The Sustainable Agriculture and Food Security Grant Annual Report 2016-2017

WorldRenew

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Cover Page Photo Credit: Sierra Leone, Sean Hawkey

1.0 Introduction

On January 1, 2016, the new 2030 Agenda for Sustainable Development was released by the United Nations. These new global objectives continued to include the 17 Sustainable Development Goals (SDGs) which had previously succeeded the Millennium Development Goals. The SDGs will continue to shape development plans globally but the heart of the 2030 Agenda is food and agriculture, climate change and sustaining natural resources, which will contribute to ending poverty and hunger.

Linked to this is climate change which has both direct and indirect effects on agricultural productivity including changing rainfall patterns, drought, flooding and the geographical redistribution of pests and diseases. Climate change threatens our ability to achieve global food security, eradicate poverty and achieve sustainable development. Greenhouse gas emissions from human activity and livestock are a significant driver of climate change, trapping heat in the earth's atmosphere and triggering global warming.[1]

World Renew's strategic plan highlights the challenges currently facing smallholder farmers, including the impact of the changing climate on food production and the increase in frequency and severity of disasters such as drought and floods. One of the three strategic pillars that arise out of this changing global context is developing the capacity of communities in agriculture and food security. Current Sustainable Agriculture and Food Security Strategy includes four pillars:

- Embracing agricultural practices that are stewardly, sustainable, and address issues of poverty and injustice, with a focus on restoring creation through the use of locally available resources.
- Strengthening the capacity of staff to deliver high-quality agriculture and food security programs.
- Ensuring increased funding amounts and diversified sources of funding for integrated agriculture and food security programs.
- Improving the quality and effectiveness of agriculture and food security programs.

Photo Credit: Sean Hawkey

[1] www.fao.org

The Sustainable Agriculture and Food Security (SAFS) Grant has helped advance work in the agricultural sector by providing financial and technical support for key initiatives that address the needs of smallholder farmers in communities in which World Renew operates. Since 2010, country offices and partners have had the opportunity to submit proposals for up to $12,000 USD that address one of seven thematic areas (see infographic). The grants offer an opportunity to test and improve a new agricultural process or technology or to adapt a process or technology that has been successful elsewhere and not previously implemented with the participant farmers. This is innovation.

In 2016-2017, the SAFS Grant funded seven innovative projects working with smallholder farmers in six countries, as well as four learning opportunities for World Renew staff and partner agencies in four countries. A total of $80,209 USD was dispersed.

In Bangladesh, Malawi, Mali, Uganda, Sierra Leone and Zambia smallholder farmers are now better equipped to adapt their farming operations to the changing climate, have made improvements to their soil fertility, and have accessed credit and linked with markets, all through innovative, scalable, context-specific initiatives made possible through the SAFS Grant. The following sections highlight these projects, with a summary of each project's strategies, key achievements, and lessons learned.

With thanks to this granting opportunity, the story is changing.

2.0 Fruit Tree Food Security Project - Bangladesh

2.1 Background

Comprehensive Community Development Project (CCDP) works in the north central region of Bangladesh. CCDP began community transformation work in 1998 with World Renew. Community members in this area have a rice-based diet. They eat rice three times per day with a small amount of vegetables and lentils. Occasionally they eat fish; even less frequently, they eat fruits. The fruit they do eat is grown either on their own land or a neighbor's if available. Geographically this region is low lying and the soil is a combination of silt and sandy loam.

A fruit tree cultivation project is a perfect opportunity for group members to expand their diet towards food security. Almost all group members have room around their house for at least one fruit tree. Fruit is considered a child's food and it is often consumed straight from the tree. Papaya and banana are eaten both as a vegetable and a fruit in Bangladesh are high in nutrient values.

2.2 Project Description

Taking into consideration the high need for food security and diversity, World Renew's partner CCDP chose to promote papaya and banana to local farmers. Papaya needs only six months from planting until harvesting and banana one year from planting to harvest. Making papaya and banana trees available at a reasonable price, encouraging group members to plant them, and addressing other barriers members have, will provide a simple solution to a serious problem.

The project aimed to provide technical support to participants by equipping the agriculture sub-committee, Agriculture Technical Committee (ATC). ATCs operate locally and are available to teach and train. The ATC has vast knowledge in regards to the training and practice of fruit tree cultivation, monitoring, training of trainers, exposure visits and demonstrations. The ATC shared fruit tree cultivation practices with participants and provided necessary support.

Additionally, the project promoted the use of pile compost as mulch/fertilizer for the fruit trees and trainings on how to properly prune the fruit trees. The idea was to test a theory that if the capacity of the local People's Institution was increased with this knowledge, that fruit production and consumption would also increase.

2.3 Results Achieved

- 295 families are eating fruit from their own trees and have improved their food security. 805 families are expecting fruit from their trees during the next harvest season.
- Trained participants were able to form a new local ATC in order to assist communities where the fruit tree project had been initiated. The ATC will be locally available to consult on planting issues.
- Famiies have become more aware of the skills needed for successful fruit tree planting and nurturing And seeing more fruit from their own trees.
- 423 farmers are aware of environmentally friendly cultivation practices and are using compost or cow manure and organic pesticides for their home gardens and fruit trees.
- 200 community members outside the project have planted fruit trees, after watching the program participants plant and care for fruit trees.

A stick fence keeps the chickens from ruining the young dwarf papaya plants.

2.4 Lessons Learned

- Participants and staff learned that due to the sandy soil, plants must be watered frequently, alternatively many plants died in the rainy season due to flooding.
- Encouraging fruit tree plantation and care is good, but the program is only one year, so difficult to see the long-term results. The project hopes to continue activities for several years in order to see growth and change.
- CCDP discovered quick adaption among the female participants as caring for fruit trees is something that is easy and does not require extra time outside their home area.

Changing Their Story

When the Agriculture Technical Committee began teaching in the villages, they were not well received. “You are just my cousin, what do you know about fruit trees?” was often heard. Although they had been trained on good banana production and tree care, they had never seen it in person. Arriving for a training they were surprised at the orderly rows of banana trees, healthy and strong. “This farmer keeps the banana plants cleaner than I keep my own skin!” one ATC member remarked. On returning home, family and neighbors asked them “Where did you go last Thursday?” The ATC then had countless opportunities to share what they saw and what they now know about caring for banana trees.

“I never thought of watering a tree before” shared Mashi from the women’s focus group. Because the CCDP staff have visited me to share why and how to take care fruit trees I now water my 3 banana trees. “One day my sister saw me and asked me why I was watering the trees. I told her it is to keep the trees healthy. It is not hard to water a tree. My sister now waters her trees.”

The ATC team continues to be motivated during monitoring visits by community participation and lots of healthy banana and papaya trees.

3.0 Treadle Pump and Winter Cropping - Malawi

3.1 Background

Traditionally in Malawi, most small-scale farmers have been growing maize. Most households do not practice conservation agriculture and do not understand how they can restore the fertility of their soil. A largely agricultural country, 84 per cent of Malawians live in rural areas where about 11 million are engaged in smallholder subsistence farming; but only one-third of the land is suitable for cultivation because of mountains, forests and rough pastures. Jasi GVH, Kalu and Santu in the Chikwawa District of Malawi regularly struggle with water availability for agriculture. Either fields are flooded or they are too dry due to drought. Poor farming practices have resulted in very poor soil which is now dependent on high fertilizer inputs. The year that this SAFS Grant was submitted had been particularly difficult as the previous year's floods had reduced available food stocks and drought had resulted in severely reduced harvests.

3.2 Project Description

The project focused on innovative solutions to water management, but also had aspects of soil fertility restoration and new agricultural technologies. World Renew supported partner, Eagles Relief and Development Programme with all three approaches.

In the dry season, the river becomes what is known as a sand river. There is no water visible, but it can be found just a few inches below the surface flowing through the porous sand of the river bottom. Three locations were chosen for implementation and design of the shallow wells. Families normally were only able to plant once a year, so it was hoped that by introducing the treadle pump, they could plant up to twice a year, greatly improving their food security.

This would also enable families to supplement rainfall during the wet season cropping in the event of a drought. Households were also chosen to be trained on Conservation Agriculture techniques and to grow more diverse crops. Participants were chosen from households in Jasi, Kalu and Santu based on need and their capacity to gain access to and prepare land adjacent to the identified water sources.

Food Security

Pa Fwambi realized the importance of making compost and mulching. Now, he only needs to water his garden once a week because the mulch protects his plants. He no longer needs to water his garden by hand because of the treadle pump. He expanded his plot, gathered and bought seeds from local farmers and has planted tomatoes, sweet potato, cow peas and other vegetables. He now has enough food for his family and can sell the excess.

3.3 Results Achieved

- 23 women and 27 men were trained in smart Conservation Agriculture.
- Participants were trained in soil health and management and on how to access water using treadle pumps in dried river beds to irrigate crops.
- Participants are growing cassava and orange-fleshed sweet potatoes which are drought resistant and vegetables on small amounts of land .
- All farmers are involved and participating in winter cropping using improved agriculture techniques.
- The project has established that it is possible to do winter cropping using shallow wells.

3.4 Lessons Learned

- An initial plan to pump water from the shallow well to a liner reservoir, and from the liner reservoir to water tanks where water could flow to the fields by gravity could not be implemented as extremely hot temperatures rendered the liner inactive.
- When innovations are based on local knowledge, participants do not struggle to adopt the concept. This has been learned from the participant's ability to adopt mulching and manure making, which were based on their local knowledge and locally available resources.
- Development is a process that should be given enough time for the participants to integrate the concept as a livelihood option. During the first farming season of the project, participants struggled to safeguard their crops from livestock and other invaders, there has been a positive change as the participants have learned a lesson from their own practices and did everything to safeguard their crops.

Changing Her Story

"I had been living a miserable life since my husband passed away", says Mercy Maclean, a participant in the Chikwawa District. "But now my life has changed as I am able to harvest my own vegetables for meals and I can sell the surplus. The knowledge that I have received from Eagles has really transformed my family. I plan to continue farming, until I advance myself. I want to buy livestock from farming returns and improve my asset base".

4.0 Mali - Sahelian Bocage to Restore Land Productivity

4.1 Background

Mali is a landlocked country with 60% of its area classified as arid zones or desert.

Farmland in Boura is not very productive. Decades of cultivation have left the soils seriously depleted. Overgrazing of livestock, the cutting of trees, and poor farming practices have also contributed to the depletion of soil and water resources in the area and left the land more vulnerable to erosion from wind and water.

Due to poor soil fertility, crop yields remain very low, even during some rare good years when there is abundant rain. Harvest is barely sufficient to meet food needs, and typically, food stores are exhausted a few months after the rainy season. With the introduction of ploughs and sowing machines pulled by animals, farmers have been able to cultivate larger areas of land to increase their Boura Commune production. But they have cut down many trees to clear the land, thereby worsening the problems of erosion. With current erosion trends, food security will remain a problem in this region unless farming practices change.

4.2 Project Description

This project targeted four rural villages, Tabako, Koun, Wakoungo and Tasso with an innovative solution to address the problems mentioned above. It was important to involve all people of different ethnic groups including people from the Bodo, Minyanka, Fulani and Bambara people groups. World Renew with its partner ODES (Development Agency for Hope) identified 48 households who together own the 15-hecatres of land and were very interested in working together on this innovative project.

A Bocage perimeter was established around this parcel of land, which was then divided into 48 plots. The plots were distributed to the participant households, including eight plots for female headed households and six plots for immigrant families. Despite the challenges brought on by the rainy season, ODES was successful in facilitating the project participants through the steps of land mapping, perimeter delineation, making a land distribution plan, identifying landlord families and mobilizing stakeholders who would contribute their labour to the initiative. Before the project began, World Renew had already facilitated the negotiations of agreements between families regarding the common property. An inter-village agreement was also signed between the villages of Tabako, Koun, Wakoungo and Tasso in order to establish terms for land ownership and management.

Sahelian Bocage

Bocage consists of a group of agricultural plots degraded within the same site, enclosed by a mixed hedge (fencing, hedges). The development of bunds, ponds and hedgerows conserves rainwater, mitigating the erosion of the land. This allows a quick restoration of the degraded and impermeable land. Use of Kassine (top) and digging Zai holes (bottom).

4.3 Results Achieved

- 250 participants (100 and 150 women) are using Conservation Agriculture techniques including zai holes, composting, trenching, and retention walls.
- The layout of the interior plot, including digging the outlines of each lot and ponds for retaining water, and water bunds were completed.
- A total of 12 lots were made and each divided by four plots.
- The application of sustainable agricultural methods in the plot has started, including zai hole, composting, embankments, trenches and ponds.

Site access requires the construction of two gates. Gate 1 allows access of pedestrians, while restricting animals (left). Gate 2 allows both pedestrians and animals access through the site (right).

4.4 Lessons Learned

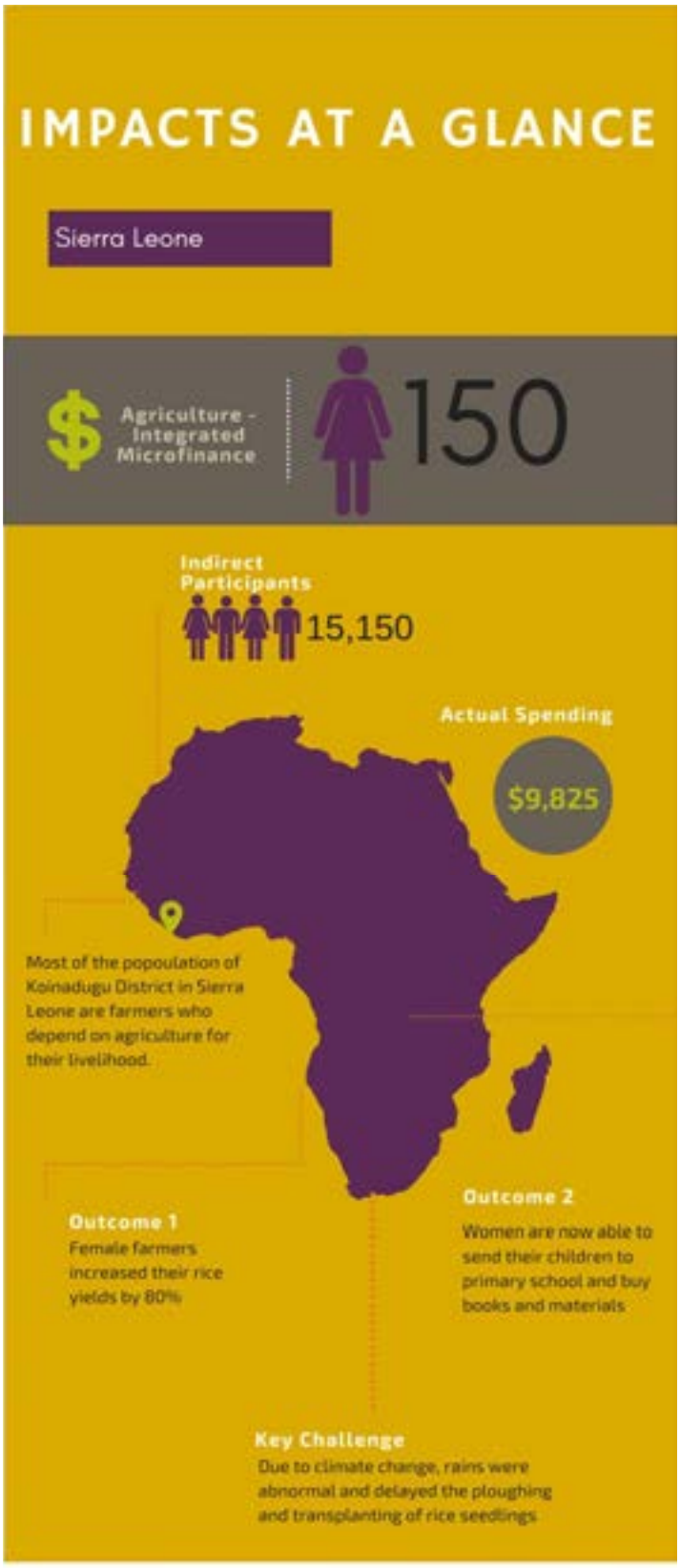
- It was vital that at the onset of the project efforts were put into mobilizing the communities first and helping them to understand the principles of Bocage. Much dialogue and discussion was necessary to have landlords sign inter-family agreements to transfer the land to the community. MOUs were signed between families by the participants.
- ODES was intentional about gender equity in the project; as a result community participation has increased the ownership of the project, which will promote its sustainability.
- The project fell slightly behind schedule as during October to January communities were busy harvesting their grain and selling cotton.
- Young people did not leave the village after the harvest as they typically do in search of other work. Youth remained and continue to be involved in the work.
- Procurement of certain supplies and materials was challenging and led to slight delays in programming timelines.

5.0 Seed Bank Project for Female Farmers - Sierra Leone

5.1 Background

A majority of the population in the Koinadugu District of Sierra Leone are farmers who depend on agriculture for their livelihood. Rice is a staple food, and yields have been negatively affected by delayed and erratic rains in recent years.

World Renew and its local partner, Christian Extension Services (CES), have been working to improve food security in the district by introducing improved agricultural techniques, focusing particularly on female-headed households and on creating social capital in the communities to foster peace and development.



5.2 Project Description

The villages selected for implementation of this SAFS Grant funded project were the most remote and populous within their wards. A survey by CES staff revealed that female farmers are the poorest and most marginalized persons in the communities, and they rely on accessing rice seed on credit because they run out of food by planting season. Interest on rice seed loans is extremely high at 100% and the women are also forced to pay part of their harvest for renting the land, leaving them in a cycle of poverty. As women also bear the primary burden of feeding and caring for children and paying for school fees, if they are adequately equipped with the necessary skills in agriculture and given the opportunity to earn an income through their farm produce, the whole family will benefit.

Customarily, men in Sierra Leone are responsible for earning the family income, managing farm production, and making decisions regarding the family and community. Men are also the traditional landowners, including Inland Valley Swamp (IVS) land, which is used for rice production. In order for project success, men were included in the project in a way that they could see the project as being of benefit to them as well. They were involved at the land preparation stage but allowed the women to have control in the harvest and processing. Because of this, the women were better able to manage some aspects of the farming activities, especially processing. There was a further impact in the increased role of women in decision making which established healthy household participation and future contribution to their community. The women are now consulted for decisions that will affect their lives.

5.3 Results Achieved

- 150 women farmers in 5 communities participated and saw an 80% yield increase in rice.
- Training of the CES field staff on sustainable agriculture methods.
- 150 women farmers were trained on sustainable rice intensification.
- Demonstration plots on rice intensification developed in all the five communities.

Photo Credit: Sean Hawkey

- Recovered seed loans with interests from SAFS women farmers.
- Leadership training on seed bank management was conducted for a total of 224 leaders.
- All five (5) VDCs in Bendukoro, Gbokoroma, Barawa Komoya, Sengbeleroh and Firawa are implementing and monitoring seed bank activities of the 150 women farmers.
- A few women have received control and ownership over land.

5.4 Lessons Learned

- In order to produce healthy seedlings at the nursery the project needed to keep a small amount of seed sown, wider nursery bed areas and shallow harrowing with uniform sowing.
- Higher yields were produced when participants took note of careful uprooting, shallow planting and proper spacing.
- Women were better able to manage aspects of the farming activities because the project intentionally involved men in the design stage. Men were onboard with the project idea and then were able to see the benefit for the women and indeed the entire community.

Changing Her Story

Madam Fatmata Mansaray's husband died three years ago. At 45 years of age, being a widow with seven children to care for is an incredible challenge. Prospects for re-marriage and additional support are slim; close male relatives and other men fear establishing a relationship for the extra burden it would create in their own life. Fatmata was chosen as a member of the SAFS program. She became the head of a group of 37 women whose main income was swamp rice farming, tree planting, up land rice farming and local vegetable production. She received a loan of two bushels of rice seed to begin rice farming on a small scale. Fatmata has been able to produce three bushels of rice, three bushels of groundnut and other items with a profit of $177.50 USD (710,000 LE) that she gained from rice sales.

Her situation has dramatically improved, she pays local tax and is a decision maker as the ward representative in her village. Besides this, she is able to feed her family, pay school fees and her children's medical needs. Just recently she was able to move into a four room thatched roof house with mud blocks and hopes to replace the roof with corrugated iron sheets very shortly.

Fatmata Mansaray now fulfils a popular community saying,
"Through perseverance one can achieve success in life"!

6.0 Youth Integrated Indigenous Chicken Raising – Uganda - Nebbi

6.1 Background

The Church of Uganda Nebbi Diocese (CoU Nebbi) has been engaged in improving rural household livelihoods and food security through agricultural related programs in northern Uganda since 1995. Over the last few years, CoU Nebbi has been adopting the self-help group approach as a community entry point and mobilization strategy.

As these self-help groups have seen success, the need for increased activities for youth has become apparent. Youth in Kaya Parish have limited access to formal employment opportunities. In general, many male youth will leave the area to find work as casual day laborers. Most of the female youth drop out of school due to lack of support from family to remain in school and increasingly due to teen pregnancies. While the need to provide and diversify young people's sources of income is high, the project also saw the need to promote nutritional programming aspects.

6.2 Project Description

Households in the parish are predominantly earning their livelihoods through smallholder farming, and while it is rare to find goats and cows, most households keep a small number of chickens. Market demand for this variety of chicken is high (Kroiler) and market opportunities exist beyond the project region. The program used savings groups as its foundation, the focus on youth, and the integration of market orientation and the youth growing their own chicken feeds. Youth were mobilized into self-helps groups and the savings produced from these group funds allowed them to access loans in order to support poultry needs such as buying feed and supplying vaccines. Introduced into the project as well was the promotion of amaranth for better nutrition for chicken feed, this will improve egg laying capacity. Learning was shared by participants through exchange visits in Buganda region.

6.3 Results Achieved

- The project saw a great increase in the number of youth participants. Membership increased to 122 youth (92 female, 30 male) and six self-help groups. Group activities included weekly meetings, small financial contributions to the group fund, trainings on different aspects of indigenous chick raising and participation in the exchange visits.
- Total loans received by members was approximately $227.00 USD (830,700 UGX). Contributions from members varied depending on members' access to money. The group fund grew from zero to $413.67 (1,514,700 UGX).
- Information gathered from 70 households indicated an increase of 358 birds, with 389 chicks and 86 Kroiler males and 40 hens laying eggs.
- Improved ability to identify the diseases and provide appropriate treatment of the birds with minimal external support from the veterinary extension service providers.
- 75% of the participants have established various kitchens near their homesteads planted with amaranth, tomatoes, eggplant, crotalaria, black night shade, spider plant and other forms of local vegetables.
- A learning demonstration site was established to increase awareness on soil fertility. The six self-help groups in their respective kitchen gardens planted the different vegetable types including the amaranths, ensured that the crops are well spaced, the field with well covered organic matter.
- 20% of the youth now have at least two sources of income that range from poultry keeping to the growing of vegetables.

I am very grateful to the SAFS project. I now have a meaningful livelihood both for my family and for myself in general.

6.4 Lessons Learned

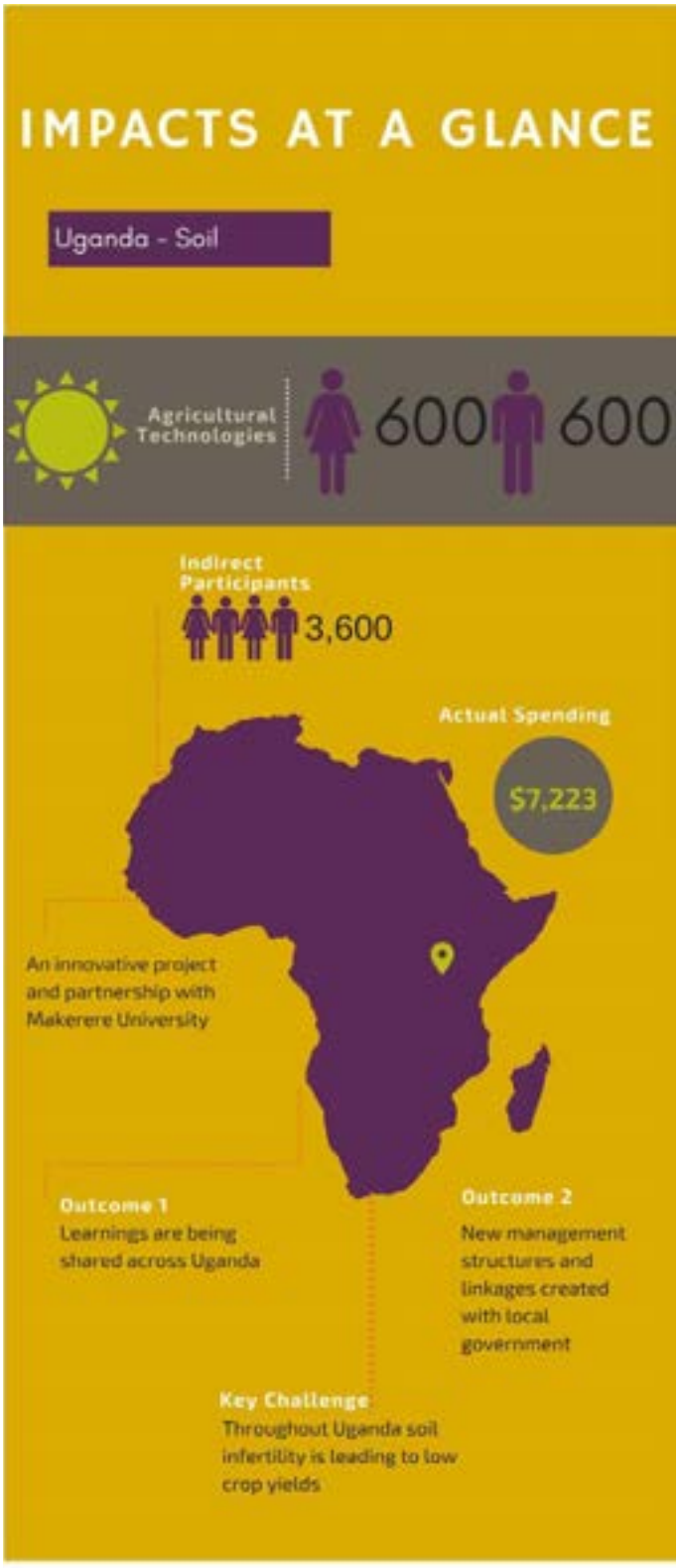
- The remaining need to equip community members with other life skills and innovations such as soap making and basket weaving as other alternative income generating activities in addition to kitchen gardening by planting of vegetable both for sale and home consumption.
- Continued need to connect the community with other NGOs and government line ministries to strengthen relationships and improve sustainability.
- There was reported loss of the kroiler birds through theft and death due to the New castle disease outbreak. This inevitably affected the number of hens that should have been realized as a result of matching from the participating households.

7.0 Multi Partner for Soil Fertility Improvement - Uganda - Soil

7.1 Background

Uganda is faced with declining soil fertility caused by poor farming methods, increasing population leading to overuse of land among other factors. Poor and degraded soils affect the quantity and quality of crop yields and this in turn impacts on human health. This link between soil fertility and human health calls for an increased focus on soil fertility as a major challenge in crop production and food security. Even though practices that are based on the principles of Conservation Agriculture have been implemented and changes may be seen in yields, there has been very little attention on soil health.

Continuous burning in fields and poor soil management practices have resulted in an increase by the invasive, cogon grass. Pasture that can be used for raising livestock is gradually disappearing. Based on World Renew's strong work in Uganda with its five partners, a proposal was launched to include all partners' knowledge in this innovative approach.



7.2 Project Description

World Renew Uganda is intervening to improve soil fertility in all the regions in Uganda where projects are being implemented using Conservation Agriculture. The purpose is to build capacity of the communities in improving soil fertility through retaining and returning soil nutrients. The return of lost nutrients or new additions of nutrients are necessary to balance this removal of nutrients and an understanding of the condition of our soils will help in this restoration process. However, projects do not have a means to track how well this is being achieved at the community level. The goal therefore of this program is to initiate soil testing and monitoring measures at the community level that will enable World Renew and its partners in Uganda to quantify the impacts of the different Conservation Agriculture practices on soil health. With time, good soil health analysis will require microbiology analysis and this will involve the partnership with Makerere University. The chemical soil testing kit will provide a visual learning aid and assist teams and farmers in understanding a good estimate of soil pH and plant available Nitrogen and Potassium. Data collected from the testing will be used to determine elements that may be deficient and will then be used to make soil amendment recommendations for each region that will lead to improved crop yields.

7.3 Results Achieved

- Two training sessions on soil testing were conducted for all Agriculture teams within the Uganda partners.
- Preliminary results show that soils are acidic in almost all farms sampled and organic matter was also low. Results were shared with the Makerere University scientists for further advice on how to address the acute cases of soil nutrient deprivation.
- Target sites were identified for demonstration plots by communities.
- Management structures have been created by each partner for each community, including Community Resources Persons, Community Development Committees, church leaders and Local Council One government officials.
- Participants have been selected based on being an active farmer, a community member and being willing to be involved in project activities.

7.4 Lessons Learned

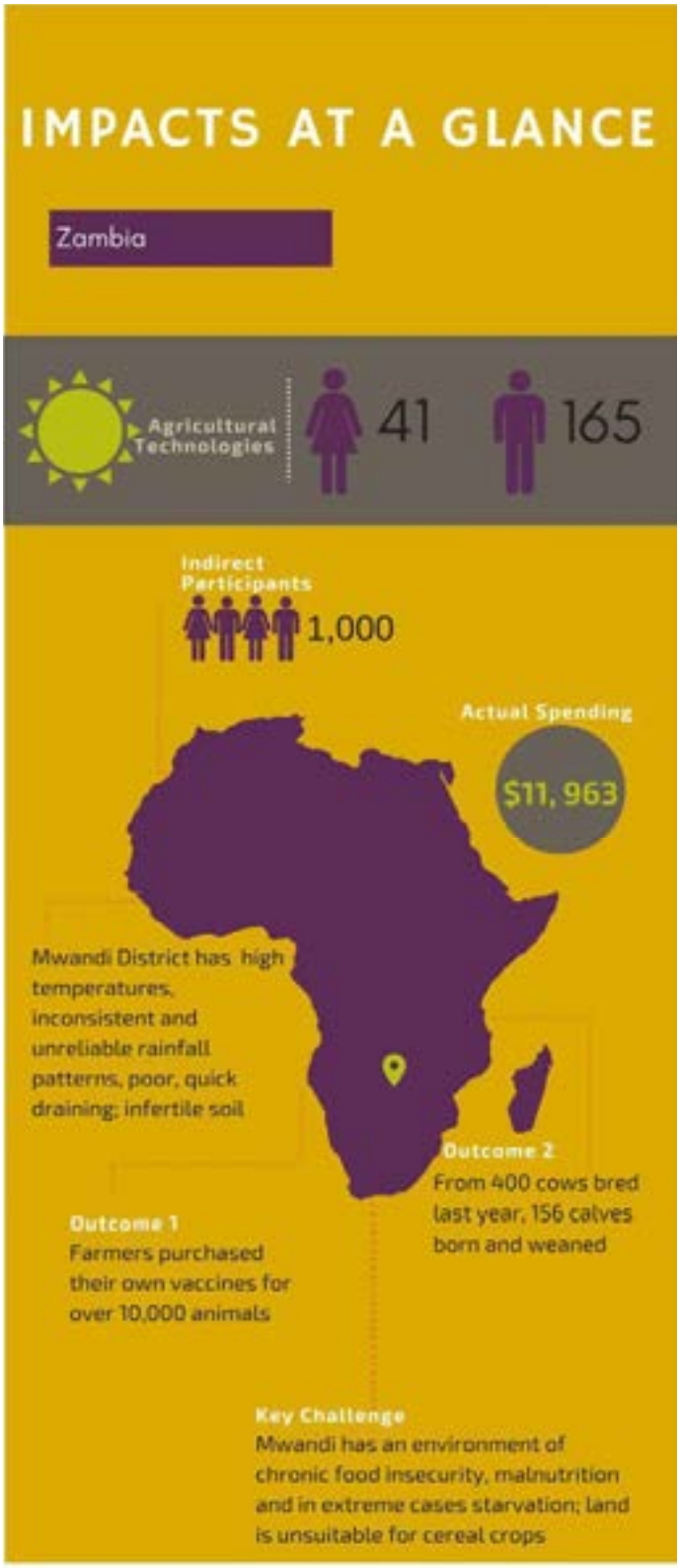
- The findings and recommendations of the soil testing results informed our Conservation Agricultural projects throughout the country.
- Conservation Agriculture alone cannot meet the total soil nutrient restoration without other components for better crop production. Partnering with the Canadian Foodgrains Banks (CFGB) will further enhance learning.
- Project will continue to procure soil testing kits for farmers, as the cost is prohibitive and there is high need for this learning and knowledge.

- There is a need to design projects that integrate both animal and crop production. This will enhance the soil fertility using organic manure to address the soil nutrients deficiency for enhanced crop productivity.
- Soil nutrient restoration using organic manure, cover crop/ green manure takes time and the cost of chemical fertilizers is beyond the capacity of small-scale local farmers.

Soil Testing

Farmers are beginning to understand soil quality and how better soil conditions will produce higher crop yields.

8.0 Mwandi UCZ Livestock Development Program – Zambia



8.1 Background

Mwandi District is located in the Western Province of Zambia and borders both the Zambezi River in the South and Namibia. It is marked by high temperatures, inconsistent and unreliable rainfall patterns, poor, quick draining; infertile soil based on Kalahari Sand and as a result, is drought prone.

An over reliance on maize in an inappropriate context has meant that traditional, historically relied upon, more drought resistant crops such as sorghum, millet, cassava and pumpkin have been discontinued.

Mwandi, however, benefits greatly from the Zambezi River, its catchment areas and flood plains. All of these help to provide some of the best grazing land in Africa. Annual inundation means that vast areas of land are flooded and when the water recedes it leaves abundant grass and reeds for cattle to graze on and year round access to water in canals, pans and pools.

The livestock industry in Mwandi has been unable to properly develop as cattle owners have not been able to access the resources, technology and training they require to maximize the economic resource that is their cattle.

8.2 Project Description

This unique project was designed to assist cattle owners in Mwandi district develop the commercial viability of their local cattle stock through education in effective animal husbandry practices, the development and access to vaccinations and anti-parasite protocols and to begin an artificial insemination program. The focus on livestock rearing will have a positive impact overall for the family as participants depend heavily on their animals for food supply. A cornerstone of the Zambian culture is cattle and most cattle keepers are men or boys. Improvement of livelihoods and food security are the focus of this project and for all members of the household, but direct participants are mainly male, although specific targeting is done for widows and female-headed households. The project includes training for participants on access to vaccines and their use and early disease identification. In this way the project will help to reduce the annual attrition rate from easily treatable and preventable disease. Artificial insemination procedures are undertaken along with education in good husbandry practices to increase calving rates. The continued development of a district wide farmer's cooperative is an integral part of the project design and combines with the advocacy work that local veterinary and livestock departments undertake to promote government support.

8.3 Results Achieved

- The farmer cooperative has grown to 206 members and 14 villages.
- Of 400 cows bred during the project year, 156 calves have been born and survived to weaning. These calves are outgrowing their local age mates by significant margins and have attracted much attention from even outside the district.
- Over 2000 individuals have attended trainings.
- Over 10,000 animals have been vaccinated with vaccines paid for by the farmers themselves.
- 1 program manager, 1 Field Office and 14 CLWs have been hired and paid for by the cooperative.
- During the project year, 756 cows have been bred with successful pregnancies.

8.4 Lessons Learned

- Cooperative formation, training and selling of medicines have worked well this year. The farmers have begun to see the cooperative's strength and new members are coming in a steady stream.
- The sale of medicines has only resulted in the challenge of keeping enough inventory stocked. Farmers really appreciate the ability to buy what they they need in their own community and a sense of empowerment comes from being able to to buy medicine and treat their own animals.
- Continue to face challenges in getting large numbers of cattle pregnant. One reason for this is finding quality animals to breed.
- Cattle farming and livestock rearing is on a very simple level and basic education is still needed.
- The potential impact of the animals born will be very large for the community as these animals breed and multiply, but also they have raised awareness that farmers can do so much more with their animals than they had realized. The impact has been to create a hunger in farmers to improve their livestock and the tools and structure through which to do so.

9.0 Capacity Building for World Renew and Partner Staff

In addition to making grants available for innovative agriculture programming, each year, approximately 10 percent of the SAFS Grant is earmarked for capacity building of World Renew and its partner agencies' staff. This provides an excellent opportunity for staff to attend trainings, networking events and workshops related to agriculture and food security. This past year, four learning opportunities were funded, directly benefitting World Renew staff and their implementing partners in four countries.

9.1 ECHO Latin America Conference 2016 (Managua, Nicaragua)

ECHO's goal is to empower network members to advance food security and sustainable livelihoods among the poor. ECHO regularly organizes conferences that provide networking opportunities to improve the capacity of international development workers by allowing them to share their skills and knowledge with each other.

In September 2016, 13 participants from World Renew's three partner agencies, including ACJ, AMC and the Saint Lucas Foundation were sponsored to attend the conference.

- The moringa plant (marango in Nicaragua) has excellent nutritional properties; participants had the opportunity to learn about proper cultivation practices.
- Biointensive beds, which are advantageous for farmers with limited planting space or infertile soils.
- Commitment to change eating habits at family and then institutional levels.
- Promotion of a more nutritious and sustainable diet within their project communities.
- Reflection on more effective methodology; experimenting with new techniques in order to promote them to local farmers.
- Community development must always strike a careful balance between social, economic and environmental sustainability.

9.2 Guatemala at the ECHO Latin America Conference 2016 (Managua, Nicaragua)

The Guatemala program was able to send four staff from its partner agencies; ACOSPREK, ADIP, ADIPEC, Vine and Branches to the ECHO conference (as referred to above).

- Participants were assured that all of the practices being promoted in the Guatemala agriculture program are relevant to mitigate the effects of climate change and to the improvement of food security of rural homes.
- Practices that the partners are currently implementing and that were promoted in the event are: moringa cultivation, organic composting, vermicomposting, rabbit husbandry, soil conservation techniques and promotion of growing local leafy greens (amaranth and chaya) for consumption.

- Two partners, ADIP and APIDEC have taken this learning experience and are currently replicating and giving emphasis to new practices seen during the event, including the use of chickpeas for soil conservation, promotion of moringa and amaranth as highly nutritious leafy greens and micro-irrigation systems.

9.3 East Africa ECHO Conference 2017 (Arusha, Tanzania)

World Renew Uganda was able to send three of its partner staff to this conference. During this ECHO learning opportunity, participants were exposed to new ideas and encouraged by innovative approaches, which will strengthen current programming. Participants and farmers learned that starting small is a good and acceptable approach for small-scale farming throughout the whole of Africa. Conservation was also an important topic and reinforced learnings including engaging all members of the household in planning for these practices, promotion of good seed selection and overall refreshers on the technical aspects.

- Two farmers are successfully demonstrating the use of pigeon pea as green manure cover crop in Katakwi and Amuria FRB communities with PAG-North TESO.
- 20 Demonstration plots for farmers on the best use of GMCC (Green Manure Cover Crop) as cover crops have been established - knowledge acquired during ECHO.
- Shared learnings with farmers currently in programs with PAG Kaberamaido.
- 76 farmers are successfully demonstrating the use of pigeon pea, Lab Lab seeds and visiting each other as a way of enhancing adoption of Green Manure Cover Crop use.

- One VSLA group has incorporated the livestock component (goats) into their livelihood program and are currently getting ready to acquire an improved male goat that they can use to improve the local breed that they are rearing with PAG South Western Uganda.
- As a result of networking during the conference a team from PAG North TESO had an exposure tour to western Kenya to see what farmers are doing in conservation Agriculture.

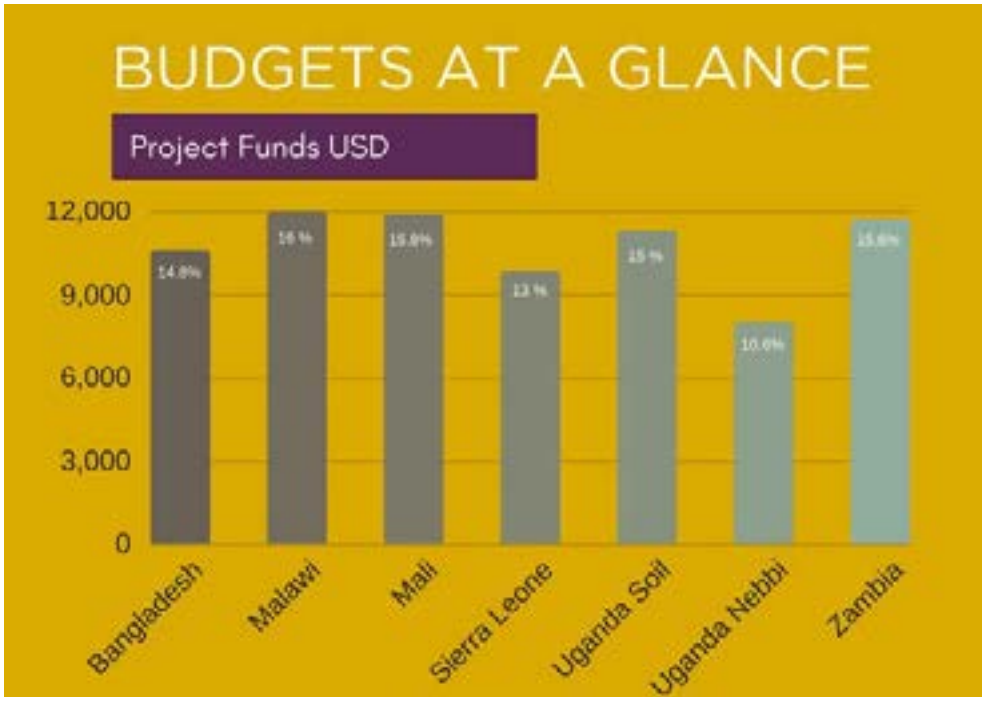
9.4 Kenya Soil Testing Learning Exchange 2016 (Uganda)

World Renew's Ugandan partners have been implementing a soil testing methodology in the Soroti area for a number of months. As noted above, Uganda's partners are engaged in a current SAFS funded grant for Soil Testing. In order to re-inforce learnings and introduce the Kenyan team to new and innovative ideas, a learning exchange visit was offered. During the visit, three partner staff from ADS Mt Kenya, ADS Central Rift and ADS Western, along with three World Renew Kenya team members were able to participate. Best practices learned from this visit will inform the design of future projects, especially a project designed to grow the current Canadian Foodgrains Bank Conservation Agriculture scaling up program.

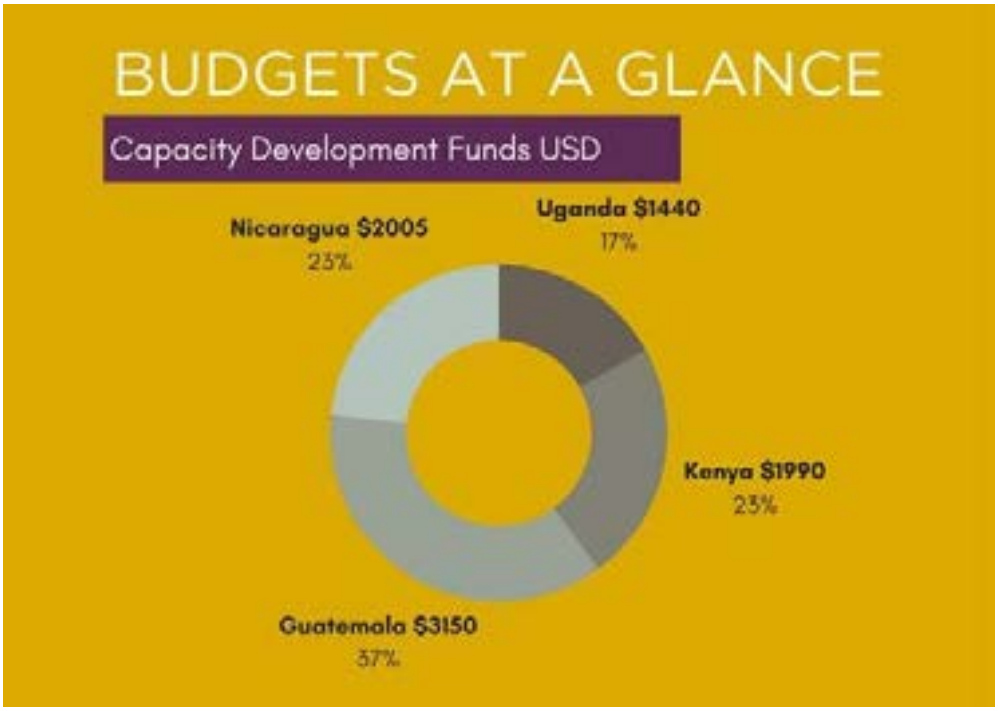
NARO

The National Agricultural Research Organization of Uganda is based near Soroti Township. This research centre is used primarily to address dryland farming. Participants learned about peanut selection.

10.0 Grant Allocation Summary



A total of $71,444 in SAFS funding was dispersed in 2016-2017. Projects directly benefited **1,152 women and girls, 951 men and boys and 21, 845 indirect participants,** enabling communities to experiment with innovative agriculture solutions towards sustainable food security.



In addition, $8,585 was used to fund four learning and capacity building events directly benefiting World Renew staff and their implementing partners in four countries.

11.0 Conclusion

Photo Credit: Sean Hawkey

Programs implemented through the SAFS Grant in 2016-2017 have successfully helped communities to further their goals of food security through small-scale sustainable agriculture. Within the context of climate change, characterized by heavy rains, flooding, drought, and unpredictable seasons, smallholder farmers are facing significant challenges in producing enough food to feed their families. Sustainable agriculture practices not only hold promise for helping farmers produce enough food for today, but they also ensure that farmers in future generations will inherit productive, fertile land.

Being given the opportunity to test new and innovative agricultural methods and gain grant management experience has been highly valued by World Renew and its partners, with the impact of the SAFS Grant being felt far beyond the programs themselves.