

# FARMER MANAGED NATURAL REGENERATION

FMNR – Report from the Katete site



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## **EXECUTIVE SUMMARY**

The farmer managed natural regeneration technology while not being new among farmers requires support to make it more deliberate and structured. Katete district in the Eastern province of Zambia is one of the districts not been spared by massive deforestation. This concern has already attracted the attention of both Civic and Traditional leadership. One of the events that requires cutting of trees in mass is the Kulamba ceremony which is an annual international event. Chewa people have much reverence for their customary practices and areas that have been protected by traditional laws such as cemeteries and sites for Nyau practice are not disturbed by community members. Positive deviants exist in the community who amidst the ongoing deforestation have still managed to maintain intact forest patches. These provide an opportunity for initiating farmer-to-farmer learning. The role of indigenous knowledge in the identification of species and their uses supports the 'conservation-through-utilization' approach. Another approach suggested by the farmers is 'conservation-awareness-through-order'. There are gender concerns in FMNR and these mostly anchor on livelihoods. Disasters are directly and indirectly related to land degradation and this makes disaster risk reduction a theme to be mainstreamed in the interventions. Culture can be used powerfully to green the people's heritage and children can be targeted to raise a generation that is better informed about their environmental concerns. Government and other stakeholders should deliberately recognize efforts by pioneers of environmental protection and natural regeneration activities and use them together with other positive deviants as an example to amplify extension work.

## INTRODUCTION

FMNR activities in Katete combined meeting with farmers and practical demonstrations along with discussions. The team was accompanied by a technical officer from the Katete District Forestry office. Meetings with the District Commissioner and the two Chiefs were also used to explain the aim of the THRIVE project and details were shared about the farmer managed natural regeneration technology as being a low cost approach to regenerating the environment which can be used even in cases where tree planting would be seen as being costly. A stakeholders' meeting was held which was attended by government officials and representatives from other NGOs.

This report is a compilation of FMNR activities which took place under the THRIVE project from 12 to 16 June 2017 in Katete.

## OBJECTIVES

- To meet farmers, discuss and demonstrate FMNR technology and possibly recruit the early adopters, where possible even demarcate land for FMNR
- To meet the two chief and advocate for their support in the management of natural resources with a possibility of their allocation of communal land for rejuvenation
- Engage district level stakeholders to obtain technical and extension support for the farmers

## FINDINGS AND LOCATION

On the first day a meeting was held with the District Commissioner (DC) at the DC's office. The Commissioner glowed with enthusiasm when expressing interest in the protection of the natural environment. The DC is passionate with forest protection even in his own village and is committed to assisting in a way possible especially in promoting forest products like honey.

### Transect in Azele Kacheka

Two areas were selected for inspection. One was a reserved plot with secondary trees and the second was an area actively used for crop cultivation.

- Tree density in the unused plot was found to be <10 species of economic importance per lima (2500m<sup>2</sup>). This area represented a reserved piece used for the purpose of Nyau. Species included *Brachystegia longifolia*, *Diplorhynchus condylocarpon*, *Piliostigma thonningii*, *Azanza garkeana*, *Diospyros mespiliformis*. The most abundant of these was the *Brachystegia* species.
- The fields used for cultivation had some natural species along the boundary with the main road, with *Mangifera indica* growing in the middle of the field purposely grown by the farmers.

Figure 1: Cultivation Field with Mango Trees and Reshoots of Trees



### Site visit to Grevazio Banda's field near Lupando School

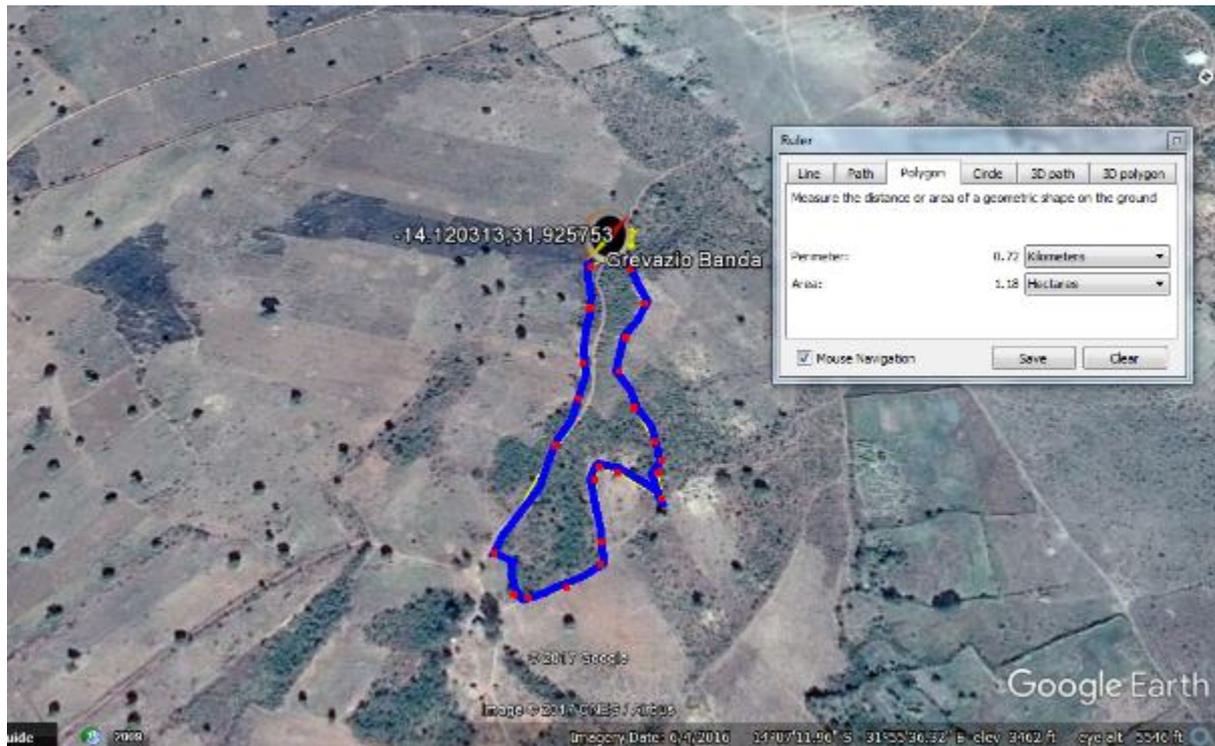
Field demonstrations were carried out in the 1.2Ha reserved land where trees have been left to grow (cf figure 3). Activities that were carried out included identification of species and their uses. Farmers were able to learn from peers on the correct way to prune and they went on to try out the pruning. The area had a comparatively impressive tree density  $>20/2500\text{m}^2$ . Stems averaged 25mm with a height of 2.4m.



While the farmers expressed interest in trying out the FMNR technology on their fields, some of the concerns raised were such as how the species to be rejuvenated would be protected from other members of the community. After considering several options, the farmers settled for the use of oil paint to mark the trees as an indication that the plant was under regeneration.

Figure 2: Grevazio Banda

Figure 3: Grevazio Banda's Woodlot



### Site visit to Benson Zulu's field in Chapita farms

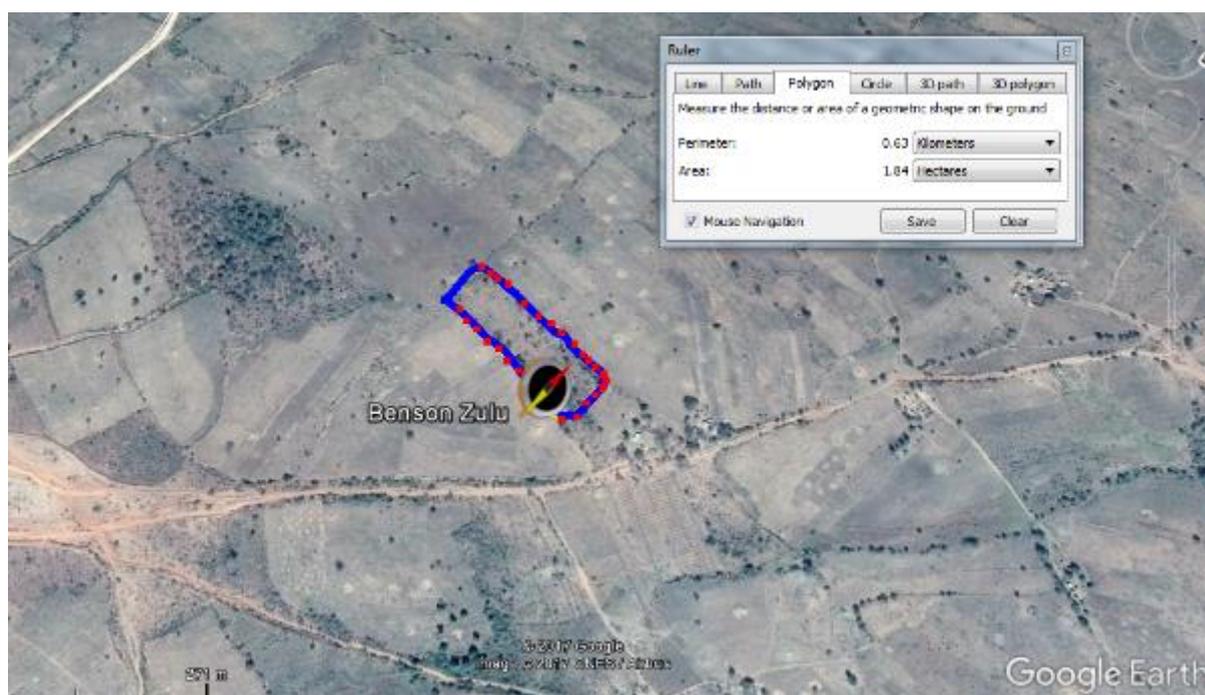
The Chapita farms are a settlement where farmers have homesteads, each one with an individual field unlike the other areas where homesteads were clustered and fields maintained in the periphery.

Benson Zulu is a headman and lead farmer who has been practicing FMNR after undergoing training with World Vision. He carries out regeneration on the fields where he grows crops and also owns a land reserved for natural trees, where however there was no deliberately managed regeneration. The reserve had beehives which the farmer put and was harvesting honey from. The area where measured 1.8Ha (cf. figure 4)

The farmer explained that besides caring for trees as a means of adding biomass to soil in order to build fertility and water retention, he observed that he could grow edible caterpillars on the *Msekese* tree. He did so by first finding young caterpillar in the bush and bringing them onto trees in his field where they grew and were harvested to be used as food for the family.

During the discussion with the farmers that gathered it was learnt that there is a high possibility of protecting species once people realised that someone was intentionally doing so. Farmers suggested that once the trees under managed were kept in a line and the area around them cleared, it would show other people that these were being cared for and therefore increase the chances of the trees' survival.

Figure 4: Benson Zulu's Woodlot



### **Common opportunities and challenges faced by farmers**

Farmers agreed that trees that are grown and raised on the fields had a higher chance of being protected and untouched. This was unlike naturally growing tree and worse still, those off the crop field.

Farmers expressed concern about the helpless situation in instances where some headmen were in the forefront of indiscriminate tree cutting and selling of firewood.

Community members felt that they needed more support and sensitization on laws and policy from the Forestry Department.

### **Meeting Chief M'bangombe**

A brief on THRIVE project progress was made to the Chief M'bangombe in particular issue of Nature preservation was highlighted. The Chief welcomed the idea of an orientation with headmen on FMNR. When asked if a specific area could be allocated for tree regeneration, the Chief advised that Vulamumkoko ward where the area programmes are implementing was over populated but other wards in his chieftom might be best suited.

### **Meeting Chieftainess Kawaza**

Chieftainess Kawaza was also given a brief on project implementation. The Chieftainess was wholly impressed with the FMNR concept and insisted that the woodlot in front of her palace be earmarked as a demonstration site for FMNR. She welcomed the idea of the headmen's FMNR orientation and requested that chiefs who are custodians of the people be also orientated. Chieftainess Kawaza has already embarked on a campaign to promote better management of natural environment. It was agreed that Chiefs would be oriented on

various models in September when they would be no longer committed with the traditional ceremonies.

Figure 5: Area Around Chieftainess Kawaza's homestead



### Meeting with Stakeholders

The meeting with stakeholders attracted participants from government line ministries and other organizations. To create an appreciation of the extent of deforestation in the district, satellite maps were shown using Google Earth Pro<sup>®</sup> and it was clear that there was more bare ground than what was covered by vegetation.

Quoting the words of the District Commissioner's representative, "The extent of the damage on the environment is larger than we thought. You have given us a real picture of our district and it is worrisome and gloomy, so we just have to stand up and do something to change the situation... we have the human resource to make a difference".

The meeting which started with an overview of the situation of the natural forest in Katete culminated in a discussion and noted the following:

- Awareness of the devastating effects of deforestation can be intensified through use of the local radio (Mphangwe FM), Churches, Community leaders and Traditional events, and the creation of environmental clubs through the local /traditional leadership and engagement of the DDCC.
- Alternative forms of livelihoods can be created/ promoted such as small livestock production (Goats, chickens, pigs), fruit farming /gardening, beekeeping, wild fruits, mushroom production and other small businesses (tuntemba).
- Camp and Block extension officers, Community development officers, Traditional and Civic leaders, and Lead Farmers can spearhead FMNR work to encourage,

challenge and conduct trainings at community level as FMNR Champions/Facilitators. At district level this can be done by Forestry department, the Local government, Ministry of Agriculture, Cooperatives Department, Ministry of Chiefs and Traditional affairs, DMMU, and Other cooperating Partners.

- Governance can be strengthened for the management of natural resources by working through FMNR committees at village level which can be responsible for enforcing Community resource by-laws. The composition of the committees can include the Village headman and the Indunas supported by representatives from the Ministry of Agriculture and other Implementing partners. The committee can then report to the District and Environmental Subcommittee of the DDCC.

### **Visit to Munyamadzi**

The natural environment of Munyamadzi was found to be much different from all the other sites visited as it still had a substantial number of tree species with diameters >160mm. Greater biodiversity was also observed. Species also had *Combretum molle*, *Faurea saligna*, *Azelia quanzensis* and *Bauhinia petersiana* in addition to the species that were found in the other sites.

The contrasting findings when compared to Vulamukoko and Lupando have an implication on the approach to the management of natural resources in Munyamadzi.

## **CROSSCUTTING THEMES IN FMNR**

### **Gender**

Gender plays an important role in the management of natural resources. During a meeting with farmers near Lupando School, women were quick to say that men were responsible for the destruction of trees because they were the ones who carried axes. The reaction from

men pointed towards the women's who were in the business of distilling *kachasu*, an illicit alcoholic drink. It was therefore clear that both sides contributed to the deforestation problem.

A self-confessed former distiller, Josephine Phiri, explained how she changed her means of livelihood after joining a Savings Group and being able to access money which she was now using to support her new business of selling vegetables and fritters



Figure 6: Josephine Phiri center with Daughter Margaret Phiri

### **Disaster risk reduction**

A number of impending disasters can be prevented through regeneration in Katete. Watershed management requires that farmers use correct systems of farming and trees naturally help to hold the soil and prevent erosion. The shallowing of streams and disappearance of water in the drier season is related to indiscriminate cutting of trees upstream.

### **CONCLUSION**

There lie great opportunities for FMNR in Katete arising from the need, the leadership zeal and the presence of early adopters. The success of FMNR does not end at demonstrating the technology, there is more to it and that includes relationship building with the members of the community. The AP has stakeholder support and can help to make a difference in environmental protection and management as part of contributing to the wellness of children.

### **RECOMMENDATIONS**

From the observations made in all the communities visited, there is an important connection between cultural practices and environmental management among the Chewa people. Patches of land with tall trees at the edge of the village typically represent communal burial grounds. Similarly, other areas showing secondary forest growth undisturbed by indiscriminate cutting were those areas designated for the practice of Nyau. Since these customs are recognized by the Kulamba Ceremony which attracts participants from Mozambique, Malawi and Zambia, there is a high possibility that conservation of natural reserves can be enhanced through advocating for the directing of bylaws as such. Opportunities for this are almost guaranteed as the District Commissioner and the Chiefs showed willingness to be pioneers.

In individual fields, farmers should be encouraged to use fast growing species (e.g. *Cajanus cajan*) to mark boundaries rather than leave the boundaries bare. This can be done as an addition to the existing practice of keeping mango trees in the middle of the field.

Environmental education targeting the young generation should be carried out. This can be through deliberate education of children in the farmers' homesteads on the correct way of harvesting sustainably for regeneration, as well as promoting school environmental clubs through Forestry extension support.

Encourage FMNR pioneers by recognizing them and including them into extension system through farmer-field-schools, field days with the ministry of agriculture and site visits. Consider that FMNR has the potential of graduating farmers into foresters and therefore, provide timely information including marketing opportunities for forest products.

The approach to environmental management in Munyamadzi should emphasise forest protection with natural regeneration alongside it and not the other way round. This is

because the community should try to protect what is available while also putting efforts on adding to what is there through regeneration.

Scaling up with supporting the farmers that are interested in practising FMNR should be done quickly. If a good number of pioneers are enrolled, committees that may support each other on the ground may be developed. Mapping should be done for all the sites identified

The use of energy saving cook stoves would be essential in mitigating the need for charcoal and firewood. The adoption rate for these stoves is usually low. An analysis on how these stoves could be used as a business case would be necessary.

## ANNEXES:

### Checklist of Planned Tasks

- Meet with the two chiefs: Mbang'ombe and Kawaza
  - Assigning of communal areas to FMNR in both chiefdoms

Only Chieftainess Kawaza was able to offer a piece of land for rejuvenation
  - Provision of mechanisms for protection of species

The by-law system for the protection of species and reserved pieces of land would be considered in the near future as this is a relatively lengthy process
- Meet with department of forestry
  - Training and extension support

Carried out field visits with the forestry officer who participated in the demonstrations with the farmers. Training and extension support would be on-going for farmers participating in FMNR.
- Meet with indunas

The Induna, representing the Chief, was expected to be part of the stakeholders' meeting, but did not attend. However, the indunas and headmen will be part targeted orientations in the coming months.
- Work with Farmers previously trained in FMNR
  - Demarcating the areas that the chiefs have allocated (at least one per chiefdom)

Demarcation was done in two areas belonging to individual farmers. The total are covered by trees in the tow areas was found to be 3Ha. Demarcating of more areas should be on going.
  - Recording hectarage and tree/specie count for these areas with the community

The standard formula for carrying out specie count could not be established. While Forestry Department mentioned the 2-6-12 method, the team in the field thought that a simple random sampling of chunks of land about 25m<sup>2</sup> could be averaged. The method for actual counting could still not be established.
  - Specie identification and Economic usage of demarcated areas

Specie identification and usage was done in all the sites visited. Farmers were encouraged to mention the names of trees they would want to regenerate and their uses.
- Discussion with Farmers and Forestry Department
  - Identify other extra species required and where

While the discussion with farmers and forestry department was part of all the field visits, the identification of other species that the farmers would require will be part of on-going support, especially as individual and groups of farmers identify specific needs and areas for reforestation.

### List of Participants in the Stakeholders' Meeting

	<b>Name</b>	<b>Sex</b>	<b>Organisation</b>
1	Jordan Samuwika	M	Ministry of Fisheries and Livestock
2	Brian Siwale	M	WVZ
3	Alfred Moyo	M	WVZ
4	Peter Simenda	M	WVZ
5	Moffat Mtonga	M	WVZ
6	Teddy Chambwe	M	WVZ
7	Samuel Chanda	M	WVZ
8	Wilfred Mufwambi	M	WVZ
9	Ruth N. Moyo	F	Education
10	Gloria Phiri	F	Community Development
11	Dickson Phiri	M	Mphangwe Radio
12	Winfred Mwale	M	Care International
13	Mwila Mazunda	F	Local Government
14	Chilala Gibson	M	Commence
15	Jeremiah Kabwe	M	Ministry of Agriculture
16	George Sakala	M	Health
17	Kanonkela Jones	M	Forestry
18	Sam Munkombwe	M	COMACO
19	Nkhowani Maurice	M	ZNFU
20	Nasser SHomo	M	WVZ
21	Ethel Mulenga	F	WVZ

### List of Farmers expressing interest in FMNR in Lupando

<b>Name</b>	<b>Village</b>
Methasis Banda	Tuze
Stephen Banda	Keni
Grevazio Banda	Keni
Bornface phiri	Rueben
Edwin Lungu	Makanya
John Tembo	Keni
Yambani Tembo	Rueben
Alifas Phiri	Makanya
Zacharis Mbewe	Makanya
Julias Zulu	Chimlandu
Shapulani Tembo	Makanya
Angelo Banda	Chpezika
Skaout Phiri	Chimpondo
Moses Sakala	Keni
Lameki Phiri	Chakwama
Lyord Chulu	Rueben
Lucy Banda	Chindiba
Florence Banda	Makombe
Ida Miti	Makombe
Hekenex Zulu	Makanya
Agness Banda	Makanya
Zinobia Zulu	Keni
Matadah Phiri	Keni
Zakose Banda	Keni
Magret Phiri	Chimpondo
Dominia Zulu	Keni
Esther Banda	Keni
Sarah Zulu	Kachile
Niose Banda	Kachile
Maureen Phiri	Gileya
Agness Phiri	Keni
Christine Tembo	Makombe
Taldah Banda	Chimpondo
Lidiah Phiri	Keni
Evelyn Banda	Tuze
Charity Banda	Reuben
Hildah Miti	Reuben

### List of Farmers expressing interest in FMNR in Chapita

Name	Village
Kalinda Banda	Mtsale Village
Samuel Banda	Mtsale Village
Lipilani Phiri	Mtsale Village
Benson Zulu	Chapita farms
Enock Miti	Chapita farms
Jophat Phiri	Chapita Farms
Wilson Mwale	Mshulu Farms
Elekana Zulu	Chonzi village
David Sakala	Jose
Selina Banda	Jose

### List of common trees, their local names and uses

Botanical Name	Local Name	Uses
<i>Azalia quanzensis</i>	Mpapa, Mgalilondo	Timber
<i>Azanza garkeana</i>	Makole	Edible fruit
<i>Bauhinia petersiana</i>	Mpondo	Construction
<i>Brachystegia longifolia</i>	Mfendaluzi	Fibre, poles, firewood
<i>Cajanus cajan</i>	Nyamndolo	Edible peas
<i>Combretum molle</i>	Kalama	Firewood, charcoal
<i>Diospyros mespiliformis</i>	Nchenja	Edible fruit
<i>Diplorhynchus condylocarpon</i>	Mtombozi, Mtowa	Construction, medicinal
<i>Faurea saligna</i>	Chipepe	Firewood, charcoal
<i>Mangifera indica</i>	Manga	Edible fruit, firewood for curing bricks (rare use)
<i>Piliostigma thonningii</i>	Msekese	Construction, medicinal, livestock feed, growing edible caterpillars