



Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program

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Trip Report: Mozambique 2-10 November 2013

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Purpose of Trip: To learn about production practices and the social relations supporting them in two Total Land Care-Mozambique villages and identify the list of actors involved.

Sites Visited: Total Land Care (TLC)-Mozambique Office in Ulongue; CIMMYT and SIMLESA Conservation Agriculture field sites north of Ulongue; and the villages of Gimo and Phanda.

Description of Activities

Focus group activities were conducted in two villages in the Total Land Care (TLC)-Mozambique zone of influence near the Malawi border (Gimo and Phanda). The primary objective, to identify the list of actors involved in the production of maize in these villages (value chain and information support services), was achieved. In the process, I learned about maize production processes and the social relations that support them in the target villages.

One village group was considerably easier to work with (Gimo) and in-depth discussions were held concerning maize production practices and the set of actors involved in assuring the process is completed each year. Following this discussion three small groups set about describing in words and/or pictures how they go about producing maize. A list of the various actors contacted during the process was generated. The significance of the nearby market in Malawi was clearly indicated. In addition, there appears to be little other NGO or government activity in the area. The list of actors is relatively limited which will facilitate a more in-depth analysis of network relationships.

Arriving at the second village (Phanda), where the focus group had been delayed for a day because of a funeral in the village, we found over 100 farmers waiting for us. The enthusiasm

for TLC programs was clear. However, it made conducting focused discussion nearly impossible. We adjusted the methodology (with the experienced hand of operations manager Jose Luis Antonio) and divided the group into four smaller groups and set them about the exercise of describing with words and/or pictures how they go about producing maize. These groups then reported back to the plenary after which we responded to their questions. They were very interested in TLC opening up the program for more farmers this year.

Suggestions and Recommendations

The next step in developing a survey of maize production network actors to understand their social networks and potentially why some are more willing to conduct Conservation Agriculture than others will be integrating the following network sampling and data collection elements with the survey work of the LTRA-10 team members. Some additional reflection will be needed concerning the use or adaptation of the mindset indicators after these preliminary findings from Gimo and Phanda are more fully digested. Social capital issues are evident, but interpretation is confounded by the difference in size of the two groups.

The process to follow for the collection of network structure data will involve a limited data set (we are currently developing a revised module for follow-up in Uganda and Kenya which may be applicable). For each of the following types of agents, the names and contact information of these individuals with whom resources have been accessed or knowledge/information shared in the production of maize will be collected. This list of contacts generated in snowball fashion will be subject to a second set of interviews. Whether all or a sampling of them will be interviewed will be decided after the first round of household interviews. Clearly, interviewing all would provide the best estimate of network structure. However, the number interviewed will necessarily be a function of time and available resources. Many family members and neighbors may already have been interviewed in the household surveys, reducing this work load.

- Family (include only if outside of the immediate household)
- Neighbors (include up to three)
- Vendor in the Malawi market (different vendors)
 - Seeds
 - Hoes
 - Fertilizers
 - Pesticides
 - Buyers of maize
- Vendor in Mozambique weekly market (only the vendor of hoes was mentioned)
 - Hoes
 - Seeds
 - Fertilizers/pesticides
 - Buyers of maize
- Agricultural input supply store (new)
- Temporary hired labor
- TLC extension
- Other NGO
- Extension agent
- Government representative

List of Contacts

Name	Title/Organization	Contact Information (address, phone, email)
Dionosio Novele	Coordinator, Total Land Care-Mozambique	Complexo da MLTC Vila Ulongue Cell : +258 84 473 495 dionisiojn@gmail.com
José Luís António Munguambe	Operations Manager Total Land Care-Mozambique	Complexo da MLTC Vila Ulongue Cell : +258 84 285 611
Domingos Chale	Monitoring and Evaluation Total Land Care-Mozambique	Complexo da MLTC Vila Ulongue
Lazarous Dailesssi	Driver/Interpreter/Radio Announcer Total Land Care-Mozambique	Complexo da MLTC Vila Ulongue
Fidelina Miqueias	Field Coordinator Total Land Care-Mozambique	Ntengo Wa Mbalame

Appendix: Field Notes

Focus Group Notes – Gimo (14 men and 9 women) – 4 November 2013

What was farming like in the past and how has it changed?

The TLC village chairman was born in 1968, so that gives a range on the documentation of the FG farming experience. There were few if any older than he. Before 1979 maize was the primary crop grown. A few families with Portuguese connections (for seed and sale) were growing potatoes. The local variety of maize, *Kagolo*, was grown with no fertilizer. It appears to have been an early, short season and short cob variety, which seemed to have better storage qualities than current varieties. Hybrid varieties were introduced in 1979. The seeds were more expensive but out produced the local variety at the price. Yields have been declining ever since even with the application of fertilizer. Fertilizer appears to have always come from Malawi.

In the past, farming was a matter of clearing the field, bending over the stover, weeding and ridging (same day). Now, they don't bother to bend the stover and leave it between the ridges. Some stover is taken away. They know now that keeping the stover helps keep humidity in the soil. Women, too, used to bend the stover. This continued until they started incorporating stover and intercropping beans. The routine was to till the land, incorporate the stover, plant maize, and then to the beans planted (on the same day if possible). There are two varieties of beans, one smaller that is planted with the maize, the bigger beans are intercropped (between the maize ridges).

It appears that most of the village took refuge along the border in Malawi during the war. They came back in 1993 with new farming skills: incorporation of stover; and micro-dosing of fertilizer in coke caps. Before when there was a low population, farmers could rotate with fallows to help restore the earth – now there is no fallowing and increasing need for fertilizer. Since then as well, all farmers are now growing potatoes as the major cash crop, followed by beans. Malawi is the source for potato seed and the primary market for output.

What is the difference between the local and the hybrid maize varieties?

The first response was that there was no need for chemicals when storing *Kagolo*, suggesting some sort of resistance to pests. The women pointed out that for the same weight of flour, the local variety needed very little for a good porridge; the hybrid variety needed a lot more flour for the same quality/quantity of porridge.

There was concern expressed that the local and hybrid varieties were being stored and mixed together degrading the quality of the local variety. The local variety is now attacked by pests during storage. Many are not able to distinguish between the local and the hybrid. Consequently, they are mixed both in storage and again at seeding. In any case, more fertilizer is needed to achieve the same harvest levels as in the past.

When they returned from Malawi, one of the women remembers being given new seed by the government (with paint on it; i.e., fungicide). She still grows from the seed stock base and also gives seed to others.

Farming today in Gimo

Women

The planting season begins with a meeting of the family to decide what to grow this year. This is followed by an inventory of equipment (i.e., hoe) in order to be ready to take to the field. New hoes are purchased in the local market (Mozambique). They decide among themselves where to get seeds, whether from someone in the village or across the border in Malawi. Planting may include mixing in the beans. One week after planting, fertilizer is applied; and two weeks after planting, urea is applied. Side-dressing of fertilizer is the standard using the coke-cap micro-dosing system. Ridges are then banked and everyone waits for harvest time. Harvesting is done largely in the family and an ox-cart (often rented from a neighbor) is used to bring the maize in from the field. Local silos are filled with the maize harvest and the beans not immediately for sale. Maize is milled in the village as needed.

Men (1)

The planting season begins with family consultation, they decide together. They calculate how many hoes, seeds, fertilizer, etc. they will need for one acre of land and then prepare the land. If they don't have hoes, they buy them in the market. Seeds are acquired from Malawi. Although the customs agents are a challenge, increasing the cost of shopping in Malawi, they still find it more profitable than making their purchases in Mozambique. They then cultivate and plant. The fertilizer used is 21-23-0 plus 4s, as well as urea. Once planting and fertilizing is done they wait for the rain and then wait for the grain to dry in the field before harvesting. After harvesting and transporting the maize (2 acres normally yields 4 cartloads of maize), they determine the benefits for the year and how much they can sell. There are no government advisors. They get their information for production from TLC agents and the radio (both TLC and Malawi). They are looking for an alternative market.

Men (2)

They sit down and decide in family what they will need for the production season: hoes, seeds, fertilizer. It takes about 2 weeks for a family of 5 to cultivate an acre of land. They follow the same pattern as above, making ridges after the second fertilization (with urea). Weeding is conducted by the whole family, rarely is anyone hired. When the harvest is stored they lay pesticide on the floor of the silo and then on top of the maize. They are still trying to find a better market than Malawi.

Various

There are no agro-dealers in the village. However, TLC does have 4 clubs for forestry activities.

The local market in Mozambique (Thursday) is rarely used. The Malawi market is across the border (5 kilometers away) and held on Saturdays. One of the benefits of the Malawi market is that it has all the supplies together under one roof.

List of maize production network actors

- Family
- Neighbors
- Vendor in the Malawi market (different types of vendors)
 - Seeds
 - Hoes

- Fertilizers
- Pesticides
- maize purchasers
- Vendor in Mozambique weekly market
- TLC extension

Focus Group Notes – Phanda (6Nov13)

There were over 30 women and 60 men in attendance at the beginning. The numbers only grew. [Ideally focus groups should be less than ten persons (6-8 is often considered the best).]

Everyone wanted to be sure that they would get a chance for free fertilizer. The attempt to get the history of production in this village was too difficult given the numbers. Trying to get a handle on how we could do anything more than be talking heads, Jose Luis (operations manager) came up with the idea of dividing them into four groups (3 of the men and 1 of the women) to work on a description of their production systems. This seemed to get them all involved and be a way to capture their knowledge. It sort of worked. The problem was that they were really angling most directly for inputs and weren't really trying to tell their story like the group in Gimo.

It seems they do buy things like hoes in the local town market, but must go to Malawi for major inputs which they claim they don't use (then back track when cross-examined). They grow potatoes, tomatoes, soybeans, other beans, maize, and pumpkins. They may grow a few other things but it wasn't clear. There will be an agricultural input supply store opening in the nearby town soon (relevant for both villages). Their primary source of information is the TLC radio program and direct contact with the TLC agent(s). Only 2 of the 7 trial farmers managed to complete their first year of CA. There is something going on here.

The household decision making at the beginning of the season seems to be standard. Although descriptions vary from one mouth to another. The women describe it more clearly than the men.

Field Notes – 5 Nov 2013

The village planned for today had a funeral. After stopping back at the office in the morning we went out to see some of the research plots in the afternoon.

Field 1: Farmers practice CA test plots (last year crop – to be rotated this year)

	Beans
	Maize
	Beans
	Maize

← Road →

Good cover for the CA despite the fact that they said they had remove much of the stover to protect it from animals and termites. It appears to be standard farmer practice to remove the stover to the homestead. It may come back to be placed between the ridges of the traditional plots on just the residues remain, falling into the troughs. In any case, CA practice is to bring the stover back and place it on the field just before planting. This looks like a very thick covering (several inches before one could measure 90 or 100 percent.

Field 2: Has a pile of stover in the middle of it waiting to be distributed across the field.

They use herbicides at four inches of weed growth. They could also lay down a light dose before spreading the stover, or spraying over the stover once it was in place. – varying explanations. In a month, in some sites the stover may be nearly fully consumed by the termites necessitating a second load to be brought out. They claim and showed me lots of stover – presumably enough to cover all the fields.

We went to Machawango village where I was shown a considerable amount of stover. This is also where the CA field had been burnt (caught it in time to save a lot of the stover. Fire seems to be a major additional threat to maintaining stover in the field.

Field 3: SIMLESA demonstration site (Rinza) – next to African doctor (w/flags)

Lower field had the farmers standard maize	growing process.
Upper field had maize last year here	And beans here. They will be rotated this year.

← Road →



Farmers (men) describing maize production procedures in Gimo.



Farm woman reporting on the procedures for producing maize in Gimo.



Farmers (men) drafting their presentation of maize production practices (Phanda).



Farm woman describes maize production process to villagers in Phanda.



Field 1 with farmer practice in the background.



Field 2: the effects of burning.



Field 2: comparison of maize and bean plots (seeding will be reversed this year).



Field 3: stover brought back from storage on the farm for field cover.



On farm storage of stover.