

CFGB Inter-Member Food Security Delegation Report

January 24 – February 3, 2010

Malawi-Mozambique

A. Executive Summary

An Inter-Member Food Security Delegation with four member staff (MCC, CRWRC, CBM and WRC) and one CFGB staff person visited five food security projects in Malawi and one food security project in Mozambique from January 24 to February 3, 2010. In addition to encouraging inter-member learning and dialogue, the delegation was tasked with providing food security programming recommendations for the Foodgrains Bank network. The project visits usually involved meeting with member and partner staff for an overview of the project, and then field visits with project participants. After each project visit, the delegation met to discuss highlights and identify key recommendations that should be included in the report. The report summarizes the recommendations to CFGB and provides an overview of the key discussion items arising from each project visit. Below is a condensed version of the recommendations found in this report.

General Recommendations

1. The CFGB network needs to share the many unique and innovative technologies implemented by partners which are having a significant impact on enhancing food security.
2. Community participation and project ownership are key elements that improve the success and sustainability of projects and should be highlighted in proposal and reports.
3. Enhancing the programming capacity to develop and implement projects which conserve water and soils must receive greater attention.
4. The CFGB network needs to increase support to partners who are advocating for appropriate public policy changes that could ensure sustainable food security initiatives.
5. To keep programs focused and manageable, food security projects should initially focus on only a few key innovations that are shown to improve food security at the household level.
6. Integrated food security programs play an important role in recognizing the diversity of factors affecting food security at the household level, but must also remain grounded in a few key and complementary interventions.
7. Capacity building on developing strong monitoring and evaluation systems must be enhanced.

Specific Recommendations

1. Adoption of legumes in cropping systems needs to play a greater role in food security programs given their potential to reduce external inputs, increase crop yields and diversify diets to enhance nutrition.
2. The practice of ridge farming in Malawi is increasing food insecurity and needs to be replaced with soil management systems like conservation farming which protect soils, conserve moisture and enhance soil fertility.
3. The planting of drought resistant crops are necessary to mitigate the effects of climate change.
4. Ecosan toilets are a unique innovation which needs further evaluation and then dissemination.
5. Projects which demonstrate the impact of savings and loans groups on increased food security need to be highlighted within the network to build program capacity in this area.
6. Current grain bank projects should be monitored to gather “lessons learned” to guide the development of grain banks in the CFGB network.
7. Farming God’s Way is a form of conservation agriculture that is making significant positive impacts on household food security, and there is need for a “Southern Africa Partner Forum” to develop strategies to expand the impact and reach of this unique and simple farming system.
8. Food security programs incorporating livestock need to be carefully studied to determine impacts.
9. Sand dams represent a unique innovation to enhance food security and should be evaluated to determine their best application and impacts.

B. Background/Rationale

In keeping with the policy of CFGB Inter-Member Delegations, this delegation was organized both to enhance inter-member learning and dialogue, as well as to assist in setting programming priorities for the network. An additional rationale for this delegation was to look for ways to enhance the quality of food security programming and increase funding, both of which were priorities established at the June 2009 CFGB Board Meeting.

The delegation consisted of 5 participants – Menno Plett (World Relief Canada), Bruno Soucy (Canadian Baptist Ministries), Wondimu Kenea (Christian Reformed World Relief Committee (CRWRC)), Dan Wiens (Mennonite Central Committee) and Alden Brault (Canadian Foodgrains Bank). From January 24th to February 3rd, the delegation visited food security programs implemented by Presbyterian World Service and Development, CRWRC, Mennonite Central Committee (MCC) and Bountiful Grains Trust in Malawi and Mozambique to determine best practices and give direction to the CFGB network through the formulation of recommendations.

Approximately 70% of the world's hungry are rural people who derive their livelihood from agriculture. Based on this statistic, it is not surprising that working with smallholder households to boost agriculture productivity so that daily food needs are met is a priority for many of the Foodgrains Bank partners. By assisting farmers to develop more resilient agriculture practices and livelihoods, they will be better positioned to cope and adapt to the cyclical nature of food insecurity and the growing impact of climate change. Identifying the best techniques and approaches to increase food security is a critical first step to improve overall programming.

In keeping with this rationale, the following objectives of the delegation were agreed upon and approved by the Program Working Group and CFGB Executive Committee.

1. To promote inter-member sharing, coordination and collaboration with respect to food security programming in southern Africa.
2. To deepen the understanding of food security issues and responses by members and partners.
3. To showcase examples of food security programming which are having a significant impact in reducing food insecurity.
4. To make recommendations to the CFGB network to guide food security programming in the region.

C. Summary of Key Findings

1. Lack of rainfall and declining soil fertility for crop production were highlighted as the two key restraints limiting the ability of households to achieve food security. In some situations, projects lacked focus because too many innovations were being introduced at one time to improve food security. The CFGB network needs to build capacity on prioritizing and promoting key innovations which significantly increase food security. Based on field visits, conservation agriculture systems and introduction of legumes were having the greatest impact on achieving food security.

2. Unique and innovative technologies were part of every project visited by the delegation. Sharing this information through multi-partner exchange visits and workshops should be a priority for the CFGB network.
3. Introduction of livestock, development of sand dams and use of composting toilets were identified as having significant potential to enhance food security, although they lacked an in-depth analysis to quantify their actual contribution to food security. CFGB should support the work of members and partners to provide an analysis of these technologies for the whole network.
4. The CFGB network needs to increase support to partners who are advocating for appropriate public policy changes that could ensure sustainable food security initiatives such as policies that improve access to land, strengthen agricultural input and output markets, increased technical support to small scale farmers, good governance, etc. Sharing of experiences by members and partners around this topic is recommended to enhance the understanding of how to more effectively implement these types of programs.

D. Methodology

Partner project visits were organized in advance of the delegation by first contacting members who made the initial contact with their partners to begin the organization of the visit. One field visit of a Farming God's Way project in Malawi was also arranged through the CEO of Bountiful Grains Trust based in South Africa. Partners were informed about the objectives prior to the visit, and it was stressed that the visit was meant to be an opportunity for information sharing about successes and challenges of the project. To help guide the discussions, a series of questions were prepared and agreed upon by the group. For each visit, members of the delegation were responsible for asking questions related to the questions.

Usually there were two forums for discussion. The first was with the partners who gave a general overview of their program. The second was with project participants in the field where the project was implemented. During the evening de-briefing sessions, each delegate shared what they learned about their assigned questions and other conversations/observations during the visit. These de-briefing sessions became the basis to develop the key discussion items and final recommendations for each visit.

E. Recommendations

General

1. Unique and innovative technologies were part of every project visited by the delegation. Unfortunately, these technologies are not widely shared between partners and members. Identification, description and dissemination of these innovate farming practices to improve food security must therefore become a priority within the CFGB network. Possible methods to promote these innovations include partner and member exchange visits, carefully targeted training sessions and the development of learning materials adapted for adult learners.
2. Mobilization of communities to increase participation and project ownership must be central in all food security projects. In particular, the formation of farmer research teams to discuss and experiment with new innovations must be promoted within the CFGB network. Project proposals

should include a description of how the project participants will be involved in assessing and promoting the food security innovations as this will improve the success and sustainability of the project.

3. Lack of rainfall and declining soil fertility for crop production were highlighted by partners and project participants as critical restraints limiting the ability of households to achieve food security. Innovations which would minimize the effects of low rainfall and soil fertility were also recognized as key climate change adaptation strategies. The CFGB network needs to build capacity at all levels on prioritizing and promoting key innovations which address water and soil fertility issues which limit crop production. Partners and project participants identified conservation agriculture systems and the introduction of legumes (both as a main crop and intercrop) as key interventions which are having the greatest impact on achieving food security.
4. The CFGB network needs to increase support to partners who are advocating for appropriate public policy changes that could ensure sustainable food security initiatives such as policies that improve access to land, strengthen agricultural input and output markets, increased technical support to small scale farmers, good governance, etc. Sharing of experiences by members and partners around this topic is recommended to enhance the understanding of how to more effectively implement and measure the impact of these types of programs.
5. Food security programs should initially be limited to a few key innovations that are proven to improve food security at the household level. Starting a program on a smaller achievable scale helps to establish a solid foundation. After the community has mastered the initial innovations, the program may expand to include more participants, a larger variety of innovations and a larger catchment area. Additional innovations should only be considered after the initial innovations are well established.
6. Integrated food security programs are important to capture the diversity of factors at the household level which affect food security. This programming diversity needs to be balanced with a focus on key and complementary interventions. An example would be linking the promotion of legumes in cropping systems and the use of legumes in diets through recipe sharing activities with program participants.
7. Food security monitoring and evaluating systems continue to be a challenge for many partners. Building capacity in this area through workshops, mentoring and other training approaches is recommended to both improve the ability of partners to measure the impact of their food security program and simplify reporting.

Specific Technologies

1. The use of legumes in crop rotations as intercrops, green manures and cover crops is a valuable method to both improve soil fertility and improve nutrition for project participants. The probability that a legume will be incorporated into a cropping system will depend on (a) how well the legume crop is adapted to local conditions, (b) the demand for the legume in the diet of project participants (c) the demand for the grain in the marketplace and (d) the non-food value of the legume (i.e.: soil fertility enhancement). Further information on incorporating legumes into cropping systems and diets should be collected, summarized and promoted within the network.
2. The traditional ridge farming system as practiced in many parts of Malawi requires significant labor, often leads to soil erosion when not established on the contour and is not efficient in conserving water in the soil profile since residues are often burned and/or removed from the field. Promotion of conservation agriculture systems through trainings, farmer led research and exchanges are recommended.

3. The importance of planting drought resistant crops such as cassava, millet and sorghum to mitigate the effects of climate change needs to be promoted. The strong preference for maize in the diet will make the adoption of these drought resistant crops difficult and therefore innovative strategies which partners have found successful must be shared within the network.
4. Ecosan toilets appear to be making a significant impact both in reducing incidents of cholera and increasing crop production. Evaluation of this innovation is necessary to determine current adoption rates, barriers affecting adoption and strategies to reduce need for external inputs in the construction of the toilet. This information should then be shared with the network.
5. Savings and loans groups provide program participants with an opportunity to generate income to purchase food and thereby increase household food security. CFGB should highlight successful projects which link savings and loans groups with improved food security in order to build program capacity in this area.
6. Few examples exist of successful grain banks in southern Africa. In theory they are viewed as an excellent intervention to improve food security. Unfortunately, community capacity to manage the bank is limited, especially when outside support is discontinued. Current grain bank projects should be carefully monitored to gather “lessons learned” which would be useful in guiding the promotion of grain banks for the CFGB network. Perhaps a more effective approach is developing more capacity for individual households to store grain.
7. Farming God’s Way is a farming system that unites the practices of conservation agriculture with biblical teachings. This farming approach is significantly improving food security throughout many parts of southern Africa, and aspects of the system are being rapidly adopted by numerous members and partners in the CFGB network. Although observation of field plots indicated the methodology is working, there were major concerns that key components of the system such as mulching, plant density and permanent planting stations recommendations were not being followed. The CFGB network must work more closely to assure that the recommended practices are being promoted and monitored. Partners who are actively promoting FGW in the southern Africa region should meet on a biannual basis to evaluate progress, share ideas, interact with non-member agencies and develop strategies to increase the impact of this unique farming approach.
8. Livestock introduction programs designed to improve food security require more attention to assure sustainability, direct benefits to households, improved targeting and proper breed selections.
9. The successes and challenges of sand dams should be more carefully analyzed and then disseminated within the CFGB network for other members/partners to benefit. The study commissioned by MCC on sand dams in Kenya should be summarized and shared in the Program Working Group newsletter, in addition to a general TIPS sheet on the technology. MCC Mozambique is also planning to study the impact of sand dams and this should also be shared with the network.
10. A unique component of the sand dam project was that it was focused. This approach is recommended for members/partners interested in introducing this technology in a new region. Making sure that the project has strong technical support will be a key factor for success. Sand dam projects should also be developed in increments, allowing sufficient time to analyze the success of the technology in the region. In order to help communities to understand the technology, exchange visits should be organized between communities to share information.

F. Project Visit Summaries

Ekwendeni Hospital - Soil, Food and Healthy Communities Project (Presbyterian World Service and Development Partner Project)

Overview

The Soils, Food and Healthy Communities (SFHC) project began in 2000 at Ekwendeni Hospital in Northern Malawi as a pilot participatory project in 7 villages. Its focus was to test whether intercropping legumes could improve soil fertility, food security and child nutrition of resource-poor farming households in Northern Malawi. Thereafter, the project expanded to over 180 villages in 14 areas, or 6,000 participants.

An evaluation of the 2006-2009 CFGB-sponsored Soils, Food and Health Communities project indicated that farmers are improving their soil fertility, food security and child nutrition as a result of participating in the project. Gender relations have been improved, particularly in relation to men taking on more of a role in cooking, child care and feeding, and sharing household decision-making around agricultural resources.

The partner has received new 3-year funding through PWS&D and CFGB to expand legume promotion to other regions in Northern Malawi, while fostering crop diversification, climate change adaptation in Ekwendeni region, with a focus on food insecure, youth and AIDS-affected households. This project is very successful, especially from the local ownership perspective and impact on child health and growth. There is a great buy-in from the local farmers of the technologies that are being introduced and tested.

Key Delegation Discussion Items

1. The Soil-Food-Healthy Communities Link

The progression from improved soil fertility to food security to healthy communities (nutrition outcomes) neatly tied this project together giving it both direction and purpose. Most unique though was how well program staff and participants integrated each of these three components as they explained the significant points of the project. What was somewhat surprising was that the name of the project was recently changed to a focus on climate change adaptation, although the key components remained very similar. The logical link and integration between soil, food and healthy communities is valuable and should continue to be emphasized.

2. Soil Fertility

Ekwendeni staff and project participants identified soil fertility as the major factor limiting crop production. This concern also matches the policies of the government of Malawi in the launching of a major fertilizer subsidy program, albeit poorly administered. Subsidized fertilizer (both phosphate based and urea) is available only to a very small group of farmers with coupons (less than 5%), and usually only 50 kg. The cost of subsidized urea was approximately \$70/MT compared to commercially available urea at \$700/MT.

A critical component of this project was the recognition that fertilizers are beyond the reach of most farmers, and therefore alternative methods to increase soil fertility must be developed to overcome food insecurity. This goal was largely achieved through Farm Research Teams (FRT) which became the forum to assess soil building technologies. Discussions with farmers and field observations showed that through the use of legumes, farmers were improving their soil fertility and proving that food security was possible without fertilizer dependency. Less than 30% of the farmers at a community meeting indicated that they were using

fertilizers to enhance soil fertility. Fortunately, the high cost of fertilizers and the unavailability of subsidized fertilizers were strong enough factors to protect the gains in enhancing soil fertility through legume inter-cropping.

3. Project Ownership

An important achievement of this program was tied to a high degree of project ownership, a critical component of sustainability that takes a lot of time to build. One farmer indicated that the reason for the high level of project ownership was linked to the simple fact that they (the farmers) are the “owners of the soil” and they must live off the land till they die. Another farmer voiced that the project responded to their problems as the reason for its success. Input transfer to farmers appeared very limited, and farmers highlighted training events, sharing of knowledge between farmers and experimentation as key components which likely contributed to project ownership.

4. Farmer Research Teams

These teams were made up of community elected volunteer farmers who met monthly to share information between villages. At one project site, four farmers per project area from 18 areas met monthly to share ideas and brainstorm with project staff representatives. New FRT participants received training on leading meetings, group dynamics and legume cropping systems. Encountering new ideas will continue to give life to the FRT and guarantee their survival. These groups were well organized and provided the mechanism for disseminating information. Also important was the marketing of the innovations by placing the innovations (i.e.: new crops) in areas where they could be easily seen by neighbors. This type of field based promotion is usually more effective than using the model farm approach which is not as easily observed because of distance and location.

5. Innovative Legume Inter-Cropping Systems

The FRT were instrumental in gathering farmers together to analyze and discuss various options to increase soil fertility, primarily through the incorporation of legumes into the cropping system. Through field visits and discussions with farmers, pigeon peas appeared to be the most popular legume used for inter-cropping. Pigeon peas were planted within the ridge at approximately a one meter inter-row spacing with the main crop. The pigeon pea was harvested in August, cut at approximately 40 cm and laid in the furrow between ridges. When the leaves had dried off, the stalks were shaken to deposit the leaves in the furrow. The stalks were removed from the field and used as firewood. The dried leaves from the pigeon pea were incorporated as the farmer shifted the ridge to where the furrow was. If the residue from the main crop was maize, the stalks were removed from the field after harvest and stored as livestock fodder. If peanuts or soybeans were the main crop, the residues left after harvest were placed in the furrow and lightly covered with soil until the pigeon pea leaves were added.

During the next cropping season, the established pigeon peas would re-grow within the furrow with the primary crop on the ridges. The system of incorporating the leaves was identical. Pigeon peas are used with this system for 2-3 years before re-establishment. This system allowed farmers to improve soil fertility and significantly improve yields without fertilizers. However, a major disadvantage was the labour involved to shift the ridge each year. Alternative systems should be considered by the FRT to minimize labour.

6. Gender

Discussion of gender roles among project participants at the Agriculture and Nutrition Discussion Groups dealt with gender challenges at the household level. One example involved men selling the legume harvest rather than assuring their family consumed all or part of the production to increase the family’s health. Solving this problem required a review of gender roles and resulted in (a) men becoming more involved in food preparation, (b) women playing a more active role in sales of farm products and (c) men taking time to assist the women in household duties including feeding children.

7. Nutrition Outcomes

Nutrition outcomes for food security projects are generally difficult to quantify given the many factors which influence the measurements. Both qualitative and quantitative data gathered from the project evaluation indicated that malnutrition decreased significantly during the course of the project. Project participants also felt strongly that the need to bring their children to the hospital's malnutrition unit had decreased. One of the factors influencing improved nutrition was a deliberate effort by staff to promote the use of legumes in the diet through the development and promotion of recipes with legumes. These discussions were carried out primarily through the Agriculture and Nutrition Discussion Groups.

Nkhoma Relief and Development Project (Christian Reformed World Relief Committee Partner)

Overview

The over-arching goal of the Nkhoma Relief and Development (NRD) project is to improve agriculture production practices and diversify staple food crops in relief prone areas in the lakeshore region. Mixed gender farmer groups were formed and trained to improve agricultural management, encourage crop diversification and to develop community projects to improve community food security. Each farmer group selected a volunteer to be their trainer. The food security coordinator developed lesson plans to train these volunteer trainers according to their group priorities. This project expects to achieve food security in 1200 households and support 60 communities to start community food security projects.

Key Delegation Observations and Discussion Items

1. Ecosan Toilets

An important intervention of NRD was the promotion of Ecosan toilets to reduce cholera and improve soil fertility. Two holes were dug one meter deep and one meter in diameter. A reinforcing wall made of bricks and mud as mortar was made to prevent the pit walls from falling in. A cement lid with slots was made with financial assistance from NRD to cover the pit in use. After each use, a handful of sand and ash was placed in the hole. Usually it took 6 months for an average family of 7 to fill a hole, after which the cement pad was moved to the second hole, while the first hole was topped with a layer of soil and left for 6 months to compost. The product was then removed from the soil covered hole and used as organic fertilizer in crop production.

One of the primary limitations of the Ecosan toilet is purchasing materials for making the cement cover. Each cover required ¼ bag of cement and only those families who received the cement donation (approximately US\$4.50) built an Ecosan toilet.

2. Grain Banks

Grain banks each having 40-50 members were established in each of the eight centers where NRD worked. Participants received 10 kg of maize and fertilizer to plant 0.5 hectares on land donated by the village headman or chief. Inputs arrived late the first year (2008-09) which meant the grain bank received almost no grain. This year the inputs were available, but seed germination was low (less than 10%), meaning that farmers had to reseed at a very late date which will limit production. After harvest, farmers deliver the production to the bank where it is stored until the lean period when grain is costly and in short supply.

3. Conservation Farming

NRD established 82 plots with community groups in their catchment area to demonstrate Conservation Farming (CF) practices. Despite the current drought, the CF plots showed no sign of moisture stress while adjacent maize fields were stunted from lack of moisture. When the women's group managing a plot was asked how many were going to practice this technology next year on their own farms, all raised their hand. Soil under the thick mulch layer was moist despite the extended period without rainfall.

To curb the potential attack on maize by army worms, the government demanded that all farmers burn the maize stover. Groups that had already placed stover on the fields went to the additional work of burying the stover.

One of the greatest limitations to adopting CF is letting go of the ridging practice. Approximately 20-30 years ago, government instituted the practice of farming on ridges. This practice increases soil erosion and labour inputs for maize production. Farmers who had practiced CF recognized the labour savings of CF.

4. Moringa Tree

The moringa tree has been promoted throughout the world as a miracle tree which provides many nutritional benefits especially people who are HIV infected. According to health workers, the uptake of using different products from the moringa tree is significant as many people experience improved health. In several of the houses visited, the moringa tree was being used. If moringa trees are only promoted to households with HIV infected patients, the tree has the potential to isolate and stigmatize these households.

5. Orphan Care and HIV

The negative effects of HIV/AIDS on communities also impacts food security by reducing the labor pool, destroying a generation of farmers and pulling caregivers away from crop production. In response, NRD assisted communities to organize community gardens to feed orphans. Community Health Care Workers provided support to HIV/AIDS affected households which are generally more food insecure because family members use up a significant amount of time caring for chronically ill people in the household.

6. Livestock Introduction

A limited number of households benefited from the introduction of goats and pigs. These projects were designed using the "passing on the gift" approach. In some cases, the community group maintained their animals in one area, while in other situations, the animals were given directly to families who passed on the offspring to the next family in line. A concern is how large the impact of the animals will be on the immediate food security of the family, and whether this asset will be maintained for a long enough time period to warrant the investment.

Action Aid – Right to Food Project (Presbyterian World Service and Development Partner)

Overview

The Human Right to Food (RTF) project in Malawi is currently in its eighth year of operation. In 2007, the project partnership was moved from a church-based development organization to Action Aid Malawi for a one-year feasibility trial which has been extended to 2010. The primary objectives of the project were to consolidate the national RTF coordination mechanism, lobby for the adoption of RTF legislation, promote

human rights awareness on RTF at the grassroots level and build the capacity of civil society on monitoring and evaluation of RTF policies.

The project is at a crossroads in the sense that future support of this project hinges on whether the RTF bill can be passed in the Parliament, which is due to be considered in May, 2010. The focus now is to build grassroots, legislative, judicial and bureaucratic understanding and support, and to educate stakeholders about this RTF initiative.

Key Delegation Observations and Discussion Items

- 1. RTF Legislation:** The link between RTF legislation and improved food security for Malawians undergirds the work of the organization and this project. It is an important step for the government to pass a law which holds government officials legally accountable. Legal enforcement of this law will likely remain the most significant challenge when considering the issue of poor governance.
- 2. Overall Food Security Strategy:** Action Aid recognizes the critical state of depleted soils in Malawi and recommends the use of fertilizer as a necessary remedy to boost production in the short term. In order to maintain food production in the long term, a more sustainable approach relying on manure and compost nutrient recycling is required. With the proposed Food Security bill, the government is to ensure systems are in place to create continuous production of food, promote sustainable agriculture approaches, open markets to bring in food when there is a serious drought or setback. This includes assuring availability for food in distant rural areas and a social protection/buffer system to provide access for those who cannot afford food.

Blantyre Synod Health and Development Commission – Lirangwe Food Security Project (Presbyterian World Service and Development Partner)

Overview

The major goal of the Lirangwe project is to improve food security through sustainable livelihoods for the most vulnerable community members in Lirangwe, Blantyre rural district in Southern Malawi by the end of 2012. The most cited factors affecting food security is dependence on rain-fed agriculture, high HIV/AIDS prevalence, poor access to clean water and lack of credit. The objectives are to increase crop diversity, promote livestock production and increase food production through enhanced soil fertility.

This project builds on the Blantyre Synod's Health and Development Commission's (BSHDC) work in livelihood improvement with poor community members since 1999. Currently, BSHDC is carrying out four livelihoods programs in Lirangwe, Balaka, Phalombe and Blantyre Rural districts funded by Presbyterian Church of Ireland (PCI) and Oxfam. The current PCI-funded project period is from August 2008-July 2010. Food security has been the major component in all four livelihood programs promoting an integrated approach to rural development.

Key Delegation Observations and Discussion Items

- 1. Field Visit:** Unfortunately the delegation was not able to visit the project site and meet with farmers because of rain. As a result, a more in-depth understanding of the project was not possible.

2. **Multi-Faceted Integrated Approach to Improve Food Security:** The number and diversity of activities to enhance food security in this project exceeded all of the projects visited by the delegation. Given the complexity of communities and food security issues, a multi-faceted integrated approach can be very effective. However, there is also evidence that programs need to focus around key activities which will have the greatest impact in both the short-term and long-term. *[a comment—I will also forward Wondimu’s evaluation report to help the project staff deal with this challenge in their planning—thanks again for the balanced and sensitive way this was addressed.]*
3. **Off-Season Production:** The production of crops in the off-season using small-scale irrigation was cited as a valuable intervention which enhanced food security.
4. **Community Involvement:** The BSHDC staff emphasized that a significant component of the program was a high level of community involvement. Communities were consulted from the beginning on the project and with the assistance of BSHDC, formed committees to organize discussions and activities to enhance food security.

Bountiful Grains Trust - Farming God’s Way

Overview

Bountiful Grains Trust is a non-profit organization whose mission is to transform the poor in Africa through training and mentoring in relevant agricultural practices and life skills. The organization targets under-nourished rural subsistence farmers who live in generally drought prone regions which often receive food aid. Often working through a church contact, promoters train communities in a method of farming called “Farming God’s Way” (FGW). In addition to the biblical principles that are taught, FGW focuses on protecting and rebuilding soil by maintaining a mulch (God’s Protective Blanket) layer on the land by abandoning the practices of plowing and burning. The management principles focus on how to utilize locally available resources to high standards, timely and with minimal wastage.

National trainers have been trained & mentored in the course of working in communities throughout Africa. They have proven very successful and all have given several years of voluntary service to the communities they serve. These trainers continually visit communities and conduct frequent monitoring and evaluation with farmers on site.

Key Delegation Observations and Discussion Items

1. **Impact of Community Leader/Promoter:** The use of trained community-based promoters that are committed to working with neighbours and other communities is one of the strengths to the FGW approach. This empowerment at the village level undergirds the sustainability of the farming system.
2. **Advantages of the FGW Approach:** The FGW approach is revolutionary in the sense that it has effectively introduced a very different farming system using simple tools and instruction methods that subsistence farmers can quickly learn and implement. Mastering the basics of FGW and not confusing farmers at the outset needs are strategic in the introduction phase. As farmers develop more familiarity with the system, other aspects which enhance its sustainability can be introduced including rotations and the use of legume inter-cropping.

3. **Nutrient Availability:** The delegation observed that nutrient sourcing will likely become the next biggest challenge of FGW as the availability and accessibility of nutrients are exhausted. Currently the nutrient sources for the planting stations include fertilizers, manure, compost and ant-hill soil. Fertilizers are not accessible to the most vulnerable who are most desperately in need of this technology. Manure is becoming more costly and less accessible. Ant-hill soil is a limited resource. Compost generally relies on manure and holds some potential in areas where there are sufficient resources, but requires a significant amount of labour to produce. The only option remaining for farmers is the use of legumes and green manures to enhance soil fertility.
4. **Mulch Maintenance:** Maintaining a thick mulch layer in fields is one of the most critical technologies of FGW. The FGW field visited was very poorly mulched with less than 25% cover. Without proper mulching, the majority of the impacts of FGW are lost. The reason cited for the poor mulch layer was high decomposition rates due to extreme temperatures. Based on observations in other regions, mulch covers of 75-100% are maintained by farmers even in hot climates. Part of the strategy includes collecting some mulch at the end of the rainy season to supplement the mulch from the crop. More work on using alternative sources to enhance the mulch layer must be investigated.
5. **Planting Stations:** The importance of maintaining the same planting stations year after year is a critical component of the system and needs to be highlighted. Through careful marking and digging of holes, an exceptionally fertile zone is established where the seed is planted which enhances early plant growth. Adaptations of FGW often overlook the importance of returning to the same planting station which overtime becomes very fertile, especially with manure amendments.

Sand Dams – Christian Council of Mozambique (Mennonite Central Committee Partner)

Overview

The major goal of this project is to increase household food security by increasing availability of water through building sand dams, building terraces and/or contour lines, and planting of elephant and other grasses, which conserve the water and increase subsurface infiltration of water. Sand dams are concrete weirs build across ephemeral (seasonal) river beds in order to trap sand and water upstream. Sand is critical because it keeps trapped water cleaner and slows evaporation. It is expected that water will usually be available through the 6 month dry season immediately upstream of “mature” sand dams. Water is usually accessed by digging small holes in the sand.

Because of the increased soil moisture and available water, community members are expected to open more land for cultivation by utilizing small-scale irrigation. They will be able to keep more animals. With more available water it is also expected that the communities will start tree nurseries and vegetable gardens. Women and children should no longer have to carry water such long distances, allowing them to devote more time to other activities. This 3 year project has completed only one construction season, so dams that will normally take 3 – 6 years to mature, have yet to show significant impacts on food security in participating communities.

Key Delegation Observations and Discussion Items

- 1. Sand Dam Technology:** Sand dams are a unique technology which stores water in sand through the collection of sand by the dam. Key considerations in the dam construction include the width and slope of the river, including the depth of the impermeable layer. Other considerations include maximum flow rates and erosion control behind the dam. Sand dam construction is complex and requires trained engineers, hydrological data from the region, and skilled community development workers. Having these basic technical skills before beginning these projects is critical. In one community, there was dissatisfaction because the dam was so low to collect a significant amount of water. The problem was that the community did not understand how the dam worked, and that it was necessary to begin the dam at a low level to slowly collect sand. The next steps after construction require more emphasis on agronomy and community organization.
- 2. Food Security Impact of Sand Dams:** Sand dams are an important intervention to lessen the impact of seasonal hunger during the dry season in the Changara district. Community members work together to not only build the dam, but also fences around the area adjacent to the dam for crop production. With the dam complete and full of water and sand, farmers draw water from holes dug in the sand to irrigate vegetables and cereals during the dry season, as well as provide water for their animals during the dry season. As this is a new technology to Mozambique, special effort is required to quantify the impact in the coming years. MCC Kenya hired a private consultant who assessed the impact of sand dams in Kenya and MCC recommends this document as a valuable resource to provide additional information on sand dams.
- 3. Other Food Security Interventions:** Although sand dams undoubtedly will have some impact on food security, the delegation discussed whether this impact was sufficient to significantly improve the food security situation in the Tete region. The hot dry climate in the region does not lend itself well to crop production, but does have a comparative advantage for livestock production in the country. According to the Changara District Administrator, Tete is the country's number one producer of livestock in the country and, for the local population, livestock is the main livelihood source. Most importantly, livestock production serves as the "bank" to survive during the dry season when farmers sell livestock to buy cereal grains. This coping mechanism can also be viewed as a climate change adaptation strategy. Unfortunately, the most vulnerable have few to no livestock making their situation even more precarious.