the project's collaborators analyze the data and provide it to planners who then use it to calculate the water balance within watersheds and estimate water productivity at field scales. Learning to predict crop yields based on field-level evapotranspiration and improve water productivity is an urgent need for agriculture in areas of the world that are chronically water-stressed.

Rachael McDonnell, head of Climate Change Modeling and Adaptation Section at ICBA, said: "The partnership between the University of Nebraska-Lincoln and ICBA is invaluable in bringing together international and MENA regional expertise to empower local decision-makers to better manage droughts in these water-insecure countries."

While monitoring tools are being developed, the drought and agriculture research centers are focused on helping governmental agencies and commodity groups better understand the water needs of the MENA region as well as its drought vulnerabilities. ICBA has been conducting stakeholder needs assessments in each country. These findings will be presented at town hall-style forums planned for Tunisia, Morocco, Lebanon and Jordan from September through November. Insights gained from those meetings will help improve the effectiveness of tools developed during the project.

This project involves close collaboration with several United Nations activities and organizations, including the Food and Agriculture Organization.

The Middle East and North Africa region has the lowest level of renewable water resources per capita and the highest proportion of water withdrawals, compared with other major regions of the world.

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About ICBA

The International Center for Biosaline Agriculture (ICBA) is an international, non-profit organization that aims to strengthen agricultural productivity in marginal and saline environments through identifying, testing and facilitating access to sustainable solutions for food, nutrition and income security.

www.biosaline.org

About the National Drought Mitigation Center

The National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln was established in 1995 to help people and institutions develop and implement measures to reduce societal vulnerability to drought, stressing preparedness and risk management rather than crisis management.

www.drought.unl.edu

About the Water for Food Global Institute

The Water for Food Global Institute (WFI) at the University of Nebraska was founded in 2010 by the Robert B. Daugherty Foundation to address the global challenge of achieving food security with less stress on water resources through improved water management in agricultural and food systems. It is committed to ensuring a water and food secure world while maintaining the use of water for other human and environmental needs.

www.waterforfood.nebraska.edu

About the Center for Advanced Land Management Information Technologies

The Center for Advanced Land Management Information Technologies (CALMIT) at UNL is recognized as a center-of-excellence for education and research focused on remote sensing, geographic information systems and global positioning systems. The people and partners of CALMIT combine interdisciplinary expertise in advanced land management information technologies.

www.calmit.unl.edu