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PERFORM TRAINING OF TRAINERS ON FARMER MANAGED NATURAL REGENERATION

LIWONDE, MALAWI

JULY 18 – 20, 2017



GINA ALTHOFF - PERFORM

AUGUST 2017

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This report was prepared by:
World Resources Institute
10G Street NE, Suite 800
Washington, DC 20002 USA
Telephone: (202) 729-7600
Fax: (202) 729-7686

Tetra Tech
159 Bank Street, Suite 300
Burlington, Vermont 05401 USA
Telephone: (802) 658-3890
Fax: (802) 485-0282
Email: international.development@tetrattech.com

Contacts:
Ramzy Kanaan, Chief of Party
Email: Ramzy.Kanaan@tetrattech.com
Chris Reij, World Resources Institute
Email: CReij@wri.org
Anna Farmer, Project Manager
Email: Anna.Farmer@tetrattech.com
Rod Snider, Deputy Project Manager
Email: Rod.Snider@tetrattech.com

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS AND ABBREVIATIONS

CEW	Community Extension Worker
FC	Field Coordinator
FMNR	Farmer Managed Natural Regeneration
AEDO	Agriculture Extension Development Officer
GoM	Government of Malawi
PERFORM	Protecting Ecosystems and Restoring Forests in Malawi
USAID	United States Agency for International Development
WRI	World Resources Institute

I.0 INTRODUCTION

Protecting Ecosystems and Restoring Forests in Malawi (PERFORM) is a five-year project funded by USAID/Malawi and implemented by a consortium led by Tetra Tech ARD which includes World Resources Institute (WRI). One of the main objectives of PERFORM is to increase low emissions land use opportunities in targeted geographies. The PERFORM team works in close collaboration with the Forestry Department. Over the past year, PERFORM has provided support to assess the opportunities to restore degraded lands.

In September 2016, the Government of Malawi (GoM) adopted a national target to restore 4.5 million hectares by 2030. The recently completed national assessment of restoration opportunities revealed that farmers are well positioned to scale up the adoption of “farmer managed natural regeneration” (FMNR) and agricultural technologies related to restoration on 3.7 million ha. PERFORM is working in three targeted landscapes which include significant areas where the widespread adoption of FMNR and progress on restoration of degraded croplands could be accelerated by the provision of appropriate training and other support.

This training was organized particularly for field extension workers both from government and the community. Specifically, the trained targeted Government Agriculture Extension Development Officers (AEDOs), Forest Assistants, Community Extension Workers (CEWs). Five PERFORM Field Coordinators (FCs) were also included in the training. The total number of participants was 28, 4 of whom were women.

The training was co-facilitated by Dr. Chris Reij of World Resource Institute and Blessings Mwale, Deputy Chief of Party for PERFORM.

2.0 WORKSHOP OBJECTIVES

The main purpose of the workshop was to provide technical guidance and to develop training materials intended to accelerate the adoption of Farmer Managed Natural Regeneration (FMNR) by smallholder farmers in Malawi. Additionally, the specific objectives of the workshop were three-fold:

- a) Share information and increase the field extension staff members' understanding of "FMNR" – what it is, how it benefits people and the land, and why it is important to learn about it
- b) Provide a hands-on training to all participants, so that they become familiar with how to do FMNR; introduce everyone to farmers who are practicing FMNR and provide an opportunity for workshop participants to learn from these FMNR practitioners
- c) Equip workshop participants with information to guide, support and accelerate the widespread adoption of FMNR, so that people in their areas can benefit from FMNR

3.0 ORGANIZATION AND EXECUTION

The preparation for the training began with the collection of relevant training material for East and Southern Africa as well as for Francophone Africa. A detailed draft program for the workshop was developed (Annex I). All material to be used in the workshop was presented to Blessings Mwale, Deputy Chief of Party for PERFORM on a USB memory flash drive.

The training was delivered using four different media:

- a) PowerPoint presentations
- b) Video documentaries
- c) Field visits
- d) Small group discussions and plenary group discussions

The guiding principles of the workshop were to share experiences and to learn from each other. In that way, the workshop was not only about teaching and training, but it was also about listening and learning. The intention of this workshop design was to jointly build new capacity.

4.0 DAILY REPORTS OF WORKSHOP

4.1 DAY I

At the start of Day I, it became clear that the detailed workshop program could not be implemented as originally scheduled. The workshop participants in attendance were field staff based in villages around Malawi. Therefore, the workshop's original components, for instance presentation about policy and strategy, were not directly applicable to the participants' work in rural communities. In addition, the participants spoke English to a certain degree, but most felt more at ease expressing themselves in the local language, Chichewa. The implication of this language preference or was that more time would need to be allocated for translation.

The workshop program was adjusted to concentrate mainly on the technical aspects of FMNR and to illustrate the practice using audio-visuals stimulating working group reflection sessions.

At the beginning of Day I, Blessings Mwale welcomed all participants and explained the objectives of the workshop; thereafter the participants and facilitators spent time getting acquainted or reacquainted.

Next, Dr. Chris Reij, confessed that it had taken him 27 years since I had started working in Africa before he really became aware FMNR and its potential in 2004. He explained, "If someone does not know what FMNR is, it can easily be overlooked, and I overlooked it until Professor Adam Toudou of the University of Niamey brought me to the Maradi Region in Niger in June 2004 where many farmers had already practiced the protection and management of woody species which regenerated naturally on their farmlands. That was my eye-opener."

4.1.1 FIRST POWERPOINT PRESENTATION

In order to orient both the workshop's participants and trainers, Day I began with the PowerPoint "The many faces of FMNR in Malawi." This PowerPoint consisted of 45 slides showing:

- Low as well as high on-farm tree densities for visual comparison
- Situations in which one species dominates among several woody species
- Lands with very young trees as well as ones with older *Faidherbia*
- Tobacco farmland without trees as well as tobacco farmlands with on-farm trees

The PowerPoint ended with a slide showing a woman carrying firewood in a field of high on-farm tree density and a good crop stand. This last slide illustrated that the fear of some farmers that on-farm trees produce shade, compete for nutrients and water, is not necessary the case.

4.1.2 SHORT TECHNICAL VIDEO ON FMNR

Next, a short, technical video about FMNR was shown. This video was produced years ago by workshop facilitator's, Dr. Chris Reij's, former colleague Will Critchley from VU University Amsterdam. The video is part of a series of 12 short technical videos each about 8-10 minutes long and featuring Sustainable Land Management practices in Africa. The short video shown on FMNR effectively illustrated how underground root systems work and how they fuel natural regeneration.

4.1.3 WORKING GROUP DISCUSSIONS ABOUT THE CONSTRAINTS OF FMNR

Next, the larger workshop group was divided into working groups and each working group was asked to identify what they considered to be the five biggest constraints to FMNR. The four working groups identified the following constraints:

- Potential reduction of crop yields as trees provide shade affecting crop yields and compete for soil nutrients
- Lack of ownership of trees
- Long term benefits with no short-term benefits
- Lack of knowledge/farmers do not know which trees to combine with crops/lack of tree management skills
- Poor agricultural practices
- Uncontrolled bushfires
- Uncontrolled grazing after harvest
- Conflicting messages of forest and agricultural extension agents/inadequate extension services for rural communities/agricultural extension emphasizes crops only, not trees
- Farmers cultivate on rented land that they do not own
- No bylaws to support FMNR
- High population pressure on land/small landholding size
- Poverty leads to cutting on-farm trees for charcoal

All these challenges are real and the larger group discussed most of the challenges in plenary. The notes on the group discussion can be found below.

- Some farmers are afraid that on-farm trees depress crop yields, but experience shows that some tree species (e.g. *Faidherbia albida*) have a positive impact on crop yields. Farmers actively protect and manage *Faidherbia* and practice shows that they sometimes have very high densities of this species on their farms. Besides this tree's leaves, when shed, help to maintain or increase the soil's organic matter.
- It is vital that farmers perceive ownership of trees. If not, they will not invest in the planting or regeneration of trees. It is important that the law recognizes farmers' rights to on-farm trees.
- Does it really take time for benefits to mature? Emerging bushes/trees need to be thinned and/or pruned in year one or two. This produces twigs, which can be used for household energy and leaves which can be used as fodder or as organic compost matter. If these products are perceived as benefits of on-tree farms, the benefits can be seen and appreciated sooner rather than later.
- Farmers lack knowledge. This can be addressed by organizing study visits to villages where farmers (men and women) already have experience with FMNR, for example in the area between Ntcheu and Balaka.
- Uncontrolled bushfires are a problem, but they can be addressed through enforced village bylaws. This issue also shows that village institutions need to be built or strengthened to manage the village tree capital. Individual farmers can practice FMNR, but it helps if villagers organize themselves to do so as a group or community.
- Uncontrolled grazing may be a problem, but livestock pressure in Malawi is much lower than in Sahel countries where villages practice FMNR at scale.
- Conflicting messages of extension agents. Agricultural extension messages have a focus on crops and not on on-farm trees and forestry agents mainly look at natural forests. On-farm trees/agroforestry fall between these two types of extension agents' expertise areas. Besides this, extension agents often recommend to clear cropland from emerging bushes and tobacco companies prefer that farmers remove trees from tobacco fields. These are the messages that must stop conflicting for FMNR to be trusted and adopted.
- Many smallholders in Malawi cultivate only one hectare. Experience in the Sahel shows that on-farm trees are part of the agricultural production system. They help farmers to intensify agriculture without having to buy inputs such as fertilizer. FMNR does not require cash investments. Instead, it means that cultivating one hectare only is not necessarily a constraint to increasing the number of on-farm trees.
- Poverty leads to cutting trees for charcoal. That is the case. However, experience in regions with large-scale on-farm re-greening shows that more on-farm trees increases income from

crops, livestock and trees. A major reason for smallholder farmers to increase the number of on-farm trees is the growing scarcity of natural vegetation and the increasingly longer distances women have to walk to collect firewood. It is much easier to collect firewood from an increasing number of on-farm trees. FMNR practices also reduce the pressure on the remaining natural vegetation.

At the end of Day 1 a short World Vision video was shown twice about “thinning and pruning”. The video was intended to prepare workshop participants for the field visit on Day 2, upon which participants would have an opportunity to practice thinning and pruning themselves.

4.2 DAY 2

On Day Two of the workshop, the participants made a field visit to a nearby village. After meeting with the village chief they moved into a field and participants thinned and pruned a young bush in a field. That particular field was cultivated by a woman who accompanied the group into her field. Through the demonstration, it became immediately clear to all participants that thinning the young bush produced some immediate benefits, including sticks that would later be used for household energy and leaves that could be used as compost manure material or fodder. In fact, as soon as the leaves had fallen on the ground, a goat approached and began eating the leaves. This effectively demonstrated to the trainees that FMNR practices immediately offer practitioners some benefits.



FIGURE 1: A GOAT BROWSING ON LEAVES AFTER PRUNING OF A SHRUB AS DR. CHRIS REIJ WATCHES ONE OF THE PARTICIPANTS DEMONSTRATE SHRUB PRUNING

Participants noticeably felt at ease with the thinning and pruning after their practice. Some might have done it before, but the video shown in the afternoon of Day 1 was also attributed for their level of comfort.

Two trees at the roadside of the farm were also thinned and pruned. One of the trees was a local species and the other tree was a Eucalyptus, which had many small stems. Again the village chief and the woman on whose field the first bush was thinned and pruned looked at what happened and expressed their appreciation.

From the roadside, the group continued to a field adjacent to a natural forest. Next to the homestead, an older tree needed pruning. The participants interacted with the woman of the homestead, who expressed her view that this local fruit tree could only be pruned after some years. The participants explained that the tree would benefit from pruning as it would produce a better trunk and accelerate growth and they offered to do the pruning for the woman. The woman agreed and she was astonished by the quantity of pruned branches the tree produced and that after the pruning the plant looked more like a tree.



FIGURE 2: DEMONSTRATION ON PRUNING IN ONE OF THE FARMERS' FIELDS IN MTHIKO VILLAGE, NTUBWI EPA, T/A NKULA, MACHINGA, AS MEMBERS APPRECIATE YOUNG SEEDLINGS LEFT DELIBERATELY ON THE FARM

After returning from the field, the participants evaluated the field visit. They expressed confidence in their ability to train smallholder farmers (men and women) in thinning and pruning of on-farm tree species. They admitted FMNR is an easy technique that immediately produces visible impact on the landscape

The day ended with the showing of the 1 hour documentary “The Man Who Stopped the Desert.” This documentary showcases the life, innovations and impact of Yacouba Sawadogo, one of the Sahel’s most innovative farmers. He improved a traditional planting pit, called a zay, which is used to restore strongly degraded land. The film also documented the opposition by the traditional leaders in his village he had to overcome. The forest he created out of nothing was, at one point, even set on fire. In the end, he won the regeneration, greening battle and he now receives positive public recognition for his work in the field of FMNR.

4.3 DAY 3

4.3.1 INTRODUCING FMNR TO UNEXPERIENCED VILLAGES

At the beginning of Day 3, the workshop participants received a handout prepared by Chris Reij titled “Involving Communities and Households in FMNR.” Participants were asked to meet in the

same four groups as in Day 1, to discuss the note and to plan how they would promote FMNR in villages without prior FMNR exposure or experience.

The four groups suggested the following steps to introduce FMNR to unexperienced villages:

- Group 1
 - Organize a meeting with the chiefs
 - Organize sensitization meetings for villagers
 - Identify interested farmers (men and women)
 - Develop a work plan
 - Identify demonstration fields
- Group 2
 - Inform and involve local leaders
 - Discuss FMNR with the Area Development Communities and Village Development Communities
 - Register interested farmers
 - Organize interested farmers into groups for thinning and pruning activities
- Group 3
 - Meet the chiefs
 - Identify whether some farmers already practice FMNR
 - Conduct field visits to on-farm tree fields
 - Organize field days for learning from those already practicing FMNR
- Group 4
 - Hold introductory meeting
 - Identify challenges faced by farmers interested in FMNR
 - Organize field visits to farmers with FMNR experience
 - Identify interested men and women and train these individuals in FMNR techniques
 - Organize study tours focusing on FMNR
 - Establish village- level bylaws regarding FMNR
 - Monitor impact and host FMNR review meetings for villages

The conclusion is that all groups emphasized the need for informing and involving the local leaders, informing the villagers and exposing them to FMNR experience inside the village or elsewhere, involving men and women in joint learning during field days, organizing hands-on training in thinning and pruning, and regularly reviewing the FMNR experience.

4.3.2 ADDRESSING UNRESOLVED ISSUES

Next, the four working groups were asked to identify issues that had not yet been addressed during the workshop. The following questions and answers were discussed as a result of this activity:

- Question: What about the mindset of the communities? Many communities have a handout syndrome, which is a challenge that must be addressed.
 - Answer: The experience in other African countries is that FMNR empowers communities, because they master a new technique, develop new knowledge and have to define and implement bylaws. This works toward destroying the handout syndrome. If a village insists that a handout is needed, do not work with them and only work with villages that are interested despite the program's lack of handouts.
- Question: This is a new project. How long will it run?
 - Answer: This is less about a project than it is about catalyzing a process. The process has no end date, but the start date is now.
- Question: FMNR can also be introduced in schools. Some schools have environmental clubs.
 - Answer: Great idea! Do it.
- Question: What about promotional material like caps, cloth and tools like panga knives? Will they be provided?

- Answer: It would be very useful to have such promotional material. The example was given earlier of Mali where caps and cloth printed with “Regreening the Sahel” were used. Many farmers involved in FMNR there wear the same caps and recognize each other when they visit markets and other places.
- Question: Is it possible to promote competition between farmers and how best can this be done?
 - Answer: This is done in some countries. In Mali, 400 men and women who had adopted FMNR registered for participation in a competition. A small technical team visited all 400 farmers and gave the farmers a green cloth with “regreening the Sahel” printed on it, a reward for their FMNR practices.
- Question: What about other activities such as beekeeping?
 - Answer: The experience is that where FMNR and other forms of natural regeneration of vegetation are developing, some farmers also decide to do beekeeping, which helps them to generate income from their FMNR activities.
- Question: What about the density of trees? How far should they be apart?
 - Answer: It is up to the farmers (men and women) to decide what the densities they find acceptable. Some may go for high densities of *Faidherbia* or other species. Other farmers may opt for lower densities. Those who have high densities and find them too high, will cut some trees to generate income from poles or from firewood.
- Question: What kind of species should be protected and managed?
 - Answer: That decision should be made by the farmers. However, the answer also depends on which species regenerate from root systems or from seeds and which species the farmers want in which densities.
- Question: Local structures will serve as entry points. What to do if there is weak local leadership?
 - Answer: If there is weak local leadership, work with (lead) farmers (men and women) who are ready to try new initiatives.

4.3.3 VIDEO DOCUMENTARY

After lunch, the documentary “Ethiopia Rising: Red Terror to Green Revolution” was shown. This one-hour documentary shows the important role of strong village leadership in the restoration of strongly degraded land in Northern Ethiopia. After the documentary, all participants were asked to identify their next steps in promoting FMNR.

This generated the following remarks:

- We can start a movement any time; we can start now in Area Development Committee meetings and other meetings.
- We should work together with local leaders. We can do it.
- We feel more empowered and ready to empower others through FMNR.
- We should talk to our colleagues in the forestry service and set targets.
- Let us talk to lead farmers, identify together where they can start, and jointly demonstrate FMNR.
- Some farmers are already doing FMNR. They should join us in meetings.
- We need to define a common message with the agricultural extension workers.
- Let us have another gathering like this in 6 to 12 months and share experience.
- One of the women participants expressed that she feels empowered, never thought till now about FMNR.

Finally, more slides were shown about scaling up re-greening. The slides especially related to communication of FMNR.

5.0 EVALUATION OF THE WORKSHOP

In evaluating the success or failure of the workshop, participants were asked five specific questions:

- Has this workshop contributed to your increased understanding of FMNR and its multiple economic, environmental and social impacts?
- Has this workshop increased your ability to train other trainers in FMNR?
- Has this workshop increased your ability to train farmers (men/women) in FMNR?
- Do you need more information about specific themes to be able to train farmers (men and women)? Please specify which information?
- Do you feel you need additional skills to be able to train farmers (men and women)? If so, which ones?

In response to these questions, the following summarizes feedback from the participants:

- Participants overwhelmingly felt the workshop contributed to their increased understanding of FMNR and its multiple benefits.
- Participants reported the workshop has built their confidence, as extension agents.
- Participants felt empowered that they would be able to train the farmers and fellow extension workers about FMNR in the village when they returned.
- Participants emphasized that they would like to increase their knowledge of tree species. They want to know the local names and what each species can be used for. They were also interested to know more about the multiple uses of Moringa.

6.0 NEXT STEPS

After attending the workshop, the 28 community extension agents felt able to train farmers in FMNR. Which next steps could be made after this first training? There is a need for building the knowledge and experience of the trained community extension agents and of representatives of villages in Machinga District. How can this be achieved?

The following steps were identified as next steps by the workshop's facilitators:

- Step 1: Identify villages with high on-farm tree densities in or close to Machinga district, which can serve as a source of inspiration to community extension agents and as a focus for farmer study visits.
 - It is interesting to see the high on-farm tree densities along the MI between Ntcheu and Balaka. It would be useful to do a quick exploratory study in this area to determine why farmers/communities in this area have invested in FMNR, how they have organized themselves to do it, and whether or not they are interested in sharing their knowledge and experience with visitors from Machinga District.
 - While doing this quick study, it would be useful to explore whether some farmers have innovated in FMNR, or have built such good experience and skills that they are able to train other farmers.
- Step 2. Monitor the activities of the 28 trained extension agents after the workshop.
 - All trained extension agents mentioned that they feel confident about promoting FMNR. It will be useful to visit all of them as soon as possible after the training to explore whether they have actually begun to promote FMNR and to train farmers. This will encourage them and it will also reveal whether any questions/issues have emerged that should be solved.
- Step 3. Continue to build the knowledge and experience of the community extension agents.
 - Bring the extension agents to villages which have already built experience with FMNR. This will further boost their knowledge and their confidence.
- Step 4. Organize study visits for representatives of village communities from Machinga District.
 - It is always helpful if farmers (men and women) to see for themselves what fellow farmers working in similar conditions have achieved. Experience, for instance in Mali, shows that more than 50% of the men and women participating in such study visits subsequently start doing it themselves.
- Step 5. Develop model bylaws for the protection and management of trees by village organizations.
 - Rather than having each village try to develop its own bylaws for managing on-farm and off-farm trees, it would make sense to propose a model to the villages in Machinga District, which can be adapted to each village's specific circumstances and needs.

7.0 FINAL REMARKS

Without Blessings Mwale this workshop would not have been successful. He patiently translated where necessary and generously shared his rich experience with the participants. All material used during the workshop is on a USB storage memory stick ready to be used for more training/capacity building in Malawi. Individual participants were also given hard copies of FMNR handouts that were discussed during the workshop.

8.0 ANNEX

ANNEX I: DETAILED TRAINING PROGRAM

Farmer Managed Natural Regeneration

Program for the training of trainers workshop, July 18-20, 2017

In Machinga District Malawi, organized with the support of USAID PERFORM project

Prepared by Chris Reij, Senior Fellow Restoration team

World Resources Institute, Washington DC

Day I FIRST DAY OF WORKSHOP

Day I – Session I Welcome

PERFORM team and local authorities to welcome all participants, introduce Chris Reij, FMNR trainer, and provide a brief **overview of workshop objectives**:

Why are we here? To:

1. Share information and increase your understanding of “FMNR” – what it is, how it benefits people and the land, and why it is important to learn about it
2. Provide hands-on training to all participants so they become familiar with how to do FMNR; introduce everyone to farmers who are practicing FMNR and provide an opportunity to learn from them
3. Equip you with information that would help you to guide, support and accelerate the widespread adoption of FMNR, so that more people can benefit from FMNR

Overall plans for the training workshop: (schedule with timing and locations to be handed out/posted and briefly explained)

Day One:

- Welcome and presentation of workshop plans and principles
- get to know one another
- context for the development of FMNR
- experiences with tree planting and differences with natural regeneration
- experience with FMNR in Malawi
- benefits and impacts of FMNR (men and women)
- technical aspects about how to do FMNR

Day Two:

- organize a field visit
- demonstration of FMNR practices
- hands out on training on pruning, thinning
- dialogue about experiences in practicing FMNR
- perspective from women about FMNR

- review experience gained during the field visit
- documentary: “The man who stopped the desert”

Day Three:

- review and summary of what has been done to promote FMNR in Malawi
- advantages and disadvantages of FMNR
- management considerations and recommendations for FMNR
- overcoming constraints to protecting and managing tree and shrub regeneration on cropland and across rural landscapes
- key elements for further training sessions on FMNR
- DVD “Ethiopia Rising: Red Terror to Green Revolution
- training and discussion on how to accelerate the widespread adoption of FMNR (scaling up strategies)
- Presentation of additional sources of information about FMNR (Fact Sheets, Trouble shooting notes, FMNR Hub, etc.)
- What will you do to promote FMNR after the workshop?
- participant evaluation of the workshop

Guiding principles of the workshop: sharing of experience, learning from each other; it is about teaching and training, but also about listening and learning and by doing so jointly building new capacity

Day 1: Session 2 Getting acquainted – Who are we?

Participants include farmer champions/practitioners of FMNR, government and non-government extension agents, and project training staff (men and women)

Participants introduce themselves mentioning their background, experience (or not) with FMNR, agroforestry, conservation agriculture or other aspects of SLM.

A personal story: how did I discover and uncover FMNR?

Day 1: Session 3 -context for the development of FMNR

The context of Malawi makes re-greening of deforested and degraded rural landscapes urgent:

- extensive deforestation, conversion of forest land to other land use, and loss of forest and tree cover
- Rapid environmental degradation, especially the degradation of cropland and stagnant or declining soil fertility and low crop yields needs to be addressed and reversed;
- Climate change: irregular rainfall, droughts and floods require adaptation and resilience building by communities
- Rapid demographic growth and widespread rural poverty increases pressure on the land and increases need for intensification of rural production systems to meet demand for improved food security, higher incomes, and more sustainable production of wood-based products (e.g. charcoal), non-timber tree products like livestock fodder, fruits, and protection of water supplies

The “warm heart” of Africa should also become its “green heart”.

Day 1 – Session 4: Tree planting in Africa in general and in Malawi in particular

Tree planting has been the standard action to reduce environmental degradation in Africa

Examples: large-scale plantations in the 1970s and 1980s (like the big investments in the Viphya Plateau commercial plantations), village woodlots in the 1980s and 1990s, green belts around cities, the Greenbelt Movement in Kenya (Wangari Maathai), introduction of exotic species, like Eucalyptus and neem, and enrichment planting in national forests

Indicators: national tree planting days in almost every African country, international and national tree planting targets; most attention devoted to numbers of seedlings produced and distributed; how many have been successfully planted? Survived after 1 year? After 5 years to generate lasting benefits?

What is your experience with tree planting, if any?

For instance:

- What Species were planted?
- Why, for what purpose? Where?
- What were the estimated survival rates? After 1 year or 5 years?
- What can you say about ownership and management of the planted trees?
- What can you say about costs?

Day 1 – Session 5: What is natural regeneration and which main types can be distinguished?

There will always be a role for tree planting, but attention is beginning to shift from tree planting to natural regeneration of woody species in Africa. The large-scale re-greening by farmers in the Sahel since the mid-1980s and in particular in Niger is a main driver behind this shift. The story about scale (5 million ha) and multiple impacts is known by many policy makers in and outside Africa.

Show some slides of re-greening in Niger, Burkina and Mali to illustrate and provide an example of what FMNR looks like. (Underscore that this practice has been adopted by many farmers on millions of hectares of cropland in the drylands of Africa; it is not a theoretical concept; it is not a product invented by researchers and limited to a few research stations or project sites)

Note common sources of natural regeneration:

- Root systems...what is also sometimes called the “underground forest”
- A seed bank in the soil, sometimes called the “soil’s memory”
- Livestock manure
- Birds

Day 1 – Session 6: What experience does Malawi already have with FMNR?

All participants share their views about:

- Does FMNR exist in Malawi? What is your personal experience, if any, with FMNR?
- Do a quick survey amongst participants: yes/no – FMNR does or does not exist in Malawi
- If not.....any reasons why not? Have you never observed it or heard about it from others?
- If yes...where and at which scale?
- Have organizations already been promoting FMNR and if so, which ones?
- Have organizations done so in the district(s) you work in.
- How have they promoted FMNR? Training? Study visits? Tools? Other?

- If training, who has been trained? (men/women)
- Is government promoting FMNR? Forestry/Agriculture/Natural Resources? If yes, who and how? What are the messages?

Show some slides about FMNR in Malawi

Note that Malawi's national strategy for restoration aims to achieve a target of 10% tree cover on 50% of cropland by 2020 and on 80% of cropland by 2030.

Show a short video clip about FMNR made by Will Critchley (SLM in Sub-Saharan Africa)

Day 1 – Session 7: The multiple benefits and impacts of FMNR on smallholder farm households

Present slides from WRI report on Scaling Up Regreening: Six Steps to Success with listing of documented benefits of FMNR; ask participants to comment on their experience about observed benefits and impacts of FMNR in Malawi, such as:

- Soil fertility and crop yields.
 - Which tree species have a positive impact on soil fertility and crop yields?
- Fodder availability (which tree species in particular?)
- Firewood for consumption
- Firewood for sale
- Charcoal
- Fruit
- Nutrition
- Local temperatures
- Resilience of crops and communities to drought
- Income of men, women and youth
- Community empowerment

Do you know about other impacts?

Focus attention on how women can and do benefit from FMNR

Benefits could include:

- Reduction in labor to collect firewood
- More income from sale of firewood and other tree products
- More food available for family consumption
- Better nutrition
- Training/capacity building
- Other?

Day 1 – Session 8: Some technical aspects about how to do FMNR

The role of thinning. Why is it important and how does it accelerate the growth rate of trees? How to choose the stems to remove and how to protect the selected stems against livestock?

The role of pruning. It is often indispensable for developing a proper trunk and canopy.

How to thin and prune with local tools without too much damage to the trees? In other words how to make a clear cut?

Is there a best time for pruning?

Farmers in Mali with high on-farm densities of *Combretum glutinosum* prune their trees at the very end of the dry season or very early in the rainy season. It means that the pruned trees will benefit from increased moisture availability.

Show video clip about thinning and pruning

Day 2 - FIELD VISIT

Multiple objectives can be combined...depending on the sites selected for the visit and the duration and timing of the visit.

Take participants to fields where FMNR is being practiced, and to fields where FMNR practices can be demonstrated

Provide hands on training on pruning and thinning – for each participant

Participants can do thinning and pruning themselves.

If some farmers are already practicing FMNR they can show the participant show they do thinning and pruning, which may lead to an exchange of experience.

Promote a dialogue between workshop participants and additional farmers (men and women) living around the sites being visited, to learn about their perceptions/experience with FMNR.

Encourage participants to ask questions about some themes:

- When and why did they decide to protect and manage on-farm trees?
- Where did the information come from?
- Have they received any training or other support?
- Which difficulties did they have to overcome and how did they overcome them?
- Which difficulties are they still facing and how could they be overcome?
- Which benefits do they perceive of FMNR?

Be sure to ask questions to gain the perspective of women farmers.

Day 2 - Session 9: review the experience gained during the field visit

Day 2 - Session 10: Video documentary on successful farm level restoration interventions in Burkina Faso

Show documentary “The Man Who Stopped the Desert” (60 minutes)

Reason for showing...the documentary illustrates how an individual farmer in the Sahel manages to create a 25 ha forest on barren degraded land and at the same time inspires other farmers to protect and manage natural regeneration on-farm. He manages to overcome resistance in his community.

Day 3 – FINAL DAY OF WORKSHOP

Day 3 – Session 11: review what has been done in Malawi to promote FMNR

Have you or your family invested in FMNR?

Why?

Why not?

- If you have invested in FMNR, what made you start with it?
- Where or from whom did you get information about FMNR?
- Radio?
- Neighbors?
- Extension agent?
- Forester?
- Other?

Day 3 – Session 12: Discussion of possible advantages and disadvantages of FMNR

Possible Advantages

- Low costs per hectare (no cash costs, only labor for protection and management, thinning and pruning...)
- High survival rates
- Fairly quick results. Strong growth is fueled by well-developed root systems in case of “underground forest”
- Agricultural intensification. FMNR is part of the agricultural production system and it leads to better integration of agriculture, livestock and trees
- It’s simple...everyone can do it!

Possible Disadvantages

It is not easy to identify disadvantages, but they may include:

- Competition with crops for water and nutrients. Which species do farmers perceive to be competing with crops?
- Seed eating birds can negatively impact on crop yields, but insect eating birds help control pests.
- Other?

Day 3 – Session 13: Management considerations and recommendations

Should we recommend optimum tree densities to farmers?

Some experts have suggested that we should recommend farmers to respect certain tree densities. Do you agree or disagree? Practice shows that farmers in Africa have very different on-farm tree densities (20, 40, 60, 80 or even 100+ trees/ha).

How do farmers reconcile high on-farm tree densities with cultivation of cereal crops?

Show some slides with different on-farm tree densities (recall slides that were shown previously)

What about saying that it is up to farmers to decide which tree densities are acceptable to them and which species they want to protect and manage?

It depends on their objectives, their selection of species....

Which species do farmers in Malawi prefer to protect and manage on-farm?

Do women and men have different preferences?

Day 3 Session 14: Overcoming constraints to protecting and managing tree and shrub regeneration on cropland and across rural landscapes

Ask participants to briefly summarize what they perceive could be the main constraints to practicing FMNR – and discuss how these could be overcome.

- *Theft?* If so, how can this be overcome?
- *No perceived rights to trees?* Do you know whether the current forest code recognizes farmers' rights to trees?
- *No permanent rights to land?* Is this a major constraint? For whom?
- *Damage by livestock?* How much of a problem is this in Malawi which has much lower livestock densities than many other African countries where FMNR is applied at scale? How can livestock be excluded during some time (a year) from grazing in areas with FMNR?
- *Competition with crops due to shade?* If this is perceived as a problem, is it true for all tree species? Which tree species, and with which crops?
- *Lack of household labor?* Can this be addressed through the organization of (traditional) work parties?
- *Lack of community organization?* If community organization is weak, can faith-based organizations play a role in strengthening community organization for FMNR? Other solutions?
- *Bylaws exist but are not enforced?* Do you know examples of villages with bylaws for the protection and management of on-farm and off-farm trees which are enforced? Which sanctions are imposed on those who do not respect the rules?
- *Are bushfires a problem in your area?* Is this addressed? If yes, how and by whom? If no, why not and what needs to be done according to you?
- *Damage by birds, rodents, monkeys and other animals?* How big is the problem and what can be done against it?
- *Lack of knowledge/information/training about FMNR?* How can this best be addressed according to participants? (radio programs? extension agents? other?)

Day 3 Session 15: Key elements for further training on FMNR

Ask participants if they know farmers (men and women) who have become so experienced in FMNR that they have begun/are able to train other men and women.

Assumption: such farmers (men and women) do exist in Malawi. How can they be identified?

Ask participants to reflect upon what they feel are the main elements to be included in training of farmers and others to facilitate and accelerate the adoption of FMNR. What do participants find the key elements they will include in their training of farmers in FMNR?

What could the government extension services do differently or additionally to increase their role and contributions to FMNR training?

Can it be integrated or added to ongoing training on crop production? On sustainable land management? On reforestation and restoration?

Consider how such training could be organized and by whom? What networks, associations, NGOs, projects or other groups might be interested?

What does each participant think they could do to accelerate the widespread adoption of FMNR in Malawi?

Day 3 – Session 16: Video documentary on successful landscape restoration experience in Ethiopia

Show DVD Ethiopia Rising: Red Terror to Green Revolution

Reason: it shows a number of elements, which include:

- the importance of community organization and leadership to restore degraded land

- support by development partners
- the role of study visits
- the visit by a re-greening champion (Wanjira Mathai)

Day 3 - Session 17: How to rapidly accelerate the scaling of FMNR and monitor its progress and impacts?

Ask participants to list and categorize the main types of activities that they think are needed to quickly scale FMNR. The WRI scaling strategy has identified six steps and a number of activities under each step.

1. *Identify and analyze re-greening successes.* FMNR is beginning to emerge at scale (= success) in Malawi, but there is an urgent need and huge potential for scaling.
2. *Build a grassroots movement.* How to do this in Malawi? What role for faith-based organizations? Who are the FMNR champions in Malawi? What role for traditional leaders?
3. *Create enabling national policies and legislation.* For instance, does the current forest code recognize rights to on-farm trees? Is it possible to move from subsidies for fertilizers to subsidies for fertilizer trees
4. *Develop communication.* This is about increasing information about FMNR to all smallholder farmers (radio programs?) and about capacity building (training and study visits) and empowerment of communities.
5. *Develop agroforestry value chains.* Which value chains exist in Malawi (Moringa?) or can be developed?
6. *Develop research to fill gaps in knowledge.* For instance, knowledge about costs and multiple benefits of FMNR is not adequate yet.

If the enabling conditions are in place, would it be sufficient to develop communication (training for capacity building, information shared by experienced farmers in national radio programs, study visits by non-practitioners to farmers (men and women) who already have gained experience.....) to catalyze a process of re-greening?

What might be the role of rural radio in Malawi – to provide a voice for FMNR champions and to share information about the life-changing benefits of FMNR?

What might be the role of farmer associations, radio, extension agents, project staff and others to organize demonstrations and training on FMNR, and to monitor progress in the adoption of FMNR?

How could these groups and others help to improve the knowledge base about the benefits and impacts of FMNR?

What critical gaps in information about FMNR need to be addressed in Malawi? How could it be done, and who might have a role in addressing these gaps?

Powerpoint about “scaling up re-greening: six steps to success” can support group discussion

Divide the participants in small groups (4 – 5 persons) and each group identifies what they perceive to be the key aspects which should be included a national program to scale up FMNR in Malawi, as part of FMNR training of trainers session and other interventions.

Day 3 – Session 18: Presentation of additional sources of information on FMNR

Present documentation and walk participants through the contents of a training manual on FMNR, including Fact Sheets, FMNR trouble shooting notes, guides and useful websites, such as FMNR Hub (www.fmnrhub.com.au); EverGreen Agriculture Partnership, and other resources.

Notes to be shared with participants

World Vision/SIM AgNotes 2009. Farmer Managed Natural Regeneration

World Vision/ICRAF Fact sheet: how to do FMNR

World Vision. FMNR Trouble-Shooting Notes

Day 3 – Session 19: What will you do to promote FMNR after the workshop?

Each participant can share what they want to do to promote FMNR.

Day 3 – Session 20: Participants evaluate the training workshop

Key aspects to evaluate include:

- Has this workshop contributed to your increased understanding of FMNR and its multiple economic, environmental and social impacts?
- Has this workshop increased your ability to train other trainers in FMNR?
- Has this workshop increased your ability to train farmers (men/women) in FMNR?
- Do you need more information about specific themes to be able to train farmers (men and women)? Please specify which information?
- Do you feel you need additional skills to be able to train farmers (men and women)? If so, which ones?



U.S. Agency for International Development

1300 Pennsylvania Avenue, NW

Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

www.usaid.gov