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INSIDE THIS ISSUE

Lead Farmer Strategies
for CA Promotion

Benefits and Challenges
of Intercropping

Partner Profile:
National Council of
Churches in Kenya

Farewell to Putso Nyathi

CA Technical Officer
Travel Schedules

CFGB Conservation Agriculture Technical Officers:

Neil Rowe Miller:
nrmler@foodgrainsbank.ca

Jean Twilingiyumukiza:
jeantwilingiyumukiza@mcc.org



foodgrainsbank.ca

Lead Farmer Strategies for CA Promotion

Chrispin Mirambo, MCC Food and Water Security Program Coordinator, Tanzania

Lead Farmer (LF) approaches to training have become increasingly popular for promotion of CA as well as other food security initiatives. Lead Farmers, Farmer Promoters, and Farmer Motivators are all different names given to farmers who help motivate and train other farmers on new farming innovations. They are performing what is sometimes referred to as “Farmer-to-Farmer” extension services.

Simply having Lead Farmers in a project does not guarantee positive impact for the project and community. Their effectiveness and sustainability depends upon several key factors:

Proper selection of the LF by the local community

Some projects choose the LFs themselves, however our experience has shown that when the community is involved in choosing LFs, they generally do the best work. Lead farmers are best selected in the second year of a project after potential candidates have demonstrated their farming skills and motivation to work with others. The community members selecting the LFs should understand and agree on a set of guidelines for selection including:

- Project goals, structure, future plans, etc.
- Roles and responsibilities of a lead farmer
- The type of person who will be a good LF (see box on page 2)

Willingness of farmers to serve as LFs

Lead Farmers often face challenges from their families, neighbors, community leaders, extension agents, NGOs, or even between themselves. It is important to make sure that they and their families know about these challenges before agreeing to serve as LFs. After potential LFs are selected, and their responsibilities and form of compensation has been made clear, they should be given a week to discuss this with their family before agreeing to take on the LF role.



Zachary Mati and Ibrahim Kithaka, Lead Farmers in Kirundi village in Kenya, facilitate a discussion on tillage options.

Clear responsibilities and expectations by both farmer and the local community

Projects should prepare a written agreement signed by the community leaders, project staff and lead farmers clearly specifying;

- What roles and responsibilities are expected of him/her.
- Terms of service (is it a one-year contract or 3 years?) Is the contract renewable?
- What benefits or incentives they will receive.

This agreement should be signed publicly in front of village leaders and the project beneficiaries they will serve. The project keeps the original signed agreement, while the LF and the group each must have a copy.

Preparing LFs for their work

For the LF to positively impact their community, they need to be equipped and prepared. In addition to technical training, they need to know principles of adult education, group dynamics, how to solve problems encountered when performing their role as LF, how to work as a team, etc. We have prepared a LF Training Guidebook (for download at caguide.act-africa.org/additional-training-modules) to help facilitate such training.

Building LFs' capacity over time

Refresher training should be held each year. Do not give solutions for their challenges, but rather use skits, stories, proverbs, and testimonies to help the LFs come up with their own solutions.

If you have questions or comments, feel free to contact me at chrispinmirambo@gmail.com. My colleagues and I are eager to discuss LF strategies and facilitation topics and to receive constructive criticism. If you want us to facilitate training of trainers for your organization or Lead Farmers please us know.

Important Qualities of a Lead Farmer

1. Has an interest in Conservation Agriculture (or whatever technology is being promoted)
2. Has a well-managed farm
3. Always keeps records
4. Has good relationships with others and is respected within community
5. Is literate
6. Is active in teaching and working with others
7. Is honest, dependable and committed
8. Is a patient and caring person
9. Has leadership abilities
10. Is willing to volunteer time to serve the community
11. Is permanently settled in the community, with home and family
12. Can be man or woman
13. Can be of any religious affiliation
14. Is willing and ready to participate in trainings conducted within the village and outside the district and or region
15. Should not be an excessive drinker

Benefits and Challenges of Intercropping

Mike Salomons, Canadian Foodgrains Bank Agriculture & Livelihoods Technical Advisor

Introduction

A diversity of plants and animals is an important part of the sustainability, productivity, and resilience of natural systems including forests and grasslands. In farming systems, intercrops are a similar way to maximize diversity and productivity, and for this reason they are widely used by smallholder farmers around the world, and an important strategy in CA.

Benefits of Intercropping

Intercropping has numerous positive benefits on farming system stability, including improved soil water holding capacity through increased biomass. It also can reduce the risk of variable weather conditions. For instance, in a maize-cowpea intercrop, the maize will often do well in wet years, while the cowpea does better in dry years. Growing crops which complement each other is a form of weather insurance and leads to more stable production.

Intercrops can also help control pests and diseases. Many insects find their host by smell, and a second crop in the field can confuse them. Some intercrops actively repel pests: as in the 'push-pull' system in which a repellent legume such as *Desmodium* is intercropped with maize while a trap crop is planted around the border to attract pests away from the maize. The 'push-pull' system can reduce damage from cereal stem borers and fall armyworm.

Nutrients are used more efficiently when farmers grow a diversity of plants, resulting in increased production and profitability per unit of land.



Maize-cowpea intercropping in Zimbabwe

For example, in cereal-legume intercrops, the cereal takes up nitrogen in the soil, which pushes the legume to fix more nitrogen than it would if planted alone. Intercropping of legumes with maize can also increase phosphorus availability, and cereal crops may increase micronutrient availability to companion legumes.

Intercrops help suppress weeds, thus reducing labour requirements at peak seasons. In many African countries this is particularly beneficial to women who do most of the weeding. Furthermore, the income from intercropped legumes is often controlled by women. Dietary diversity also improves as legumes increase protein production, and the leaves of many intercrop species are also commonly eaten as green vegetables.

Finally, for farmers with livestock, intercropping can significantly improve both the quantity and quality of fodder (although this must be balanced by the use of crop residues as soil cover).

Making Intercrops Work

The first challenge when planning intercrops is to select crops which complement each other rather than competing. In addition, labor demands, consumption value and marketability must be considered. Farmers should experiment with spacing, arrangement, inputs, and different harvest times to maximize their productivity and profitability.

Additional points that may be useful when planning an intercropping system include:

- Some legumes adapt to less sunlight in a dense cereal stand by growing bigger leaves, thus minimizing negative impacts on yields. For other species, shading reduces yields. For light-sensitive legumes, farmers may need to reduce the planting density of the cereal crop, widen the row width, or relay plant the legume late in the life of the cereal crop.
- Some legumes, like common beans and green gram, compete with cereal crops for water, and should not be intercropped in drought-prone areas. Others, like pigeon pea and lablab, compete less because they grow slowly in the early stages of their life and have deep tap roots. Such intercropped legumes can actually improve soil moisture status by increasing reducing evaporation and/or conducting water up from lower in the soil profile.
- Non-legume intercrops can also be effective. For example, potato and maize or pumpkin (squash) and maize can complement each other. In Malawi, there is growing use of 'double-up legumes' – two legumes grown together with or without a cereal crop. Maize grown with squash, green gram, a medium maturity lablab, and a late-maturity pigeon pea is a traditional intercropping system used in central Kenya.
- The choice of when to plant each crop should depend on which one the farmer is prioritizing. A legume sown first typically results in a reduction in the cereal crop yield, while maize sown first typically results in a reduction in legume yield.
- Perennial plant associations may also be advantageous. For example, bananas benefit when planted with legumes such as mucuna or cowpea. In a strategy known as Farmer Managed Natural Regeneration (FMNR) millions of hectares have been reclaimed in the Sahel by managing shrubby trees in association with annual crops.

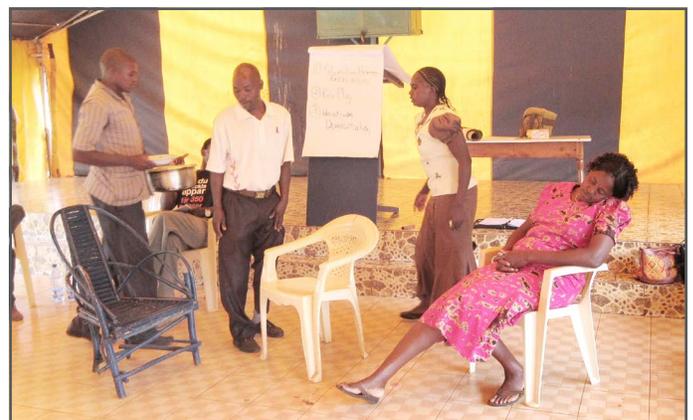
Partner Profile: National Council of Churches in Kenya

Neil Rowe Miller, CA Technical Officer, Eastern Africa

The Tharaka Nithi County Conservation Agriculture for Food Security project was launched by the National Council of Churches in Kenya (NCK) in November 2015, with support from the United Church of Canada and CFGB. The project is being conducted in three wards of Tharaka Nithi, a semi-arid area east of Mt. Kenya. The area is characterized by bi-modal rainfall (4-600 mm annually) with cereal crops and alley-cropped pigeon peas planted in October; and cowpeas, green gram, lablab and other legumes planted between pigeon pea alleys in March.

The project originally planned to train 880 farmers over two years in four different cohorts. 80 conservation agriculture Lead Farmers (CALFs) were recruited and trained from among the best CA farmers of the initial cohorts, and they have since trained another 829 farmers (67% women) in Farmer Field School (FFS) groups. An evaluation in 2018 found that, for every farmer who was part of the project, additional 2.1 farmers who are *not* members of an FFS had been trained by CALFs and other participants. Thus, with only 3-4 field staff, NCK has reached nearly 3000 farmers!! CALFs are largely self-motivated, and work as volunteers, though the project helps them to buy a bicycle on a cost-share basis.

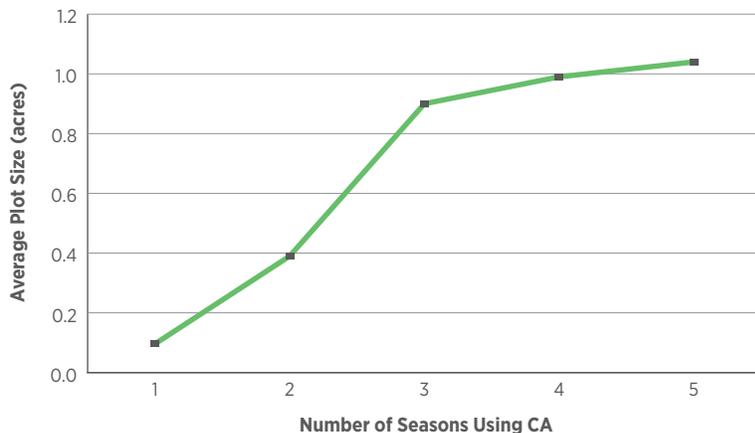
Selection of CALFs involved various stakeholders including the traditional leaders, clergy and other NGOs. Additionally, CALFs were involved in recruitment of the subsequent CA cohorts. Recruitment of farmers in cohorts ensured that the project was implemented gradually without unnecessary rush. This gave enough time to all stakeholders to improve and make corrections where necessary. In addition to training in the FFSs, the project uses farmer field days, exposure visits within and outside of Tharaka Nithi, and radio programs broadcast on local stations.



CALFs receive regular training using participatory methods like role plays.

By year three, maize, sorghum and millet yields under CA had increased by 33%, 45%, and 41% respectively, while cowpea and green gram yields increased 40% and 59% compared to conventionally grown crops. Most farmers began with small, 20m x 20m CA plots, but quickly expanded (see chart). Many have switched from basin planting to using oxen for ripping CA fields, and have converted their entire farms. A local sub-chief stated that “CA is fast becoming the conventional way to farm!”

Increase in CA Plot Size Over 5 Seasons



The Kenya Ministry of Agriculture acknowledges and supports CA as an important strategy for Climate Smart Agriculture and food security, and local officials have embraced the NCCK CA initiative. Three government extension officers were trained alongside the project agronomists, and they have continued to support NCCK’s activities. They freely express their appreciation for what the project has achieved, and point out that the CALFs have been paramount in effectively reaching so many farmers.

In addition to CA technologies, the project has been training farmers on soil fertility improvement, agroforestry, integrated pest management, and safe use of agri-chemicals. This CA-plus approach has had a positive impact on soil fertility, crop production and food security. Nonetheless as prepare for a second phase beginning in 2019, NCCK anticipates further scaling up through increased use of ox-drawn rippers, further promotion of cover crops and agroforestry, support in post-harvest handling, and collective marketing. They recognize that despite their considerable achievements, if CA is to replace conventional agriculture in Tharaka Nithi, they will need to think creatively and broaden their extension outreach. Fortunately, religious leaders, traditional chiefs and government officials are already asking NCCK to train their personnel.

Farewell to Putso Nyathi

Putso Nyathi has tirelessly served CFGB Members and CA Partners as our CA Technical Officer in southern Africa since 2014. She recently accepted a position with International Fund for Agriculture Development (IFAD) in Nairobi. IFAD’s mandate is to provide financing to projects designed to introduce, expand or improve food production systems and to strengthen related policies and institutions. Thus we hope to continue collaborating on other levels.

We are sad to lose Putso’s skills and contributions. Her creativity and wisdom have contributed immensely to the expansion of CA programming and program quality which we have experienced over the past five years. We wish Putso and her family well in this time of transition!



CA Technical Officer Travel Schedules

NEIL ROWE MILLER

3–8 March

Katakwi, Uganda
Maresha ripper training

17-20 April

Pwani, Kenya
CA Project development visit

26-31 May

Debre Markos & Arba Minch, Ethiopia
Project visits

JEAN TWILINGIYUMUKIZA

21-23 March

Ndjamena, Chad
MCC training workshop on gender

25-30 March

Dakar, Senegal
CA Training with NCM

22-26 April

Rwanda
MCC-PDN Project visit

20-24 May

Eastern Rwanda
CBM-AEBR Project visit



The CA Technical Officers manage a Facebook Discussion Group from which allows individuals and organizations to discuss issues and ask questions related to CA. If you’d like to join the discussion, sign up at www.facebook.com/groups/CAinAfrica.