

A photograph of two young children sitting on the ground in a rural setting. The child on the left is wearing a white shirt with a pattern of blue and yellow vehicles and blue shorts, holding a metal bowl filled with small, round, yellow and red items. The child on the right is wearing a red shirt and is looking towards the camera. The background shows a dirt wall and some wooden planks.

Center for Sustainable
Rural Livelihoods

Transformed,
NOW TRANSFORMING

2013 ANNUAL REPORT

IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

Director's Message

Spending nearly two months in Uganda this year has given me a much greater appreciation for the impact CSRL-funded programs are having on the food security and economic stability of poor, rural families in the Kamuli District of Uganda.

With our nongovernmental organization partner, Volunteer Efforts for Development Concerns, we are improving the livelihoods of more than 1,200 households directly – and nearly 1,300 additional households indirectly – through farmer-to-farmer training programs and demonstration projects.

This year the 13th and 14th wells were drilled in this rural area. These wells now provide clean, safe water for more than 5,000 households and more than 2,800 students at nine elementary schools. Access to this precious resource has improved household sanitation and hygiene, and decreased incidents of waterborne diseases from 70 percent to 35 percent.

At Namasagali and Nakanyonyi Primary Schools, the lunch programs have expanded dramatically to ensure every student can receive a nutritious meal almost every day. That's nearly 1,000 meals served each lunch day! This would not have been possible without the tireless dedication of our community nutritionist, Laura Byaruhanga, the commitment of the school

administration, and the generous support of our donors. This program has had a remarkable impact on student attendance at these schools and on parental support for education.

The Nutrition Education Center, started a little more than one year ago to help improve the health of a handful of pregnant women, lactating mothers and their malnourished children, now serves more than 100 young women at three centers. Graduating mothers are encouraged with microcredit support to develop income-generating activities – such as poultry production – that can directly benefit their children's nutrition.

This year's report highlights a number of these accomplishments and the individuals impacted by CSRL programs. I hope you find their stories as inspiring as I have.

Sincerely,



Mark Westgate

Professor, Department of Agronomy

Director, Center for Sustainable Rural Livelihoods

Since its inception in 2003, Iowa State University's Center for Sustainable Rural Livelihoods has made substantial progress in its mission to combat global hunger, malnutrition and poverty in the developing world. By utilizing this approach in Kamuli District, Uganda, the center and its partners have laid the groundwork for a higher quality of life for rural Ugandans while teaching Iowa State students what it takes to be change agents in improving the global community. As the center's tenth anniversary approaches, this is a time to reflect on the accomplishments of the past year, celebrate the progress achieved, and forge ahead with the work that still needs to be done.



AREA TOTAL:
241,038 sq km

slightly smaller than Oregon

CLIMATE: TROPICAL

■ dry season
■ rainy season



POPULATION:
34,758,809 *(July 2013 est.)*

LANGUAGE:
ENGLISH

POPULATION BELOW POVERTY LINE:



24.5%
(2009 est.)

MEDIAN AGE:



15.5 YEARS

Life expectancy at birth:

53.98 YEARS

English: official national language, taught in grade schools, used in courts of law and by most newspapers and some radio broadcasts

Also: Ganda or Luganda, other Niger-Congo languages, Nilo-Saharan languages, Swahili, Arabic



Sowing the Seeds of Success

Service Learning Program

A focal point of the center's involvement in Uganda is capacity-building, or empowering Ugandans of all ages by teaching them the skills and knowledge necessary to lead healthy, fulfilling lives. Iowa State students play a critical role in accomplishing this goal on the ground when each year, a small number of hand-picked students participate in the College of Agriculture and Life Sciences' service learning program in Uganda, working in tandem with students from Makerere University, one of the most prestigious academic institutions in Africa. Together, the students form bi-national teams and work to establish and maintain school gardens at primary schools while educating students in subjects that include agriculture, nutrition and hygiene. The teams utilize the school gardens as living laboratories to give the schoolchildren hands-on experience with agriculture – an important opportunity to develop skills that will improve the quality of their lives now and in the future. Many children have negative associations with this area of expertise as a profession, but often decide to pursue such a career after witnessing the inspiring passion that Iowa State and Makerere students have for agriculture.

“Students truly don't know much about development until they are able to travel somewhere and experience a place like Uganda firsthand,” said Trisha Nielsen, senior in horticulture. “This program challenged me in so many ways, and seeing how it has really made an impact has reignited the passion I have for helping people.”

Brent Sexton, senior in animal science, agrees. “Participating in the service learning program was an incredible experience, and the CSRL is what allows us to make an impact in these rural areas of Uganda.”

“THIS EXPERIENCE ENHANCED MY CURRENT INTERESTS AND MADE ME EVEN MORE CONNECTED TO THE PROBLEMS THAT UGANDANS ARE FACING.”

**JULIE PERREAU,
SENIOR IN GLOBAL RESOURCE SYSTEMS
SERVICE LEARNING PROGRAM PARTICIPANT**



Sustainable Utilisation of Resources

- world population is growing rapidly which means resources are being used much faster
- remember that some natural resources are limited and non-renewable
- So resources are being used up
- Sustainable development ensures the needs of the future are met
- This helps with things like housing, industry, agriculture, for mining, transport,

“WORKING IN A SCHOOL IN UGANDA WAS VERY REFRESHING BECAUSE THE CHILDREN WERE SO EAGER TO LEARN. I’M GRATEFUL TO HAVE HAD A CHANCE TO MEET AND WORK WITH SUCH WONDERFUL STUDENTS.”

REBECCA CHAMBERLIN,
JUNIOR IN GLOBAL RESOURCE SYSTEMS
SERVICE LEARNING PROGRAM PARTICIPANT

“INTERNING IN UGANDA TAUGHT ME THAT IN DEVELOPMENT, YOU ARE NEVER ALONE. I NOW KNOW MORE ABOUT HOW EFFECTIVE PARTNERSHIPS WORK AND HOW TO MAKE THESE RELATIONSHIPS AND PROJECTS THRIVE.”

ANDREA MATTHEWS,
SENIOR IN GLOBAL RESOURCE SYSTEMS
INTERNSHIP PROGRAM PARTICIPANT



Sowing the Seeds of Success

Global Resource Systems Interns

In addition to those involved with the service learning program, students majoring in global resource systems participate in on-the-ground internships in Uganda each summer. Iowa State undergraduates such as senior Andrea Matthews, who traveled to Uganda as an intern in the summer of 2013, engage in specific yearly projects with the goal to raise the bar on the quality of life in Kamuli District while creating a sense of continuity from year to year. In addition to her teaching responsibilities at a local elementary school, Matthews' primary project focused on health and sanitation. She researched and assessed local food safety conditions; created training materials to improve food safety education; and worked with influential community members to

best disseminate her knowledge and findings throughout homes and businesses in the village. She describes her experience as invaluable, both personally and in terms of her academic and career goals.

“When I was working out in the field, I felt the struggle, felt the hardships that these people are facing, but when I saw the results at the end, it was so rewarding,” she said. “The global resource systems internship program in Uganda helps the community as a whole – we’re not just working on projects, we’re there to inspire the community. Seeing children realize that they can go to college and create their own futures is incredible. When a kid says, ‘I want to be you,’ that’s moving.”



Sowing the Seeds of Success

Farmer-to-Farmer Training

Extension and outreach have always been hallmarks of Iowa State's mission, and the center continues this tradition in Uganda through highly successful farmer-to-farmer training programs. In collaboration with Volunteer Efforts for Development Concerns, the center teaches farmers about productive agricultural methods, caring for animals, storing the crops they grow, and marketing strategies for the goods they produce in excess of household needs. The center utilizes a variety of approaches to meet the challenge, including:

- Demonstrating the tangible differences between traditional and modern farming practices using on-farm trials with Ugandan farmers.
- Promoting adoption of nutrient-dense crops and use of improved seed by farmers.
- Installing boreholes – deep-water wells – as a means to provide clean water for consumption and improved sanitation, hygiene and irrigation.

Many of the issues facing Kamuli District are staunchly interconnected, and farmer-to-farmer outreach and training make an enormous difference by providing personalized assistance to Ugandans who are seeking to improve their lives

through agriculture. As a result of these extension efforts, the number of food-secure families in the three subcounties of Kamuli District where the center operates has increased from a desperate 9 percent to well over 60 percent within five years; nearly 5,000 households are benefitting from the 14 boreholes that have been drilled throughout the subcounties; and farmers who were destitute before receiving training supported by the center are now thriving and passing their newfound knowledge on to their peers.

Jane Kintu, Volunteer Efforts for Development Concerns program manager and Center for Sustainable Rural Livelihoods coordinator, is pleased with the progress the center has made and optimistic about the future of Kamuli District. “The center’s work is unique and directly impacts the community in a practical way by targeting both youth and adults, many of whom have limited education, changing the attitudes of school students toward agriculture, and touching so many people in the community,” she said. “The program enlightens communities about the issues of food security, nutrition, health and sanitation, and this has led to improved livelihoods. At this point, I am pleased with the work we have done, but we need to do a lot more.”



Connecting Agriculture and Nutrition

Production of Nutritious Crops

With a reputation as one of the nation's leading programs in agricultural education, Iowa State University as well as the Center for Sustainable Rural Livelihoods have a natural role in providing leading edge, culturally sensitive farming methods to Ugandan farmers. A primary component of this agricultural education is knowledge regarding the growth, harvest, storage, preparation and sale of Ugandan crops, which include maize, grain amaranth, soybeans, bananas and sweet potatoes.

Teaching Ugandans about efficient, productive farming practices has a twofold benefit: The products grown provide immediate nutrition for families, and over the long term can provide increased household income, ultimately supporting healthier, more stable families. The center aims to serve as an agricultural education resource for Ugandans of all ages, from children via elementary school programs to adults through farmer-to-farmer training.

One interesting measure of success that has come from the center's efforts is knowledge transfer from elementary school students to their families. After learning about agricultural practices from Iowa State and Makerere students at school,

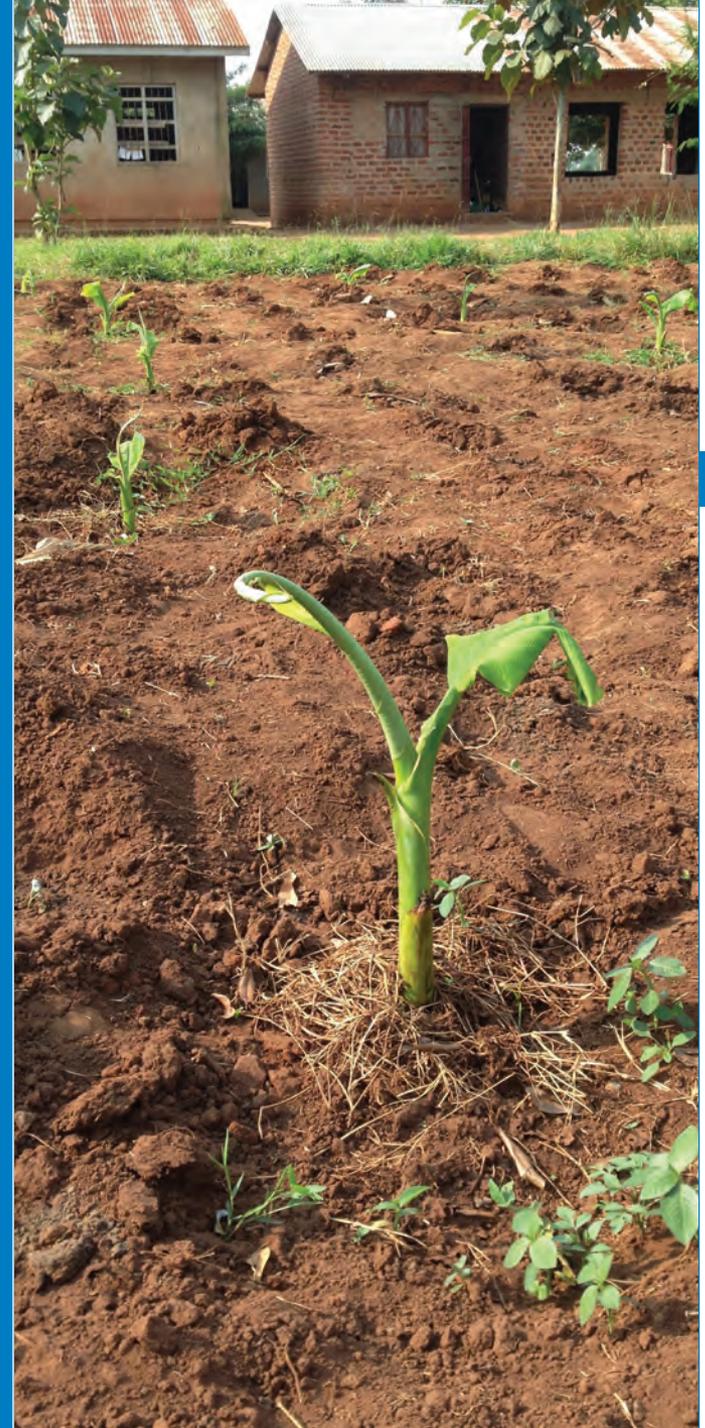
children are bringing that information home to their mothers, who are utilizing this newfound knowledge to improve their own crop yields, as well as storage and preparation techniques.



PROTECTING HARVESTS FROM PESTS

A team of faculty and students in the department of agricultural and biosystems engineering are developing grain storage solutions to combat pests that ravage crops after harvest. Carl Bern, university professor, Tom Brumm, associate professor, and Kurt Rosentrater, assistant professor, are working with Iowa State students to explore cost-effective methods of easily and effectively killing insects such as the maize weevil, which is responsible for devastating post-harvest crop losses in Uganda.

Brumm and his graduate assistant Denis Bbosa are currently developing a hermetic storage technique that effectively suffocates the weevils during storage and prevents further crop damage from occurring. “With hermetic storage, we try to create an environment whereby the weevils will consume all the oxygen that is in the barrel,” explained Bbosa, a graduate of Uganda’s Makerere University. This research has the potential to drastically improve crop storage techniques for Ugandans and make the difference between a farmer producing enough food to eat and sell at the market and going hungry.





Connecting Agriculture and Nutrition

Increasing Availability of Animal-Source Nutrition

Livestock are incredibly valuable additions to a Ugandan household, and can dramatically improve a family's levels of nutrition and financial stability. The center is working to introduce a variety of animals to families in Kamuli District, including goats, pigs and poultry. By raising livestock, families have access to protein-rich food in the form of meat and eggs, a nutrient that is often lacking from their diets. Livestock also provide manure for crop production as well as the potential for increased income through the sale of animal products. The extra income helps stabilize a family's finances and frees up funding for such expenses as school fees, which are necessary for children to gain an education.

While some challenges such as disease management and limited knowledge of animal husbandry are persistent, efforts by the center to help rural families introduce and maintain livestock have been very successful. One notable example of this is Paul Mudhasi, a Ugandan farmer who owns a thriving piggery. Mudhasi was one of the first people to utilize the resource of a borehole near his farm, along with additional support from the center, to strengthen his farming and animal husbandry practices.

Today, Mudhasi is building on his own experience and success to organize an informal cooperative with neighboring farmers to provide bulk purchasing power for the group. He also advises other farmers on how to raise pigs profitably. “Paul is a great example of someone who has gained some knowledge, succeeded, and moved his family up,” said Max Rothschild, Iowa State professor of animal science, C.F. Curtiss Distinguished Professor in Agriculture, M.E. Ensminger International Chair and livestock expert for the center. “We are making progress, and in the near future we hope to see improved disease control and water collection systems, better feed for livestock, and a better organized marketing system for farmers to sell their animal products.”



Connecting Agriculture and Nutrition

Empowering Women of All Ages

Ugandan women are truly the driving forces within their families: They farm the land, care for the animals, raise the children and maintain the households. Empowering women to support their families nutritionally and financially is a primary focus for the center's field programs. Working with female farmer groups to improve their agricultural practices, group marketing skills and sales techniques is crucial to achieving the goal of sustainable improvements in their families' livelihoods.

The center's work with girls is equally important in establishing a healthy and educated generation of women in Kamuli District. Girls in the district often struggle in school when they begin to menstruate; without a sanitary solution during their monthly cycles, many girls will skip classes or drop out of school entirely. The center has worked with the local education ministry and school administration to combat this issue by building a girls dormitory at Namasagali Primary School, located on the western edge of Kamuli District. This dormitory is designed to provide a supportive environment where girls receive encouragement to stay in school as they reach puberty.

Iowa State students are helping with these health-related service learning projects at this and five other schools in the area. For instance, during the last two service learning trips to Uganda, Iowa State students have taught schoolgirls how to create reusable menstrual pads, a game-changing skill that can make a big difference in girls' attendance and success in school.





Nutrition Education Centers

One of the center's most effective methods of reaching out to women and children in Kamuli District has been through the recent establishment and expansion of Nutrition Education Centers. The overall aim of these centers is to ensure proper nutrition for women during pregnancy and throughout their children's first 1,000 days of life – a critical period in physical and cognitive development. This is accomplished through an educational program, personal staff support and partnerships with local government health centers.

Upon enrolling in the program at a cost of about 60 U.S. cents, a woman and her child are immediately provided with supplementary nutrition to intervene with likely malnutrition. She then begins a formal curriculum that includes training on adult and infant nutrition, agricultural practices, personal hygiene, and cultural misconceptions about pregnancy and healthcare. Women learn how to grow and prepare nutritious food for their families and how to sell their own agricultural products in the marketplace, the latter of which is an opportunity that can create financial stability for families and ensure access to enough food for a family to eat and grow. Once the mother

completes the curriculum and her child is no longer malnourished, she graduates from the program and is encouraged to join a support group with other graduates. These groups are instrumental in sustaining progress and continued success. The graduates are also encouraged to pursue income-generating activities to supplement the family income. Many graduates have referred other women to the centers, effectively broadening the reach and reputation of these centers throughout the subcounty.

2013 was an exciting year of progress for the Nutrition Education Centers: Two additional centers were opened at strategic points in the subcounty to improve accessibility, and plans are underway to expand to five centers in the coming year. This year alone, more than 170 clients have been served, 50 of whom are engaged in income-generating activities. Additionally, relationships between women in the community and local health centers continue to strengthen, resulting in increased medical services and care for Kamuli women. For example, 58 percent of infant deliveries were performed with skilled healthcare personnel, who continue to be astounded by the dramatically

improved birth weights they see as a result of the work of the Nutrition Education Centers.

With the leadership of Dorothy Masinde, lecturer in global resource systems and associate director of the Center for Sustainable Rural Livelihoods, and Laura Byaruhanga, Volunteer Efforts for Development Concerns community nutritionist, the Nutrition Education Centers have made an enormous impact on the lives of families in Kamuli District, an impact that is only anticipated to increase as plans for further expansion and development progress. “Mothers tell me, ‘This place has saved my children’s lives,’” Byaruhanga noted. “When they see the progress their children have made, any previous skepticism they may have had disappears – they really appreciate the efforts we are making to reach out in the community.”





Focusing on a Brighter Future

Working with youth at elementary school gardens in Kamuli District is one of the most powerful experiences students describe upon their return to Iowa State. The garden programs enable children to learn agricultural and animal husbandry skills, produce desperately needed food to supplement school lunches, and also help children understand that agriculture is not a chore, but rather an opportunity to drastically change their quality of life now and in the future.

Iowa State and Makerere students not only work in elementary schools, but also in high schools, where they help develop agricultural knowledge and prepare interested students for work in farming and livestock trades. An entrepreneurship club recently established at one of the high schools has been very successful at engaging older students in agricultural education while helping them develop valuable leadership and networking skills.

Iowa State students leave the school gardens feeling reenergized and profoundly moved by their interactions with the children. “Working in Kamuli District made the issues of poverty and hunger very real to me,” said Rebecca Clay, junior in agronomy. “The experience gave me more appreciation for my education – an opportunity easily available to me but not to Ugandans.”





For a decade, the Center for Sustainable Rural Livelihoods has given Iowa State students an unparalleled learning experience in development while simultaneously transforming the lives of the people of Kamuli District, Uganda. The mutually beneficial nature of this unique program sets it apart, and as interest and support for the center continues to increase, so will its ability to make a greater impact in the lives of both Ugandans and Iowa State students. With the help of dedicated donors, the Center for Sustainable Rural Livelihoods will continue to stand for positive change and crucial progress in the years to come.

“Thanks to the donors whose private gifts provide the majority of support to the Center for Sustainable Rural Livelihoods, the programs in rural Uganda are some of the greatest examples of the commitment our faculty, staff and students have in helping society,” said Iowa State University President Steven Leath, who visited Kamuli District last summer. “We are a caring university, both in Iowa and globally. We care about our role in society and giving back. Donor-supported programs like the center help showcase how Iowa State truly cares about people in the world and improving their lives.”





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