

## Service Learning and School Garden Program

**The Service Learning Program** continued its tradition of hands-on learning and international collaboration in 2011 by engaging a team of 22 students and 5 faculty members from Iowa State and Makerere University. A graduate student from ISU, Amanda Snodgrass, also accompanied the team as a teaching assistant and completed her field research for her master's degree in this year's trip.

As in past years, the team stayed together in Kamuli and invested much of their time aiding and implementing program activities at three primary schools in the area. The School Garden Program allowed students from Iowa State and Makerere University to work side by side with students from Namasagali Primary School to create viable school gardens. These gardens are useful as outdoor learning labs, helping the young students learn valuable farming skills to bring home to their families, and also provide nutritious food to supplement students' diets. One of the principal achievements of the program this year was support for expanding the school lunch program. In addition to helping establish and care for the school gardens, service-learning students harvested crops from the garden and used them to prepare a nourishing meal to serve to the primary school students each day.



2011 Service Learning Students



Kelsi Bauermeister serving lunches to students at Namasagali primary school

Additionally, the team spent time teaching in the primary school classrooms on topics such as agriculture, nutrition, science, health, and hygiene. Outside of the classroom, bi-national teams led projects with the primary school students on poultry husbandry, beekeeping, water conservation and irrigation, agroforestry, nutrition, health and sanitation.

The students also branched out from the school gardens and invested time within



Eggplants in the Nakanyonyi school garden

the community to learn from and support a number of CSRL program farmers. Each bi-national team was assigned to a VEDCO program farmer and spent two days each week assisting, observing, and assessing on-farm activities. The project culminated with each team completing a cost-benefit analysis to help the farmer improve the farming enterprise.

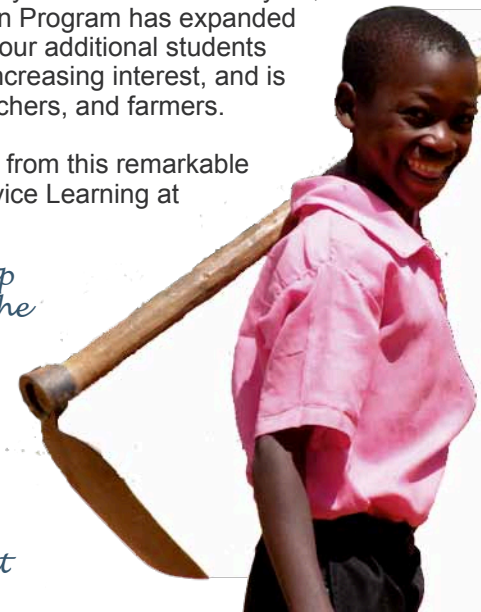
This project complements VEDCO's farmer-to-farmer teaching strategies already in place and is intended to promote closer integration with the Service Learning Program.

The Service Learning Program continues to grow and succeed. Every student and faculty member involved in this program comes away from the experience personally enriched. Despite stable funding there has been an increasing number of student participants admitted and Ugandan households involved each year. Now in its sixth year, the Service Learning School Garden Program has expanded to three primary schools, admitted four additional students from Makerere University to meet increasing interest, and is benefiting more schoolchildren, teachers, and farmers.

You can help more students benefit from this remarkable program with your donation to Service Learning at [www.foundation.iastate.edu/CSRL](http://www.foundation.iastate.edu/CSRL).

*"The service learning trip to Uganda provided me the opportunity to expand my horizons and experience first-hand the triumphs and hardships of international rural development."*

*- Jacob Hunter  
Service Learning student*



CSRL's Service Learning Program is focused on allowing students from Iowa State and Makerere University and pupils from the primary school opportunities to learn together through hands-on experiences. Participants "learn by doing," simultaneously developing personal perspectives and skills while providing a service to the community through the school. The current garden program functions to help establish school gardens as outdoor learning labs that produce supplements for school lunches and help the school children transfer their knowledge and skills to their home gardens and families.

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# Livestock Production and Health

**The Center for Sustainable Rural Livelihoods** places a high priority on introducing program households to the opportunities that livestock operations can present. Adding a livestock component to a farming enterprise can increase the nutritional value of a family's diet by providing extra calories, important nutrients, and protein, all of which are essential to alleviate malnutrition and lead to healthier families. In addition to promoting food security, livestock operations can also enhance financial security. Animal products, such as eggs and milk, can be sold to bring income for day-to-day expenses and lead to a higher quality of life. Having animals and their offspring available to sell in case of unexpected costs or hardships also provides a financial safety net for the family.

Activities related to the livestock production and health program continued to expand in 2011. The focus for this past year has been to increase the number of livestock operations and improve the quality of those already established. The farmer-to-farmer approach used in other aspects of CSRL's activities in Kamuli were at work here as well. It is the primary



Goat enclosure supported by the Monsanto project.

method to expand knowledge and improved practices among farmer groups. Offspring born to animals given to farmers in previous years are now being distributed to other farmers to start new operations.

Additionally, a poultry project has been started at the Namasagali Primary School. This is a great opportunity to extend the reach of the livestock program and introduce the

benefits of consuming animal products to students whose families do not own livestock. With the help of Dr. Gideon Nadiope, the VEDCO Program Extension Officer for Livestock Production, the program has been very well received and is so far a tremendous success. Dr. Nadiope trained the

Livestock can greatly improve food security and financial stability of a household. CSRL's Livestock Program aims to provide farmers with the tools, knowledge, and support necessary to raise and market animal products in a sustainable and profitable way. This includes helping farmers construct facilities, teaching them about health and feeding of animals, and providing information about current market conditions.

school teachers about poultry production and provides ongoing technical support for the program. Under the teachers' guidance, students help care for the animals and learn about husbandry in the process. Some of the eggs produced are used to supplement the school lunch program with increased protein and to purchase food items such as beans, oil, and salt. The rest are sold to buy feed for the poultry and offset production costs. The success of this program has encouraged CSRL and VEDCO to expand the program to other schools.



Healthy chickens inside an enclosure

Along with efforts to expand the program, several on-site evaluations were performed on many of the established livestock operations with the intent of helping farmers benefit most from their efforts. Max Rothschild, our Associate Director leading the livestock program, joined Dr. Nadiope in his meetings with Kamuli farmers to inspect their animal enclosures developed as part of the livestock expansion project supported by a grant from the Monsanto Fund. They observed dramatic improvements in animal health and productivity for those farmers using enclosures. They also conducted farmer group discussions on livestock value chains to improve access to quality animal feed and markets beyond the local communities.

We are very grateful to receive support for the livestock program from several new donors this year. This generous support has enabled the program to hire a livestock extension officer, providing local expertise and a liaison between ISU faculty and program farmers.



Your donation can change a family's life. To contribute to this amazing program, visit

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Beans and grain amaranth are nutritionally rich foods with enormous potential to help alleviate hunger and food insecurity in resource-poor regions. But there are a host of obstacles for production, storage, and supply chain management that limit this potential. Here is a brief description of three research projects CSRL team members are leading to address these issues.

### Enhancing Biological Nitrogen Fixation of Leguminous Crops Grown on Degraded Soils in Uganda, Rwanda, and Tanzania

Degraded and infertile soils are major factors limiting crop yields for small landholder farm families. To combat this problem and increase bean yields, we are investigating methods of increasing biological nitrogen fixation by common beans via bacterial inoculants. We are testing a wide range of bean varieties for their capacity to work with nitrogen fixing soil bacteria and we are using gene sequencing tools to identify genes controlling this interaction. A key step of this project in Uganda is training our field staff and farmer trainers about the concept of nitrogen-fixing bacteria and why nitrogen is essential for plant growth. Farmers are also being trained on how to identify root nodules and handle plant inoculum safely. Demonstration gardens are being used to increase farmer awareness of inoculants, soil fertility management, and differences in variety performance when seeds are inoculated with nitrogen-fixing bacteria.



**Dr. Mark Westgate**

### Promoting Production and Utilization of Grain Amaranth for Improved Nutrition and Health in Uganda

Grain amaranth is a fast-growing, nutritionally dense crop that has immense potential to alleviate malnutrition and food insecurity among resource-poor farmers. The goal of this study is to promote grain amaranth and identify the most effective farming practices for growing it. A baseline study has been conducted to discover farmers' knowledge and



**Dr. Dorothy Masinde**

attitudes about the crop and its uses. It was determined that 70% of the farmers in the study area knew about grain amaranth. Of that group, 90% had grown it the previous season. These families were surveyed to gather recipes using grain amaranth, yielding 51 recipes that utilized grain amaranth for porridges, breads, sauces, snacks, paste, and medicines. These recipes are being compiled as part of our outreach effort to families unfamiliar with the crop. Trial plots also were established to evaluate best management practices for growing grain amaranth. Among the questions being addressed are which agro-ecological zones perform best, what is the optimum plant density and spacing, and what is the most profitable fertilizer strategy. Results from the experimental plots will help farmers adopt amaranth management to their local conditions.

### Enhancing Nutritional Value and Marketability of Beans Through Research and Strengthening Key Value Chain Stakeholders in Uganda and Rwanda

With their short growing period and potential for two crops per year, a productive crop of beans should be a tremendous asset to any small farm. Unfortunately declining soil fertility, inefficient cropping methods, diseases, insect damage, and post-harvest losses severely limit yields and product quality. This, in turn, has turned consumers away from beans since those available for purchase are unappealing, require laborious preparation, and are viewed socially as a "poor man's meal." This project focuses on three areas to improve "bean appeal" for farmers and consumers. First, this study aims to improve harvested bean yield and quality. Second, handling and processing strategies are being developed to enhance the nutritional value and the appeal of beans available on the market. Third, once the problems of yield and quality have been addressed, constraints around marketing and consumption will be identified to enhance the popularity and acceptance of bean products.



**Dr. Robert Mazur**

Conducting research to improve food and nutritional security of small landholders and sharing that knowledge - is central to CSRL activities. A key component of CSRL's mission is to catalyze discovery and application of science-based and indigenous knowledge in cooperation with our partners in the developing world.

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**Previous reports have documented the positive impact** CSRL programs are having on individual lives. To determine the overall impact on program households we recently compiled and evaluated household data using internationally accepted indicators of food security which we have been collecting since the beginning of our program in Kamuli. This analysis reveals a very encouraging trend of increased food security among community members.

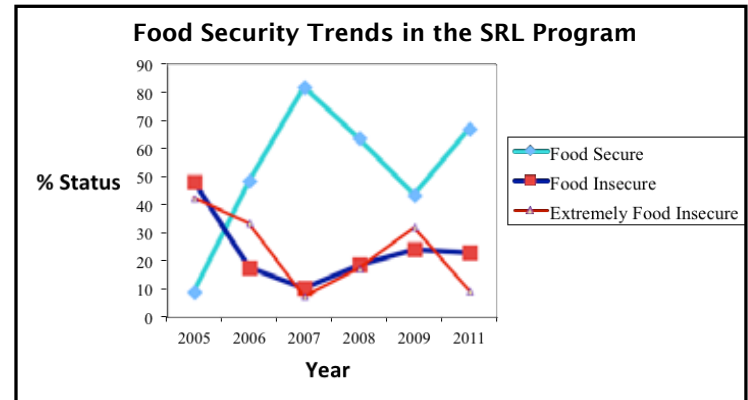
One major indicator of increased food security among farm communities is a significant increase in the amount of land owned and cultivated by the average household. When CSRL first established training activities in Kamuli in late 2004, the majority of farmers were actively cultivating less than 2.5 acres of land. Just two years after the institution of programs for educating and supporting farmers, more than half of program households had increased their planting area to 3 acres or more. The increase in land under cultivation is a strong predictor of household food security because it can increase the availability of food and income.



A local farmer takes great pride in showing off his thriving farm

Another indicator is the increase in variety and quality of crops grown. Through introduction of new seed technologies and implementation of improved farming practices, farmers are able to grow more crops successfully. Within the first few years of the program, program farmers were cultivating more plants, a wider variety of plants, and trying crops and varieties. Crops promoted include: vegetables, which are fast maturing (therefore drought avoiding) and provide micronutrients to fight malnutrition; disease resistant varieties of staple crops such as cassava; crops that can provide income as well as household nutrition, such as

bananas and beans; and new nutrient-rich staple crops such as grain amaranth. Crop yields are also increasing as farmers adopt better growing techniques. All of these pieces are coming together to achieve the overarching goal of increasing food security. Since baseline data were collected in 2005, households involved with CSRL have undergone a fairly stable transformation. Despite setbacks caused by floods, rainfall extremes, and crop diseases that impeded progress in 2009, there has been a clear increase in food securities among program households.



As indicated in the figure above, the majority of households are now classified as “food secure,” which means they eat at least two meals per day, consume a variety of foods, and have food stores to get through periods of scarcity. This is a huge accomplishment, given that prior to CSRL involvement, less than 10% of households considered themselves food secure. Members of the community have reported many indicators of this overall increase in food security: more meals consumed per day on average; more food available for purchase locally at reasonable prices; the renewed ability to share food freely after a harvest (a tradition that had ceased during food shortages); reduced need to buy supplemental food to get through a period of scarcity; and the availability of a wider variety of foods. We continue to monitor and evaluate these and other key indicators to ensure our programs are having the intended impacts on the households and communities we serve in Kamuli District. A complete report will be available on the CSRL website early next year.

One of CSRL’s main objectives is to increase food security among households in Kamuli District. Data collected since the programs were implemented show we are successfully working toward that goal.

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## Student Projects

### Development Calling: The Use of Mobile Phones in Agriculture Development in Uganda

Brandie Martin and Dr. Eric Abbott



Farmers can use mobile phones to make market decisions.

The number of mobile phones in use in Uganda has increased from 776,200 to over 8.5 million in the past five years. Within the Kamuli district roughly 42% of rural farming households now own a mobile phone. These phones hold tremendous potential to assist small farm operations become more successful and efficient. This study aimed to identify how mobile phones are being used currently, as well as determine how they might be used in the future. 110 individuals were interviewed, representing males and females from six

parishes in Kamuli. The study showed that phones are being used by a majority of these farmers to acquire market information prior to buying or selling, which allows farmers to determine if they are getting a fair price. Additionally, the phones provide functions such as a calculator, loudspeaker, and the ability to store textual, verbal, and photographic information. These functions can provide the farmers with information advantages, promote solidarity among their farming groups, and facilitate knowledge transfer. Based on this study, CSRL is planning to incorporate cell phones into their training programs.

### Assessing the Nutritional Status of Pregnant Women in Rural Kamuli District Uganda

Eric Nonnecke, Benon Musasizi, Dr. Kevin Schalinske, Dr. Manju Reddy

Severe malnutrition is a major cause of mortality in pregnant women in sub-Saharan Africa. Research investigating the impact of food insecurity in rural Uganda is limited and little is known about the dietary practices and obstacles faced by pregnant women in this area. This study was performed to address this lack of information and pave the way for future studies to improve the nutrition and welfare of women in Kamuli District.



Assessing women's nutrition and health status

Researchers established a baseline among these women by performing body measurements, conducting food practice and nutrition surveys, observing clinical practices at governmental health centers, and monitoring calorie and nutrient intake among participants. The study revealed many problems women face are due to low body mass index, inadequate intake of protein, and nutrient deficiencies caused by reliance

on nutrient-poor staple crops such as maize. It was also noted that participants did not have adequate access to health facilities during their pregnancies. Instances of infection and disease were underlying health challenges. Based on these and other observations, CSRL has initiated a community Nutrition Education Center to educate young women about nutrition and sanitation while they are pregnant and raising young children.

### Tomato Education and Production for Nutrition and Income Generation in Rural Kamuli Uganda

Amanda Snodgrass, Dennis Katuramu, Dr. Gail Nonnecke, Dr. Dorothy Masinde

Tomatoes are a popular and nutritious vegetable, but production in Kamuli is impeded by fungal and bacterial pathogens. This project seeks to identify disease-resistant tomato cultivars that can produce greater yield under the difficult conditions in Kamuli and promote sustainable tomato production. The first set of trials have been completed, testing five tomato cultivars along with several mulching and staking methods to determine the best cultivar and the best agricultural practices to minimize incidences of disease. Sharon Tusiime Mbabazi, a graduate of Makerere University and Service Learning participant from 2010, oversees the tomato project. Test plots are set up at the Namasagali Primary School garden with guidance from Mbiira Rose, a successful 'graduate' of the CSRL/VEDCO program. Preliminary results identified the least and most productive varieties. Mulching and staking practices did not affect yield or disease susceptibility. Trials planned for 2012 will repeat and expand these tests.



Test plot at Namasagali Primary School

The CSRL team is working to expand knowledge and develop new practices to improve livelihoods in rural Uganda. Students and professors at Iowa State University and Makerere University work together to solve problems facing African farmers and implement those solutions where they are most needed.

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## Natural Resource Programs

**Access to clean water is fundamental** to achieve food security and improve livelihoods in rural Africa. Clean, safe, and readily accessible water is essential for drinking, cooking, maintaining healthy livestock, and irrigating home gardens. To address this facet of sustainable livelihoods, CSRL partnered with VEDCO to pioneer a borehole-drilling program in 2006 with the goal to provide a clean water supply for local communities and their local primary schools. Thus far, the project has focused on communities with the greatest need in Butsani and Namasagali subcounties just to the east of the Nile River. As of 2010, the program has installed 8 boreholes that service over 1,000 households and over 2,300 primary school students, providing more than 150,000 liters of water each day. Donations to CSRL currently support drilling two boreholes each year- one for a community and one for the primary school associated with that community. The District Water Engineer is commissioned to conduct the hydrological survey to determine the most suitable locations for drilling new boreholes and to supervise their drilling and maintenance.



A student fills a jerrycan at the school borehole



Students eagerly try out the new school well

As with most water projects, there are challenges that need to be addressed. One is that a single borehole is not always enough to meet the needs of a densely populated community. We are currently identifying locations where secondary boreholes might be installed to ease the burden on existing boreholes and provide easier access to water in these communities.

Another challenge is that some of the boreholes have experienced declining water quality and water pumping efficiency. This is due to metal pipes rusting and developing leaks as they age. To overcome this problem, 7 boreholes were serviced this year to replace the original metal with new PVC pipes and stainless steel water-lifting mechanisms. These materials are more expensive, but will last much longer and alleviate problems associated with metal deterioration. PVC pipes will be installed with all new boreholes. Lack of necessary maintenance has occurred even though community leaders have been trained how to care for and maintain their boreholes and the District Water Engineer is responsible for maintenance and repair. To address this issue, we are working more closely with each community to build their capacity to manage their own boreholes. Communities also are required to create community water and borehole accounts to ensure funds are on hand when needed for borehole maintenance and repairs.



Locations of the 8 installed and 2 planned boreholes in Kamuli district. The Nile River is on the left; Kamuli Town is on the right.

The beneficiaries of these wells agree they are having a very positive impact on their schools and communities. If you would like to support this critical natural resource project, please contribute to the CSRL water fund at: [www.foundation.iastate.edu/CSRL](http://www.foundation.iastate.edu/CSRL)

Access to clean, safe, drinking water is essential for healthy, productive communities. CSRL recognizes this as a basic human need and is taking steps to ensure the people of the Kamuli district have a ready supply of water to support their development as successful communities.

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## School Lunch Program

The **school lunch program** was launched as a pilot project in 2010. It was met with enthusiasm by the primary school students and was expanded in 2011. Prior to initiation of this program, the students at Namasagali Primary School in Kamuli were served a lunch that consisted of a cup of maize meal porridge. This provided about 50 Cal, or the equivalent of a medium-sized apple, which did not come close to meeting the recommended intake of calories or nutrients for children their age.

The new program aims to alleviate short-term hunger among students by providing a more nutritionally and calorically dense meal during the school day. The meal developed in cooperation with Makerere University and VEDCO is called “nyoyo,” a traditional dish served in the neighboring country of Kenya. It is a mixture of maize and beans, cooked in a pot with oil and vegetables, and sometimes meat. Serving nyoyo for school lunch has many benefits for the students beyond its superior nutrient and caloric content. The ingredients are inexpensive and readily obtained from local sources. In fact, many of the ingredients are grown by the students themselves as a part of the school garden program! Boiling the maize and beans together in one pot is also easier and more cost- and energy-efficient than traditional ways of preparing maize and bean meals in Uganda, where maize is generally milled into flour and then served with a sauce made from beans.



A student receiving a helping of nyoyo

The outcomes of this project so far have been extremely encouraging. Laura Byaruhanga, VEDCO’s Community Nutritionist, documented the impact of student development as part of her master’s thesis research. The children involved in the lunch program have shown progress both physically - based on weight

gains recorded for the majority of students involved, and mentally - with teachers reporting their pupils more alert and involved in the classroom. Students eagerly anticipate the lunch hour and are more likely to remain in the classroom for the entire school day, rather than leave to look for food. Increased attendance has also been noted, with students regularly coming to school five days a week rather than missing days. One student, while talking with his classmates, told them “Tomorrow I will not miss school because I know I will eat ‘nyoyo.’” Although the new meal seemed strange at first, the students have embraced it and report that they enjoy it more than the porridge meal. So far, our results are overwhelmingly positive and indicate that the new lunch program is helping students stay in school and enabling them to learn more while they are there.



Students enjoying their lunch

Thanks to the generous contributions from donors, the School Lunch Program has expanded from the pilot program of 76 students to 147 pupils from Grades 3 through 7. This is approximately half of the students at Namasagali Primary School who attend afternoon classes. The continued success and impact of our School Lunch Program at Namasagali reflects a collective effort and support by the parents, teachers, and pupils in that community.

In the future, we intend to expand the school lunch program at Namasagali and to include all students at the school and also add more vegetables from the school gardens to the meal. Once the program is sustainable at the Namasagali Primary School with support from the community and parents, it is our hope to develop similar programs at other schools in Kamuli district.

To support this program, visit our website:  
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Malnutrition among school children affects their performance in school and slows their individual development. Providing food for school children during the day can help relieve their short-term hunger and drastically improve their ability to concentrate and learn while in school.

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## A Nutrition Education Center is Born



Jane Sabbi at her home where she established the center

**The visitors from Iowa listened** attentively as Jane Sabbi explained how she started a piggery with great hopes only to have her first herd of pigs die from disease. With improved confinement protocols recommended by the CSRL program, her next attempt was successful. Ultimately, her hard work resulted in a successful breeding program that provided substantial income for the family. Income obtained from the piggery has provided fees to send all seven of her children to school and continues to provide supplemental income for the family. Jane has also shared some of her piglets with others in the community and helped neighbors with their own crops and livestock.

With Jane's family now stable, she was selected and trained to be the Community Nutritional and Health Worker. In this role, Jane visits village families to do health checks and make recommendations of what crops to grow for better health and nutrition. During her visits, she discovered many children and pregnant mothers at risk of malnutrition and poor health, which prompted her to create a feeding center at her home for mothers and young babies. With her own funds, she built a small hut and convinced young mothers to come to the center where she provides a nutritious meal, nutrition education, and monitoring during pregnancy and after the baby is born.



Young mothers at the NEC

Jane's story is a perfect example of the achievement CSRL hopes to bring within reach of each farmer involved in the program- attaining sustainability in their own lives and then extending that success to their neighbors and their community.



A mother shares her story

Many mothers who seek her assistance are young girls who have no idea how to care for a baby. At the center, these girls learn how to feed and care for their baby, what types of food are best to grow, and how to monitor the health of their baby. Food is also provided for food insecure mothers who may not have the support of the child's father. Together, these resources greatly increase the child's chances of survival. With guidance from Laura Byaruhanga, VEDCO's Community Nutritionist, and Dorothy Masinde, CSRL's Field Operations Manager, Jane's feeding center has grown into CSRL's first Nutrition Education Center (NEC) in the sub-county. Service Learning students from ISU and Makerere University also have participated at the NEC to help educate young mothers in the care and health of their babies and themselves.

The Jane Sabbi story is a prime example of how a self-sustaining farm family supported by CSRL, VEDCO, and their own hard work can look beyond their own needs and reach out to others in their community. Jane and her husband Kitimbo have done that as they share their knowledge, resources, and success with many young women. Thanks to the tireless efforts of Jane Sabbi, with the support of CSRL and the VEDCO team, our first Nutrition Education Center is meeting a clear and very urgent community need. It is transforming the lives of more young mothers every day.



The goal: a healthy mother and child

To support Jane and the young mothers she helps, visit our website:  
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### A host of indicators are providing evidence for real

progress towards CSRL's primary goals of promoting the nutritional security and economic stability of small-landholder farmers and their communities in rural Kamuli District. First and foremost, this progress is a credit to our dedicated team of VEDCO field practitioners stationed in Kamuli. The expansion of the farmer-to-farmer training program to include Community Based Trainers now provides a network of community resource personnel to deliver information on a host of topics ranging from crop and animal production, household nutrition and hygiene, to local market access. Supporting this team of trainers with relevant information, improved training materials, and appropriate technologies is a key aspect of CSRL's management approach.

**Increased Food Security:** One benchmark of progress is a standard Household Survey using internationally accepted indicators of food security, which we have been collecting regularly since the program began in 2005. The most recent surveys conducted in 2009 and 2011 reveal a very encouraging trend of increased food security among community members. At least 50%, and as many as 80%, of the households surveyed since 2007 were reported as 'food secure'. The resilience of the households through a severe drought in 2009 is particularly important as it indicates sustainable access to nutrition has begun to take hold. The complete data set and analysis will be posted on the CSRL website ([www.srl.ag.iastate.edu](http://www.srl.ag.iastate.edu)). Future surveys will evaluate the impact of our training programs on the food security and economic stability at the parish level.

**Increased access to clean, safe water:** We have now funded the installation of eight boreholes that provide more than 150,000 liters of water to over 1,000 households and 2,300 primary school students each day. We also repaired seven of these boreholes this year. The original metal lifting systems deteriorated and were replaced with PVC and stainless steel water-lifting mechanisms. This also prompted us to initiate a community-based maintenance program that is funded locally.

**More students receiving lunch at school:** The pilot program designed to alleviate short-term hunger among students at Namasali Primary School doubled the number of student receiving a nutritionally and calorically dense meal this year. Thanks to the dedication of our Community Nutritionist and generous support of our donors, the School Lunch Program has expanded from the pilot program of 76 students to 147 pupils from Grades 3 through 7 -- approximately half of the students at Namasagali Primary School who attend afternoon classes. Plans are in place to provide a meal for all the students by next year.

**A Nutrition Education Center for young mothers is launched:** Student research as well as our own team's daily observations revealed that many young girls become mothers with no idea how to care for a baby or themselves during pregnancy. With the help of VEDCO's former Community Nutrition and Health Worker, Sabbi Jane, our Associate Director for Field Operations, Dorothy Masinde, and our Community Nutritionist, Laura Byaruhanga, a small center was initiated at Jane's home to teach these girls learn how to feed and care for their baby, what types of food are best to grow, and how to monitor the health of their baby. The response from the community has been overwhelming and plans are in place to develop a number of satellite Education Centers in the near future.

**A host of research projects are underway** led by undergraduate students, ISU and Makerere University graduate students, ISU faculty, and Uganda collaborators. These include research on: Use of Mobile Phones in Agricultural Development, Assessing the Nutritional Status of Pregnant Women, Tomato Education and Production for Nutrition, Enhancing Biological Nitrogen Fixation of Leguminous Crops Grown on Degraded Soils, Enhancing Nutritional Value and Marketability of Beans, Promoting Production and Utilization of Grain Amaranth. CSRL also supported a new program to bring Iowa farm women to Uganda to share their knowledge about growing soybeans with women farmers in Kamuli District. Nearly all of these projects are supported by external funding and promote CSRL's primary goals to improve nutritional security and economic stability of rural households.

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