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Toward a Farmer-Centric Approach to Training in Malawi

Introduction

Sustainable Intensification (SI) technologies have been increasingly promoted for small-holder farmers in Africa in recent years. Governments, NGOs, and research institutions, including CIMMYT, have recognized the value of SI in protecting the environment and increasing productivity leading to greater food security.

Because of the immense diversity of agro-ecological zones and cultures present on the African continent, SI technologies need to be adapted the local context where they are being promoted. Unfortunately, adaptive methodologies for helping extension staff and farmers sort through the many possible SI technologies are lacking.

To this end, CIMMYT launched the innovative Space to Place (S2P) project to enable the promotion of locally appropriate management recommendations, guided by a mobile phone application using digitized maps and farmer-level characteristics. CIMMYT staff and Malawi stakeholders have prepared a list of around 25 potential SI technologies and rated their appropriateness to different agroecological zones and soil textures. Presumably these technologies will also be rated according to their appropriateness for different farmer socio-economic characteristics before being programmed into a phone app.

One potential risk to developing such an app is that it could be used by extension agents as a prescriptive tool. Given the lure of technological devices, they may assume that the app itself is sufficient to decide which technologies are appropriate for each context where they work. The pitfalls to such an approach include:

1. A database of this sort can't possibly take into account the micro-level agroecological and socioeconomic diversity present in rural African communities.
2. The farmers themselves don't participate in deciding which technologies they will learn about. As a result, the likelihood that they will actually adopt the technologies is much lower than if they had chosen what they wanted to learn.
3. Local farmer knowledge and innovation doesn't contribute to the process. Inovative farmers in most communities have developed effective farming methods that can contribute to the productivity and sustainability of their neighbors as well as helping extension and research professionals broaden their list of approapriate technologies.

A farmer-centric approach to SI training will build on the strength of modern technology, while at the same time incorporating the interests and expertise of local farmers. The phone app, currently under development, will help extension agents narrow down the roughtly 25 SI technologies to 3-4 best-bet options for each individual context. Then, though a participatory process, farmers themselves will add to this list and decide what new techniques they want the extension service to help them learn.

A Participatory Decision-Making Tool

Key to the success of a farmer-centric approach is an effective decision-making tool that extension agents and lead farmers can use to facilitate the process of identifying technologies for training. An example of such a tool was developed by Partners of the Canadian Foodgrains Bank (CFGB) and shared with CIMMYT staff in June (Appendix 1). With some minor adaptation, this tool could be used as the first step in engaging a farmer group with the S2P approach.

This tool assumes the extension agent or lead farmer has the facilitation skills to lead a non-directive process and is committed to using a participary approach. Using it effectively will require training of the trainers, many of whom may be more comfortable with a more one-way delivery of extension information. Nevertheless, without a farmer-participatory process, the appropriateness of the selected technologies to each context, and the adoption rate of the farmers will be much lower.

Pedigogical Approach: Dialogical vs. Didactic?

Once a farmer-group decides which innovations they want to learn and adopt, the extensionist or lead farmer will walk them through a learning process. The current Soil Health Manual, designed to train farmers on the roughly 25 SI technologies under consideration, uses a relatively traditional, didactic approach to training. Step-by-step guidance is given on how to implement each technology. Questions are presented at the end of each module for the sake of repeating information provided earlier in the lesson and assessing the comprehension of the learner, but farmers are not asked to provide their own ideas or suggestions.

Brazilian educator, Paulo Friere called this the "banking" approach to education. Teachers with knowledge "deposit" what they have into the knowledge bank of their students. Friere espoused an alternative approach in which a facilitator guides the learning process by posing open-ended, generative questions which invite learners to discuss and contribute to the learning process. Since 2015, CFGB staff and Partners have used this approach in promoting conservation agriculture throughout sub-Saharan Africa. A set of core CA training modules, and modules usng this approach for many other subjects, are available in many languages from the ECHO website.

Many of these materials could be used directly or adapted to facilitate training for SI technologies in the S2P list. However, a prior question is whether we want to take a dialogical approach or a more traditional, didactic approach to training. A dialogical approach is clearly more farmer-centric. It capitalizes on farmer knowledge, combined with information from the scientific community, to identify solutions and build the commitment of farmers resulting in higher adoption rates.

On the other hand, effective implementation of such an approach will call for significant training of trainers in order to be effective. CFGB has carried out a "master training" process for NGO and government extension staff in Ethiopia, Rwanda, Kenya, Zimbabwe and Burundi which combines adult education/facilitation skills with technical training. Participants testify that the

trainng has transformed their extension approach and helped them to engage farmers more effectively. In Ethiopia and Rwanda, the national extension services were impressed enough with the approach that they asked CFGB to train their extension staff throughout their countries. A private foundation (Ethiopia) and the World Food Program (Rwanda) have provided funding for these initiatives. Is there the potential for such an effort in the S2P countries?

An alternative approach could be to incorporate some additional adult education principles (i.e. open-ended rather than leading questions, role plays, hands-on activities, etc.), but not expect extension personnel to gain the level of skills of a Master Trainer. This approach will be cheaper and quicker to implement, but likely less effective.

Presumably the decision on pedigogical approach will be made in conversation with our extension partners in Malawi unless such a discussion has already taken place. I look forward to your guidance on how to proceed.

Appendix 1: Soil Health Training/Decision Making Tool

Learning Outcomes At the end of this course, participants should be able to:

1. Understand what is soil health
2. Identify soils which are healthy and soils which are not healthy
3. Know the benefits of having healthy soils and the losses from unhealthy soil
4. Know various ways to improve soil health
5. Create an action plan for improving soil health

Pre-Requisites: In order to benefit fully from this class, participants should have already attended the following classes:

1. No pre-requisite is needed

Timing of this Lesson: This lesson can take place late in the growing season so the participants can still compare crop growth and prepare for crop residue management, or it can take place 2 months before the beginning of the rainy season as they are developing their coming cropping plans.

References:

Resource Concerns & Soil Health Indicators V2.3. Natural Resources Conseration Service. United States Department of Agriculture

Centre for Sustainable Development. 10 Seed: How-To Card

Materials Needed:

1. A field with good soil health nearby a field with poor soil health
2. 1 hoe or shovel
3. 2 containers to collect soil
4. Soil health poster
5. Flip chart and marker pens
6. Seeds (at least 10 per participant)

Preparation:

1. Sample the 2 soils ahead of time to assure that there are visible differences between them
2. Review all discussion questions and be prepared to guide the discussion appropriately.
3. Recruit 3-4 people for the role play. Make sure there is a gender balance
4. If you choose to use the Mother Earth drama (see Appendix A) recruit 3 actors and prepare the skit with them ahead of time.

Learning Activities (Total time required = 2-3 hours)

I. Introduction (The Mother Earth drama, in Appendix A, can be used here as an attention grabber, or later as an energizer)

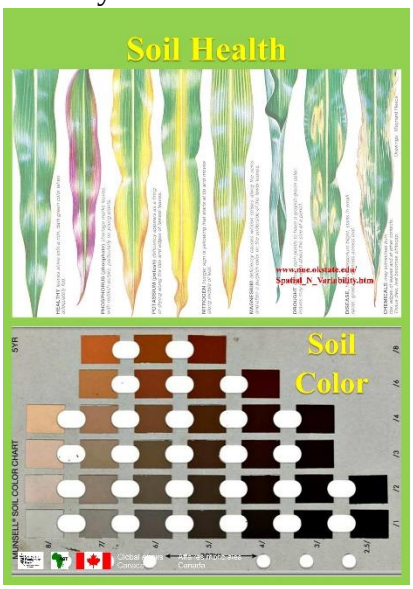
A. Opening Discussion – write their responses on the flip chart (15 minutes)

1. Ask the group to explain how they know when a soil is healthy or fertile. What are the signs that they look for? (*Alternative question*: If you are looking for a piece of land for farming, what characteristics can tell you that a certain piece of land is good for farming?)

2. Present the soil health poster and ask them which of the maize leaves looks like it was growing in a healthy soil.

3. Ask if they have a word in their local language that is used to describe a healthy soil?

4. Why is it important for our soils to be healthy? ***Allow them to give their answers first, but be sure that they discuss higher productivity, lower input costs, easier soil preparation, and greater drought tolerance.***



II. Practical Training (60 minutes)

A. Take the group to a field where regenerative agriculture has been practiced (e.g. Conservation Agriculture, double-up legumes, cover crops, etc.)

1. Dig 4-5 liters of topsoil and place them in the bucket

B. Take the group to a field where extractive agriculture has been practiced (e.g. continuous maize, crop residue burning, etc.)

1. Dig 4-5 liters of topsoil and place them in the bucket

C. Allow each farmer to take a handful of each soil and examine them for several minutes (if the sun is hot, take the buckets to a shady spot before destributing samples and holding the following discussion:

1. **What differences have you seen between these two soils?** ***Allow them to give their answers first, but be sure that they discuss the following:***

a) The soil from the regenerative field is darker (have them compare the 2 colors to the Munsell Soil Color Chart on the poster).
b) The soil from the regenerative field is softer and more crumbly
c) The soil from the regenerative field has more roots growing in it

2. **Which field has healthier-looking crops?** *If the field has already been harvested ask them if they remember which field was more productive*

3. **Which field would you rather farm in the next season? Why?**

III. Follow-up Discussion (45 minutes) Return to a comfortable meeting place for this discussion

A. Discussion Questions:

1. In your community, which soils tend to be healthier: Soils nearby the homestead where people are living, or soils which are far away from the homestead? Why?

2. What is the "food" which makes soils healthy? *Allow them to give their responses, but if they struggle, help them see that it is the organic inputs like crop residues, manure, cover crops, etc. which truly "feed" soils.*

3. The regenerative agriculture approach that we saw in the field showed us one way to improve soil health. What are some other ways we can improve soil health?

B. Action Planning

1. Review all the methods they have listed for improving soil health which you have written on the flip chart

2. Supplement their list by writing down and explaining any other high-potential methods which you have identified for this community

3. Ask them which of these methods they think will be most effective and most practical on their farms?

4. Use the 10-seed method (***see Appendix A***) to identify the top 2-3 methods which they will try in the coming season.

5. Offer to return to help them learn how to implement their priority methods and prepare a schedule for follow-up training.

6. Ask them if they have any unanswered questions.

7. Thank them for their wisdom and insights throughout the lessons!

Appendix A: Mother Earth Role Play (30 minutes)

A. Drama

1. A mother struggles to feed her 2 greedy children.
   a) She goes to the garden each day, works hard and brings food home to cook for them
   b) When she prepares their food, the children eat it all up and there is nothing left for her to eat.
   c) The children are very demanding and show no appreciation for the hard work their mother does on their behalf.

2. Because she has too little food, the mother becomes weaker and weaker.
   a) After some time she dies of hunger..
   b) The children cry and cry, but not because they love their mother, rather because now they have no one to take care of them!
   c) In despiration, they consider themselves very unlucky.

B. Follow-up Discussion

1. What did you observe?

2. What should the children have done differently?

3. What would you do if you had such greedy children in your family?

4. The indigenous peoples of North America refer to the earth as their "mother" In what ways is the earth like our mother? ***Allow the group to give their answers, but if they struggle, help them see that the earth provides for us and without it, we could not have life. In the Bible, God is said to have created human beings from dust!***

5. What can we learn from the role play about caring for our Mother Earth?

6. If we neglect to feed our Mother Earth, will we be able to survive ourselves?

7. What are some of the ways we can feed our Mother Earth?