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ACES-led consortium visits Africa to launch soybean project

A farmer in Zambia stands where she will soon be planting soybeans.

After a visit to Sub-Saharan Africa in early December, Dr. Peter Goldsmith's research team is well-placed to begin establishing its proposed program that will assure a strong soybean research system in Africa.

Goldsmith, an agricultural economist in the College of Agricultural, Consumer and Environmental Sciences (ACES) who is leading a consortium funded by the United States Agency for International Development (USAID), said the project's first official trip allowed many members of the team to meet their key African partners, assess the current plight of the soybean in Africa, and visit the project's research center. Additionally, he was happy to confirm this new project, which supports a foundation of basic on-site specialized research, is truly "new and novel" with regards to soybean in Africa, and therefore well positioned for success.

"The assumption has been that if you put soy in the ground, it will grow; they [promoters] haven't worried about the underlying research. Our project, however, promotes setting up the necessary research infrastructure. For example, we will start with basic plant breeding to answer the fundamental questions such as which lines might thrive," he explained.

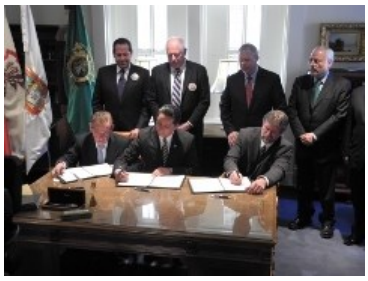
Instead of focusing on the farm, the new ACES-led project, referred to in short as the Soybean Innovation Lab (SIL), will start by helping those who help the farmer.

"Prior to this project, funders have focused on directly engaging farmers, but in the case of soybean in tropical settings that engagement is scant on underlying research. So instead we will work to support the people and organizations who support the farmers; it's similar to the concept we employ in the land-great system where research precedes extension. Unfortunately the research infrastructure is weak in the case of soybean. That's where SIL comes in," added Goldsmith.

The underlying challenge is that soy is unlike other crops grown in Africa.

"The mindset of 'a crop is a crop' will not work with soy in Africa because its challenges are very different from those of maize or cowpea or native beans. Soy is a non-native, non-staple, and commercial crop, thus the adoption process is not straight forward. Most non-governmental organizations (NGOs) and agencies work with multiple crops, but with soy, we still need to answer fundamental questions. Our team will serve as a hub to bring together this community that hasn't previously understood how different soy is from other crops," Goldsmith explained.

UI expands collaborations with Mexico



To promote collaboration and create opportunities for expanded trade between Mexico and Illinois, the University of Illinois has established an official partnership with the Universidad Autónomous del Estado de México (UAEM) and the Mexican-based Foundation for Regional Development and Competitiveness (FUNDECO). The partnership became official on February 11, 2014, at the Governor's Mansion in Springfield with a signing of a Memorandum of Understanding (MOU) document by Dean Robert Hauser, representing the U of I, and Dr. Jorge Olvera García, the rector of UAEM. Gov. Pat Quinn of Illinois and Gov. Eruviel Ávila of the State of Mexico also signed the document as honorary witnesses.

"This agreement is a continuation of the College's ever increasing involvement with institutions in Mexico," noted Dean Hauser. "We have forged similar agreements with institutions such as the Univesidad Nacional Autónoma de México (UNAM), El Colegio de Postgraduados, and the Autonomous University of San Luis Potosí, the latter, of which has resulted in several projects pertaining to obesity in our respective countries. Additionally, we have fostered dually funded research programs with the Mexican government and Mexican universities, for example, the University of Querétaro. This new relationship with UAEM has tremendous possibilities for both Illinois and Mexico as we collaborate to realize our shared interests in agricultural, nutritional, and economic benefits," Hauser added.

Upcoming Events

April 17: ACES Distinguished International Lecture featuring Dr. Roberto Lenton

Dr. Lenton is the Executive Director of the Robert B. Daugherty Water for Food Institute at the University of Nebraska and a Professor in Biological Systems Engineering at the University of Nebraska-Lincoln.

May 13 - May 15: Water Quality 2014 Conference at I-Hotel

http://www.accwa.net/water-quality-2014/

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Cooke designs rainfall harvesting systems in Sierra Leone

The swamp being developed by Cooke and his team.

Dr. Richard Cooke, associate professor and drainage extension specialist in the Department of Agricultural and Biological Engineering, spent fall semester 2013 at Njala University in Sierra Leone designing rainfall harvesting systems to increase agricultural productivity in the country's inland valley swamps.

"Despite the large amount of rainfall – in excess of 2000mm or nearly 80 inches annually – Sierra Leone has no national strategy for utilizing the surplus rain during the dry period. Irrigation there is undeveloped," Cooke explained.

During a sabbatical leave based at Njala, Cooke initiated a study to investigate the extent to which rainwater harvesting (RWH) can impact the area's surface water and groundwater throughout the year. RWH is a method of inducing, collecting, storing, and conserving local surface runoff for agricultural production which can promote small-scale, cost-effective irrigation.
Cooke worked primarily with Njala's Prof. Rashid Noah, and two PhD students he is supervising, Mr. Mohammad Blango and Mr. Patrick Sawyerr.

"Rainwater harvesting technologies are essential for Sierra Leone and West Africa especially because of projected changes in weather patterns. This project will use water collected within the harvesting area to provide a model for utilizing excess rain and therefore extending the cropping season," Cooke said.

Sierra Leone's agricultural sector is based on the production of basic staple grains, mainly rice, but the country currently imports more than 40 percent of its rice requirement. The demand for rice is rapidly increasing across West Africa. Better irrigation technologies could help Sierra Leone become self-sufficient in rice, and possibly even export to its neighbors.

Cooke's research will be ongoing for the next three years and will include surveys, assessments, and experiments at the Njala University Swamp. Specifically, his team will implement a RWH system, conduct topographic and hydrological surveys, compute water balance and changes in the reservoir storage, and measure agro-climatic data such as rainfall, temperature, relative humidity, wind speed, leaf wetness, and evapotranspiration.

Cooke greatly enjoyed his time in Sierra Leone. He ran an average of eight miles a day, fished, and enjoyed new fruits.

"I discovered six new fruits that I have never eaten before. I am trying to eat 100 different fruits and now I'm up to 93. My favorite in Sierra Leone was the yumbuyambe," he said.

Endres and Long co-author United Nations recommendations on the future of biofuels

Two faculty members from the University of Illinois College of Agricultural, Consumer and Environmental Sciences (ACES) are serving as lead authors on a United Nations-sponsored publication that will recommend new policy approaches and practices to globally expand the sustainable use of biofuels.

Jody Endres, assistant professor of environmental, natural resources and energy law, and Dr. Stephen Long, the Gutgsell Endowed Professor of crop sciences and plant biology, were two of only 36 invitees to an international rapid assessment process (RAP) on "Bioenergy and Sustainability: Bridging the Gaps" sponsored by the Scientific Committee on Problems of the Environment (SCOPE) under the United Nations Economic and Social Council. The project was initiated, facilitated, and paid in part by FAPESP, the State of São Paulo Research Foundation (Brazil).

"This is the second rapid assessment project this committee has completed on bioenergy; the first was five years ago. These reports bring together experts from all over the world who issue their opinions on how bioenergy can move forward. The first report caused quite a stir," said Endres.

The RAP has drafted new science-based recommendations on the global expansion of sustainable bioenergy production, including local and global solutions for policy makers that position bioenergy to positively affect societal challenges such as energy security, food security, climate change and the generation of wealth. The committee is currently finalizing the document, which will be published in October 2014.

OIP announces Fall 2013 International Seed Grant winners

OIP congratulates its International Seed Grant winners for Fall 2013. The goal of the Seed Grant program is to support awardees in establishing a strong international relationship that will continue to expand and flourish into a larger and substantial international collaborative effort. The funding of the program is made possible through support provided by the Arlys Conrad Endowment Fund. This semester's winners are:

Dr. Gustavo Caetano-Anolles, Department of Crop Sciences: "Untangling Organismal Diversification" (Germany)

Dr. Felipe Cardoso, Department of Animal Sciences: "Re-hydrated Corn Grain particle Size: Digestion and Performance in Dairy Cattle" (Brazil)

Dr. Tara Felix, Department of Animal Sciences: "Establishing Research Collaboration with Argentina to Enhance Future Funding Requests"

Dr. David Miller, Department of Animal Sciences: "Sperm Storage and Chemotaxis in Animals"

Dr. Kent Rausch, Department of Agricultural and Biological Engineering: itigating Postharvest Storage Losses in Southeast Asia"

Dr. Margarita De L Teran Garcia, Department of Food Science and Human Nutrition: "Obesity, Metabolic Disease and Kidney Damage" (Mexico)

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