Reflecting on 2019, my first year as holder of the Endowed Dean’s Chair in the College of Agriculture and Life Sciences, one of the things that has impressed me the most is the college’s commitment to making an impact on the global stage.

We do so through the education of our students and the opportunities we present to them to study and learn in other countries. We do so by lending our world-class scientific expertise in collaboration with others, and through our extension, outreach and engagement. In short, we are a global college, extending our land-grant mission across borders. By doing so we serve the greater good, just as we serve Iowa, a world-class, engaged state.

The Center for Sustainable Rural Livelihoods is a big part of our global story. The center truly is our signature program in how we make a difference by focusing on education and sustainable human development. CSRL delivers programs that build capacity at every chapter of the life cycle — from healthy newborns . . . to young aspiring entrepreneurs . . . to hard-working farmers . . . to senior mentors for the next generation.

What I find amazing is the fact that CSRL has accomplished so much through the generosity of many philanthropic donors. I’ve had the honor to meet several in my first year and hear directly how they care deeply about our college and the role we play to serve people struggling mightily against hunger and poverty. Their selfless commitment to the moral right of daily food and the essential nourishment of daily hope is heartening.

That’s why I am looking forward to my first trip to the Kamuli District of Uganda in the summer of 2020. I want to walk the grounds of the Mpirigiti Rural Training Centre and hear from our ISU Uganda staff about their daily interactions with rural families, farmers and communities. I want to see our students working side-by-side with their peers of Makerere University to achieve common goals of improving lives.

Most of all, I want to listen to the people of the Kamuli District tell of their hopes and aspirations, and what CSRL has helped make possible for them.

2020 will mark a return trip to Africa for me. An important part of my previous international experience centered on Africa. After I earned my Ph.D., my wife Julie and I spent two years in West Africa. I worked as a consultant for the West Africa Rice Development Association, which today is known as AfricaRice, one of the 15 global research centers that are part of CGIAR, the Consultative Group for International Agricultural Research.

Since then I have completed more trips to Africa — in the west, east and south. All were remarkable experiences for me. I came away understanding much more about agriculture and forestry in those corners of our world — and the vital role that education and research play in making progress. I am absolutely certain that my upcoming trip to the Kamuli District will reinforce and broaden that understanding, and that we’ll push forward with more great efforts and impactful opportunities there.

I am grateful to our dedicated faculty and staff — and those of Makerere University — who give of their time and talents to make the programs of CSRL a model for the rest of the world.

And I am exceedingly thankful for the benefactors of CSRL, who believe in what we’re doing and believe fervently that it is possible to reduce the number of hungry and poor people in the world.

My special thanks and appreciation goes to David Acker and Denise Bjelland. Dr. Acker begins a new chapter in January 2020 as our associate dean for global engagement and the director of CSRL. This marks a significant advancement in our college’s outlook and capacity on the global stage. Denise is retiring after 28 years of service to our college and 47 years overall to Iowa State — including serving as director of CSRL and as a leader in our global agriculture programs. This past fall I had the pleasure of honoring both David and Denise — for David, with my Dean’s Citation for Extraordinary Contributions to CALS, and for Denise, the college’s Lifetime Achievement Award.

Daniel J. Robison,
Endowed Dean’s Chair, College of Agriculture and Life Sciences
You can hear the passion in Roger Winterhof’s voice when he describes how the Center for Sustainable Rural Livelihoods program is making a difference in Uganda.

“Seeing what families have done with a small amount of financial assistance is what’s rewarding about this program,” Winterhof says.

Winterhof, who has visited Uganda twice, has seen the benefits of investing in the CSRL program. He described how one family started a pig operation with a small loan and made a profit. The family was able to buy school uniforms for their children and put a metal roof on their home.

“They were proud of an income they had generated themselves,” Winterhof says. “If a person ever had a doubt about the value that this creates this is a testimony that hits home — it blossoms, it just blossoms.”

The CSRL program works as an umbrella covering a collage of working parts focused on a mission that helps Ugandan families. The parts range from microlending to school gardens to raising livestock to hands-on training — all work to address hunger and poverty in the Kamuli district in Uganda.

One working part that was added in June 2018 is the Mpirigiti Rural Training Center. Its dedication served as a next step in building a sustainable future for the CSRL program.

“Seeing what families have done with a small amount of financial assistance is what’s rewarding about this program.”

Roger Winterhof

Managing for Food Safety and Success
Training Builds Capacity and Security
Effectively Living the Land-Grant Mission
Growing Food and Changing Lives
Building Capacity Through Training
The Worth of Water
Striving for Independence and Sustainability
THOMAS BUYINZA
Post-Harvest Technology Specialist

The role of Thomas Buyinza can be summed up as food and water safety. He plays a key role in ensuring the health of the people in the communities he serves by facilitating the availability of potable water and safe grain. He received his bachelor of science from Makerere University in 2016 and was a service learner in 2014, during which time he worked on a number of community projects. Prior to being hired by ISU-Uganda Program in January 2018, he gained relevant experience working for Coca-Cola in Kampala and a district farmers’ association.

As a post-harvest technology specialist, he is responsible for overseeing grain storage and safety, implementing strategies, and working with smallholder farmers to reduce postharvest losses. Much of his time is spent developing training for and working with farmers and area schools, focusing on drying grain, eliminating weevils, and removing aflatoxins and debris from the grain after harvest and before storage.

Thomas is also responsible for boreholes (deep wells), which provide a local source of clean water. A large part of that work is identifying water issues in the community and developing plans to address them. Then, viable sites must be identified and verified with the district government and expert hydrologists. Engaging with and training local community water committees ensures the functionality and safety of the boreholes and, in the long run, implementation of sanitation and health activities related to water.
C SRL is committed to enhancing overall crop management in the Kamuli District through its work with individual farmers. An important focus is ensuring the safety of the grain used in preparing food served at the nutrition education centers and schools. One of the intangible benefits of integrating improved crop management skills into the community is that each personal victory in this critical life-sustaining area lifts them all.

A major challenge to Kamuli District farmers is the ability to effectively store grain. Due to lack of alternatives, they are often forced to sell their grain at harvest when prices are low. Much of what isn’t sold at harvest then spoils or is lost to insects and rodents. So, months later when the price is higher, they have to buy grain to feed themselves or their livestock. CSRL’s micro-finance program helps smallholder farmers obtain tarps and hermetic grain storage containers. The tarps allow farmers to dry their harvest in the sun and avoid contamination from the ground. The containers (silos) allow farmers to store their grain safely, providing higher quality grain for themselves and allowing them to sell any excess at more optimum times.

Aflatoxin is the product of a widespread field mold often seen in maize purchased in the market. Proper grain storage and processing reduces the risks of high levels of aflatoxin that when ingested are linked to liver cancer in adults and stunting in children. CSRL is prioritizing the development of a supply chain that prevents the use of maize contaminated with aflatoxin in the porridge at its nutrition education centers and in its school lunch programs. Working directly with farmers, the CSRL ISU-Uganda Program team helped to establish farming practices that reduce the risk of aflatoxin. All maize is now tested to ensure aflatoxin levels are below the acceptable level specified by the Uganda government.
The people of the Kamuli District have farmed for generations, struggling to make a living growing grain in the weathered soil. CSRL training in agronomy best practices and the availability of water for irrigation have greatly contributed to improving their lives. Building on that success, the introduction of CSRL livestock programs and livestock management trainings has resulted in significant progress in childhood and adult nutrition, food production efficiency, and overall quality of life.

With the knowledge and support of experts from Iowa State and Makerere Universities, CSRL has successfully incorporated animal protein into school lunch programs, and nutrition education centers. Livestock management has begun in the youth entrepreneurship programs as well.

Through special trainings, the Khursid Livestock Training Pavilion within the Mpirigiti Rural Training Centre has made it possible to build capacity for local farmers interested in livestock production. The new facility provides a dedicated training pavilion and livestock demonstration area where chickens, goats, pigs, and cows provide a working model of livestock integration.

In 2018, a CSRL donor gifted Holy Cow to the training center. This Ayrshire-Jersey cross cow soon delivered a heifer calf named Blessed Event. As part of the CSRL imperative to improve the genetics of Kamuli District animals, Holy Cow will soon deliver a second Ayrshire heifer calf through artificial insemination.

Holy Cow has become a celebrity at the center. Because she is an Ayrshire-Jersey cross, she is relatively small compared to the Friesian cows more common in the district. As such, she requires less feed, water, and other inputs, which is of particular interest to farmers who visit the demonstration area to compare Holy Cow to their own cattle.

In fact, since Holy Cow’s arrival, the number of visitors to the livestock demonstration area has increased significantly. These guests come to see everything from construction of a simple cattle shed, to how and what Holy Cow is fed.

With training and capacity building as its core priority, the ISU-Uganda Program team has trained more than 500 farmers (youth, women, and men) this year in livestock feeding and management. These trainings move families closer to economic and food security through the sale of their animals and the use of meat protein in their families’ diets.

“Introduction of the livestock demonstration farm is a great opportunity for farmers. They benefit from livestock trainings, where they acquire knowledge in livestock management practices. The community is far better off than before CSRL came in!”

NIKUZE YVETTE
ISU-UGANDA PROGRAM LIVESTOCK EXTENSION SPECIALIST
WHAT YOUR SUPPORT MADE POSSIBLE THIS YEAR:

- The livestock training pavilion and livestock
- Access to improved livestock genetics
- Alternative sources of income to improve quality of life
- Improved livestock management practices through regular trainings (e.g., feeding, structure design and construction, livestock vaccinations, litter management)
- Collaboration among neighbors to keep more animals

WHAT YOUR CONTINUED SUPPORT MAKES POSSIBLE GOING FORWARD:

- Additional livestock management trainings
- Water collection and storage, for livestock and household use
- Collective purchase of livestock feeds
- Bulk storage of livestock feed
- Expanded farmer support through cows or heifers
- Formation of marketing groups to leverage livestock product marketing
Iowa was the first state in the nation to accept the provisions of the 1862 Morrill Act. The establishment of Iowa State University as Iowa’s land-grant university followed. Iowa State wholeheartedly supports the mission of sharing knowledge beyond the campus borders as seen in its dedication to improving lives around the nation and the world.

One illustration of upholding the land grant mission is the story of Namulondo Monica.

Monica is a mother of four (three daughters and a son) and married to Mukalu Thomas. She was enrolled at the Naluwoli Nutrition Education Center (NEC) in 2013 with a malnourished child. She completed the program and graduated in 2014.

While at the NEC, Monica attended livestock management trainings and expressed interest in joining the piggery project. In 2017, she was selected as one of the NEC mothers to receive weaned pigs as part of that project. Monica cost-shared with the program in constructing the pig pen. She agreed to provide locally available construction materials while ISU-Uganda Program contributed cement, wood preservative, and labor for constructing the floor.

When the pig housing was completed, she received two weaned pigs (one male and one female), sow feed and weaned pig meal, plus medication. She was able to look after the pigs up to farrowing, when her female pig farrowed five piglets.

In addition to the piggery, Monica grows indigenous and broiler chickens, and participates in the poultry vaccination program. She sold some of her chickens to buy a female goat and successfully raised the goat to produce two kids (a male and a female). The profit from livestock sales allowed Monica and her husband to purchase a 30-foot-by-100-foot plot for a small shop. They have further used income from the growing and selling of chicks to invest in a coffee business, with enough money remaining to purchase another female goat.

In June 2019, Monica received an above-ground 6,000-liter water tank. She is now able to easily provide water to her pigs and other livestock, has water for other domestic work, and is able to share with her neighbors. All of this was made possible because of the training she received from the ISU-Uganda Program team. Madina’s success with her livestock demonstrates to her neighbors the skills she gained as a NEC mother, which in turn, strengthens and lifts her whole community.
WHAT YOUR SUPPORT MADE POSSIBLE THIS YEAR:

- Reduction and prevention of malnutrition through training mothers on porridge consumption
- Mothers trained to prepare balanced diets (Ekitobero) in their homes
- Community training on making nutritious porridge
- Improved nutrition and farming methods learned through the demonstration gardens
- Mortality and morbidity rates reduced through capacity building
- NECs provide a venue for nurses from the Kamuli District government to hold clinics on health, vaccinations, family planning, and HIV testing and counseling.
- Homes have improved sanitation and hygiene using tip taps, latrines, rubbish pits, and kitchen drying racks

WHAT YOUR CONTINUED SUPPORT MAKES POSSIBLE GOING FORWARD:

- Extra support for the NEC graduates
- Opening other NECs to reduce travel distance
- Setting up nutrition demonstration gardens in more parishes
- Providing sustainable affordable support to mothers who have graduated
- Strengthened nutritional rehabilitation partnerships with health facility for referred cases with complications
“We’d like to make sure that all the children are having lunch five days and that each school has a hygienic and useful kitchen.”

GAIL NONNECKE
ASSOCIATE DIRECTOR FOR EDUCATION PROGRAMS, CSRL
Growing Food and Changing Lives

The CSLR school gardens program in the Kamuli District helps educate, train, and feed students at four primary and two secondary schools. The gardens furnish produce to enhance school lunches served at all six locations, from one to five days a week. A partner poultry program is also offered at two of the primary schools to enable the inclusion of animal protein in those meals.

Providing the lunches from gardens at each school is a team effort involving the ISU-Uganda Program team, parents, teachers, and pupils. The program produces or purchases all lunch ingredients locally from the community, thereby providing a market for the farmers’ products. Because ISU-Uganda Program staff trains and works side-by-side with local farmers throughout the production process, the quality and safety of all locally purchased products for the school lunch program is ensured.

The success of the school lunch and gardens program is clearly visible at the Naluwoli school kitchen. At Naluwoli, the number of days school lunches can be offered each week is increasing, and they are providing plates and cups so children can have their lunch on time and don’t have to wait for others to be finished before getting more plates. This improvement at Naluwoli is simple, yet impactful — reducing the amount of time that children have to wait in line for food equals more time for education.

In addition, new kitchens for safe lunch preparation have facilitated an increase in the number of days per week that lunches are provided. Two schools have been able to increase the number of lunch days from one to two, with a goal of five lunches a week at each school.
Building Capacity Through Training

The opening of the Mpirigiti Rural Training Centre in 2018 has allowed for expansion of education programs. Whether community members, ISU students working in Uganda’s Kamuli District, or Ugandan students at Iowa State for U.S. based training, the ISU-Uganda Program uses the power of education to develop sustainable communities and responsible global citizens.

The 2019 service learning program saw the highest number of ISU/Makerere University student groups in the history of the program. The Mprigiti Rural Training Centre accommodates 40 students living together cross-culturally while also working on ISU-Uganda Program projects and programs in the communities.

This year, Iowa State University and Makerere University students and faculty worked in Kamuli District public schools with children in four primary schools (grades 1 – 7) and two secondary schools (grades 8-13) by assisting in teaching integrated science (agriculture, nutrition, sanitation) and math. University students worked on binational team projects that benefited the schools while also learning from farmers in the community. When the harvest was complete, the students assisted ISU-Uganda Program staff in projects ranging from postharvest storage to analyzing the nutritional value of the meals served at the schools and nutrition education centers.
The Beekeeping Binational Team Project saw its first year of honey production and honey sales with the youth agriculture club at Namasagali College (a secondary school).

Youth entrepreneurship specialist Lukwata Martin Roy Kagoye explained, “While we did not see immediate results from the project [in prior years], we kept going consistently and persistently. Then this year, together with the entrepreneurship club at Namasagali, we harvested, processed, packaged, and put to the market a branded natural organic honey. We branded it Nile Honey because of the location of the apiary by the shores of the Nile. Throughout the process, from locating the apiary to our first real harvest, the biggest lesson learned was that even failure is sometimes necessary to achieve the level of success we’ve reached in this project.”
In 2019, the Mpirigiti Rural Training Centre was the site for a youth institute that successfully engaged 13 schools (nine secondary and four primary) and 82 youth (31 females, 51 male) in a discussion on United Nations Sustainable Development Goals. The ultimate success of this discussion depended on extensive tutoring three months prior to the event. This was to overcome a significant information gap regarding global goals and issues related to rural sustainability and to illustrate how youth can be change agents in their local communities. This information gap was largely covered by extending the usually inaccessible mobile internet as a source of information to the schools as well as providing a network of internet savvy student and teacher mentors to help novices.

This youth institute demonstrated that tutoring and mentoring is important in boosting the confidence of the Kamuli youth and expanding their comprehension of various issues, then finding solutions. Lukwata explained, “Primary school pupils competing against high school students amazed in their visual presentation of zero hunger as a global goal; describing hunger and malnutrition as problems in their community and explaining viable solutions to them while citing existing projects in their schools.”

“Youth have the time, energy, brains, and talent to solve Kamuli’s problems. There is a need to ignite young minds early enough through mentoring so that they understand these problems and contribute to finding solutions.” He concluded, “We have started that with this year’s youth institute.”

Perhaps the most impactful achievement for 2019 was that the Nakanyonyi Primary School saw all seventh graders pass the national exam required for entrance into secondary school. “The continued engagement of university students, pupils, teachers, and parents through the education programs has created a great positive impact on pupils’ participation in school activities, as well as improving daily attendance and learning.” According to Dennis Lutwana, service learning and school garden projects officer, “The pupils and parents have become more serious about studies and as a result, parents have become more supportive.”
Caleb Floss had just graduated with a double major in global resource systems and business economics when he accepted a six-month volunteer position with the CSRL's Youth Entrepreneurship, and Community Income Generation Innovations programs in 2018. The impact of his work in microfinance will carry over for many years. One aspect of his job was to collaborate with the ISU-Uganda Program team to assist and train youth in developing entrepreneurial agricultural businesses. He also revised existing microfinance loan agreements to improve the language and standardize the process of administering CSRL funds for livestock, grain, baskets, and more. He assisted in creating a budget template for farmers’ use and assisted with budget trainings for both farmers and high school entrepreneurship clubs. His efforts resulted in greater consistency among the programs and better accountability for all parties involved. Looking back, he said, “I was so grateful to have the opportunity to work alongside the incredibly dedicated staff at ISU-Uganda Program. The entire experience was very rewarding, and I often find myself reflecting on the knowledge that I gained from the people of Kamuli.”
WATER AND SANITATION

PHOTO: BRIAN NONNECKE
The Worth of Water

Water is critical for every bodily function, making up about 75% of total body weight. Water is critical to effective hygiene and proper sanitation. Without water, nutrition is compromised. Without clean water, health is compromised. Without close proximity to water, a family’s ability to support itself is compromised by the daily search for water. The value of water in Kamuli District cannot be over-emphasized.

In response to this critical and continuing need, CSRL supported the installation of three boreholes in the Kamuli District during the past year. Since its beginning, CSRL has installed 21 boreholes in the Kamuli District, with plans to continue to install at least one new borehole each year going forward.

The CSRL ISU-Uganda Program team in Kamuli works with local communities to establish and train members of water committees who manage use and maintain the operation of the boreholes. This aligns with CSRL’s approach to engage with communities to enable and support improvements in water and sanitation at the household, school, and community levels. Because the CSRL program is an integrated part of the community, not a temporary fix, the training and education offered has a lasting impact toward sustaining the achievements made.

WHAT YOUR SUPPORT MADE POSSIBLE THIS YEAR:

- Installation of 3 new boreholes
- Improved access to water (water tanks)
- Water for irrigation and brick making
- Reduced distances to and from water source
- Improved biosecurity (sanitation and hygiene) in homes and schools
- Fewer water-related diseases
- Community investment in borehole maintenance
- Established community water user committees

WHAT YOUR CONTINUED SUPPORT MAKES POSSIBLE GOING FORWARD:

- Installation of one new borehole each year in strategically identified areas of need
- Training local community technicians to repair boreholes
- Additional water sources in the community
- Signposts to identify community water projects
- Increased leadership and water management training in communities
A n important extension of CSRL’s community programs is the effort to help improve lives through income-generating enterprises. By supporting mothers as they create sustainable sources of income, the Community Income Generation Innovations program enables women to ensure their own livelihoods and improve the nutrition and health of their children. Craft production, sewing projects, soap making, and notebook construction are just some of the program’s income-earning activities.

With the longer-term goal of independence and sustainability, a group of mothers formed as the Tusubila Crafts Group this year. Certified by the local government as a community-based organization, the members of the Tusubila Crafts Group launched their enterprise, elected officers, and opened a bank account. They recently filled their first big order as a community-based organization with payment from the customer made directly to the organization’s new account. This is a big step for these women toward becoming truly independent and self-sustaining. It is no coincidence that “Tusubila” translates to hope.

Other ventures are accomplished by students through school garden projects. Working together, children, teachers, and the CSRL ISU-Uganda Program team grow vegetables to be used in school lunches and for sale in local markets. Not only do these hands-on learning activities result in pride of ownership among the students and offer valuable lessons in best practices taken home to share with parents, they also provide income to be put towards school fees and books.
As impressive as these income-generating results are in improving the financial lives of the women and families of Kamuli, one graduate study project revealed even more. That study indicated that just the opportunity for social interaction among these women, who can be somewhat isolated in the rural areas of Kamuli, had a tremendous positive impact on their quality of life — a win-win.

Nearing the completion of her Semester Along the Nile, Katie Stringer, a senior in global resource systems, wanted to build upon the relationships she established in Kamuli, tell the stories of the people, and broaden market opportunities for the women of Tusubila.

When she contacted the CSRL office about her plan, she found she was in exactly the right place at precisely the right time, and led the push to form the Uganda Alliance, a campus organization at ISU. The Uganda Alliance, established in July 2019, is designed to extend knowledge of the ISU-Uganda Program to more faculty, students, and community members.

The organization sells products produced by the Tusubilia Crafts Group through a “Globe Pop-up Shop,” to expand economic opportunities for program participants.

KATIE STRINGER
Uganda Alliance Extends Tusubila Women’s Reach to ISU
The Center for Sustainable Rural Livelihoods uses the power of education to develop responsible global citizens and thriving local communities that benefit from food and financial security, quality education and healthcare, civic participation, social inclusion, environmental stewardship, and overall sustainable livelihoods.

Thank you for helping this vision become reality.