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How World Vision Ghana is helping to regenerate depleted lands through the Farmer Managed Natural Regeneration (FMNR) Initiative

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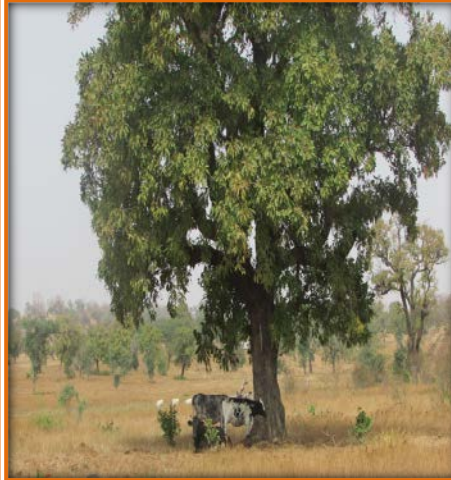
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FMNR



How World Vision Ghana is helping to
regenerate depleted lands

By: World Vision Ghana

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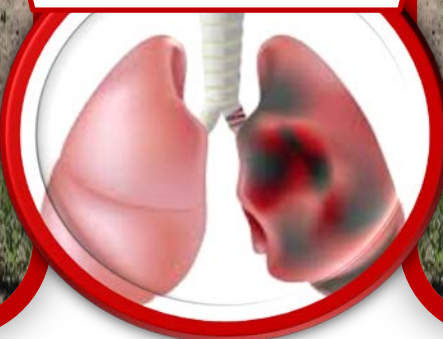
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1.0. Glossary

ADP	Area Development Programme	MDG	Millennium Development Goals
CBO	Community Based Organizations	MOE	Ministry of Education
CWBT	Child Well Being Targets	MOFEP	Ministry of Finance and Economic Planning
CWIQ	Core Welfare Indicators Questionnaire	MOM	Models of Ministry
DF	Development Facilitator	NDPC	National Development Planning Commission
FES	Fuel Efficient Stove	NER	Net Enrolment Rate
FMNR	Farmer Managed Natural Regeneration	NGO	Non-Governmental Organization
FORIG	Forestry Research Institute of Ghana	PRP	Poverty Reduction Program
GDP	Gross Domestic Product	SO	Strategic Objectives
GES	Ghana Education Service	UNICEF	United Nations Children's Fund
GHANEP	Ghana Network for Peace Building	UNSG	United Nations System in Ghana
GPRS	Ghana Poverty Reduction Strategy	U5	Under 5
HH	Households	WVG	World Vision Ghana
LEAP	Livelihood Empowerment Against Poverty	WVI	World Vision International

A nation that
destroys its soils
destroys itself.
Forests are the
lungs of our land,
purifying the air and
giving fresh strength
to our people

Franklin D. Roosevelt



2.0. Acknowledgement

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Utmost appreciation also goes to all those the KMNI Unit contacted before and during the publication of this journal.

It is important to note that the views in this publication do not necessarily represent those shared by staff of World Vision Ghana.

3.0. Foreword

The management of the natural environment to withstand environmental hazards has been a herculean task in the arid regions in Africa. In the savanna areas in Ghana for example, acute and protracted dry seasons, activities of Fulani herdsmen, rampant bush burning, and indiscreet felling of trees, among other things, have culminated in the decline of the forest cover, loss of indigenous biodiversity and increased soil infertility.

With the increasing danger of climate change and its attendant effects like scorching temperatures, unpredictable rainfall regimes, increasing pest and disease infestations on the environment, a variety of interventions are being pursued the world over to mitigate these adverse effects. However, realities on the ground document a

body of evidence that most of these interventions have not yielded optimum results. Realizing the relative ease of managing already available tree shrubs and seedlings compared to creating new tree plantations from nursery seedlings to 'regreen' the environment, World Vision Ghana introduced the Farmer Managed Natural Regeneration (FMNR) in the Talensi Nabdam District in 2009. The project has been under the care of the Talensi ADP, with funding from World Vision Australia and supported by some of our Development Partners.



*Mrs. Gifty Appiah
Director, Ministry Quality and Strategy (MQS) Department*

A lot of resources have been invested into this project because as an organization, we believe that tree resources are capable of supplementing existing food resources and income; filling in seasonal shortfalls of food, medicine and income; providing seasonally crucial agricultural inputs; providing food and shelter for animals; improving upon soil fertility; providing habitat for wildlife; protecting water and land resources, and sequestering carbon and hence reducing the rate of global warming.

The FMNR project has made a lot of strides in improving vegetation. After barely five (5) years of implementation, we reckon that the successes of the initiative have been enormous.

We therefore deemed it fitting and proper as an organization to document and broadcast our achievements; hence the publication of this journal. This journal chronicles the successes of the FMNR project. It gives a background to the formation of FMNR, a description of the project areas, and describes the project approach. It also highlights the myriad support that has been given to us by our partners.

As an organization, we are child-focused and thus, all activities must inure to better living conditions of the child. In this journal therefore, you'd see how the FMNR is impacting on our Child Well Being Targets. This material also posits some challenges the project faces at the moment. Inferring from the project's best practices, some recommendations to improve the project's effectiveness have been outlined. Lastly, after implementing the project and recording lots of successes in the area of vegetation, the journal presents FMNR as a better alternative to tree planting. A number of human interests have also been captured in this material.

This publication has carefully been drafted with experts' review to communicate effectively progress on the state of FMNR since its inception within the Talensi Nabdam District. Authors of the material painstakingly took time to interview beneficiaries of the project and documented all the success stories they shared. The authors also learnt directly from beneficiaries how World Vision Ghana could replicate this intervention in all other communities in the savanna area.

This is a must read journal!

Stay blessed

Mrs Gifty Appiah

Director

Ministry Quality and Strategy (MQS) Department

World Vision Ghana

4.0. Executive Summary

Human activities over the years have led to the degradation of large tracts of farm lands, grazing lands and forest. Experts have described the rate of deforestation and degradation as very alarming. The situation has a detrimental effect on the lives of the rural poor and peasant farmers who make up the majority of Africa's population. These peasant farmers face extreme poverty because of famine brought about by the degradation of farmlands that make it difficult for them to carry out their farming activities.

The Final Report on *'Achieving the MDG's with equity in Ghana: Unmasking the issues behind the averages'* published by the National Development Planning Commission (NDPC) & United Nations System in Ghana (UNSG), in June 2012, affirms, "Between 1990 and 2010, Ghana has lost an average of 125400ha (or 1.68%) of forest per year or a total loss of 33.7% (i.e. around 250800ha) of the country's forest cover over the period. The cost of environmental degradation to the economy of Ghana is estimated at 7% of GDP for 2011 putting the estimated cost of the degradation at about \$2.7 billion per annum. This cost is captured in the form of loss of forest cover and arable land for farming, drying up of water bodies, decline in wildlife population and biodiversity and increasing risk associated with health related pollution. The estimated cost of environmental degradation has a significant impact on the capacity of the country to sustain its growth, as it substantially reduces the genuine savings rate. The rapid deforestation has serious welfare and livelihood effects on the people."

In the savanna belt of Ghana, notably the Upper East, Upper West and Northern regions, the situation is very grave; degradation and desertification of lands in these areas are very rampant. This is capable of worsening the poverty situation in that part of the country which is already considered as the poorest in the country.

Talensi is one of such affected districts in the Upper East region with the majority of the inhabitants being subsistent farmers. The challenges that confront them are not different from those of other communities within the savanna belt. Degraded farmlands are all daily challenges they have had to face. But these challenges are largely human and brought about by their own actions and inactions. Inhabitants usually engage in regular bush fires during the dry season. All these activities impede the economic growth of the inhabitants of the communities. The lands are no longer fertile, meaning that the yields are no longer as much as expected; livestock do not have enough greenery for grazing which even affects their pricing on the market. Some plants, especially wild fruits and medicinal plants have become extinct as a result of these environmentally unfriendly practices

Government and other agencies have several times tried to regenerate the lands through tree planting. These interventions have not yielded the desired results either because the approach adopted to get attitudinal change was inappropriate or the damage caused to the lands was too grave for the initiative to succeed.

But an initiative by World Vision Ghana seems to have done some magic, and seems to be yielding more than the expectation of communities within the Talensi District. The organization in partnership with its key stakeholders has introduced an initiative called the FARMER MANAGED NATURAL REGENERATION (FMNR) to some communities in the Talensi Districts. FMNR has produced enormous benefits to the Talensi District

This journal therefore seeks to bring to the limelight the impact of the project in the Talensi District. It gives a description of the project area, tells the background to the formation of the project and highlights the project's current state. It enumerates a number of successes the project has chalked so far, documents some individual success stories and shares how these successes have impacted the achievement of World Vision's Child Well Being Targets. (CWBTs). There are some recommendations too, to help improve the sustainability of the project. At the concluding part, FMNR is presented as a better alternative to tree planting.



FMNR Pilot Plot at Yameriga Community In Talensi-Ghana



Australian High Commissioner Visits Talensi to See FMNR Work

5.0. Profile of FMNR

State of land before
FMNR at Wakii



State of land after
FMNR at Wakii



State of land at Yameriga before FMNR



State of land after FMNR in Yameriga



5.1. Introduction

Farmer-Managed Natural Regeneration (FMNR) is a low-cost, sustainable land-restoration technique used to combat poverty and hunger amongst poor subsistence farmers in developing countries by increasing food and timber production, and resilience to climate extremes. It involves the systematic regeneration and management of trees and shrubs from tree stumps, roots and seeds. FMNR adapts centuries-old methods of woodland management, called coppicing and pollarding, to produce continuous tree-growth for fuel, building materials, food and fodder without the need for frequent and costly replanting.

On farmland, selected trees are trimmed and pruned to maximize growth while promoting optimal growing conditions for annual crops (such as access to water and sunlight). When FMNR trees are integrated into crops and grazing pastures there is an increase in crop yields, soil fertility and organic matter, soil moisture and leaf fodder. There is also a decrease in wind and heat damage, and soil erosion.

The goal of the project is to incorporate sound environmental and natural resource management practices into indigenous farming systems. This would augment the ADPs targets of achieving food security, poverty reduction and improved livelihoods for families and communities.

At the moment, in the Sahel region of Africa, FMNR has become a potent tool in increasing food security, resilience and climate change adaptation in poor, subsistence farming communities where much of sub-Saharan Africa's poverty exists. FMNR is also being promoted in East Timor, Indonesia and Myanmar.

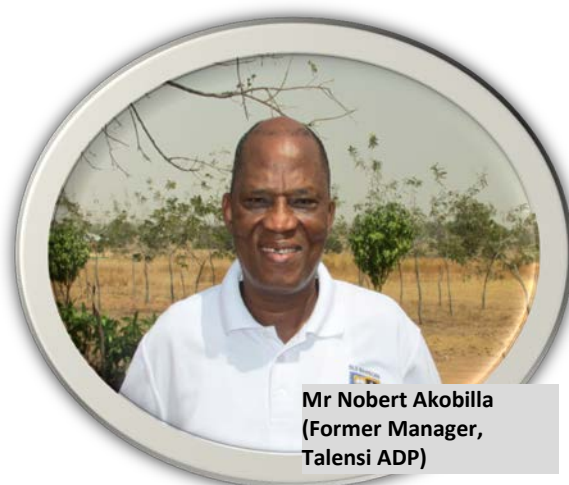
The project derives its name FMNR from the local Talen dialect, "Tintuug Legbe Tii" which explains that "A Shrub (Tintuug) Becomes (Legbe) a Tree (Tii)

5.2. Background to the formation of FMNR

Mr Norbert Akobilla, former ADP Manager, Talensi ADP, shares some background to the formation of the FMNR in Talensi. He shares, "The degradation of large tracts of farm lands, grazing lands and forest became unbearable in the Talensi District. There was therefore the need for us to do something about it. Livestock were dying, poverty rate was aggravating, and the hot weather conditions were becoming unbearable, among other hardships. We just wanted to bring trees back because there is a chain of attendant social and environmental benefits that come with trees. All attempts in planting trees and remedying the sickening environment failed because of the harsh weather conditions.

Incidentally, Tony Rinauldo had also discovered how pruning natural shrubs sprang very well to regenerate lands. Rinauldo was the main originator of the FMNR initiative. After having succeeded in Niger, Talensi also decided to remedy their fast depleting lands by adopting the project. Rinauldo came to Talensi to offer some introductory lectures to the staff and some community members on the invaluable benefits of the FMNR project

Upon acceptance by some communities to pilot the project, the ADP set sail the ship to start the project. This was in 2009. Originally, four communities were piloted but the number has grown to seventeen (17) communities



Mr Norbert Akobilla
(Former Manager,
Talensi ADP)

5.3. Description of Project Area

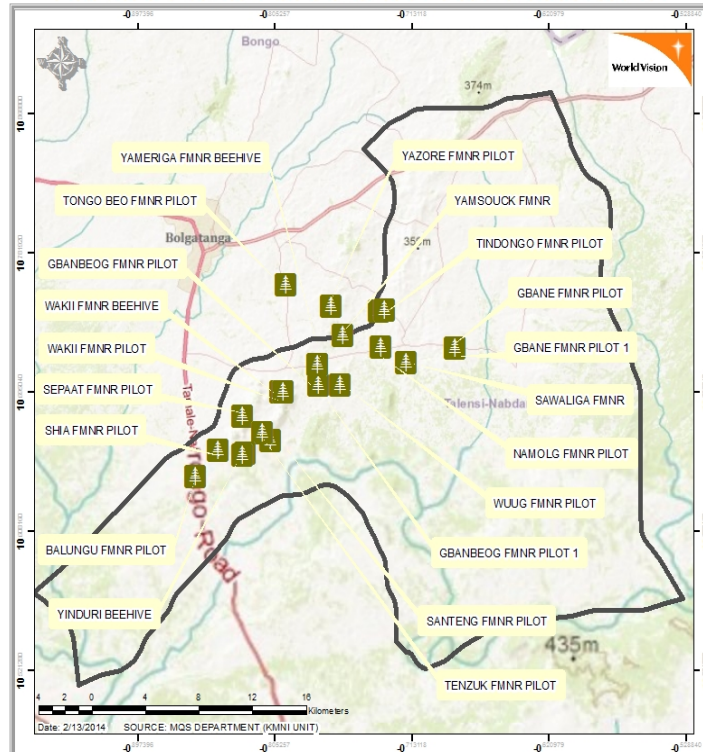
The Talensi District is bordered on the north by the Bolgatanga Municipality and Bongo District; to the west by the Kasena/Nankana District; to the south by West and East Mamprusi Districts and to the east by the Bawku West District. The District lies between latitudes 10.15° and 10.60° north of the equator and longitude 03.10° and 10.50° west of the Greenwich meridian.

Electricity from the National power grid is available only in a few sub urban settlements in the District. Government effort to provide electricity is far from reaching the interior settlements.

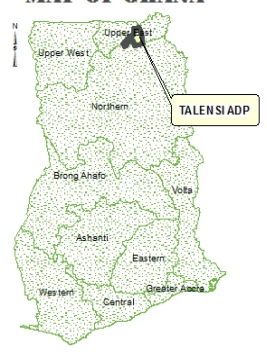
Mobile telecommunication is available in some parts of the District through some service providers such as Vodafone, MTN, Airtel and Tigo.

Communities in the District are linked by feeder roads which are laterite and difficult for motorists during the rainy seasons due to the poor state of culverts spanning streams. The terrain is best traveled on by cross-country 4x4 vehicles and motorbikes

FMNR LAND SITES AT TALENSI ADP



MAP OF GHANA



LEGEND



PROJECTION INFORMATION

Projection: Transverse Mercator
False Easting: 900000.000000
False Northing: 0.000000
Central Meridian: -1.000000
Scale Factor: 0.999750
Latitude Of Origin: 4.666667

The topography of the district is dominated by relatively undulating lowlands with gentle slopes ranging from 1% to 5% gradient. Some isolated rock outcrops and steeper slopes occur at the Tongo and Nangodi hills, which fall within the Birmain, Tarkwaian and Voltarian rocks of Ghana. There is evidence of the presence of minerals deposits especially gold. The area is drained mainly by the Red and White Volta and their tributaries.

The climate of the region is tropical with 2 distinct seasons: a short erratic rainy season from May to October and a long dry season spanning November to April. The mean annual rainfall is 950mm and a temperature range of 45°C during the hottest months of March to April. The coldest months are in December to January with temperatures of around $12-16^{\circ}\text{C}$ when dry, dusty north easterly harmattan winds from the Sahara desert dominate the entire sub-region

Over 90% of the population is engaged in subsistence agriculture. Production of the main staple food crops, namely; cereal and legumes, is done by small-holder farmers using traditional methods which have made little room for modern scientific advancement. The main crops produced are millet, sorghum, groundnut, and beans. Farming in the district is highly dependent on annual rain fall that over the years has been erratic and unreliable.

Total Programme Area	Entire District covers 912km² Programme area estimated at 500km
Cultivated Area	Entire District: 49,200 hectares Programme area estimates at 27,060 hectares
Climate	Short rainy season: May-Oct,; long dry season: Nov-April. Max temp.:45°C
Physical Environment	Gentle slopes of 1-5% gradient with hilly outcrops throughout the District
Major Vulnerabilities	Natural disasters: droughts, floods, unpredictable rainfall pattern; Infertile and degraded soils; ecologically unfriendly practices; Disease outbreaks – Cerebro-Spinal Meningitis; Poverty mindset prevalent Traditional/Cultural impediments
Poverty Rate	90% (GPRS II)
Human Development Index	0.77 (MoM Document)
Average Household Income	Less than \$1 a day (Ghana Living Standards Survey Document)
Major source of Income	Subsistence farming and agro-processing
Education Enrolment Rate	Kindergarten: 48.85% (Net Enrolment rate) Primary school: 66.55% (Net Enrolment rate) Junior High School: 13.87% (Net Enrolment rate) <i>Source: District Education Statistics</i>



Some FMNR farmers pose for photo



Yellow Berry Fruit



Farmer busily pruning some trees on her farm



Yameriga beehive



Children eating some wild fruits



Farmers busily working on their farms

5.4. Communities' Land Scopes

Currently, the FMNR project is now being practiced in 17 communities within the Talensi District. It started with 4 communities in the year 2009; moved to 9 in 2010; and 17 in 2012.



Below is the profile of the FMNR communities

	Year of Commencement	Community	Acres of land
1.	2009	Yameriga	Acre: 43.898 Sq metre: 177649 Hectors: 17.765 Sq Km: 0.1776
2.		Tongo Beo	Acres: 67.674 Sq Metres: 273869 Hectors: 27.387 Sq Km: 0.2739
3.		Yinduri	Acres: 86.967 Sq Metres: 351945 Hectors: 35.194 Sq Km: 0.3519
4.		Wakii	Acres: 23.036 Sq Metres: 93224 Hectors: 9.3224 Sq Metres: 0.0932
5.	2010	Namolgo	Acres: 22.946 Sq Metres: 92860 Hectors: 9.2860 Sq Km: 0.0929
6.		Balungu	Acres: 11.218 Sq Metre: 45398 Hectors: 4.5398 Sq Km: 0.0454
7.		Sepaart	Acres: 29.956 Sq Metres: 121229 Hectors: 12.123 Sq Km: 0.1212

8.		Shia	Acres: 4.9655 Sq Metres: 20095 Hectors: 2.0095 Sq Km: 0.0201
9.		Yagzore	Acres: 37.202 Sq Metres: 150550 Hectors: 15.055 Sq Km: 0.1506
10.	2012	Wuug	Acre: 2.9886 Sq Metre: 12095 Hectors: 1.2095 Sq Km: 0.0121
11.		Santeng	Acres: 6.7074 Sq Metre: 27144 Hectors: 2.7144 Sq Km: 0.0271
12.		Gbanbeog	Acre: 20 Sq Metre: 80937 Hectors: 8.0937 Sq Km: 0.0809
13.		Tindongo	Acres: 3.0586 Sq Metre: 12378 Hectors: 1.2378 Sq Km: 0.0124
14.		Tenzuk	Acres: 5.0173 Sq Metres: 20304 Hectors: 2.0304 Sq Km: 0.0203
15.		Yamsok	Acre: 3.8255 Sq Metre: 15481 Hectors: 1.5481 Sq Km: 0.0155
16.		Gbane	Acres: 5.9184 Sq Metres: 23951 Hectors: 2.3951 Sq Km: 0.0240
17.		Sawalg	Acres: 11.651 Sq Metres: 47150 Hectors: 4.7150 Sq Km: 0.0471

5.5. FMNR Stakeholders



5.6. Key Roles of Community Stakeholders

STAKEHOLDERS	ROLES & RESPONSIBILITIES
Chief	<ul style="list-style-type: none"> Punish everyone caught breaking bylaws Ensure effective implementation of management plans
Land Owner (Tinda)	<ul style="list-style-type: none"> Make sure fire belts are created round farms and trees Ensure adherence to land use by laws
Women Leader (Magazia)	<ul style="list-style-type: none"> Promote and ensure sustainable use of fuel wood
Forest volunteers	<ul style="list-style-type: none"> Trim the shrubs Create fire belts around trees Enforce bylaws on forest management Arrest offenders of forest bylaws Educate community members on forest management
Fire Volunteers	<ul style="list-style-type: none"> Prevent bush fires Enforce bylaws on bush burning Create fire belts around trees Prevent fire within community Arrest fire offenders to chief for sanctioning Educate community members on fire issues
Assembly person	Liaise with external institutions/stakeholders

5.7. Project Approach

- **Identifying a community:** The first thing that WVG does is to identify a community that is so depleted and thus needs FMNR.
- **Negotiating with the Chiefs and Opinion Leaders:** Once a community is identified, the FMNR staff engage the Chief and leaders of the community. Thorough discussions are made with the leaders of the community on how beneficial FMNR would be to them.
- **Identifying 20 farmers to serve as Lead Farmers:** Upon agreement by the chiefs, 20 farmers are consequently selected to serve as lead farmers. These are the people who [would] champion the project in the community and serve as point persons. Eventually, they'd also elect their leader. The selection of the 20 farmers is done by the community leaders themselves. WVG has no hand in it. The criteria used for the selection are hinged on some of these factors: 1) Farmers must be permanent residents of the community 2) There is the consideration of gender balance. There are always 10 men and 10 women. This is to help promote affirmative action in the various communities. 3) Place of abode. To avoid a number of lead farmers leaving in a clustered area, the dispersal of farmers' residence is also taken into consideration.
- **Educating the lead farmers on FMNR Methodology:** The 20 lead farmers are schooled on how to nurture the trees and shrubs to grow. These 20 are also expected to teach their colleague farmers how they could replicate these practices in the individual farms.
- **Identifying a land as a demonstration farm:** After schooling the lead farmers, they themselves identify a land site for demonstration. This is where WVG practically shows them how they could prune their shrubs and trim their trees. Everything WVG does in this stage is practical.
- **Identifying 20 people as Fire Volunteers:** Don't mistaken 20 Lead Farmers for 20 Fire Volunteers. While the 20 Lead Farmers are to practically lead in the demonstration of the pruning and trimming on the field, the role of the 20 Fire Volunteers is to make sure that people do not engage in bush fires. They act as local Fire Service Personnel. They assist the lead farmers to prevent bush fires in the communities. Additionally, they create fire belts at regular periods of the seasons, train community members of fire prevention, among others.
- **Provision of logistics:** Once everything is set, WVG gives to the communities some logistics to use for their farm operation. Some of these logistics are: cutlasses, wellington boots, sickles, knives.
- **Enacting bylaws to sanction offenders:** At this stage, it is expected that a lot of education has taken place on the benefits of FMNR and how they could themselves stop bush fires. It is also believed that the communities are definitely going to practice FMNR. Against this background, communities now set their own bylaws to sanction people who burn the bush or cut trees inappropriately. The laws are community specific.
- **Monitoring and Evaluation:** Effective monitoring is done by WVG after the communities start practicing FMNR. FMNR Staff go to the farm lands on regular basis (at least monthly) and offer any kind of support the communities may need.



5.8. Communities' assistance

- Assist the FMNR Team in providing all relevant information
- Assist in the preparation of field work
- Assist in resolving conflicts/problems (if any)
- Assist in identifying HH/recognize area
- Extend cooperation in data collection
- Attend meetings/seminars/workshops/sharing sessions
- Cooperation extended without pay (volunteer services)
- Provide input on what the findings mean to them
- Help develop practical recommendations



Best practices

- Pruning of the shrubs
- Prevention of bush fires
- Prevention of cutting of trees



5.8. Collaboration with Partners

The strategic impact of the FMNR has attracted the District Assembly. As a result, the assembly has guaranteed the sustainability of the initiative in the District by incorporating it into the District's Poverty Reduction Program (PRP). The District has considered FMNR as one of the conditions for the enhancement of livelihood in the District. It has helped to improve sensitization within the various communities.

The Ministry of Food and Agriculture (through the Department of Agriculture, which is a decentralized department of the Assembly) has adopted FMNR as one of its interventions for the communities. With the provision of extension services, the Assembly helps to sell the FMNR ideas and norms to other communities that are yet to practice FMNR. According to the department, plans are in the offing to collaborate with World Vision Ghana to spread the initiative nationwide through the Ministry of Food and Agriculture.

The FMNR project is also supported by the Bolgatanga regional office of the Forestry Research Institution of Ghana (FORIG). FORIG helps the ADP to do regular monitoring of the shrubs' growth. They are also able to detect diseases that affect shrubs and consequently suggest curative measures.

The National Disaster Management Organization (NADMO) in the region is also supporting the ADP for the success of the project. NADMO offers technical advice on some logistics to procure for the project. They have endorsed FMNR practices as an efficient way of avoiding floods, and they keep encouraging flood prone communities to practice FMNR.



Lead Farmers and Fire Volunteers of the Yamsong Community



FMNR Project Staff at Talensi

Top picture:
Samuel Abasiba
(Project Manager)

From left:
Jonas Bugre Dogbilla
(DF)

Hagar Annabel
(DF)

David Baaba
(Transport Technician)



FMNR

I will personally punish anybody who sets the bush on fire
... the immense benefits of the Tintung Legbi Tii in our
community cannot in any way be quantified. I won the
Upper East Regional Best Farmer Award in 2011 because
of FMNR.
Thank you World Vision so much for the Tintung Legbi Tii



The Chief of Tongo Beo sharing his success story in an interview with Francis Ainoo

6.0. Successes of FMNR

Stakeholders	Outcomes or benefits	Individual Outcomes
The Lead Farmer's Households	Increased Income & HH resources	<ul style="list-style-type: none"> Increased emergence and utilization of wild resources (especially wild fruits, termites and construction inputs) for household consumption and sale, and associated dietary health benefits. Some wild foods include: Shea Fruit (Locally called <i>Ta-amah</i>), Yellow Berry (Locally called <i>Gyaeya</i>), Red Berry (<i>Sissibi</i>), Black Berry (<i>A-aaraa</i>), Dawada fruit, <i>Babuurah</i> Fruit, <i>Nasomrah</i> Fruit, <i>Nakparah</i> Fruits Increased assets in the form of tree stocks and improved livestock as a result of improved fertile lands and lawns for grazing even during dry seasons Savings on traction expenditure, small loan & FES Increased soil fertility & crop yield leading to more income Farmers also learn to make compost from the droppings of the livestock. This reduces the tons of fertilizers bought
	Improved health & Nutrition	<ul style="list-style-type: none"> Increase in more nourished fruits that also grow faster. Effective pruning exercise makes tree crops to takes 2-3yrs to make fruits grow instead of 8yrs ordinarily Improved respiratory health due to FES Improved health due to improved food accessibility Reduced accidental burns due to FES Increased ability to pay for and renew health insurance cards.
	Education	<ul style="list-style-type: none"> Increased enrolment of children in school as parents generate more income from their farm produce and invest a chunk amount of the money into education
	Psychological & Social Wellbeing	<ul style="list-style-type: none"> Increased optimism towards future Improved psycho-social well-being as a result of a more aesthetically pleasing and comfortable community and field environment, weather gradually becoming cooler Enhanced leadership capacity of FMNR group members, and a more positive outlook, especially for the women Increased access to firewood thereby making access to fuel easier
	Increased in	<ul style="list-style-type: none"> Wild resources for cash, utilization, and purchase substitution

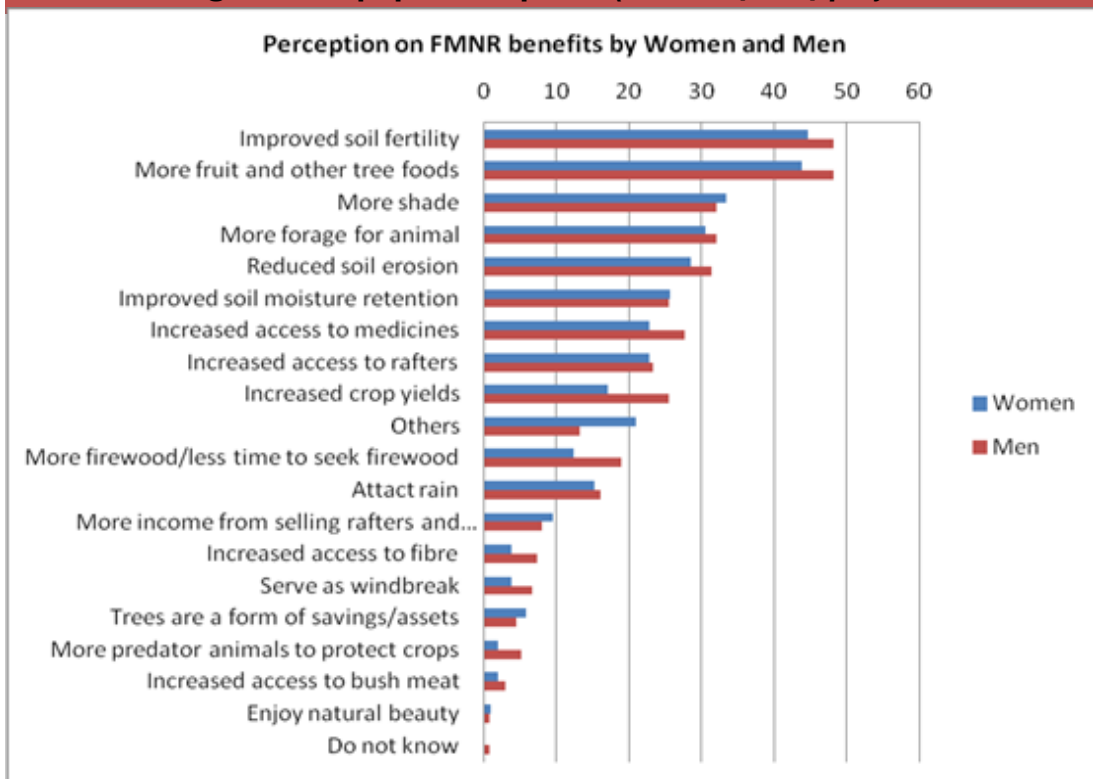
Non-project community members	income and HH resources	<ul style="list-style-type: none"> ▪ Improved livestock & economic tree assets ▪ Increased soil fertility and crop yield ▪ Savings on traction expenditure & FES
	Improved health	<ul style="list-style-type: none"> ▪ Improved respiratory health due to FES ▪ Reduced accidental burns due to FES ▪ Improved health due to improved food accessibility
	Psychological	<ul style="list-style-type: none"> ▪ Increased optimism towards future ▪ Enhanced leadership roles and community unity
Community & Environment	Economic	<ul style="list-style-type: none"> ▪ Tree stock assets for community ▪ Improved soil fertility and crop yields. Soil is also able to retain rain water more ▪ General improvement in the financial status of community inhabitants due to increased sale of farm produce
	Psychological	<ul style="list-style-type: none"> ▪ Change in attitude toward environmental protection ▪ More beautiful & comfortable existence
	(Global) environmental	<ul style="list-style-type: none"> ▪ Reduction in CO2 through FES ▪ An observed increase in the value of carbon sequestered by the increase in tree cover and reforestation



Some FMNR benefits



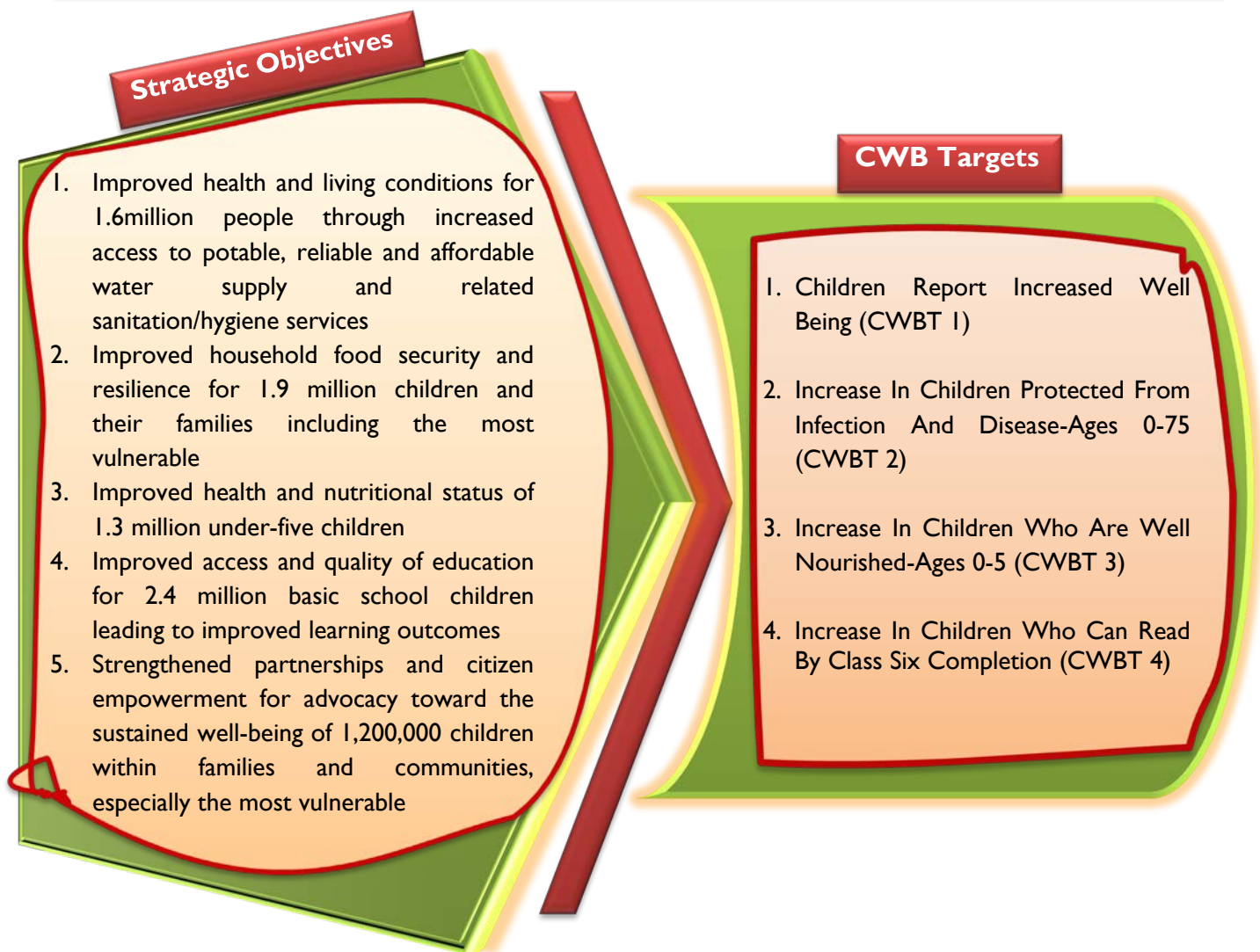
Ranking of most popular impacts: (i.e. benefits of project most cited in the HH survey)



This table helps us to understand that the most visible contributions to the community were perceived to be (in order of responses) improved soil fertility and yields, the reduction in bushfires, improved comfort and aesthetics (shade and beauty), increased tree and grass fodder for animals (also reducing thefts), increased fruit availability and consumption, and more firewood.



7.0. Impact of FMNR on CWB Targets



FMNR,

a better alternative to tree planting

The FMNR is in no small way contributing immensely to the attainment of all of WV Ghana's Strategic Objectives (SOs) through which the CWB targets would be fully achieved.

SO 1

Generally, the FMNR is helping to improve health and living conditions of the people through sanitation and hygiene services. Communities practicing FMNR are conscious of their sanitation and the aesthetic outlook of their environment. Communities are progressively learning to avoid littering their environments and defecating in open spaces. In some communities like Yamsog, Yameriga and Tongo Beo for example, sanctions are meted out to individuals who are found littering the environment, or burning the bush, or doing anything that negatively affects the sanitation



SO 2

The FMNR has helped improved household food security and resilience for about 80% of the children and their families including the most vulnerable in the communities where it is practiced. Most households that were interviewed reported having increased farm yields because of FMNR. For some children too, the wild fruits that have emerged serve as ready source of meal for them even after school when their parents perhaps might not be at home. Livestock now graze well on green lands. Consequently, they grow bigger than previously. Households report getting more meat to eat and store for the future.



SO 3

Generally, FMNR has helped to improve the health and nutritional status of children U5. Upon interviews conducted in the communities practicing FMNR, about 60% of nursing mothers affirmed that because of the increase in farm produce and livestock as a result of the FMNR, they are able to feed their babies well. Mothers now do not have to undergo the hurly burly of searching for food far away from their communities. They therefore make enough time for their babies and also prepare very nutritious food for them, hence adding to the health and nutritional status of children U5.



SO 4

FMNR has improved access to quality education for a greater number of basic school children. This is hoped to lead to improved learning outcomes. Although education is basically free in the northern regions of Ghana, most HHs interviewed claim they did not have enough money to cater for themselves at home, much less to fend for their wards in schools hitherto FMNR. However, HHs now allude that because they generate more money from the sale of more farm produce now, they are able to cater for their children's school needs. There's also a drastic reduction in situations where parents take their wards with them to the farm in search of food during school periods



SO 5

FMNR has largely helped to strengthen partnerships and citizen empowerment for advocacy toward the sustained well-being of children within families and communities, especially the most vulnerable. The project has enhanced the platform where the ADP and the community members meet other developmental agencies to discuss issues that border on their livelihood. The Talensi District is relentlessly collaborating with agencies like MOFA, FORIG, NADMO, and SADA to see how to improve the environmental conditions of the communities in the district.



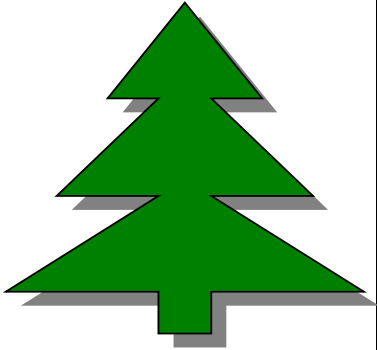
Importance of the Forest

1. It influences precipitation
2. Promotes biodiversity
3. It serves as wind breaks
4. Source of food for humans and feed for animals
5. Source of rafters and grasses for roofing
6. Source of herbs for medication

8.0. FMNR as a better alternative to Tree Planting

There have been many approaches to help regenerate our lands, especially ones in the savannah areas. One of such approaches is tree planting. Although tree planting is good and has been practiced in many areas, it seems the results are yet to be seen. However, based on the successes of World Vision's FMNR project within its short time of operation vis a vis the impact of tree planting, it seems quite apparent that FMNR has comparative advantages over just doing tree planting.

The table below shows a juxtaposition of FMNR best practices over activities of classical tree planting. Narratives in the table affirm that FMNR is a better alternative to tree planting.

	FMNR	TREE PLANTING
Nature of Program 	<ul style="list-style-type: none"> World Vision practices FMNR which is basically about the process of regenerating shrubs, roots and emerging seeds in the fields for them to become trees. In FMNR, the trees are already established. All you need to do is to prune and take away excess shrubs. <i>Note:</i> The pruning is to reduce the competition among trees for more air, space, and other nutrients. FMNR's methodology is land friendly. It makes use of existing shrubs that are dying and nurtures them nicely. You don't need water, fence, etc. All that is required of the farmer is his decision to practice FMNR and his labour. <i>Note:</i> FMNR does not inhibit the planting of trees 	<ul style="list-style-type: none"> In a tree planting system, the trees are planted in alleys. There's the tradition of nursing tree seedlings, transplanting them into the fields, watering, nurturing and farming them to grow into trees Rampant bush fires and dryness of the savanna area make the success of tree planting iffy In tree planting, tractors are used to clear the land before planting. This has a high tendency of destroying evolving trees.
	<ul style="list-style-type: none"> FMNR is not labour intensive. Once you prune the shrubs, they will grow naturally by themselves Little [or no] expertise in needed 	<ul style="list-style-type: none"> Tree planting approach is labour intensive. At least you need people to water and nurture the seedlings. This approach is quite orthodox and yet, not so

Labour



for FMNR. This affords the chiefs and other community leaders to be directly involved. FMNR is very natural.

rewarding.

- Technical skills are needed to make the tree planting approach very effective. The entire process can be very cumbersome

Financial Commitment



- Compared to classical tree planting approach, FMNR is very cheap to implement. Unlike tree planting where labor is hired and hence increased financial cost, FMNR does not hire and pay labour. The community members, after having observed the benefits of the project, have volunteered to implement FMNR methodology in their own communities. What World Vision only does is the initial trainings for the lead farmers and monitoring.
- Also, since tractors and other bulldozing machines are not involved in FMNR, it means no cost shall be incurred for such an things
- Tree planting is financially demanding. Seedlings are bought and labour is hired to nurture them to grow.
- Cost is also incurred in the agro chemicals that are bought and used to speed up the growth of the plants.
- Equipment like tractors and bulldozers are also used in areas where tree planting is practiced. It is cost involving operating such machines.

Sense of ownership



- FMNR is community owned
- The nature of FMNR is such that every farmer can practice it on his or her farmland. And because the chiefs and community people themselves have witnessed the enormous benefits of the project, they have made the concept their self-owned initiative. It has become more popular with the people.
- Certain portions of land are reserved for tree planting. Nobody holds custody of these lands. There is therefore no sense of ownership by the community members

Results



- Trees from FMNR fruit faster. It takes 3 years or less for trees to fruit. In agroforestry, trees take longer time to fruit. Example is the Shea Nut Tree. Evidence has shown that the Shea Tree fruits in a space of 2-3 years.
- It is also the case that FMNR just rejuvenates old trees whose growth has been thwarted by bush fires.
- FMNR regenerates.
- FMNR produces wild fruits and other economic resources and improves aesthetic looks of the environment.
- Other environmentally bad practices are also controlled
- Activities associated with tree planting have the potency of degrading the land.
- Agroforestry trees are non-fruiting and do not have direct economic benefits.

Monitoring & Sustainability



- FMNR is more sustainable in the communities than normal tree planting approach. Community inhabitants see the concept as theirs. This therefore makes sustainability for FMNR not an issue.
- World Vision also regularly monitors the progress of the communities and updates them on new trends, if any.
- There's lack of sense of ownership by the community members
- Monitoring is done by just a selected few with expertise in agroforestry. In their absence, monitoring becomes difficult. And since activities surrounding tree planting are technical, community members are not able to monitor by themselves

9.0. Challenges

1. **Low levels of understanding on the benefits of FMNR.** Staffs are making strides in educating communities within the savanna belt on the importance of FMNR. However, a lot more communities are yet to gain awareness of the project's benefits considering the total number of communities in the region vis a vis our project areas. As alluded to by the Tongo Beo chief, there are pockets of bush fires in the community sometimes but these fires are mostly caused by people in other communities who have no [or little] idea of FMNR. The effect of the unawareness is the potential decline in the total success of the project. The unfortunate thing is that illiteracy is high in the savanna belt of Ghana (*Core Welfare Indicators Questionnaire (CWIQ) Survey*), which makes it difficult for the community people to embrace new methodologies of doing something.
2. **Unfavorable dry weather conditions.** The weather condition in the savanna areas can see protracted periods of dry season. These seasons have in themselves the ability to cause bush fires. Ghanaweb.com reports that the vulnerability of northern Ghana to bush fires stems from the single maxima rainfall pattern that it experiences during the year. It adds that the long dry season which follows the short rainy season causes the Savannah grass to wither and render it susceptible to the least spark of fire.
Also, most livestock in affected communities move to farther places in search of shade and forage. This poses life hazards to the animals. In addition, the dryness of the weather inhibits the farmers from working on farms since most of them depend on rain water.
3. **Activities of Fulani herdsmen.** A survey conducted by the Ghana Network for Peace Building (GHANEP) as part of its newly introduced project code named, "Ghana Alert Project" has identified the activities of Fulani Herdsmen lately as one of the major security threats in the country. The presence of some Fulani herdsmen in the Talensi District and the entire savanna belt poses lots of challenge to the communities. These herdsmen engage in bush burnings and illegal felling of trees. They also make their cattle to recklessly graze farmlands of community members. These practices inhibit the success of the FMNR and destroy lands in general. The worst part is that they even threaten to kill some community inhabitants. In Yameriga and Yamsog communities for example, community elders have expressed that the Fulani herdsmen have threatened killing some people if those people meddle in their affairs. GHANEP has affirmed that activities of Fulani herdsmen are the most serious security threat to Northern Region and Ghana in general. The National Coordinator of the group said the rampant offences that the Fulani herdsmen committed included rape, armed robbery, theft and destruction of farms. It nonetheless seems quite apparent that efforts to get some remedial actions from the security services is yet to see the light of the day

4. **High rate of poverty.** Another challenge facing the people of the Talensi District is the high rate of poverty. The incidence of poverty remains very high and far above the national average at 52% in the Northern, 70% in Upper West and 88% in the Upper East regions. (*Ghana Statistical Service, 2007*). This canker is very pervasive in the rural areas, and it negatively impacts the physiological, socio-economic and aesthetic lives of the people. In the Talensi District and most areas on the savanna belt, the cutting and burning of trees for firewood and selling them is a primary occupation and source of income. Most FMNR community members interviewed [especially the women] alluded that they are into this business because there are no white-colour jobs for them. Most of them too do not have adequate vocational skills for extra jobs and income. Cutting down trees for this occupation poses lots of environmental hazards, and the practice is in antithesis to FMNR practices. On the part of the farmers, the high rate of poverty renders them incapacitated to procure gadgets and equipment for large scale farming.

How to effectively manage Forest (Emphasis on FMNR)

1. Trimming the younger tree shrubs to have desired and uniform growth
2. Avoid indiscriminate felling of trees
3. Community members to plant trees especially the economic and fruit trees
4. Farmers should plant more trees while farming on farm lands

Strategies to improve on Livestock Production

1. Construction of good and convenient houses for animals
2. Provision of good drinking water for animals
3. Preservation of feed during the rainy season for animals
4. Stop bush fire to enable animals to get food to feed during the dry season
5. De-worming of animals periodically
6. Community members to contact the veterinary services when the need arises
7. Provide land for animals grazing especially those not used for farming
8. Construction of dams
9. Stop felling of trees
10. Community members should be trained on livestock management

10.0. Lessons Learnt/Recommendations

1. There must be constant sensitization of communities on the benefits of FMNR
2. There must be regular monitoring of communities and logistics of farmers and fire volunteers. At least, quarterly monitoring will help
3. Provision of more modern logistics for farmers and fire volunteers.
4. Provision of dams and irrigation pumps for dry season farming
5. The government must come on board to provide more educational facilities and other social amenities for the people of the Talensi District and other areas in the savanna belt
6. Other developmental partners must be encouraged to come on board the FMNR to enable World Vision spread the practice to more communities.
7. Institute an award scheme to reward those whose performance in FMNR practice go beyond stellar
8. Government agencies such as MOE, GES, and MOFEP, as well as NGOs should collaborate with a view to expanding preschool access in all basic schools to ensure smooth transition from home to school, and facilitate the implementation of capitation grant in all public primary schools. (UNICEF Ghana)
9. High incidence of poverty among food crop and export farmers requires the need for a sustained policy focus on agriculture with increased access to affordable credit by farmers, provision of adequate extension services, and market for farm produce. (NDPC & UNSG)
10. The on-going buffer stock system should be sustained to ensure food security and also protect the incomes of farmers especially during periods of bumper harvest. (NDPC & UNSG)
11. The provision of necessary support for the three northern savannah regions where poverty is higher through rapid transformational development strategy should be a top priority (NDPC & UNSG)
12. The on-going social protection interventions such as cash transfer system under the Livelihood Empowerment Against Poverty (LEAP) should be properly targeted and extended to cover more people who may be chronically poor [especially for people in the savanna areas] (NDPC & UNSG)
13. The tendency of harbouring wild animals like snakes is very high in bushy environments. Going forward, while lands and vegetation would be left to be greener, efficient mechanisms must be put in place to forestall any such thing in the FMNR communities

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12.0. Appendix – *Some Impact stories from selected communities*

12.1. Impact of FMNR in the Tongo Beo Community

Tongo Beo, a community located North West in the Talensi Nabdam District in the Upper East Region, is one of the communities in the Savanna Belt where the cascading impact of the FMNR Project is greatly seen. The project started in the year 2011, and covers a land size of approximately 273869 Sq Metres. The occupation of the community inhabitants is predominantly farming.

An interview with the chief of the community and some elders revealed why the people accepted to pilot the project in the community and how beneficial it has been to them.

According to the chief, rampant bush fires and increased deaths of their livestock during acute dry seasons were unbearable. The depleted lands also reduced the farm yields in such seasons. Thus when the FMNR concept was shared with them by the officials of WVG, they felt it was a God-given intervention. The chief bethought himself, 'Lands are not like clothes that you can always replace when they become tattered. There's therefore the need for everybody to jealously guard what they have'. This insightful thought impelled the chief and elders to buy into the concept and roll it out.

Summary Results

Inhabitants of Tongo Beo affirm that because of FMNR, their livestock have grown healthier, fruits have grown more and larger, children are able to get food to eat even after school, tree crops have abundant yields, and there's improved standard of living. 'Personally, I get high produce from the farm', the chief of the community has said of himself.

'I won the Upper East Regional Best Farmer 2011 because of FMNR', Chief of Tongo Beo

In the year 2011, the Chief of Tongo Beo, Naba Nabia Bilee Namaalteng, won the Upper East Regional Best Farmer. This milestone was a result of the FMNR initiative, the chief alluded. The team that inspected his farm expressed loudly how they were marveled at the wide expanse of land he had cultivated. Within the period of assessment, Naba Nabia had reared over 150 cattle and had many assortments of crops.



Naba Nabia Bilee Namaalteng
Chief of Tongo Beo

Not only was the team impressed with the Chief and honored him with the award, they also recommended the FMNR practice to the Agriculture Department in the District.

The 2011 Upper East Regional Best Farmer has vehemently declared his outright disgust for bush burning. Matching words with actions, he shares a story on how he fiercely stopped some people from a community from burning some part of his lands. According to the chief, he was once alerted that fire was coming from a nearby community and that though it was in the night, he quickly put on his regalia (all white) and went out with his community members to extinguish the fire from getting to his community. He said he was so furious that he would have dealt with the one who caused it if he found him out.

He has said, 'in times past, burning of farm lands as a way of preparing the land for cultivation was rampant. This affected the fertility of the soil, making it difficult for trees to grow well and produce fruits. Kids were unable to get shades to play under, while livestock grew lean because there was not enough green for them to graze. The introduction of the FMNR by World Vision has corrected the situation'. It has therefore become his noblest wish to see the entire northern part of Ghana (and even the whole country) adopt FMNR as the best form of regenerating lands.

'FMNR makes me buy a goat', Enoch Annaba

Did you ever think that buying a goat could be a momentous life transforming story for somebody in the Talensi District?

Enoch Annaba is the Chairman for the Lead Farmers in Tongo Beo. For him, the project helped to increase his farm produce because of improved farming skills, the returns of which he's been able to purchase a goat (GHC35). Fortunately for him, the goat has reproduced three more. He hopes to grow a bigger farm from these animals. Annaba also mentioned that because of FMNR, he now gets more money to cater for his home. He generates more money and makes an average of GHC40 in three months from the sale of his farm produce.

Some challenges of FMNR in Tongo Beo

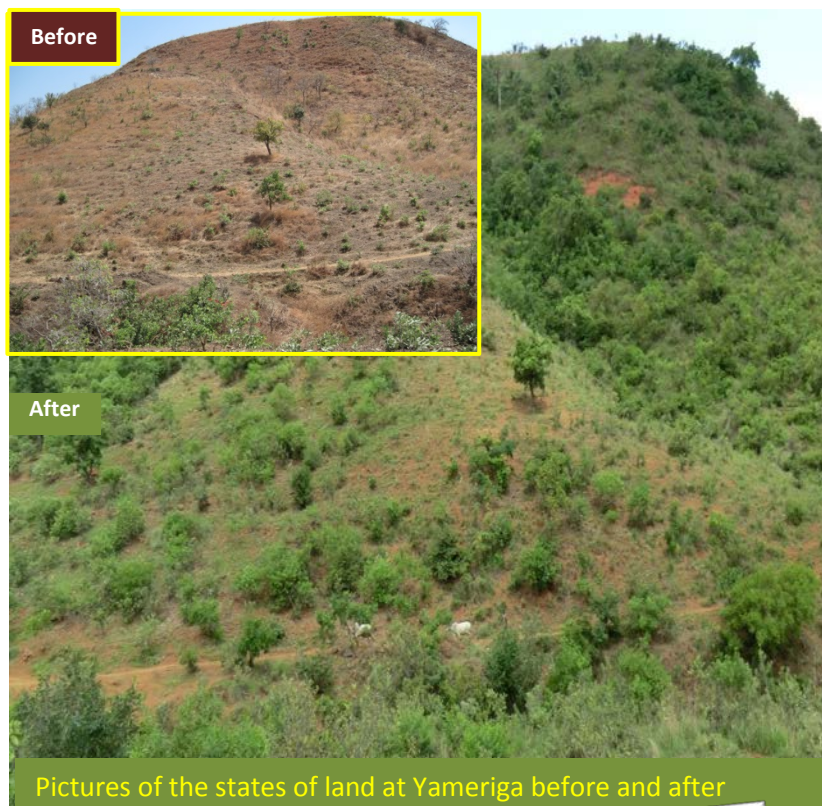
The challenges that confront Tongo Beo are not different from other communities. Some of these are: Sporadic Bush fires from other communities, high rate of illiteracy, fewer numbers of lead farmers.



Enoch Annaba
Chairman, Lead Farmers in Tongo Beo

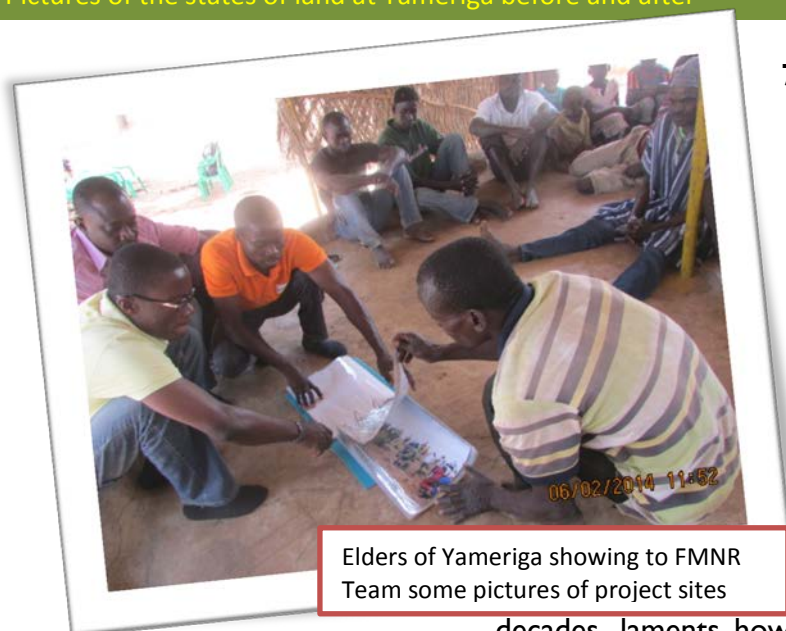
12.2. Impact of FMNR in the Yameriga Community

Yameriga is another community in the Talensi Nabdam District that is thriving so well in the FMNR project. Evidence on the ground has the following pictures to show.



From desert to forest

The Yameriga group is led by a woman called Kwame Assibi. Madam Assibi alluded to the depleted nature of their lands before the FMNR. She alludes that their place was like a dessert. However, when the FMNR initiative was introduced to us, their lands are becoming forest zones. 'There have been massive transformations in the areas of bush fires and yields in the areas of bush fires and yields from our farms. We now have fruits and plants always. Our economic situation has also improved', she points this out among other benefits.



70 year old Nawam saves his 10 children

The community elders have always been enthusiastic to share how the FMNR has positively transformed their lives and given them bigger opportunities to even take good care of their children.

One of elders, Yin Nawam, a father of 10 children, for example affirms the importance of the FMNR project. Nawam, who has been a farmer for over 5

decades, laments how he has since time past tried getting just 6 bags of maize but efforts have been to no avail. This, according to Nawam made life very difficult for him. Could the FMNR have a come at a better time? Nawam gladly shares that he embracing and practicing the FMNR on his farm has actually revolutionized his economic life.

According to him, he is now able to get 10 bags of maize. A bag sells at GH¢10. Nawam placed his hand on the chest and said that although he's not affluent, he's now well able to cater for his 10 children.

Challenges and recommendations

The Yameriga community is located North West in the Talensi Nabdam District in the Upper East Region. The project started in the year 2011, and covers a land size of approximately 177649 Sq Metres. The occupation of the community inhabitants is predominantly farming.



Yin Nawam so glad about FMNR

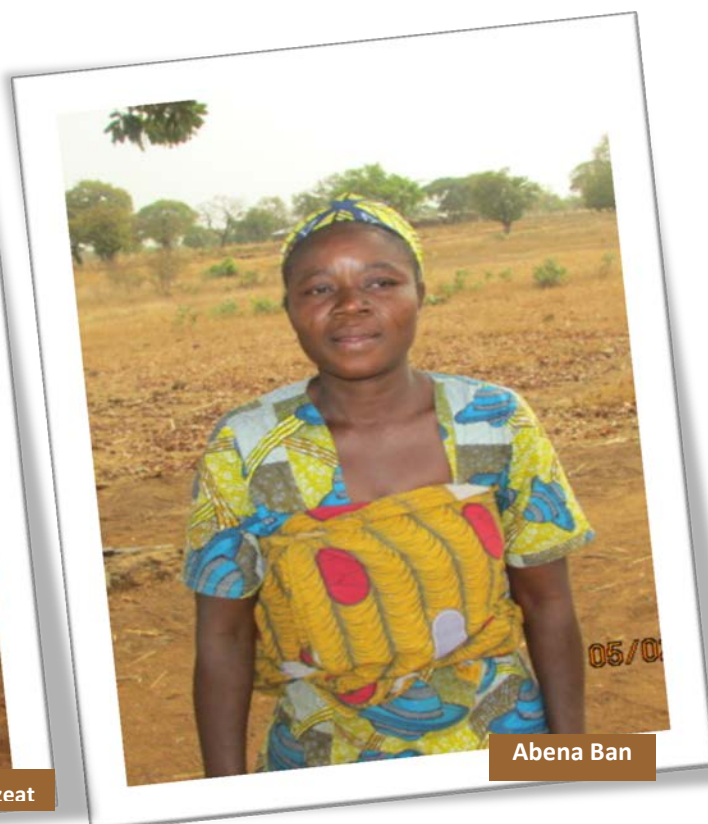
But the community is plagued with a challenge of limited access to a health center. Inhabitants also periodically suffer from the malicious acts of some Fulani herdsmen. They nonetheless wish to have a dam that would facilitate some dry season farming, and also have a health centre in their community. Provision of more logistics for the fire volunteers would augment their operations. Government must also enact and enforce bylaws to regulate the activities of the Fulani herdsmen

12.3. Impact of FMNR in the Yamsog Community

It's interesting how some women in Yamsog have whole heartedly embraced the FMNR initiative. The Shea Tree (locally called Tama) is one of the major trees in this community. Most farmers have shared that the FMNR has really enhanced the yield of this tree crop. While that is so, the women too are making good use of it. A number of them have increased their entrepreneurial prowess and are producing more Shea butter and other related products from the tree crop. Although this business existed predominantly Yamsog, the FMNR has actually invigorated it, and operatives attest to its lucrativeness.

One of such operatives is Kate Azeat, a mother of four. Her first born is in JSS 3, the second, class 5, the third, class 2, and the last born, nursery. She acknowledges the enormous benefits the FMNR initiative has brought on board. According to Kate, she has now been able to increase the number of containers she makes for Shea butter from an average of 12 to 20. She sells a container for GH¢15.

To Kate, the Tama is her 'cocoa'. Her confession revealed that out of the Tama business she is well able to cater for her children very well in school. She is also able to support the husband to provide for the family's need. Kate's husband is also a farmer who rears cows, chicken and guinea fowl, and grows groundnut. Kate and the husband are both enjoying an improved standard of living, which they attribute to cause to FMNR.



Abena Ban is also a lead beneficiary of FMNR in Yamsog community. For Abena, in addition to growing tama and making Shea butter, she also farms and sells pepper and groundnut. She admits that FMNR has revolutionized the Shea butter business because of increased yield from the tree crop. But what she considers more thrilling about FMNR is the increase in the pepper and groundnut produce. It's credit worthy to learn that Abena now sells an average of 4 bags of pepper a day and makes GHC40 profit on them. Previously, she only could sell a bag. She says, 'now my pocket money has increased vastly'.

Abena, a mother of four, tells how comfortably she's now able to provide for all of them in school. They are in primaries 5, 2, 1, and nursery, respectively.