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World Vision



FMINR MANUAL

A GUIDE TO FARMER MANAGED NATURAL REGENERATION

Second Edition

ACKNOWLEDGEMENTS

Since the FMNR Manual was first published in 2018, FMNR has spread even further around the world. This updated version incorporates new knowledge from additional project experiences in diverse contexts since the publication of Version 1. It also has a new emphasis on scaling the technique to contribute to the acceleration of land restoration, to meet the urgent global need for action on climate and biodiversity. We thank the FMNR champions around the world who are taking this practice forward.

Version 2 has been updated by Anouk Janssens-Bevernage and Miia Barrow as editors, with contributions from Tony Rinaudo, Sarah McKenzie, Alice Muller and Briah Black.

Copy editor: Virginia Morrison

Graphic design: WVI GC Creative Services Team

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For further information about this publication please contact:

fmnr@worldvision.com.au

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Who is this manual for?

This manual is for people either practising or promoting FMNR. It includes theory and techniques but also information that will help you and communities to adapt the practice to your own context and troubleshoot challenges. Feel free to read chapters individually on different topics as you need them. Each chapter starts with a summary that can help you find the information you might be looking for more quickly.



CHAPTER 1

INTRODUCTION TO FARMER MANAGED NATURAL REGENERATION

Summary: Introduction to Farmer Managed Natural Regeneration

Deforestation and severe land degradation have contributed to considerable poverty around the world.

Much of the world's degraded land contains invisible forests – complex root systems and dormant seeds hidden underground. They have the potential to rapidly regenerate, heal the environment and help slow climate change. Farmer Managed Natural Regeneration (FMNR) brings these invisible forests back to life and is therefore a game-changer in the battle against land degradation.

FMNR is a transformative technique for regreening degraded lands by systematically regrowing trees and shrubs from stumps, roots and seeds through careful pruning and protection.

FMNR gives communities a powerful tool to revive their land, boost crop and livestock productivity and build resilience to climate change and disasters. FMNR is equally a valid tool for environmental restoration projects.

The practice is low-cost because it only requires training and the tools a community member already has, like a harvesting knife or machete.

While FMNR can be done by individuals, it really makes an impact when it's part of a united community effort.

The central principles of FMNR are:

1. The systematic pruning and management of existing indigenous trees and shrubs by the land user/s.
2. An overall increase in tree/shrub coverage and biomass across the landscape.
3. An improvement in the ecological function and therefore its ability to support human wellbeing.

FMNR is more than just a technique – it's a movement. On one hand, it's about the hands-on practice of pruning and nurturing tree stumps to encourage natural regrowth. On the other, it's about guiding and inspiring communities to embrace this practice and become leaders in environmental restoration.

Taking a holistic perspective means looking at how everything is connected. It's about recognising that while FMNR can provide great environmental benefits, combining it with other methods can make those benefits even greater and bring additional economic and social advantages. One such approach is "Regreening Communities", a World Vision model for community-led environmental restoration. It has been effectively used to restore degraded landscapes by promoting a variety of natural regeneration techniques. Quite a few development organisations and governments have similar programs that provide comprehensive frameworks for locally-led restoration efforts.

FMNR can empower communities and improve ecosystems, making it a great match for various other programs. It is accessible to marginalised groups and enhances overall community wellbeing. FMNR can also be woven into other programs that look at disaster risk reduction, emergency assistance, water and sanitation, food security, education, economic development, and environmental conservation.



Photo: Nakuru County, Kenya. Photo Credit: Hellen Owuor, World Vision Kenya

Introduction

The world is experiencing severe land degradation caused by deforestation, climate change, drought, desertification and unsustainable land uses. This has damaged the productivity and health of farmlands, grazing lands and forests, which many people rely on for food and livelihoods.

As a result, many communities in developing countries are struggling with malnutrition, fewer opportunities and worsening poverty. This often forces people to move elsewhere in search of work, breaking up families and increasing the risk of conflict. This future is neither safe nor sustainable.

But this is changing.

All over the world, communities are transforming their lives and restoring their lands using a **proven**, **simple** and **sustainable** technique called Farmer Managed Natural Regeneration (FMNR). This approach is particularly effective because much of the world's degraded land contains hidden "invisible forests"

– complex root systems and dormant seeds beneath the surface. With the right techniques, these underground resources have the potential to rapidly regenerate, heal the environment and help slow climate change.

Recognised by the United Nations, World Bank, World Resources Institute and many others, FMNR is a highly regarded agroecological practice. It's rooted in Indigenous land management principles, requires minimal equipment and is easy to scale, making it effective in some of the world's toughest climates. The method is low-cost because it only requires training and the tools already available, like a harvesting knife or machete.

While individuals can practise FMNR, its full impact emerges through collective community efforts. Working together, communities can restore degraded lands more quickly, revitalising their environment and enhancing livelihoods. This regeneration process allows communities to take control of their natural resources, lift themselves out of poverty and build a sustainable future.

Restoring ecosystem health through FMNR also strengthens resilience. As land productivity rises and biodiversity increases, communities are better equipped to withstand environmental shocks like droughts, floods and storms. With a diverse range of natural resources, they can recover more swiftly from disasters.

Evidence from across Africa and other regions, supported by satellite imagery, shows the positive impact of FMNR. By restoring degraded lands, FMNR not only boosts crop and livestock productivity but also promotes long-term economic growth and healthier ecosystems. Here are some examples from **Ghana** in 2010, 2012 to 2016:

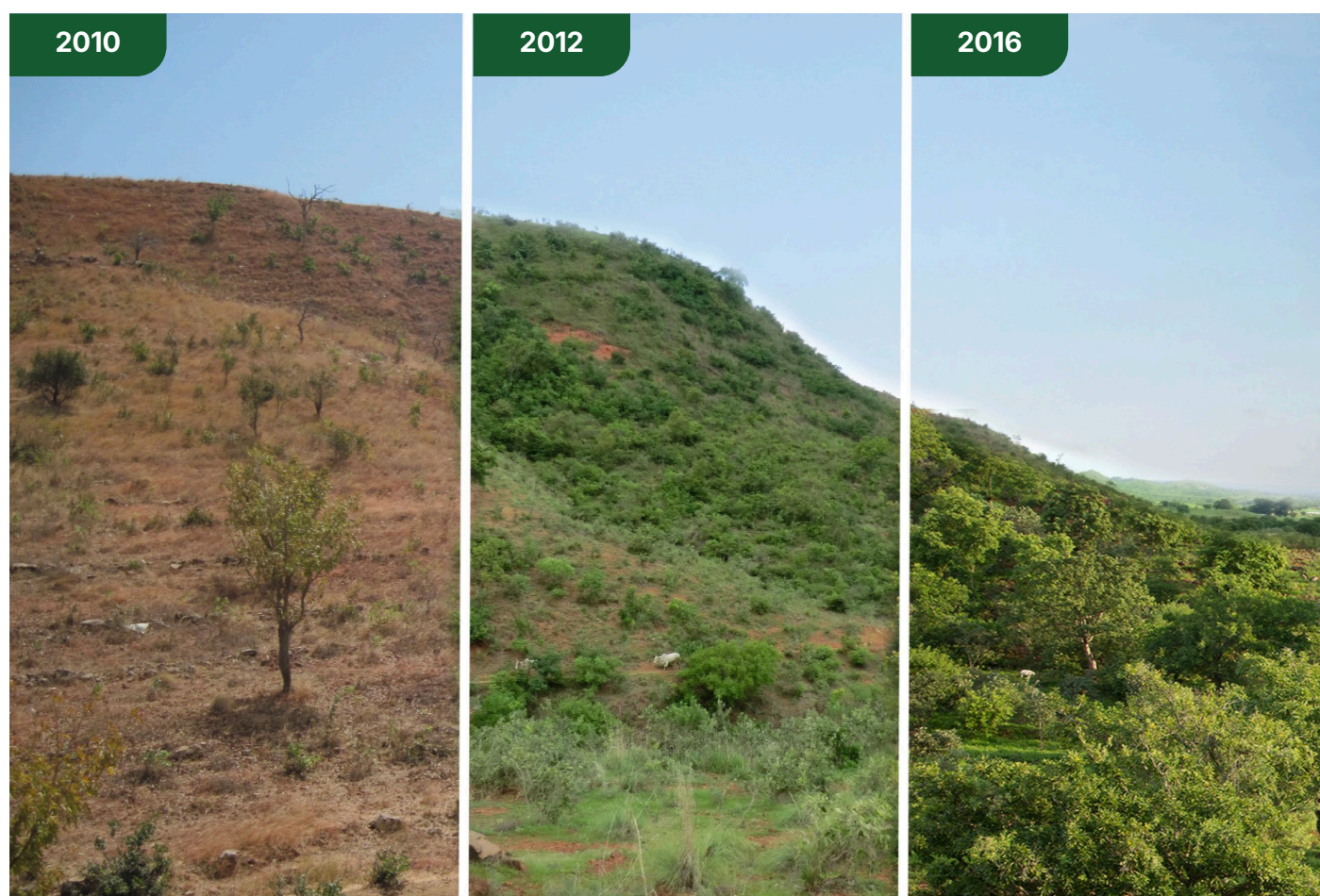


Photo: Talensi District in Ghana Photo Credit: World Vision Ghana, FMNR Before and After 2010 x 2012 x 2016.

How does FMNR work?

FMNR is all about regrowing trees from stumps with living root systems through careful pruning and protection. This pruning practice can even be done with existing seedlings and saplings. Time and time again, FMNR has proven to be a simple, effective and low-cost solution for restoring degraded lands by regenerating trees from the roots up.

FMNR works best when combined with other techniques like soil conservation, water management and sustainable farming. These combined efforts create a healthier and more resilient environment. The whole community needs to be involved for FMNR to succeed and have impact at landscape level. When everyone from farmers to local leaders participates and supports FMNR, there are lasting benefits and stronger results for the community.

Here are the five steps of FMNR. We cover this in more detail in Chapter 3.



1. **Find:** Step one is about discovery. The mission is to identify stumps and saplings with living root systems that are of value to the farmer and the community. These hidden gems are ready to spring back to life with a little help.
2. **Prune:** The next step is pruning, which involves giving the plants a careful trim. By removing everything but a few (typically three to five) strong, straight shoots, the plant can now focus its energy on growing strong, healthy and productive trees.
3. **Protect:** Protection is crucial. Regrowing trees need to be safeguarded from animals, fires and human interference. This can be done through fences, community agreements or other protective measures.
4. **Grow:** With protection in place, nurturing the plants is the next step. Continued pruning and ensuring the right conditions for growth helps these trees reach their full potential.
5. **Utilise:** Finally, it's time to utilise the resources sustainably. This includes harvesting wood, fruits or other products in a way that ensures the trees can keep providing year after year. It could even mean leaving the tree alone so it can provide shade for generations to come.

This technique, when combined with other land restoration methods, outperforms traditional tree planting, even in the harshest climates. Many organisations worldwide have embraced FMNR due to its effectiveness.

What makes FMNR truly unique is its contribution to community-based development, transforming both land and lives. By bringing people together to restore their environment, FMNR fosters collaboration, strengthens social cohesion and empowers communities to take collective ownership of their resources. This shared effort not only improves the landscape but also builds trust, enhances local governance and creates a sense of pride and responsibility. Through these processes, FMNR can potentially transform fragmented communities into united, resilient groups working toward a common, sustainable future.

FMNR is fundamentally about behaviour change.

When attitudes and behaviours towards the environment shift, nature has a chance to heal. Once people understand that working with nature, rather than destroying it, is in their best interest, they will take steps to protect the environment for the good of themselves and future generations.

This includes moving away from unsustainable farming, poor forest management or unsustainable grazing practices and towards regenerative practices like FMNR.

Often this can produce a virtuous cycle. When FMNR is applied, people are more protective of their environment. As seeds are reintroduced by wind, birds and animals, they then have a better chance to germinate and grow. This means more FMNR can be applied, more trees are available and so on.

The difference between tree planting and FMNR

One of the most common questions we encounter is: What's the difference between tree planting and FMNR?

It's a great question, and understanding the distinction is key to appreciating when each technique can be used most effectively.

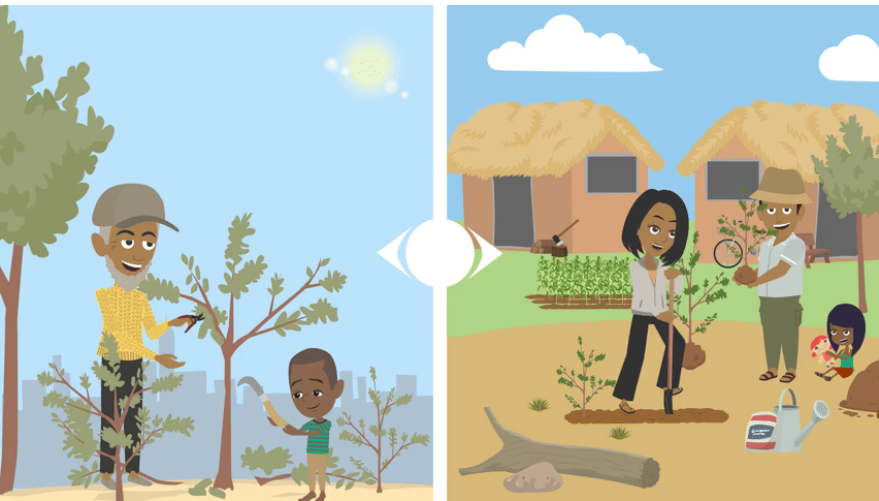


Photo credit: DynaMind eLearning, 2024.
Illustrations extracted from the FMNR e-course.

FMNR	Tree planting
Cost-effective FMNR doesn't require nurseries, transportation or planting efforts, making it much less expensive. Communities require minimal investment to reach large areas of land with FMNR practices.	Labour and cost intensive Tree planting involves growing seedlings in nurseries, transporting them to the planting site and then planting them. This process requires a lot of labour, time, water and money, and is therefore best suited to high-value species or specific target sites.
High success rate Trees that regrow naturally are well adapted to their environment and have established root systems that require minimal maintenance. This leads to a higher survival rate.	Low survival rate Many planted trees don't survive because they may not be well adapted to their new environment, or they don't get the care they need to thrive while they are small/during establishment.
Harnessing nature's power FMNR taps into existing root systems and seeds already present in the soil. By protecting and managing these natural resources, we encourage indigenous species to regrow on their own, which contributes to maintaining local biodiversity and ecosystems.	External inputs and less diversity Tree planting often relies on external resources such as water, fertilisers and ongoing care to ensure the young trees grow. Often it is difficult and expensive to find adequate quantity, quality and diversity of tree seeds, especially indigenous species.

Sustainable practice

FMNR empowers local communities to immediately begin regreening with existing resources and take ownership of the process, ensuring that the regenerated forests are protected and managed sustainably for the long term.

Stronger reliance on external resources

While local communities can lead tree planting efforts, they need to access or mobilise resources to invest in nurseries, water, planting and so on before regreening can be realised.

However, whether FMNR or tree planting is “better” isn’t the right question. The right question is: **What is appropriate and cost-effective for the goals of the community managing the trees?**

Tree planting and FMNR should be seen as complementary, not in competition with each other. Tree planting allows farmers to select specific high-value species, such as fruit trees, to add to their farming systems when those species are not naturally available in the landscape. It is also necessary when no tree stumps or natural seedlings remain. However, tree planting is often more expensive and has lower survival rates compared to FMNR.

FMNR, on the other hand, is more effective for regenerating native species naturally occurring in the area, particularly over large areas.

For example, in Niger, FMNR achieved a very high survival rate with much less investment compared to the 20 percent survival rate of planted trees.

FMNR is also more cost-effective, especially when water and resources are limited, as long as living stumps or natural seedlings exist. It also requires less work than maintaining nurseries.

While traditional agriculture and forestry methods focus on specific tree and crop arrangements, FMNR adapts to local conditions and needs, making it a flexible and practical solution. Scientific studies support FMNR’s effectiveness and benefits (for more information, consult the FMNR Hub).

In summary, tree planting has its place, but FMNR is often a more sustainable, cost-effective and successful way to restore vegetation in degraded lands at scale.

Who can do FMNR?

Although the “F” in FMNR stands for “Farmer”, this technique is not limited to farmers alone. FMNR is a versatile practice that can be adopted by all community members, regardless of their primary occupation. Here’s how different groups within a community can get involved.

Farmers

Naturally, farmers and their families are at the forefront of FMNR, using it to restore productivity to their lands. By encouraging the natural regrowth of trees, they improve soil fertility, protect crops from harsh weather and increase their yields.

Herders

Herders benefit from FMNR by ensuring there is more fodder available for their livestock. The regeneration of trees and saplings provides shade and boosts forage, which is crucial during dry seasons.

Women

Women, often responsible for gathering firewood and managing household resources, find FMNR particularly beneficial. Regenerating trees close to home reduces the time and effort required to collect firewood, and the increased availability of fruits and other tree products can improve family nutrition. Often, it is the women who are custodians of traditional knowledge on medicinal and nutritional uses of trees.

Youth and children

Engaging youth and children in FMNR instils a sense of environmental stewardship from an early age. School and community groups can participate in tree care activities, learning valuable skills and contributing to the long-term sustainability of their environment. There are examples of children becoming very effective advocates in their communities for sustainable management of trees. When they are ready to try the pruning technique, ensure they have appropriate levels of supervision for their age.

Local leaders

Traditional and local leaders, including faith leaders, play a pivotal role in promoting FMNR. By endorsing the practice and setting examples, they can mobilise the entire community to participate and support reforestation efforts.

Civil society organisations (CSOs), faith groups and other community groups

Partnering with local organisations and groups makes FMNR activities more sustainable and impactful. Community groups can act as hubs for organising and mobilising volunteers and may already be engaged in environmental action. FMNR practices align with many religious teachings about caring for creation, making faith groups (who have a very large influence on beliefs and behaviour) a natural partner for landscape restoration.

Urban residents

Even those living in urban areas can practise FMNR on private property, community gardens or public spaces. Urban FMNR helps mitigate the urban heat island effect, improves air quality and enhances urban biodiversity.

Government and NGOs

Government bodies and non-governmental organisations can support FMNR by providing training, resources and policy support. Their involvement ensures that FMNR practices are widely adopted and sustained over the long term.

Environmental organisations

Environmental organisations wanting to engage communities to be good stewards in restoring and sustainably managing forests and other natural areas can apply FMNR principles and techniques to their advantage.

Fishing/coastal communities

Even communities that rely on aquatic, coastal or marine resources can do FMNR! Restoring and protecting vegetation in the catchments of water bodies that are home to harvested fish, shells, crabs, seaweed or coral improves water quality and ecosystem health. Restoring mangroves and vegetation on hillsides or along waterways with FMNR can also be very effective in reducing the impact of storms, floods or erosion. This helps to improve soil quality in these landscapes and increase livelihood opportunities.

FMNR is a community-driven effort that harnesses the power of natural regeneration. By involving everyone in the community, from farmers to urban dwellers, it creates a collective movement towards a greener and more resilient environment.



Photo credit: DynaMind eLearning, 2024. Illustrations extracted from the FMNR e-course.

When should FMNR be considered?

FMNR is a powerful tool that can transform a variety of landscapes, from arid deserts to humid tropics. It is even being trialled in coastal environments. Its low cost and high impact make it a go-to solution wherever tree cover loss is hurting communities and where living tree stumps or self-sown seeds are present.

There are a few **conditions that would make FMNR activities unfeasible or more challenging**, as follows.

- **Completely barren land with no root stock or seedlings:** Areas with no remaining vegetation or seed bank may not be suitable for FMNR and might require other restoration techniques alongside planting to restore vegetation cover.
- **Insecure land tenure:** Lack of secure land rights can discourage long-term investment in land restoration. It is still possible to practise FMNR in these settings, but the likelihood that it will gain momentum is greatly diminished.
- **Community resistance:** Strong resistance or lack of interest from the local community can hinder the implementation and sustainability of FMNR.

The following are some of the **signs that FMNR could benefit a community**.

- **Declining natural resource income:** People working with natural resources, such as farmers, herders or sellers of wood, charcoal or honey, notice a decline in their earnings.
- **Water resources decline:** Dropping water tables, drying springs or reduced stream flow.
- **Replanting struggles:** Crops need replanting multiple times in a season due to drought, flood or wind damage.
- **Poor yields:** Lower crop yields due to soil erosion, drought, floods, wind damage, lack of fertiliser, poor water retention or declining soil fertility.
- **Tree loss:** Reduced tree cover impacts crop yields and livestock productivity.
- **Biodiversity decline:** There's a noticeable loss of environmental biodiversity, and the community wants to restore it.
- **Migration for work:** Community members are forced to migrate for work because of reduced crop yields and farm profits.

- **Food and income instability:** Low food availability, low income and lack of income diversity increase the community's risk.
- **Land erosion:** Productive land is lost due to erosion and worsening climatic conditions.
- **Firewood and timber scarcity:** Not enough wood for building and too much time is spent collecting firewood or substitutes (manure or straw), adding to the burden of women and children.
- **Resource conflicts:** Conflicts over resources, such as between farmers and herders or between government forest protection efforts and community survival needs.

If any of these challenges sound familiar, FMNR may be an important part of the solution – within a broader landscape restoration plan. It could be the game-changer your community needs.

The benefits of FMNR



Farmer Managed Natural Regeneration for Sustainable Economic Empowerment & Development (FMNR4SEED) project in Talensi District in the Upper East Region of Ghana. Photo credit: Abena Agyei-Boateng (World Vision Ghana).

This introductory chapter has outlined various benefits of FMNR. Now, we will consolidate these points to fully appreciate the transformative potential of FMNR.

- **Restores barren lands:** By encouraging the natural regrowth of trees and plants, FMNR contributes to restoring soil fertility, the water cycle and biodiversity, and revitalising ecosystems.
- **Boosts agricultural yields:** Healthier soil means healthier crops and livestock. Applying FMNR on farmland increases agricultural productivity, providing more food and resources for families and communities.
- **Provides economic benefits:** Regenerated trees aren't just pretty – they're profitable. Branches pruned from the trees provide firewood, fodder and timber that families can use or sell. But the benefits go beyond just wood. Communities can also produce and sell honey and diversify their crops. These diverse economic activities bring financial stability and open new opportunities for growth. Trees also help reduce costs – for soil fertility maintenance, insect control and increased production of items that would otherwise need to be purchased.

- **Builds climate resilience and empowers climate champions:** FMNR helps communities become more resilient to climate change. By stabilising soils and improving water retention, it reduces the damage caused by extreme weather events. Trees also capture carbon, playing a crucial role in mitigating climate change. FMNR practitioners are empowered to act and do something constructive in the face of climate change impacts that can sometimes be overwhelming. The regenerated landscapes act as a natural defence against climate instability.
- **Fosters community unity and pride:** Landscape restoration through FMNR brings people together with a common purpose. Working as a community to regenerate land fosters pride, strengthens bonds and creates a healthier environment. Cleaner air, better nutrition and a collective sense of achievement contribute to building stronger, happier and more hopeful communities, working with nature instead of against it.

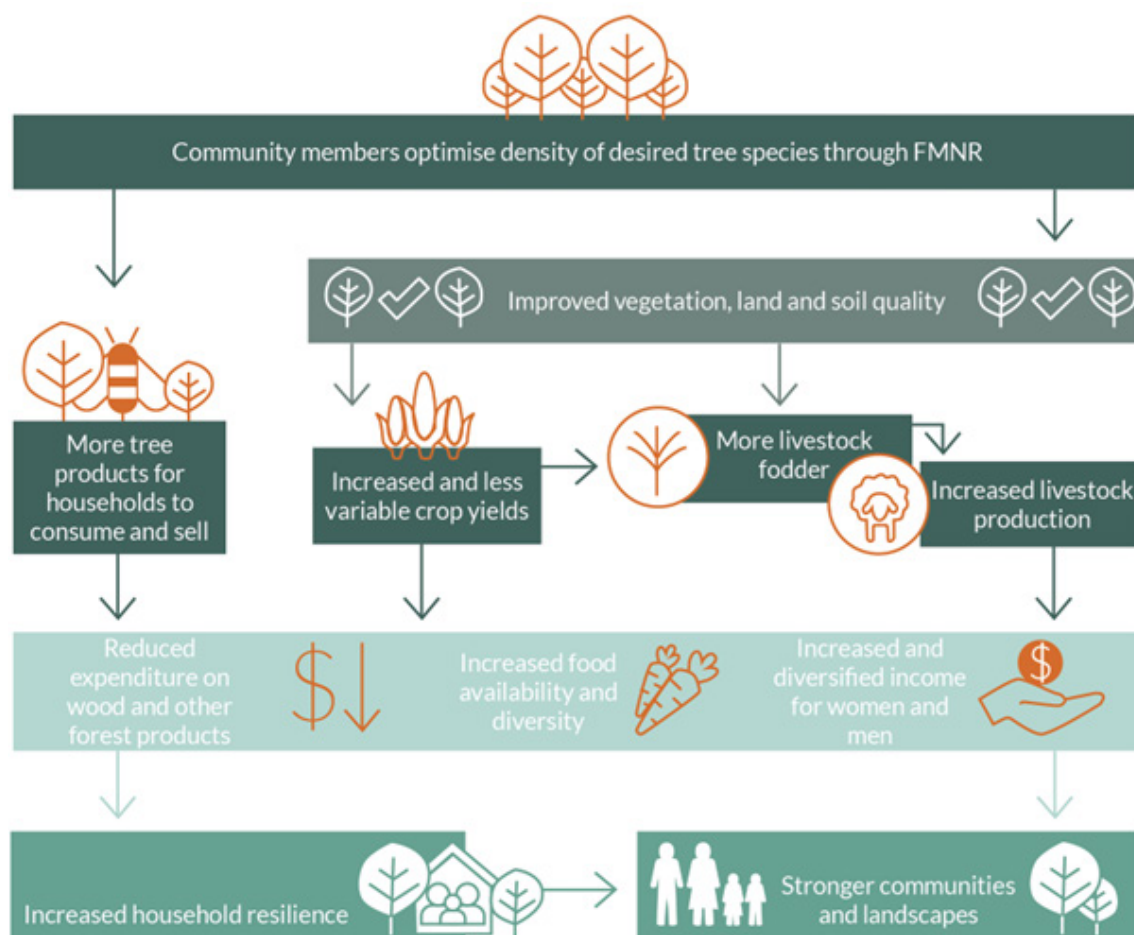
What makes FMNR stand out is its affordability and accessibility. Unlike costly planting projects, FMNR is a budget-friendly, sustainable solution to land degradation. It taps into nature's own regenerative powers, making it perfect for communities with limited resources. It's a low-cost, high-impact strategy.

With more productive land and diverse resources, families can find stability and sustainability. This reduces the need for migration and keeps communities intact.

When we look at all these benefits together, it's clear that FMNR is a game-changer. It's not just about trees – it's about transforming lives and landscapes.

FMNR Theory of Change

What are we trying to achieve? The following diagram outlines the general set of changes likely to occur once FMNR is introduced.



Simplified theory of change for FMNR. Source: C. Kabore pers. comm. (2015)

Additionally, FMNR increases biodiversity and enables diversification of farming enterprises and income streams, making communities much more resilient to environmental and climatic shocks (such as floods, droughts and insect attacks). By reducing the risks inherent in farming, FMNR encourages greater farmer investment and diversification.

Is FMNR new?

The principles of FMNR aren't new. They have been practised in one form or another for centuries in various parts of the world. We have regularly come across individuals and farming communities around the world who are using forms of FMNR based on traditional Indigenous practices or as a result of their own intuition and experimentation, without any external influences.

Examples of FMNR through the ages and around the world



Severe wood shortages in 1600s **Japan** resulted in the development of a detailed body of scientific knowledge about silviculture. The first of Japan's great silvicultural treatises, the *Nogyo Zensho* of 1697 by Miyazaki Anteï, included descriptions on trimming branches from trees to create logs of the desired shape. Japanese silviculturists developed the concept that trees should be viewed as slow-growing crops.

The coppicing method of managing forests dates back at least a thousand years in **England** and was widely practised in **Europe** for a similar period. Coppicing involves cutting small trees from deciduous forests and leaving them for several years to regrow before taking a further harvest. Trees managed in this way can be cropped many times; individual trees may be hundreds of years old, yet still regularly provide a small supply of wood. The length of time between harvests varies according to the growing conditions and the dominant species of trees. In the south of England, willows, birch, hornbeam and hazel growing in an oak woodland were harvested on a 20-year cycle. Only a portion of a woodland was cut each year and a certain number of trees such as oak and beech were left to mature for the supply of larger timber sizes.

Agroforestry parklands, where scattered multipurpose trees occur on farmlands as a result of farmer selection and protection, are currently one of the most extensive farming systems in the world. They are the dominant farming system in **semi-arid West Africa** and cover the majority of **cultivated land in Sahelian countries**. In contrast with exclusively silvopastoral systems, these parklands include long-term cultivation and fallow components.

In **Honduras**, the slash-and-mulch *Quesungual* system is used on plots between 200 and 900 metres above sea level and involves growing maize, sorghum and beans interspersed with trees. Instead of burning old vegetation, farmers clear it by hand with machetes. The tallest trees, which traditionally were cut or burned down, are kept as a good source of fruit, furniture timber and shade for the crops beneath. A typical plot of one to three hectares consists of approximately 15 to 20 large timber and fruit trees and numerous smaller trees and shrubs. Every year, trees and shrubs are pruned to a height of 1.5 to 2 metres to eliminate the upper branches, so light can reach the crops. Larger branches are used for firewood; smaller ones are left on the ground to help revitalise the soil. This enhances soil fertility for the maize, beans, sorghum, coffee and other crops grown on the ground between the trees.

What does it mean to take a holistic environmental restoration approach?

Taking a holistic perspective means looking at the bigger picture and recognising that if FMNR can provide environmental benefits, coupling it with other methods can amplify those benefits – and likely also provide economic and social benefits.

What does it mean to take a landscape perspective? Whether you're dealing with a landscape or a seascape, it includes various elements such as water, soil, biodiversity, vegetation, coastlines and seas, along with people, communities and infrastructure. All these components are interconnected and don't operate independently.



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Components of a healthy environment include water for drinking, bathing and crops; soil for growing food and sequestering carbon; and biodiversity, which supports integrated pest management, reducing the need for fertilisers. Vegetation provides shade, firewood, building materials and timber products. Waterways are crucial for fish stocks. Additionally, cultural, historical, spiritual, and traditional aspects are closely linked to the environment. A healthy environment and a healthy community are mutually dependent.

Viewing nature as an integral part of the community, rather than separate from it, is crucial for sustainable development.



Water

Drinking
Bathing
Food preparation
Health and sanitation
Crop production
Livestock production
Fisheries and aquaculture
Value addition
Drought resilience
Flood mitigation



Soil

Growing crops
Growing trees
Growing wild foods
Growing animal fodder
Erosion and landslide prevention
Soil carbon sequestration
"Green" water storage and drought/flash flooding mitigation



Biodiversity

Wild animals and plants for food or income
Insects to pollinate plants
Natural pest predators
Traditional medicines
Future commercial products and medicines
Tourism and recreation



Culture

History
Spirituality
Cultural identity
Connection to ancestors
Traditional knowledge
Learning
Sacred sites
Language & storylines
Ceremony
Food & materials
Stewardship, moral & ethical values
Recreation & aesthetic values



Vegetation

Trees for firewood, building materials
Fodder for livestock
Shading and cooling for crops, livestock and people
Medicine, fruit, flowers, gums, barks for use and sale
Flowers for honey production



Coasts & sea

Fisheries for consumption and sale
Fish nurseries
Prevention of coastal erosion and storm damage
Medicinal and cultural products
Tourism and recreation
Transport
Blue carbon capture

A healthy environment means a healthy community, and vice versa. They don't just coexist – they amplify each other. When one flourishes, so does the other, creating a powerful cycle of mutual benefit.

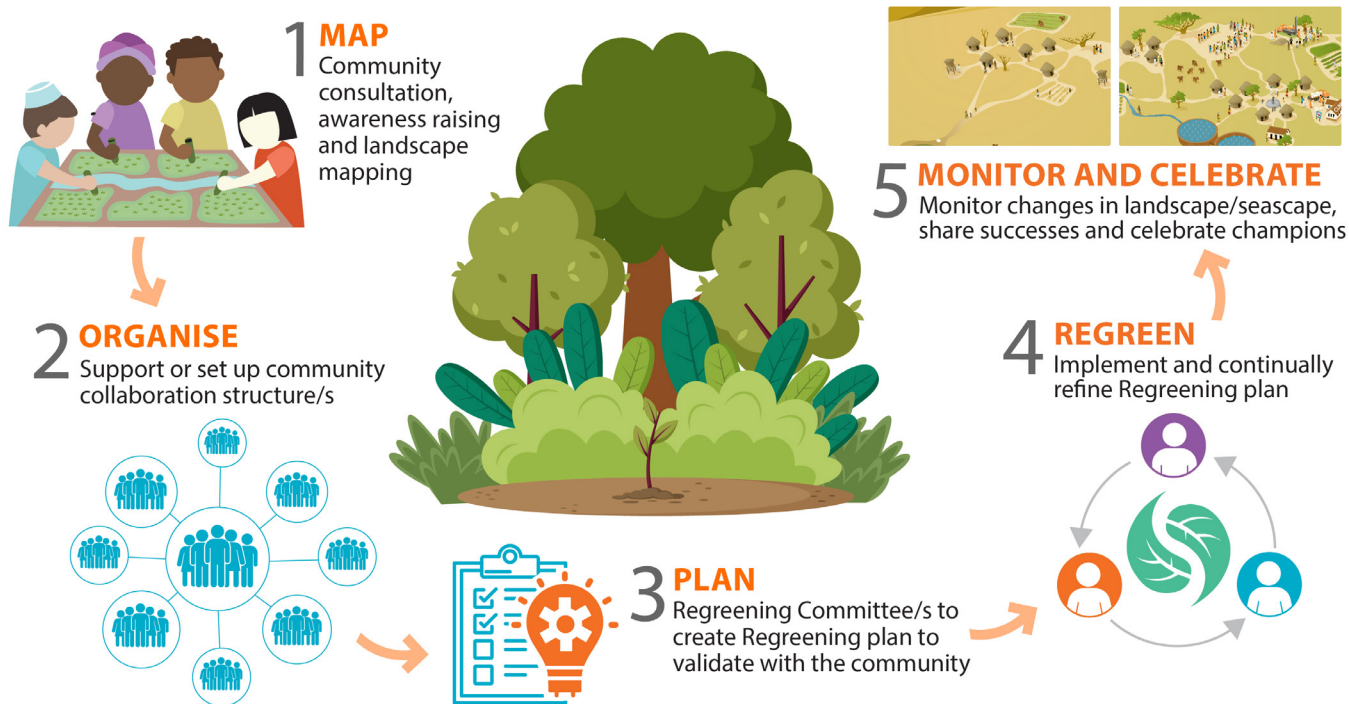
For those involved in landscape and seascape restoration, it is essential to adopt a holistic approach that incorporates various methodologies and best practices.

One such approach is "Regreening Communities", a World Vision model. It has been effectively used to restore degraded landscapes by promoting natural regeneration techniques. Quite a few development organisations and governments have similar programs that provide comprehensive frameworks for community-led restoration efforts.

With FMNR being low-cost, simple and quick in delivering returns, it can serve as a gateway to more complex restoration projects, fostering hope and confidence and encouraging continued efforts.

The **Regreening Communities** process can be tailored to your specific context, but generally, the steps are as follows.

REGREENING COMMUNITIES



Regreening Communities framework. Photo credit: World Vision Australia.

Instead of introducing FMNR only or first, think bigger. Identify **existing Indigenous or local restoration practices** that could be scaled up. These could be community decision-making processes, soil improvement practices or water harvesting techniques. Next, **create an enabling environment** by working with policy makers and partners, such as extension agents or local community organisations, to lead the regreening action plan. After addressing these foundational elements, **introduce proven practices like FMNR**, climate-smart agriculture, zai pits, terracing or small-scale water harvesting to address any remaining gaps or challenges.

While FMNR alone is not enough to holistically restore a landscape, it provides a valuable entry point into regreening efforts due to its simplicity and accessibility. It serves as a practical community engagement tool, encouraging participation and ownership in restoration activities. FMNR also lays a strong foundation that enhances other restoration efforts. For example, regenerated trees can provide shade, slow winds and supply organic matter. They can also offer poles, leaves or protection material to support practices such as mulching, soil and water conservation, climate-smart agriculture, or tree planting. **Starting with FMNR can amplify the effectiveness of these additional approaches, creating a synergistic impact on land restoration.**

In conclusion, while FMNR is just one of many techniques that supports regreening, it is an excellent place to start. By integrating FMNR with a broader array of restoration practices, communities can achieve more resilient and productive ecosystems, ensuring long-term environmental health and community wellbeing.

CASE STUDY: THE DRYDEV PROJECT

The Drydev Project took place in several countries, including Ethiopia and Kenya. This project aimed to improve environmental health in dry settings to unlock social and economic benefits.

Mapping identified a deep gully as a significant issue. Women and children had to walk around it, adding hours to their day. The gully formed due to deforestation in the watershed, which increased water runoff speed and erosive power, deepening the gully over time.



The community created check dams higher up to slow the water down. They also implemented FMNR to increase tree cover, improving water infiltration and soil stabilisation. These activities enabled them to regenerate the gully. In turn, this regeneration allowed them to focus more on on-farm activities like climate-smart agriculture.

The results were impressive: 8,000 hectares of FMNR and tree planting increased dietary diversity, reduced hungry months and nearly doubled average household income and expenditure.

FMNR: A key strategy for achieving global land restoration targets

FMNR helps achieve many of the Sustainable Development Goals (SDGs). It supports SDG 2 (Zero hunger) by improving food production and making sure people have enough to eat. It helps with SDG 13 (Climate action) by fighting climate change and making communities more resilient to extreme weather. It also aids SDG 15 (Life on land) by bringing back degraded lands and increasing biodiversity. Moreover, FMNR contributes to reducing poverty (SDG 1), improving health and wellbeing (SDG 3), ensuring clean water (SDG 6), boosting the economy (SDG 8) and creating sustainable communities (SDG 11). This shows how FMNR is important for many aspects of sustainable development.



Global restoration goals and the role of FMNR

National governments around the world have made commitments to restore land and ecosystems under initiatives such as the Bonn Challenge, the UN Convention to Combat Desertification and the Convention for Biological Diversity. Collectively, these commitments amount to restoring around 1 billion hectares of degraded land globally within the next decade to address critical challenges such as climate change, loss of nature, loss of biodiversity, desertification and pollution. The UN Decade on Ecosystem Restoration is a broad-based global movement to ramp up restoration and put the world on track for a sustainable future¹.

FMNR is one of the lowest cost, lowest risk ways to begin large-scale restoration of degraded land necessary to achieve these goals. Globally there are approximately 1 billion hectares of land that have been degraded in ways where tree stumps and roots remain in the ground. This means there is enormous potential for FMNR to contribute to the restoration of these landscapes and rapidly accelerate restoration efforts.

FMNR also makes important contributions towards the diverse goals of the UN Decade of Family Farming. By improving soil fertility and increasing agricultural productivity, FMNR helps family farmers increase yields and produce more diverse foods, increasing their income. This helps to increase food security, improve nutrition and reduce poverty. FMNR builds on traditional ecological knowledge and promotes farmer-led experimentation and adaptation of regenerative agriculture practices, thus strengthening family farming knowledge and innovation. Notably, every dollar invested in restoration yields up to \$30 in economic benefits.

¹ [About the UN Decade](#) | [UN Decade on Restoration](#)

How does FMNR support the outcomes of other programs?



Photo credit: Hellen Owuor, World Vision Kenya

FMNR can empower communities and improve ecosystems, making it a great match for various other programs. It supports women's empowerment, is accessible to marginalised groups and enhances overall community wellbeing.

FMNR can also be woven into other programs that look at disaster risk reduction, emergency assistance, water and sanitation, food security, education, economic development, and environmental conservation.

Here are the programs most commonly combined with FMNR:

Disaster risk reduction and climate change adaptation

FMNR helps reduce the impact of disasters like drought and flooding. More trees slow down wind, reduce heat and improve water retention, making the land more productive. This approach also strengthens landscape resilience and helps communities recover faster after disasters.

Humanitarian and emergency assistance

In areas hit by disasters or in places housing refugees, FMNR can quickly regenerate land and provide essential resources like firewood. Programs like cash-for-work can encourage people to adopt FMNR, helping them rebuild their lives and improve their income sources.

Water, sanitation and hygiene (WASH)

FMNR increases tree cover, which enhances water quality and availability. Better water infiltration and reduced erosion lead to cleaner, more accessible water, supporting WASH objectives through the protection and restoration of the watersheds supplying water resources.

Food security and nutrition

FMNR boosts the productivity of agricultural land, enabling farmers to grow more crops and raise more livestock with fewer inputs. Trees also provide edible fruits, leaves and medicinal products, improving overall nutrition and food security through increased access to a wider diversity of food products.

Education

FMNR can be integrated into school programs, teaching children about the environment while improving their learning conditions. Trees regenerated (or planted) at schools offer shade and reduce wind. They also provide firewood, which eases financial and time pressures.

Income generation and economic development

By improving land productivity and resilience, FMNR helps communities generate income from sustainable tree products like firewood and fruits. It supports economic stability, especially during tough times like droughts, and can be paired with savings schemes and market linkages for greater economic benefits. Certain FMNR reforestation projects can also generate income through the sale of carbon credits, if set up for this purpose.

Community forest restoration

By mobilising, equipping and empowering communities, degraded forests can be restored and sustainably managed through application of FMNR principles and techniques.

CASE STUDY: FMNR BRINGS BACK WATER



In East Sumba's dry lands, FMNR has transformed villagers' lives. Before FMNR, villagers walked long distances for water, and children like Yovintus, eight, and Elton, seven, often went to school without bathing.

Now, a well just 200 meters from their home provides ample water. Yovintus shares, "We can now take a bath every day because water is now abundantly available in our village." Thanks to FMNR, the well retains water even during the dry season, supported by regenerated trees that hold water in the ground.

Villagers now gather at the well daily to bathe, wash clothes and water their cattle. Before FMNR, water was only available until August, forcing villagers to fetch water from a neighbouring village or buy it. Lusia, a local mother, recalls spending extra money on water during dry periods.

Today, there's enough water to meet everyone's needs. FMNR has brought significant benefits, especially for children like Yovintus and Elton.

Empowering FMNR stories

Here are some incredible examples of how FMNR has made a real difference on the ground. These tales of transformation highlight the resilience and ingenuity of communities who have embraced this method.

Through their efforts, they have not only restored their lands but also improved their livelihoods and brought new hope to their communities.



Yaouza

Meet Yaouza from Niger, a father of six who transformed his life and land with FMNR and complementary activities. By implementing this technique on his five hectares, Yaouza has become a sustainable farmer and can now fully provide for his family. He has regenerated 310 new trees, top grafting 60 native fruiting trees with an improved cultivar called “Apple of the Sahel”.

The improved microclimate and soil conditions have enabled him to diversify and improve his crop yields and livestock production in a drought year: 450 kilograms of peanuts, 250 kilograms of cowpeas, 375 kilograms of sorghum, 2,000 watermelons and 833 kilograms of Sahel apples annually.

With his increased income, Yaouza has ensured his household has sustainable food and firewood. He has also been able to pay his children’s school fees, supported relatives, employed farm labour and ventured into additional income-generating activities.

Joyce

What was once highly degraded land with deep gullies is now a lush, green parcel filled with crops, trees and pasture. This area in Kenya often faces climate challenges like drought, floods and landslides.

Joyce, a hardworking and innovative farmer with a passion for farming, initially cleared all the vegetation from her new farmland, hoping to grow crops. Unfortunately, this led to land degradation.

After her FMNR training, Joyce taught her initially sceptical husband about the approach. Over time, his mindset changed, and they both embraced FMNR. Now, their once-barren farm is thriving with crops like groundnuts, beans, pigeon peas, cassava, traditional vegetables and sorghum, and fruit trees like mangoes, pawpaws and oranges.



Photo credit: Hellen Owuor, World Vision Kenya (2022).

Joyce is thrilled with the transformation. The soil is more fertile, leading to healthy crops and increased yields. The family no longer needs to buy vegetables or cereals from the market. The trees also act as windbreaks, protect the soil and provide food for their livestock.

During the drought of 2022, Joyce’s family was better prepared than many of their neighbours. Thanks to FMNR, they had stored surplus fodder and planted drought-resistant crops, ensuring they had food and pasture.

Samson

Samson, a farmer and local leader in West Pokot County, Kenya, was disabled by polio. But he hasn't let that stop him from providing for his family and community. Living in a drought-prone area, Samson joined an FMNR training program in May 2022. With new skills, he fenced off three acres of his farmland to regrow indigenous trees. This effort improved his land, providing firewood, fodder and increased crop yields.

Samson's wife, Pauline, and their seven children benefit greatly from FMNR. The family now spends less time collecting firewood, allowing more time for education and other income-generating activities. The increased income has enabled them to support their children's education, with three already in college.



Photo: Farmers with disability lead regreening efforts to adapt to drought - CRIFSUP II. Photo credit: Hellen Owuor, World Vision Kenya (2024).

Samson leads a local farmers' group, promoting FMNR to build resilience against drought and climate change. He encourages others, especially those with disabilities, to adopt FMNR for a sustainable future.



Farmer Managed Natural Regeneration as expressed in Kiswahili in Tanzania. Photo: Tony Rinaudo, World Vision Australia

Throughout this manual, we will use the terms FMNR and Farmer Managed Natural Regeneration, but please feel free to replace these with your locally equivalent terminology.

Resources

- Humbo example: <https://gpg.oxfordeconomics.com/case-studies/HumboAssistedNaturalRegenerationProject.pdf>
- Video: [Everything is connected](#)
- Video: [Tony Rinaudo: The Niger I came to](#)
- Video: FMNR Overview - https://www.youtube.com/watch?v=O_CPtFgypPE



Photo Credit: Bethel Shiferaw Kebede (World Vision Ethiopia)

CHAPTER 2

SCALING FMNR AND PARTNERSHIPS

Summary: Scaling FMNR and partnerships

FMNR has spread significantly, driven by dedicated individuals and strategic partnerships. Initially emerging as a response to severe land degradation in sub-Saharan Africa, FMNR is now practised in over 40 countries, spanning a variety of environments including drylands, tropical regions and mountainous areas. This adaptability showcases FMNR's strength in addressing diverse challenges, from desertification to deforestation, using a simple and low-cost method. Further scaling or spread of FMNR has a significant role to play in accelerating the restoration of large areas of degraded land, to address the climate crisis affecting the planet and communities.

Scaling FMNR effectively requires both targeted initiatives and grassroots movements. Organised initiatives involve structured efforts to implement FMNR, often supported by training, resources and collaboration with local communities and key partners such as government bodies. In contrast, grassroots movements rely on the organic spread of FMNR as communities see its benefits and adopt the practice independently.

To scale FMNR we need more FMNR initiatives, as well as activities that support and enable the spread of grassroots movements. World Vision has identified four key pathways to enable scaling of FMNR, each targeting different methods and groups: (1) **direct programming**, (2) **external partner-led spread**, (3) **organic/community-led spread** and (4) **enabling environment**.

Across all of these pathways, **individual champions** in a range of different roles across the globe and **partnerships** with different organisations at all levels are essential for success.

Individual champions have played a range of roles in contributing to the FMNR movement so far.

Partnerships are central to FMNR's success, and support both direct programming as well as other scaling pathways. Effective partnerships allow the technique to be adapted to various cultural and operational contexts, making it relevant to local communities. Collaboration with traditional leaders,

local governments, faith-based groups and educational institutions helps raise awareness, secure resources and integrate FMNR into existing networks and policies. These partnerships have been crucial in elevating FMNR to a global movement and ensuring its sustainability.

The community is your most important partner and is central to any FMNR initiative. However, to make FMNR sustainable, it is necessary to partner with other organisations.

Partnerships that are likely to be valuable to the spread of the FMNR movement include those with:

- traditional leaders and local government authorities;
- faith communities and religious leaders;
- schools and education departments or ministries;
- universities and research institutions;
- state, county and national governments; and
- non-government and civil society/community-based organisations.

Partnerships can be bilateral, local or regional. Even national networks of partners can be established, or if relevant networks already exist, these can be harnessed to further support your FMNR work.

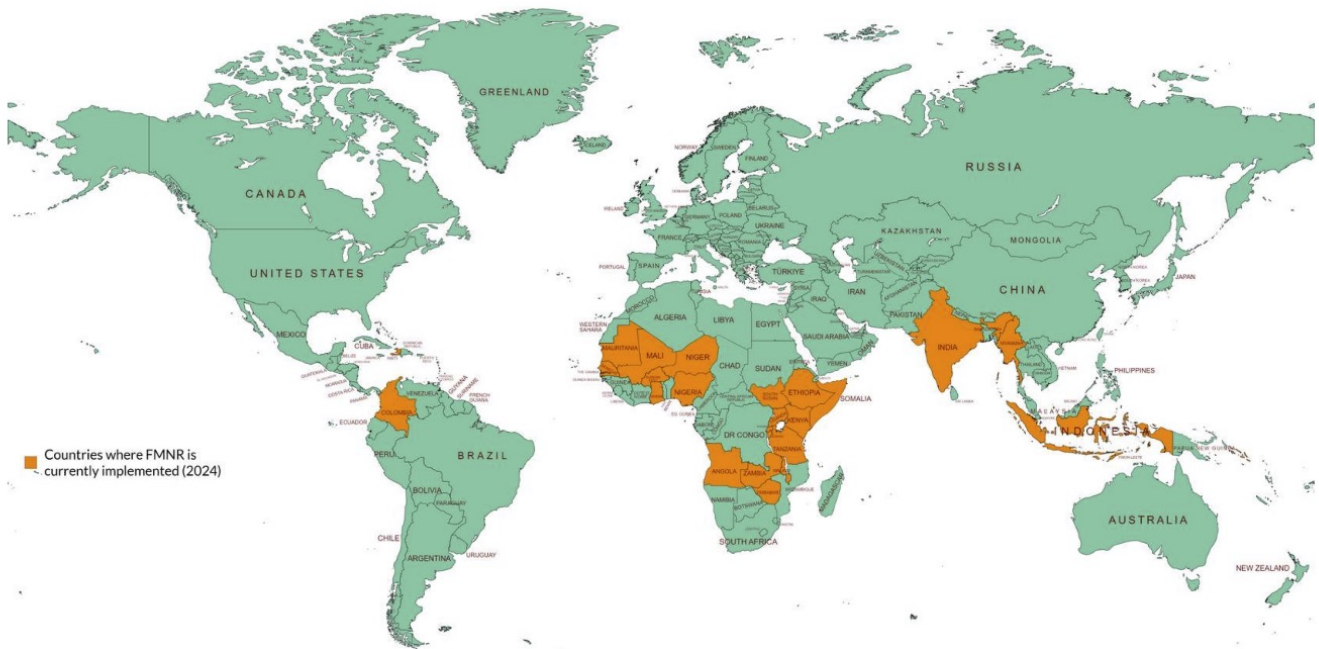
These partnerships are critical for supporting the spread of the FMNR movement and have already played a significant role in raising the profile of FMNR to where it is now.



Farmer youth group participating in the Dryland Development Programme, Kenya. Photo credit: Nick Ralph (World Vision Kenya).

Where is FMNR now?

FMNR is currently practised in more than 40 countries, particularly in sub-Saharan regions facing deforestation and land degradation. While FMNR is not yet widely practised in Latin America, there is potential for growth in these regions as FMNR is likely a practice familiar to Indigenous populations there. FMNR is also gaining popularity in both the Asia and Pacific regions.



Some key countries where FMNR is practised include: Angola, Burkina Faso, Burundi, Colombia, Ethiopia, Gambia, Ghana, Haiti, India, Indonesia, Kenya, Malawi, Mali, Mauritania, Myanmar, Niger, Nigeria, Rwanda, Senegal, Solomon Islands, Somalia, South Sudan, Tanzania, Timor-Leste, Uganda, Zambia and Zimbabwe.

Scaling FMNR

Based on the success of the FMNR movement so far, scaling this approach can be a highly effective strategy to rapidly combat land degradation and restore ecosystems, improving the livelihoods of many communities. However, we know that while this works and spreads organically, the urgency of global crises such as ecosystem degradation, climate change and inequality demand a much faster pace. Niger's transformation of 6 million hectares took 20 years, but to achieve the scale needed to make a significant impact on our planet and communities, we must accelerate the process. Without intentional and rapid scaling efforts, the natural spread will not be fast enough to meet these pressing global challenges.

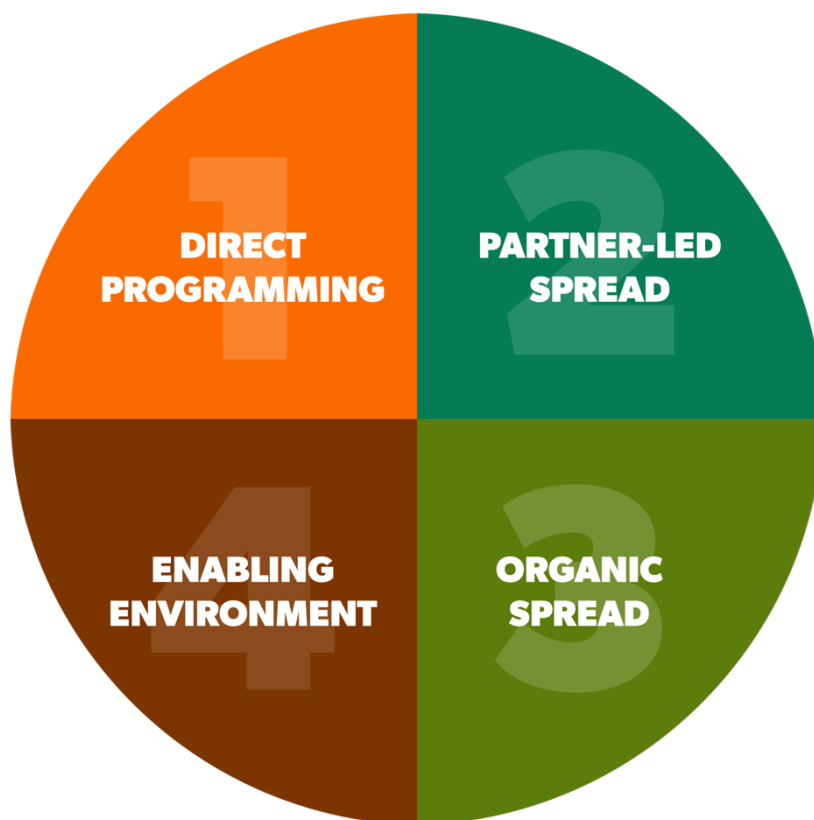
FMNR scaling can be done through targeted initiatives as well as broader movements.

- As an **initiative**, it involves organised, strategic efforts to implement FMNR practices – often supported by training, resources and collaboration with local communities and governments.
- As a **movement**, it represents the organic, widespread adoption of FMNR by individuals and communities who see its benefits and choose to implement it.

Both initiatives and movements can contribute to scaling FMNR further in some way. For example, even a small FMNR activity on a single site can still engage the broader community and share the experience through site visits and demonstrations. A larger program may intentionally target different

drivers for the spread of FMNR. For example, it may engage private sector stakeholders in market systems development to increase demand for FMNR or collaborate with media outlets like radio to raise awareness and promote its adoption.

There are different approaches to scaling FMNR, and different actors can play different roles in helping achieve this goal. World Vision has identified four key pathways to scaling FMNR, each targeting different methods and groups. Initiatives may include just one of these pathways (for example, just direct programming) or many of these pathways if scaling FMNR is a specific focus. These pathways are designed to support the spread of grassroots movements organically as well.



1. **Direct programming:** This pathway supports communities (including farmers and land managers) directly in specific areas through community-based programs.
2. **External partner-led spread:** This pathway encourages and empowers external partners, such as governments, NGOs, research institutions, the private sector and donors, to include FMNR in their activities and investments or support its scaling.
3. **Organic spread:** This pathway uses communication and change agents to promote FMNR and contribute to building grassroots movements. These change agents can be influential individuals or groups, associations, churches, schools and media companies that spread the message to their networks and audiences. Much of the spread of FMNR in Niger is assumed to have occurred through this pathway – simply by word of mouth and example, from farmer to farmer.
4. **Enabling environment:** This pathway addresses key systems challenges and responds to opportunities, which depend on context and can change over time. This may include actions such as: advocating for an enabling policy environment and/or facilitating value chain development providing market mechanisms as incentives for FMNR adoption.

There are roles for everyone to play in FMNR scaling. You don't have to be a farmer or a policy maker. You can use your unique skills and talents to contribute to supporting FMNR and its spread. In the following section you will meet some FMNR champions who have contributed to scaling FMNR in different ways.

Restoring 1 billion hectares of degraded land through FMNR by 2033



Through our FMNR Scale-Up Initiative, World Vision has committed to supporting the global community to restore 1 billion hectares of land over the next decade. This initiative leverages the success of FMNR to achieve large-scale restoration, help combat climate change, improve livelihoods and build resilience in communities worldwide. By uniting farmers, governments, NGOs and donors, the initiative aims to drive meaningful and lasting environmental and social change across the globe.

Project Drawdown² identifies nature-based methods, like FMNR, as key to effective carbon drawdown from the atmosphere. By improving soil health, increasing biomass and restoring ecosystems, whilst enabling livelihoods, FMNR provides a sustainable path to carbon storage and climate resilience on a global scale. The United Nations Food and Agriculture Organisation highlights FMNR as an ideal starting point, as many degraded lands were cleared in ways that left tree roots intact, enabling rapid regrowth from existing systems. This makes FMNR a scalable, low-cost solution for long-term carbon storage.

The importance of FMNR champions

Many FMNR champions have been crucial to activating different scaling pathways, from supporting direct programming activities, to spreading FMNR in their own communities, mobilising national or global organisations and raising awareness among policy makers and funders. Here, we highlight three key champions and share brief stories of their contributions to the FMNR movement so far.

Tony Rinaudo

In the early 1980s, Tony Rinaudo rediscovered the principles behind FMNR while working in the Republic of Niger. Like many others trying to combat the ever-expanding desert at that time, Tony worked with villagers to plant trees. However, the harsh conditions – strong winds, high temperatures and scarce water – made this effort nearly impossible. Community members were more focused on growing food and cash crops rather than putting energy into tree planting – a practice that had repeatedly failed.

At that time, individuals did not own the trees on their land; the government did. This created a major disincentive as land users needed permits to harvest trees, a process that was not only inconvenient but also costly for those living in poverty. Additionally, Niger's culture allowed people to freely harvest wood from anywhere, offering no incentive to leave trees for the benefit of others. Many land users also believed that trees competed with their crops, making the idea of having trees on their land unappealing.

² Project Drawdown (2020) The Drawdown Review: Climate Solutions for a New Decade. San Francisco: Project Drawdown

The story is best told in Tony's own words



Tony Rinaudo (2016). Photo: Silas Koch

"After two and a half years of mounting frustration at my failure at both tree planting and at winning popular support for this activity, I was ready to give up. At one of my lowest points, I was driving to the villages with a trailer load of seedlings. The hopelessness of it all weighed heavily on me. Stopping, I looked over the barren landscape. As far as I could see in every direction there were empty, windswept plains. Even if I had a multi-million-dollar budget, many years to do the work in and hundreds of staff – using these methods would never make a significant or lasting impact. It seemed hopeless and I was on the verge of giving up and going home. I voiced a silent prayer for help.

Then a common small 'bush' caught my eye. I had 'seen' these bushes many times before but had never registered their significance. On closer inspection I realised that this was not a bush at all – it was a tree that had been cut down and was sprouting from the stump. In that instant, everything changed. I somehow knew that this was the solution I had been looking for – and it had been at my feet the whole time! There were millions of similar bushes belying the fact that a vast underground forest existed just beneath the surface of that seemingly barren landscape. Each year sprouting stems would grow to about one metre in height – and then, in preparation for sowing the crops, farmers would slash that growth and either burn the stems, branches and leaves for ash to fertilise the soil, or take the stems and branches home for firewood. As long as this regular slashing and burning continued, the 'bushes' would never regrow into full-sized trees, and the 'forest' would remain hidden underground.

When a tree is felled, for most species, much of the root mass remains alive and the tree has the capacity to regrow rapidly from the stump, due to its access to soil moisture and nutrients and its large store of sugars in the roots. Felled trees constitute underground forests, because we do not see them and tend to discount the potential of the seemingly insignificant shoots that sprout from stumps. By selecting and pruning superior stems and by culling surplus stems, one achieves rapid growth with superior form.

In 'discovering' this underground forest, the battle lines were immediately redrawn. Reforestation was no longer a question of having the right technology or enough budget, staff or time. It was not even about fighting the Sahara Desert, or goats or drought. The battle was now about challenging deeply held beliefs, attitudes and practices and convincing people that it would be in their best interests to allow at least some of these bushes to become trees again. I realised that if it were people who had reduced the forest to a barren landscape, it would require people to restore it – and false beliefs, attitudes and practices would need to be challenged with truth, through love, by example and with perseverance."

From a modest start, with only a few land users brave enough to challenge traditional practices, the practice of nurturing tree stumps into mature trees began to spread. Over the next 20 years, FMNR expanded from person to person across Niger, eventually covering more than five million hectares, equating to around 200 million trees.³ Satellite data from 2016 shows this type of land management being used across over six million hectares.⁴ Between 1984 and 2004, average tree density increased from just four trees per hectare to over 40. As "normal" farming practices shifted from clearing fields to maintaining "dirty" fields scattered with trees, crop yields improved.

In one of the poorest countries in the world, these men and women reforested their land using only the resources at hand and their own labour. Working in a very harsh climate on the edge of the Sahara, they achieved reforestation through FMNR with minimal government or external assistance.

This accomplishment is especially notable given the 20 years of largely unsuccessful reforestation efforts by professionals before FMNR's introduction in 1984. Practices such as soil and water conservation measures were also introduced but struggled to continue without ongoing support.

Human geographer Chris Reij described Niger's transformation, along with independent FMNR movements in Mali and Burkina Faso, as possibly the largest positive environmental transformation in the Sahel, and perhaps all of Africa. Today, FMNR continues to spread through the efforts of numerous individuals and organisations, while also occurring spontaneously without any external intervention.

³ Reij, C. and Garrity, D. (2016), Scaling up farmer-managed natural regeneration in Africa to restore degraded landscapes. *Biotropica*, 48: 834–843

⁴ Pers. Comm. Gray Tappan, US Geological Survey, 2016



Photo: Trees strengthen resilience of smallholder farmers to climate change.
Photo credit: Hellen Owuor, World Vision Kenya (2024).

Nancy Kemboi

Nancy is a smallholder farmer in Baringo County, Kenya, where erratic rainfall patterns and perennial droughts pose severe challenges.

Despite these conditions, Nancy's livestock remain healthy. She attributes this to practising FMNR, which has increased fodder availability. Supported by World Vision Kenya, Nancy has adopted various sustainable practices, including FMNR and farm ponds, to restore her land and improve resilience to climate change.



She also contributes to her community by demonstrating these practices and collaborating with the Kenya Forestry Research Institute.

Thanks to FMNR, Nancy's farm has regenerated trees providing firewood, herbal medicine and increased pasture yields, as well as a favourable environment for beekeeping, which supplements her income. During dry spells, she uses stored pasture and tree leaves to feed her livestock, ensuring their survival and health.

In 2024 Nancy won the Constructive World Award in Berlin, Germany. Nancy became the second female FMNR farmer to get recognised on an international stage.

Goretti Goncalves Oliveira

Goretti, affectionately known as Mana Etty (Mana means “older sister” or “respected woman” in Tetum), led World Vision’s FMNR activities in Timor-Leste. In 2017, she became the first person in World Vision to be appointed to a role focused on FMNR scaling.

Since then, similar roles have been established in Ethiopia, Kenya, Zambia and Uganda.

Mana Etty’s work centred on supporting FMNR projects, including those linking FMNR to nutritional outcomes and those using FMNR and regreening to build climate resilience.

Beyond project support, she created an enabling environment for FMNR by partnering with government ministries to establish demonstration plots and engage in FMNR monitoring. She also introduced FMNR to partner organisations through training sessions.

Mana Etty is particularly passionate about involving youth in FMNR, aiming to create the next generation of champions. She has authored the first FMNR manual for Timor-Leste and shows no signs of slowing down any time soon.



SILVIA HOLTEN’S JOURNEY WITH FMNR



Silvia Holten, former Media Director for World Vision Germany, has always passionately advocated for addressing climate change for the sake of the world’s children. In early 2012, Silvia delved into FMNR and Tony Rinaudo’s story, realising its potential to revolutionise the climate debate. After meeting Tony at the 2012 Beating Famine conference in Nairobi, she became a fervent promoter of FMNR.

Silvia’s dedication didn’t stop there. She organised visits to the Humbo reforestation project for journalists and dignitaries, captivating audiences with stories of environmental transformation.

Back in Germany, she teamed up with Dr Martin Falkenburg from ZAR University, who was eager to support impactful climate projects. Together, they founded the FMNR regional group, Regionalgruppe Bielefeld FMNR, in 2014.

Their collaboration led to nominating Tony Rinaudo for the prestigious Right Livelihood Award, which brought significant attention to FMNR. This recognition opened doors to government leaders, policymakers, donors and agencies worldwide. Silvia also facilitated the publication of The Forest Maker and Tony’s autobiography The Forest Underground, spreading FMNR’s story globally.

Following the award, Silvia introduced Tony to Oscar-winning director Volker Schlöndorff, who produced the documentary The Forest Maker, inspiring audiences around the world.

Silvia Holten has made an unparalleled contribution to promoting FMNR globally and highlighting its transformative potential for land and communities.

The importance of partnering with others

"If you want to go fast, go alone. If you want to go far, go together." – African proverb

Effective FMNR relies on strategic partnerships to achieve scale and sustainability. While individuals can regenerate trees, collaborative efforts with communities, governments, academic institutions and international organisations are critical for expanding FMNR's geographic impact and ensuring its long-term viability. Partnerships enable the regeneration of larger land areas, engage more stakeholders and enhance the commitment to maintaining FMNR practices over time. This broader participation also facilitates faster climate resilience as benefits extend across larger landscapes. Effective coordination between partners is necessary to manage shared responsibilities such as sustainable harvesting practices, grazing protection and community governance. These coordinated efforts are essential to scale FMNR beyond individual communities.

Building successful partnerships

Successful FMNR partnerships require careful planning and involve a diverse range of stakeholders, including government agencies, NGOs, academic institutions and faith-based organisations. Key elements for effective partnerships include early engagement of stakeholders, alignment of values and objectives, consistent communication, and formalised agreements to clarify roles and expectations. For partnerships to be sustainable, all parties should derive tangible benefits, with agreements – either formal or informal – providing structure for collaboration and accountability.

Here are some examples of FMNR partnerships.

- Traditional leaders and local government: These partners endorse FMNR, create favourable policies and support market development. Their involvement can scale FMNR and ensure its long-term success.
- Faith communities and religious leaders: Places of worship are ideal partners due to their deep community roots. They can support FMNR through education, advocacy and providing space for meetings or demonstration plots.
- Schools and educational institutions: Schools play a crucial role in spreading FMNR knowledge to future generations. Children are passionate advocates, and schools can provide space for FMNR demonstration plots and community gatherings.
- Community-based and non-governmental organisations (CBOs and NGOs): These organisations promote FMNR, help scale projects and ensure regional and national implementation. They also provide vital capacity-building support.
- Universities and research institutions: Partnering with academic institutions can boost research, data collection and monitoring. Universities help generate evidence to influence policy and innovation in FMNR.
- State, county and national governments: Government partnerships help integrate FMNR into national strategies and attract funding from programs like the Green Climate Fund. These partnerships ensure that FMNR aligns with broader environmental and social goals.

Benefits for partners

FMNR partnerships offer significant benefits, including enhanced skills, increased capacity in natural resource management and alignment with environmental and social objectives. These partnerships strengthen governance structures, reduce local conflicts over resources and improve community relations. They also create a pathway for scaling FMNR by supporting smaller, community-led initiatives and linking them to larger, regional projects. Expanding FMNR through a coordinated network of partners can multiply the benefits of land regeneration, resulting in more resilient landscapes and communities.

In essence, partnerships are crucial to scaling FMNR and ensuring its environmental, social and economic success. Working together means landscapes can be regenerated and more resilient communities can be built.

Community leader in Ghana

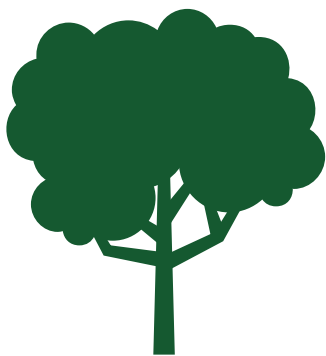


Figure 2: Chief Biliya-mnamaltenga of Tongo Beo, Ghana, is an influential FMNR leader (2015). Photo: Tony Rinaudo

Community leaders hold considerable influence and can greatly impact the success of an FMNR initiative through their support or opposition. Chief Biliya-mnamaltenga of Tongo Beo village in Ghana shared, "The arrival of FMNR in my village has allowed me to fulfil the meaning of my ceremonial name, 'Tintuug Lebge Tii', which translates to 'the small shrub becomes a tree'."

By practising FMNR on his own land and encouraging others to do the same, Chief Biliya-mnamaltenga has played a pivotal role in promoting the widespread adoption of FMNR within Tongo Beo and neighbouring areas.

His leadership has been instrumental in the rapid uptake of this sustainable land management practice.



Uganda FMNR Network

The FMNR Network in Uganda was established following the National Conference in July 2014 to promote the adoption of FMNR practices across the country. Hosted by Tree Talk Plus, the network unites over 60 member organisations that share a vision of enhancing food security, nutrition and income for Ugandan communities through sustainable land management. The network is guided by a taskforce of seven key member organisations, which help set its strategic direction and oversee its operations.

One significant achievement of the FMNR Network in Uganda is its impact in the Karamoja region, where degraded lands have been revitalised through natural tree regrowth techniques. This initiative has not only improved soil fertility and increased crop yields but also strengthened community resilience against climate shocks, supporting long-term economic stability for local farmers.

Learn more about the Ugandan FMNR Network <https://fmnrnetworkuganda.org/fmnr-network/>

Resources

[FMNR – Tony Rinaudo: "The Niger I came To"](#)



CHAPTER 3

HOW TO APPLY THE FMNR TECHNIQUE

Summary: How to apply the FMNR technique

This chapter outlines the five FMNR steps and explains in detail what each step entails, with a particular focus on pruning – the most critical practice for FMNR.

Step 1 – FIND: Engage the community to identify needed tree species and survey the land for existing tree stumps or seedlings. Select the best saplings and tag them for protection.

Step 2 – PRUNE: Use pruning to guide the growth of selected trees, removing weaker branches to promote stronger, healthier growth.

Step 3 – PROTECT: Protect trees from damage by livestock, fire or other hazards through community agreements, also known as social fencing.

Step 4 – GROW: Regularly prune every two to six months to ensure trees grow strong and healthy.

Step 5 – UTILISE: Harvest branches for fodder, firewood or other uses, maintaining sustainable tree growth and productivity.

The aim is to keep up to five of the tallest, straightest, most vigorous stems, and cut out the smaller, crooked and weaker ones. The number of tree stumps left to grow will depend on climate, tree species and specific objectives.

Pruning isn't just about cutting branches. It's about managing how a tree grows and develops.

Pruning serves several important purposes:

- It directs growth, shaping the tree to grow in a specific direction.
- It maintains the health of the tree by keeping its form, size and appearance in check.
- The pruned branches are a useful resource, for example, as firewood or fodder for livestock.
- It reduces competition between trees and annual crops for water and nutrients, essential for maximising crop yields.
- It enhances the lifespan of trees by preventing overgrowth and disease.

Proper technique is crucial for effective pruning. Follow these three golden rules:

- Always use sharp tools to make clean cuts.
- Avoid pruning stems too high up the trunk as this can make trees fragile. They can be broken by livestock or strong winds.
- Where possible, make upward cuts to reduce damage to the bark and help the tree heal faster.

Community members should experiment – there's no one-size-fits-all approach!

Regularly assess and refine your pruning techniques. Embrace FMNR as part of your landscape restoration journey.



Photo credit: Justin Njovu (World Vision Zambia)

The five FMNR steps



Step 1 – FIND

1. Start with the community

Rally the community to create a realistic wish list of tree species. Think about what everyone needs – firewood, shade, fruit – and what's locally available. Consider what needs the regenerated species should address. Should they improve soil fertility for crops? Increase fodder, fuel wood or income? Act as a buffer for strong winds or provide shade? These priorities will be further informed by the taking stock assessment, which we will cover in Chapter 4.

It's also important to understand any possible restrictions. These could include the species' government protection status, cultural taboos or restrictions for use by different groups, such as men or women. Some valuable or rare trees may have government restrictions on harvesting.

Tree species selection is a critical part of the FMNR process. Land users are responsible for choosing the species that are most useful to them and their families.

To assist in this, a "preferred FMNR species list" can be developed by consulting elders, women, local experts or vegetation specialists, along with reference materials. This list will consider which species are locally available and their benefits for the community's priority needs. Once the information is gathered, it is up to each land user or community (for communal land) to decide which species from the list – and in what quantities – they wish to regenerate.



Feel like you don't know enough about tree species and how to identify them?

Remember, information on how to identify different tree species and their uses can be collected through:

- local knowledge gathered through meetings, focus groups, site visits, taking stock workshops and local expert experience;
- literature, reference material, tree manuals and guides such as the [Agroforestry Database](#) and [Promising Agroforestry Tree Species in India](#);
- observations of where you see trees growing naturally (consider what is noteworthy about them – for example, do they appear to suppress grass growth, and do they harbour pests or beneficial organisms?);
- expert knowledge from researchers, forestry and agroforestry experts, extension staff and experienced individuals; and
- FMNR champions and trainers from other FMNR projects in your country, or beyond – check in with the FMNR Hub.

2. Survey the land



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

How many species of trees are present? Can you identify sprouting tree stumps and saplings?

While surveying the site, record details about the land where you will practise FMNR. This information will help with monitoring and evaluating your activities to determine what is working and what isn't. Take at least two photographs from fixed points in the field (preferably with GPS coordinates) to monitor changes over time. It's important to take them every year in the same month. More information on photo points can be found in Chapter 7.



A sprouting tree stump, Ethiopia (2014). Photo: Suzy Sainovski



Community FMNR agents surveying a site for stumps. Marigat, Kenya (May 2018). Photo: Alice Muller

3. Pick the winners: Select the saplings that will be used for regeneration



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Tag the saplings that will be used for regeneration with a coloured rag or a small dab of paint. Tagging and painting is optional but has proven, in some areas, to reduce theft and damage to FMNR trees.



Pruned and marked trees in Niger, 2011. If marking with ribbon, attach this loosely to a side branch.
Photo: World Vision

Make sure everyone around knows what the tags mean, including children who collect fodder. Clear communication ensures that these trees, purposefully left to grow, are respected and protected.

How many tree stumps should be selected?

When starting with FMNR on cultivated land, community members often begin cautiously, leaving just five to ten trees per hectare. As the benefits become clear and no negative effects are observed, they typically increase this number to 20, then 40 and sometimes over 100 trees per hectare. Despite the higher tree density, crop yields typically remain higher than in treeless fields.

On grazing land, having more than 100 trees per hectare is often beneficial, as it can still boost fodder yields. Many tree species provide fodder as well through their leaves, bark and branches.

In forest areas, encouraging all species to regrow is ideal, because it maximises biodiversity and environmental benefits. The number of tree stumps left to grow will depend on climate, tree species and specific objectives.

What tree species can be used in FMNR?

Key factors for selecting tree species include:

- the tree's ability to re-sprout after cutting;
- the value local people place on those species (eg, firewood, fertiliser, fodder, fruits, medicines, etc.); and
- the community's objectives in practising FMNR.

On farmland, for instance, community members might avoid species that hinder crop growth. Instead, they may prefer trees that produce fruit or firewood and benefit annual crops. On grazing lands, there might be a preference for known fodder trees.

Where knowledge is not available or has been lost, simply encourage communities to experiment and learn by doing or consult partners like universities who could help.

What if there are not enough sprouting stumps?

If there are no living stumps in an area or not enough to meet your goals, it may be necessary to explore alternative approaches. For example, you could nurture trees from naturally sprouting seeds. Protect these young trees from animals and people so they can grow large enough for the FMNR techniques of pruning and management.

While these young trees won't benefit from mature root systems that speed up growth, careful pruning and protection can still ensure their success.

As shown in the picture below, you can also use zai holes (planting pits with compost) and half-moons (semi-circular water harvesting structures) to help establish new trees. Sometimes manure placed in zai holes contains tree seeds, which can be nurtured, or you may choose to broadcast tree seeds into the zai holes to encourage growth.



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).



Half-moon micro-catchments are used around acacia trees (*Senegalia senegal*) for water retention at a landscape restoration site near the village of Loga, Dosso Region, Niger (September 2017). Photo: Rodrigo Ordonez/GLF

What if there are no seedlings either?

If there are no natural stumps or seedlings you might not be able to do FMNR, but trees can be raised in a nursery and then planted out.

This method is more labour-intensive and costly, but the principles of pruning and protecting still apply and offer similar benefits. Planting seedlings or seeds in zai holes or near half-moons can increase the chances of success, especially in arid environments.

Alternatively, with community behaviour change, such as management of fire or grazing, seeds coming onto a bare site will have a higher chance of germinating and establishing than seeds landing on a site not under an FMNR management regime. However, this process will take time.

What if there are already lots of trees?

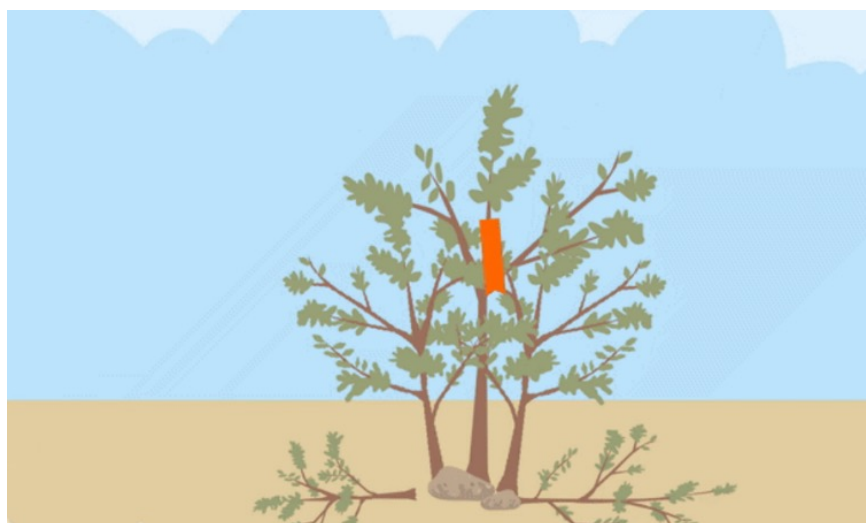
When there are many trees, the focus should be on raising awareness about the value of trees in the landscape and providing training for better management of existing trees, shrubs and grasslands.

Additionally, FMNR could still be used to bring back a particular species of tree that may be in decline. Community members should survey and select the species they want to manage to achieve their goals.

4. Make smart choices: for each stump or sapling, select three to five stems to keep



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).



Illustrations extracted from the FMNR e-course.
Graphic design credit: DynaMind eLearning (2024).

The aim is to keep up to five of the tallest, straightest, most vigorous stems, and cut out the smaller, crooked and weaker ones.



While it's possible to leave just one regenerated stem, it's usually better to keep three to five, at least initially:

- Multiple stems allow for short-term harvesting (eg, firewood, stakes) while still letting the main stem mature. A new sprout should grow each time a stem is harvested.
- Tying young stems together helps protect them from livestock and strong winds, as they are less likely to break.
- If some stems are damaged, others can still grow to maturity, reducing the risk of setback compared to having only one stem.

How do we manage overgrown bushes (bush encroachment)?

We go through the same process in settings where there is bush encroachment (invasion or overgrowth of unwanted plants). When dealing with dense areas, some bushes might need to be cut away first to see the trees to keep.

By practising and applying principles of FMNR, thickets of impenetrable bushes (picture on left) are turned into a productive landscape (picture on the right). Light can now pass through the thinner canopy, enabling grasses to grow which livestock can access. In agricultural settings, crops can now be grown between the selected trees. The increases in grass or crops means we are still observing the FMNR principle of an overall increase in biomass – even though we initially had to “remove” some bushes.



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Step 2 – PRUNE



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

When we refer to the “FMNR technique”, we are primarily talking about the practice of pruning. But it also includes other key practices such as selecting the right tree species, managing tree density and protecting regrowing trees to restore vegetation cover. Pruning is both an art and a science.

Video: The art and science of pruning [add link when available on FMNR Hub YouTube channel]

Pruning is a core part of FMNR and is crucial for its success.

Pruning isn’t just about cutting branches. It’s about managing how a tree grows and develops. So, what is pruning in FMNR? It’s the art and science of selectively cutting away parts of a tree to stimulate new growth. When you remove certain parts, you reduce its size but keep the root system intact. This allows the tree to channel more resources into the remaining parts, resulting in faster and healthier growth.

Pruning serves several **important purposes**:

- It directs growth, shaping the tree to grow in a specific direction.
- It maintains the health of the tree by keeping its form, size and appearance in check.
- The pruned branches are a useful resource. For example, they can be used as firewood or fodder for livestock.
- It reduces competition between trees and annual crops for water and nutrients, essential for maximising crop yields.
- It enhances the lifespan of trees by preventing overgrowth and disease.

To assist in this, a “preferred FMNR species list” can be developed by consulting elders, women, local experts or vegetation specialists, along with reference materials. This list will consider which species are locally available and their benefits for the community’s priority needs. Once the information is gathered, it is up to each land user or community (for communal land) to decide which species from the list – and in what quantities – they wish to regenerate.

What happens when we don't prune well?

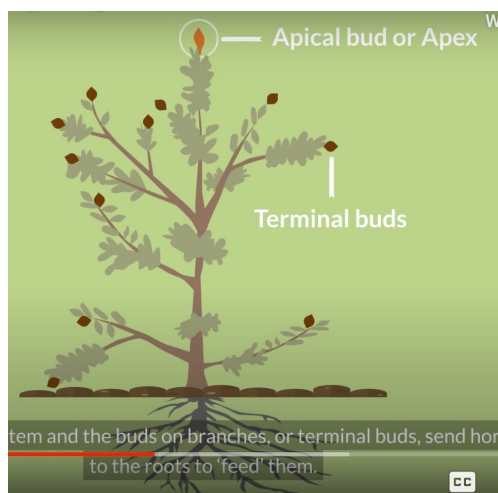
If a large portion of the root system is damaged – whether intentionally during land preparation or through improper pruning – a corresponding portion of the leaves and branches will die.

Leaves are essential for photosynthesis, which feeds the roots. Without enough leaves to capture sunlight, the tree can't sustain itself. Improper pruning, repeated over time, weakens and eventually kills the tree.

Apical dominance: a plant's response to pruning, and why we prune!

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Apical dominance means that the main, central stem of the plant grows more strongly than the side branches. In many plants, the apical bud at the top, also called apex, keeps growing unless it's cut. We use this phenomenon to help FMNR bushes grow into trees.

The apical bud of the main stem and the buds on branches, or terminal buds, send hormone messages to the roots to "feed" them. We want to direct more food, or sugars, to the apical bud to speed up vertical growth. We can do this by letting the apical bud grow and by removing some of the lower branches and their buds, as well as removing buds from some of the remaining branches.

When to prune

Pruning is best done during a tree's dormant period, which varies by region and climate. Generally, this is before the new growth starts, often in the cooler months or during the dry season.



CASE STUDY

Timing pruning and livestock exclusion in Niger

In Niger Republic, 240 million trees have been regenerated – without fencing. FMNR practitioners pruned regrowth on tree stumps before the onset of rains and the busy crop-planting season. Once crops were sown, livestock were automatically excluded from cultivated areas, giving the emerging FMNR trees a five- to six-month window of opportunity until harvest to grow free from livestock damage.

There is no doubt that some damage occurred once livestock returned to the fields, especially when large herds and flocks passed through. However, most of that damage was so mild or localised that it did not affect the overall spread of FMNR, or the growth of the majority of trees.



Photo: Elgeyo Marakwet, Kenya. Photo credit: Hellen Owuor (World Vision Kenya)

Using the right tools

Using the right tools is essential for making clean cuts that heal quickly. Tools should be kept sharp and clean to prevent disease. Community members often already have local tools they can adapt for effective pruning.

While modern tools like secateurs are great, locally available tools like axes, machetes and harvesting knives are affordable, common, repairable and effective in many areas.

Pruning techniques

Pruning techniques vary based on the objectives and the specific needs of the users.

Once you've used the FMNR pruning technique of reducing shoots to encourage vertical growth, you might move on to different types of pruning. For example, if the tree is rapidly growing, you may need to prune off dead or diseased branches. As the tree gets even bigger, you might use selective pruning methods, such as thinning, to remove certain branches and allow more light to reach crops or meet other needs.

Proper technique is crucial for effective pruning. Follow these three golden rules:

1. Always use sharp tools to make clean cuts.
2. Avoid pruning stems too high up the trunk as this can make trees fragile. They can be broken by livestock or strong winds.
3. Where possible, make upward cuts to reduce damage to the bark and help the tree heal faster.

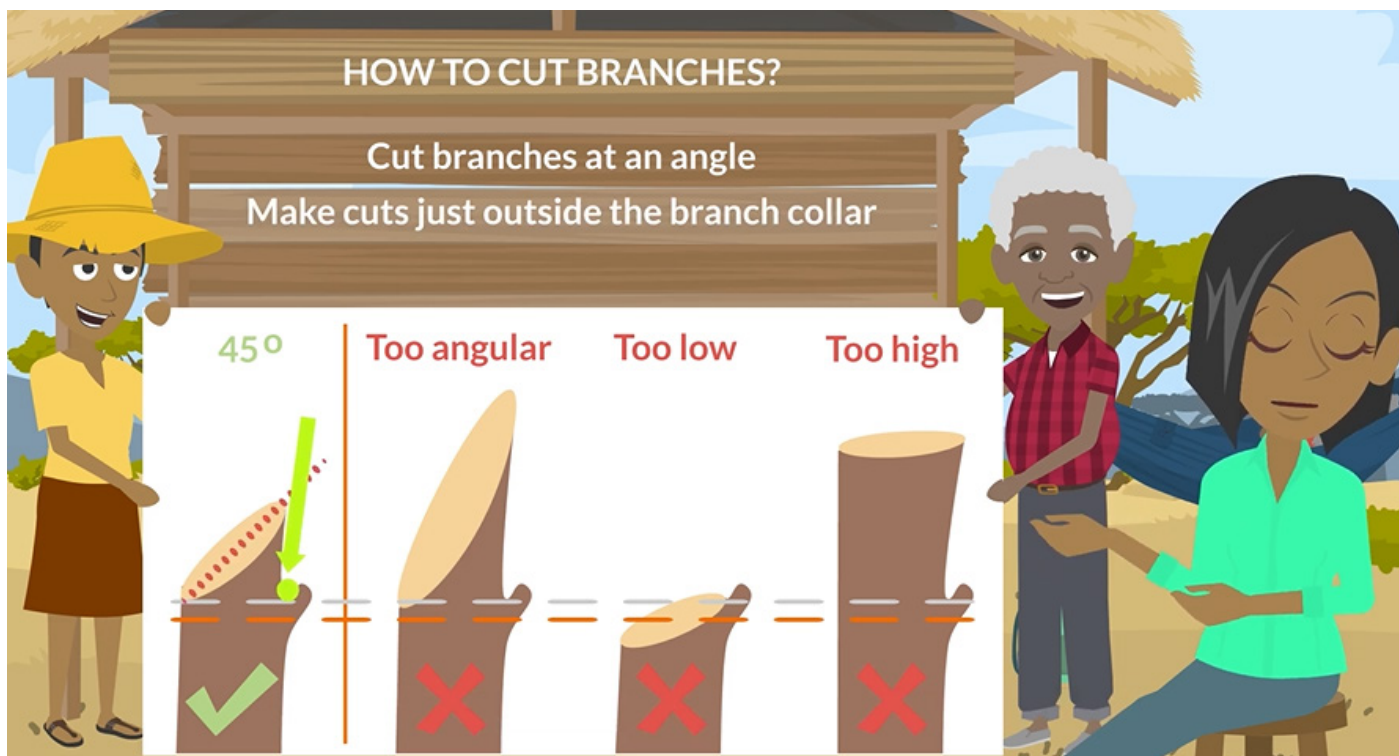
Small stems should be pruned no more than halfway up the trunk.



Photo: Joyce pruning a tree. Photo credit: Hellen Owuor (World Vision Kenya).

Once the tree trunk is over two metres tall, prune no more than two-thirds of the way up the trunk.

Where possible, when pruning, remember to cut branches at an angle to prevent water from collecting on the cut surface. Make cuts just outside the branch collar to promote proper healing. This is the ideal but be aware that using local tools makes it much more difficult to make the “perfect” cut. Don’t let this deter you from practising FMNR – trees are very forgiving and won’t die if we can’t make a textbook cut! Remove any dead, diseased or weak branches to improve the overall health of the tree.



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Pruning has a significant impact on both the visible parts of the tree and the root system. Proper pruning helps ensure that the remaining parts of the tree receive enough nutrients and water, promoting healthier and faster growth. When community members master the principles of pruning, they unlock the true potential of FMNR. This practice doesn't just help in managing trees – it transforms them into vital assets for the ecosystem.

Step 3 – PROTECT



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Once you've selected, pruned and maintained your trees, it's crucial to protect them from damage by fire, livestock and competing vegetation or weeds. In urban settings, this could include protecting from traffic or other hazards.

FMNR and livestock

Ideally, exclude livestock from areas where FMNR is being implemented for six months to a year. This gives the trees a chance to grow tall and strong enough to withstand grazing pressure. Since it is usually not economically feasible to provide wire fencing to keep livestock out, we encourage “social fencing” – an agreement within the community to keep their livestock out of selected areas. Communities will still be free to manually harvest grass for their livestock from the protected areas.

If excluding livestock isn't possible, don't let that stop you. Here are some other ways to protect trees:

- Convince the community to set aside a portion of land each year where livestock is excluded while the trees grow.
- If they are regenerating thorny trees, they can tie pruned thorny branches around the remaining stems as a protective measure against livestock.
- For trees with multiple stems, they can gently tie stems together to make it harder for livestock to damage them.

During the community decision making process, reassure members that they can still manually harvest grass from the protected area.

Protecting trees is best done through social fencing

Social fencing means creating rules on livestock movements, use of fire and tree harvesting. When these bylaws are part of traditional legal structures, they can be more effective than physical fences. We will have a closer look at bylaws in Chapter 4.

For example, in Timor-Leste, communities revived their traditional legal system, Tara bandu, which includes rules on how, when and by whom trees can be cut. This approach ensures sustainable management and protection of trees.

Step 4 – GROW



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

New branches and shoots will keep growing, so it's important to prune them every two to six months. This helps the main stems grow stronger and faster. Consistent care is key.

Step 5 – UTILISE

FMNR trees can serve many purposes based on what the community needs. Often, the traditional uses of trees are already known by someone in the community. This knowledge might have been identified during the FMNR species selection process (see Step 1).

Trees may provide shade, fruit, gum and more. Pruned branches are often used for fodder, firewood or mulch.

Following the pruning system described earlier, community members are encouraged to harvest one stem per year over a four- to five-year cycle, allowing a new shoot to replace the harvested stem.

By the fifth year, the largest stem will have grown into a tree. If needed, up to a third of the tree's branches can be harvested each year without harming the tree. This ensures the tree remains healthy, grows back quickly and continues to provide protection and resources for the land.



Photo: Lalitpur District of Uttar Pradesh. Photo credit: Jim Wungramyao Kasom

Community members should experiment – there's no one-size-fits-all approach!

Although FMNR is a proven method for rapid reforestation, be cautious when introducing it. What works in one area might not work in another. Certain crops may be sensitive to competition or shading, and some tree species might suppress crop growth or compete for water and nutrients.

Encourage community members to start small. They should experiment with different species, tree spacing and pruning techniques to find what works best for their needs.

Many people want specific guidelines on pruning, species and tree management, but FMNR is flexible. Its adaptability gives it universal appeal – it truly is community-managed!

Not having specific guidelines means that community members have the freedom to tailor FMNR to their specific needs, using available resources and adapting to local climate, soil and crop conditions. They can learn what's best for them by doing.

The FMNR technique isn't just about trees. It's about transforming landscapes and communities. By mastering the art of pruning in FMNR, you're not just enhancing tree growth; you're contributing to the revitalisation of entire ecosystems and to community vitality. Ensure you regularly assess and refine your pruning techniques. Think of pruning as a strategic tool. It helps you manage resources, boost soil health and increase land productivity.

Resources

Video: [How to do FMNR – Pruning for natural regeneration](#)

Video: [The art and science of pruning in FMNR](#)

Resources such as the Agroforestry Database provide advice on how different tree species can be used, if these uses are not already known by someone in the community.



Photo Credit: Hellen Owuor (World Vision Kenya)

CHAPTER 4

HOW TO INTRODUCE FMNR TO A COMMUNITY

Summary: How to introduce FMNR to a community

For FMNR to become a lasting, sustainable part of daily life, it's essential that the community feels empowered and motivated to:

- understand their environment and identify what is needed to improve their lives;
- shift their mindset about how they manage their land and resources;
- create and reinforce bylaws and other agreements that promote sustainable land management and income generation;
- collaborate with government officials and others to shape a legal and policy environment that supports their work and way of life; and
- share their experience and knowledge with others to help spread FMNR and its benefits.

Taking stock is a powerful tool for engaging communities and successfully introducing FMNR. By understanding the community's needs and the landscape's characteristics (and how they have changed over time), we can determine the most appropriate way to introduce FMNR, as well as any complementary activities needed.

The "Past, Present, Future" activity (workshop) helps participants reflect on environmental changes over time. They start by discussing the past, when the land was healthier; then examine the present challenges caused by degradation; and finally imagine a bleak future if nothing changes. This process fosters a deep realisation of the need for action, setting the stage for FMNR as a solution and motivating participants to take responsibility for restoring their land.

Information gathered from a taking stock assessment should be used to guide the design of FMNR efforts, helping ensure they are tailored to meet the community's needs and address environmental challenges in the area.

Ensure *all* stakeholders are involved and able to contribute to the taking stock activities. This will increase the likelihood of community support and buy-in to the decision to undertake FMNR.

Community engagement generally covers six main areas:

- **Working with the community** to build relationships and trust when introducing the concept of FMNR, as well as understanding who to engage and how through a **stakeholder analysis**.
- Creating a community-led **FMNR action plan** to move from engagement to action.
- **Building capacity** in the community, not only to practise FMNR technically, but also to solve problems, negotiate, experiment, observe, advocate for policy changes, and communicate and share FMNR with others.
- Supporting **FMNR champions** to spread the movement and support the community to adopt the practice sustainably. This involves timely, regular follow-ups, particularly in the early stages.
- **Identifying, creating and implementing bylaws** to reflect the community's agreements about FMNR and how the resources should be managed.
- **Advocating for policy change** to help further enable the spread of FMNR.

Tailoring FMNR to different settings – from drylands to urban areas – means adapting techniques to local challenges and opportunities.

Ideally FMNR will be introduced as part of a broader environmental restoration approach with other techniques, as this will ensure all the community's issues are being addressed. However, even if you just introduce FMNR alone you will still be making a difference.



Photo: Homa Bay County, Kenya. Photo Credit: Sarah Ooko (World Vision Kenya)

Preparing for FMNR

You may already have a process for introducing a new restoration technique to a community. We encourage you to keep using what works for you. Here we outline some approaches that have worked well if you need extra guidance. Additionally, you might want to just practise FMNR by yourself. That's OK too but remember you can achieve even greater impact by working with others.

Before introducing FMNR to a community, it's crucial to determine if it meets the community's needs effectively and complements their existing practices.

This process, known as "taking stock", involves a thorough needs assessment that looks at both the landscape and the community. This preparation is essential not only for FMNR but also for broader community-based landscape restoration efforts.

World Vision introduces FMNR using a process called Regreening Communities. Other organisations and governments have their own processes for supporting communities to restore their environment. Make sure you are linking FMNR to any broader activities rather than creating unnecessary new processes.

Taking stock with the community

Taking stock allows communities to reflect on current challenges like increased flooding, reduced soil fertility, water scarcity and food shortages. It also encourages them to envision their future and how FMNR, as part of a larger landscape restoration process, can help achieve their goals.

Who should be involved in taking stock?

A diverse group should participate in taking stock. In a rural context, this might include farming families, herder groups, local leaders (traditional, religious and other thought leaders), government representatives and traders (particularly those who sell firewood and charcoal), among other relevant stakeholders at the community level.

It's important to include all community members, such as women, men, youth, the elderly and people with disabilities, to ensure a comprehensive understanding of the landscape and its uses.

How to take stock

The taking stock assessment is best undertaken in a workshop format, as this level of formality, even if fairly low-key, highlights the importance of the topic. "Past, Present, Future workshops" are a particularly effective approach to help the community reflect on changes over time and understand the impacts of land degradation. (For more details on how these workshops are run, see below.) The assessment can also be conducted through group discussions or site visits to multiple locations in the area.

Topics to cover when taking stock

The taking stock assessment covers six main topics, reflecting on how these have changed over time and the causes of these changes.

1. Current situation and goals: What are the community's biggest challenges and objectives? What is the community already doing to address these? How can FMNR help achieve these goals?
2. Type of land: What are the characteristics of the land (eg, climate, topography) and how do they affect FMNR?
3. Land use, management and restoration: How is the land currently used? What needs to be restored to ensure environmental integrity and function?
4. Climate and disaster risks: What are the local climate conditions and potential disaster risks? How will these affect FMNR practices?
5. Plants and animals: What plant and animal species are present? How can they be managed with FMNR practices?

6. Social and cultural characteristics: How is the community organised? What are the leadership structures and cultural practices that influence natural resource management?
7. Changes over time: How has the environment changed? What has caused these changes, and how can FMNR help reverse negative trends?

Examining changes over time is a powerful way to discuss FMNR within a community. Reflections on how the environment and community looked before land degradation or deforestation can come from older members of the community or even children if the degradation occurred recently.

The following section describes in more detail the types of information that should be gathered for each topic. A list of questions that can be drawn upon when developing questionnaires or workshop activities for completing a taking stock assessment can be found on the FMNR Hub.



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Documenting the community's reflections

Documenting the community's reflections through pictures, quotes and testimonies is incredibly valuable. This helps in designing a broader environmental restoration approach and provides a baseline for future evaluations (if applicable).

How to run a Past, Present, Future workshop

The **Past, Present, Future activity** is one way of helping community members to reflect deeply on environmental changes over time, consider their own role in addressing degradation and introduce FMNR. Here's the basic structure for how this activity typically runs:

1. Introduction and reflection on the past

- The facilitator starts by asking participants to think about what their environment was like in the past. This involves reflecting on a time when the land was more productive, trees were more abundant and the environment was healthier.
- Participants share their memories, which often include descriptions of how the landscape provided for their needs, supported agriculture and protected them from environmental shocks.

- In small groups, participants discuss how the past environment supported their communities and how it differed from the present.

2. Discussion of the present

- Next, the facilitator shifts the focus to the current condition of the land, asking participants to describe their present situation: degraded landscapes, fewer trees, reduced crop yields and challenges like drought or floods.
- Participants discuss the impacts of environmental degradation they face today, such as food insecurity, water shortages and soil erosion. This comparison highlights the stark contrast between the past and present.

3. Looking to the future

- The facilitator then asks a pivotal question: “If we continue business as usual – destroying the environment – what will the future hold for our children?”
- This prompts participants to consider the long-term consequences of ongoing environmental damage. The discussion often brings out deep emotions, with participants recognising that, without intervention, the future will be bleak for their children and grandchildren.

4. Introducing hope: The Niger FMNR story

- After discussing the future, the facilitator shares a real-life story of hope, such as the Niger FMNR success story. This demonstrates that land restoration is possible, even in the most challenging environments, and that communities can reverse environmental degradation through FMNR.
- The story provides inspiration and shows that there are tangible solutions that can lead to a brighter future.

5. Group discussion and ownership

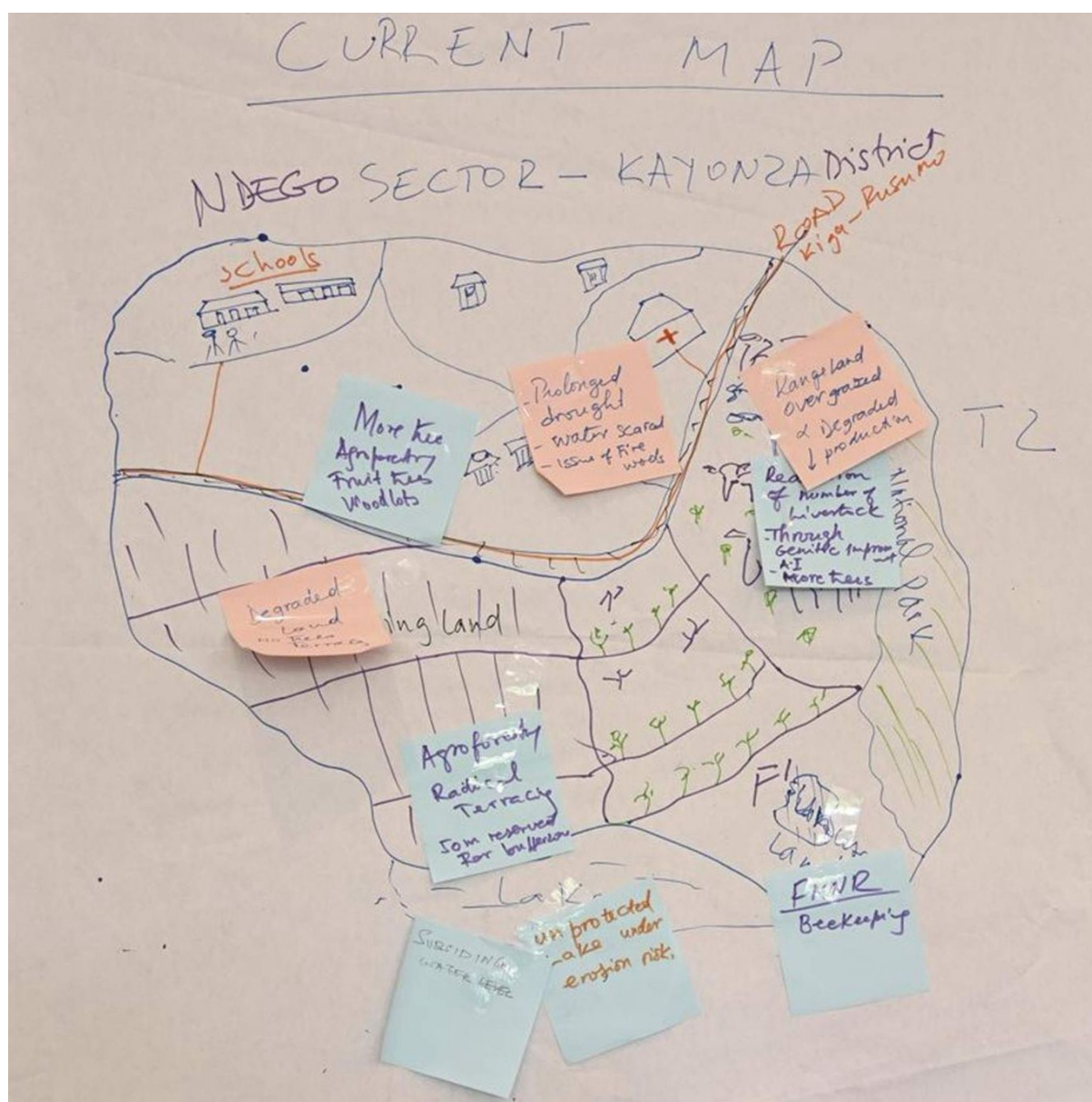
- After hearing the Niger story, participants break into small groups again to discuss how FMNR could help restore their land and secure a better future. This is where they start to take ownership of the problem and the potential solution.
- Each group is encouraged to come up with ways they can apply FMNR in their community and what actions they can take to prevent further degradation.

By the end of the activity, participants have emotionally connected with the consequences of inaction and feel empowered by the possibility of positive change through FMNR. The activity leads naturally into further discussions and planning for FMNR implementation.

The following are **key facilitator tips** for running the Past, Present, Future activity effectively.

- **Give time for reflection:** Allow participants to reflect deeply on the past, present and future without rushing the process. This helps them emotionally connect with the issues.
- **Encourage sharing in small groups:** Break participants into small groups for discussions. This gives everyone a chance to voice their thoughts and share personal experiences, making the session more interactive and engaging. It may be culturally appropriate to have separate groups for men and women.
- **Facilitate, don't lecture:** Guide participants through thought-provoking questions rather than providing all the answers. Let them discover the significance of land degradation and FMNR for themselves.
- **Use emotion to drive engagement:** Encourage participants to speak about their emotional connection to the land and their concerns for their children's future. Emotional investment helps foster a sense of ownership.
- **Incorporate storytelling:** Use compelling stories like the Niger FMNR success story to illustrate the positive outcomes of FMNR. This provides hope and inspiration after a potentially heavy discussion about the future.

- **Provide time for questions and feedback:** After each phase of the activity (past, present and future), pause for questions and feedback. This ensures participants fully understand and remain engaged.
- **Use energisers when needed:** Particularly after emotional discussions, energisers can help refocus participants and keep the energy levels up.
- **Encourage personal responsibility:** Guide participants toward taking ownership of the problem and solutions by framing the discussion around their future and that of their children.
- **Balance time between discussion and presentation:** Give participants enough time to share their experiences while leaving time to cover the necessary FMNR content.
- **Conclude with an action plan:** After the future-focused discussion, help participants transition into action planning to harness their energy and ideas into practical next steps for FMNR.



Introducing the FMNR practice to the community

Once you've identified environmental issues that FMNR can address, it's time to introduce the practice. Here are some ideas for how to do this.

- Show the community how FMNR works through a hands-on demonstration. Ensure a variety of community members provide demonstrations – including people representing different genders, ages and abilities/disabilities. This makes the concept clear, inclusive and engaging. Often workshop participants don't fully understand what FMNR is until they have this hands-on experience.
- Hold a Past, Present, Future workshop (see text box) to help the community identify the need for change.
- Organise a farm or field walk to identify tree stumps and species, and record this information.
- Find and highlight individuals already practising FMNR and have them share their experiences.
- Allow the community to vote or decide if they want to adopt FMNR. Remember, it is ultimately their decision. If the community votes "no", there might still be a small group who decide to try it out on their own.
- Address any questions or concerns the community might have. Remember, it's natural to be sceptical about new ideas.

By implementing activities such as these, you can effectively introduce FMNR to your community and help them make an informed decision.



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Including community leaders

When engaging with the community for FMNR, it's crucial to involve community leaders. They can make or break the success of your efforts! Here are the key types of leaders you should consider.

- **Traditional leaders:** They often control land use and have a big influence on community attitudes. Getting their support can spark wider community interest in FMNR.
- **Faith leaders:** They also have a big influence in many communities and their involvement can add valuable support to FMNR initiatives.

- **Group leaders:** Leaders of cooperatives, farmers' groups, women's groups, youth groups and other community organisations are essential allies in promoting FMNR.
- **Natural leaders:** These are influential community members whom others trust and look to for guidance. Identifying and involving them can enhance FMNR efforts.



Involvement through relevant community groups



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Practising FMNR with others can be more effective than doing it alone. Groups can tackle problems better and have more influence than individuals. When dealing with large-scale challenges, like restoring a whole watershed, group efforts are essential. Those at the top of the hills need to work with those further down.

Being part of a group provides mutual support, shared learning and collective action. It also creates a stronger voice when dealing with government bodies, NGOs and donors. Common groups that can be involved in FMNR include:

- women's groups
- youth groups or clubs
- farmers' and producers' groups
- cooperatives and collectives
- environmental groups
- any group with an interest in FMNR

If no suitable groups exist, new committees can be formed specifically for FMNR. While individuals may be more motivated to practise FMNR on their own land, the support and benefits of being in a group still apply.

Building relationships and trust

FMNR thrives on trust and cooperation. Everyone needs time to understand FMNR. Workshops and training should help the community understand the link between deforestation and their challenges and develop a shared vision for greening.

Expect some resistance and be prepared to make follow-up visits, engaging with people one-on-one or in small groups. It's especially important to join people on their farms or communal FMNR sites, **working alongside them on pruning** while explaining the benefits. When extension agents avoid physical labour, they can come across as being aloof and distant. Above all, always **listen**. Listen closely to what people already know, their concerns and their hopes for the future.



Beyond FMNR training

FMNR isn't just about trees. It's about building genuine human connections. If you are not already a part of this community, you will need to build a meaningful relationship with them. Show interest in what's important to the community, like births, marriages and cultural events. This builds trust and enriches your experience, leading to deeper, more genuine relationships. People are more likely to listen to you when you know them and are interested in them.



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Remember these points when engaging the community to build agreement and trust.

1. Be inclusive of everyone, regardless of their role, gender, ethnic group and age.
2. Respect and encourage thoughtful, civil debate.
3. Discuss every person's concerns and work together to find solutions that help everyone. There is nearly always a locally appropriate solution; give people the opportunity to suggest it.
4. Always start with the assumption the other person has positive intentions and respond to misunderstandings and mistakes gently.
5. Whenever possible, invite people already practising FMNR to share their experiences and knowledge with your community.
6. Listen and learn. By listening you will develop the knowledge necessary to support the community. It is the only way for you to find out what might be the best way to introduce FMNR. Listening will help you become aware of threats to success and it will win you many allies.
7. Share what you know and what you don't know. Admit when you don't know the answers. Ironically, this is a strength, not a weakness, as it will make you more approachable.
8. Talk about values. Don't lecture or preach, just share your values, listen to others' and walk your talk. Then, when you make suggestions, connect them to shared values.
9. Make sure that everyone knows they can try FMNR in their own way, on as much or as little land as they are comfortable using.
10. Do what you say. If you promise things you can't do, people might like you, but they won't trust you.



Photo: The Farmer Managed Natural Regeneration for Sustainable Economic Empowerment & Development (FMNR4SEED) project Talensi District in the Upper East Region of Ghana. Photo Credit: Abena Agyei-Boateng (World Vision Ghana)

Community engagement to ensure sustainable FMNR adoption

When we have sparked the community's interest and introduced the basics, it's time to build on that momentum.

Community engagement is key to the long-term success of the FMNR movement. After the initial engagement to introduce FMNR and assess the community's interest, community engagement generally covers the following areas.

- Creating a community-led action plan: Develop a plan that outlines the steps from engagement to action.
- Building capacity: Equip the community with the skills to practise FMNR, solve problems, negotiate, experiment, observe, advocate for policy changes and communicate effectively.
- Supporting FMNR champions: Help local champions to spread FMNR and support sustainable adoption through regular follow-ups, especially early on.
- Creating and implementing bylaws: Establish community agreements on FMNR resource management and ensure these are reflected in local bylaws.
- Advocating for policy change: Work towards policy changes that support the wider adoption of FMNR.



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Community action planning

Once a community decides to transform their environment using FMNR, it's time to turn that vision into action.

By following the steps below and ideally **making sure FMNR fits into a broader landscape restoration plan**, communities can effectively transform their environments and achieve their long-term goals. If the community doesn't have a landscape restoration plan that FMNR fits into, you might need to create a separate FMNR plan using the guidance below.

Create a vision and set goals

First, the community should come together to answer the question, "What do we want to achieve?" This vision statement can be a written description or a visual map of the desired future landscape. It's best to think long-term, looking at least five to 10 years ahead.

Next, set specific, measurable, actionable, realistic and time-bound (SMART) goals. For example, aim to increase tree cover from 10 to 50 trees per hectare over three years. Start with one or a few goals to keep things manageable and ensure these goals align with the vision.

Develop an FMNR or restoration action plan

An action plan should detail:

- what work will be done;
- who is responsible for each task;
- when each action will be completed;
- what materials and funding are needed; and
- where the work will take place.

Record this plan in a simple table for easy reference. The plan should be developed collaboratively, with input from all community members, including marginalised groups. This ensures everyone has a chance to contribute and feel ownership over the project. The plan should be reviewed and refined regularly.

Continually engage the community and stakeholders

It's essential to involve everyone affected by FMNR, including local leaders and representatives from environmental and agricultural ministries. This broad participation ensures all voices are heard and increases the plan's effectiveness and acceptance.

Monitor and review regularly

A good action plan is flexible and regularly reviewed. Set regular meeting times to monitor progress and address any obstacles. Keep the vision statement and action plan visible in a communal meeting place to remind everyone of the goals and tasks.

Communicate clearly

Include a strategy to communicate with organisations like NGOs or government departments. Participants will need to advocate for FMNR within their organisations, which may already have established routines and goals.

Keep the following in mind:

- Involve everyone in the community.
- Take the necessary time to develop a workable plan.
- Ensure all voices, especially those from marginalised groups, are heard.
- Regularly review and adjust the plan as needed.
- Schedule regular meetings to track progress and address issues.

A story: Making sure FMNR is part of a broader landscape restoration plan

In the village of Kijani, located in East Africa, the community has decided to embark on an ambitious project to regreen their land. Their main priorities are improving water availability and increasing tree cover on the nearby hills.

To address water scarcity, they plan to construct check dams. These structures will capture and store rainwater, improving groundwater recharge and ensuring a more reliable water supply for the village.

For the hills, they've chosen a combination of FMNR and tree planting to restore tree cover. FMNR will help revive the native trees and shrubs by selectively pruning and nurturing existing tree stumps, encouraging natural regrowth. This method is low-cost and effective, leveraging the resilience of native species to restore the ecosystem.

In addition, the community will plant new trees in areas where FMNR alone might not be sufficient. By integrating tree planting with FMNR, they aim to create a diverse and robust forest that can thrive on the hillsides.

The villagers are deeply involved in this project. They attend workshops to learn about FMNR and tree planting techniques, and local leaders organise teams to manage different aspects of the restoration plan. This collective effort not only improves the environment but also strengthens community bonds.

Through this comprehensive approach, Kijani is set to transform its landscape. The check dams will enhance water availability, while the combined efforts of FMNR and tree planting will restore the tree cover on the hills, creating a greener, more resilient environment for future generations.



Photo: World Vision's pilot BRACCE project, funded by the Australian Government, ran in Aileu District from 2011 to mid-2016. Photo credit: Suzy Sainovski (World Vision Timor-Leste)

Before starting training, assess the community's needs based on the FMNR action plan (or as part of the landscape restoration plan).

For communities new to FMNR, training will cover basics like tree selection, pruning, protection and maintenance. It may also discuss how to integrate FMNR with other restoration practices that the community is using or planning to adopt.

If FMNR is already known, it is likely that someone in the community can run training. Additional training could foster new skills that will support FMNR.

Important skills include:

- creating and using bylaws;
- advocating for FMNR support from local leaders and government officials;
- experimenting with new FMNR methods and sharing findings;
- teaching others about FMNR through courses and training; and
- improving markets for FMNR and agricultural products to boost incomes.

Methods of capacity building

Training can be customised to the community's needs and can include workshops, field trips, demonstration sites, field schools, etc.

Peer-to-peer learning is highly effective, so make sure to empower people to share their knowledge.



Capacity building isn't just about bringing in new knowledge!

Capacity building also involves identifying and tapping into existing knowledge and skills, and creating a space for sharing. This is especially important when FMNR is promoted by an external organisation. While the facilitator may bring FMNR experience from various contexts and be equipped to address questions and concerns, communities are the experts on their own local environment. They've gained valuable insights through intuition, trial and error, and observation. Recognising and valuing these existing skills is key to fostering community ownership of FMNR activities.

Practical tips for effective training

- Ensure training is accessible by considering timing, location and participants' needs.
- Include hands-on training in the field so participants can practise pruning.
- Regular follow-ups and field visits are essential for skill enhancement and problem-solving.

The importance of FMNR champions

There may already be environmental advocates in your community who could become FMNR champions. If not, here are some tips for selecting new FMNR champions. FMNR champions are the passionate men, women and young people who have adopted and successfully practised FMNR. They aren't just skilled at managing trees; they have a genuine desire to help their communities.

These champions support and teach others, playing a crucial role in spreading FMNR and ensuring its success. Community members are much more likely to trust FMNR champions – their peers – than project staff and outsiders.

As a Nigerian land user once explained to Tony Rinaudo in the 1980s:

If you, a foreigner, convinces me to try something new and it fails, I suffer, while you can leave without consequences. Even if a local project staff member tells me to try it, I might be sceptical because they are paid to say so. But if another land user suggests it, I trust them because their livelihood is also at stake.

FMNR champions are valuable due to their ability to:

- share their knowledge and experience;
- teach others how to practise FMNR;
- provide encouragement and advice to other practitioners;
- help to monitor practice and troubleshoot problems; and
- work with their community to resolve conflicts, change policies and advocate with leaders and government.

These champions live within the community and practise FMNR because it benefits their wellbeing, not because they are paid to. This gives them immense credibility. By helping neighbours and family members, they lay a foundation for sustainable FMNR practices. Often, the land they practise on becomes a demonstration site that people can visit and learn from.

Identifying FMNR champions

A potential FMNR champion should be someone who practises FMNR and has seen its benefits firsthand. However, not all good practitioners are natural champions. Champions are excited about the changes they see and eager to share their success with others.

Good FMNR champions are:

- excellent practitioners who monitor progress and solve problems with their trees;
- respected community members with high moral standards;
- passionate about FMNR and helping others succeed;
- natural teachers who communicate patiently and clearly;
- willing to visit community practitioners regularly and participate in discussions;
- inspirational, whether they lead crowds or inspire individuals quietly; and
- patient and persistent, understanding that change takes time.

Be sensitive to local social and political dynamics when selecting champions. For example, try to ensure that your champions represent a variety of different families, social groups, genders and so on. Ensure that they will be safe and respected in their role as champions. Look out for individuals who are already overcommitted and may not have time to dedicate to FMNR activities.

Ensuring sustainability

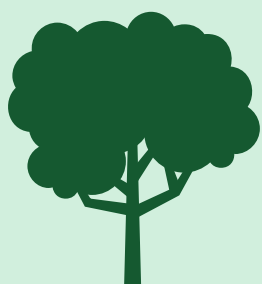
FMNR champions may need additional coaching and support throughout their journey. Even the most dedicated champions can feel overwhelmed. Most champions volunteer their time and efforts within their communities without pay. Recognising their contributions is crucial. Simple gestures like public acknowledgments, certificates or other forms of appreciation can go a long way.

Sometimes, projects may ask champions to help outside their own communities. In these cases, ensure they are not overburdened and compensate them for extra expenses like travel and meals. In some cases a stipend may be appropriate.

FMNR champions are the backbone of the movement, ensuring that regeneration efforts are community-driven and sustainable. Their passion and dedication inspire others to join the cause, creating a ripple effect that benefits the entire community.

Coaching FMNR champions

FMNR champions play a crucial role in the success and spread of FMNR, so providing them with coaching and support can have long-lasting benefits. While champions may already possess strong skills in tree management, coaching should focus on enhancing their ability to lead and teach others. This includes helping champions improve their listening, facilitating discussions, managing opposition, resolving conflicts and promoting FMNR more widely. Additionally, champions should be equipped to guide on FMNR techniques, foster collaboration, advocate for policy change and engage key stakeholders like schools and faith-based groups to broaden the impact of FMNR.



Meet two FMNR champions

Nagueyeh

Nagueyeh grew up in Awdal district of Somaliland and has worked with World Vision Somalia since 2009.

Nagueyeh first learnt about FMNR in 2012, through an Australian-funded project. At first, he thought it was only a farming intervention, but later came to see it as a means of fighting climate change and environmental degradation and building livelihoods.

"When we started the project, people did not value trees," he says. "Cultivators asked, 'How can we leave trees on our farms? Our crops won't grow because of the shade', and pastoralists said, 'We need to cut trees down in order for our livestock to have fodder!'"

Nagueyeh's journey had begun. He read widely to learn all he could about FMNR, and took the attitude of learning together with the community as they developed a form of FMNR suitable for Somaliland. Demonstration plots were set up at regional and farm-scale levels, and progress was monitored jointly



Figure 2: Mohamed Nagueyeh Amin, FMNR champion at World Vision Somalia. Photo credit: Tony Rinaudo

with the land users. Any small bushes present were pruned, and water harvesting structures were dug to trap water.

In six months, grasses started growing on previously bare ground. In two years, trees had increased in height by one to two metres, providing firewood and boosting honey production to supplement women's incomes. From the outset, Nagueyeh engaged with government personnel. The ministry of the environment helped with creating bylaws and assisted communities in enforcing them. Nagueyeh's dream is to see all programs in Somaliland, no matter what sector they address, have an FMNR component. "We need to put all our resources into protecting and restoring the environment through FMNR."

Amina

Amina is a 27-year-old mother of three and an FMNR champion. I met her while visiting a community-designated FMNR site in Somaliland.

I didn't notice her in the beginning. But as we began examining some of the regenerating shrubs, the community rushed around one of the plants. Once there was silence, Amina walked up to the plant and began explaining its importance to the community and what it meant to be an FMNR champion.

I was a little taken aback. Having already spent a few days in Somaliland, the confidence that Amina exuded in the presence of men many years her senior was, I must admit, unexpected. But as she explained the many uses of the plant and its importance to the community, there was silence and heads were nodding in agreement.



Figure 3: Amina, a respected FMNR champion in Somaliland (2017). Photo: M. Munyeke



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Creating and implementing bylaws

Bylaws are rules created by a community to ensure FMNR efforts are sustainable. They ensure everyone knows how FMNR will impact them and encourage cooperation.

An example of a bylaw could be social fencing, whereby people agree not to enter an area where trees are regrowing.

To create bylaws, follow these steps:

- Community consultation: Discuss and agree on goals, concerns and needs. Make sure everyone has a say.
- Involve authorities: Include local leaders and officials to give bylaws more authority and handle difficult cases.

Common questions for bylaws to address

- How will FMNR work be organised? (For example, as a cooperative, an association, through traditional management or on individuals' own land.)
- Who is included in the bylaw?
- Who gets to use the resources from regenerated trees?
- When and how can these resources be used?
- What are the responsibilities of different community members?
- How will FMNR work be protected from theft, fire, livestock or vandalism?
- What are the regulations around livestock grazing and grass harvesting?
- What are the consequences for not following the bylaws? Who enforces them?

Inclusive process

Creating bylaws is a community effort that involves many discussions to shape rules everyone can support. It's important to listen to concerns about restrictions or fairness, especially from minority community members. Together, the community should agree on roles for enforcing bylaws and set clear and fair consequences for not following them.

Reviewing and changing bylaws over time

In the beginning, the community should regularly review and adapt bylaws to ensure everyone is on board and address any issues quickly. Experimenting with and tweaking bylaws based on feedback helps meet the community's evolving needs and keeps everyone respectful of the rules.

If you're worried bylaws aren't enough ...

Where there is opportunity, integrate FMNR-strengthening clauses in formal legal instruments at the lowest governance units, eg, in wards/locations, etc. This means they become binding.



Community bylaws at work in Talensi, Ghana

An FMNR project in Talensi in northern Ghana worked with four communities to develop bylaws related to fire, forest management and land use.

An external organisation skilled in community facilitation was engaged to support the communities through the following processes:

1. Community entry, planning meetings and stakeholder consultation.
2. Identification of key stakeholders.
3. Engagement meetings.
4. Sensitisation and training workshops.
5. Drafting of fire and forest management plans.
6. Validation and adoption of **fire and forest management plans**.
7. Community dialogue on land ownership.
8. Development of land use bylaws.
9. Validation of **land use bylaws**.

Here are some bylaws that were developed through this process:

1. Land owners must seek advice from FMNR members before giving lands out for farming purposes.
2. Land owners are to survey the land with prospective land users to identify what trees are not to be cut.
3. The agreement between land users and land owners should be documented and witnessed by a third party.
4. Both land users and land owners are to be responsible for the maintenance of trees on a piece of land. Thus:
 - a. Land owners are to select some trees to be owned by land users as a way of motivating them to protect the trees in the farms; or
 - b. Land users and land owners should alternatively harvest or enjoy tree produce from time to time; or
 - c. Land users are to gather some produce from trees for the land owner if they are unable to harvest tree produce from the land.
5. Land users must create fire belts around the farm for tree protection.
6. Successive land users must be informed about rules and regulations given by a land owner.
7. Fire volunteers are to help women select forest trees to cut and prune. These women can collectively trim shrubs, gather excess stems and prune dry branches for personal use.
8. When collectively harvesting tree branches, women should not destroy the trees.
9. All bylaws about forest protection and preservation are applicable to every land user in the community.
10. There should be a community-wide sensitisation on agreed land use arrangements and best practices in tree maintenance.

Advocating for policy change



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

For FMNR to succeed, having supportive government policies is important. These policies should give people rights or ownership over their trees and land, and allow for the creation of cooperatives and community groups with agreed-upon rules.

We should all work towards policy changes that support the wider adoption of FMNR. This can include anything from working with national governments to create policies that support and incentivise FMNR, to local level advocacy work with local leaders.

However, even when good policies exist, they might not be enforced or well-known. Educating communities about their rights can make a big difference.

For example, in Mali, once communities learned about their rights, they were able to stand up to middlemen who were illegally cutting their trees.

Sometimes, community bylaws are enough to support FMNR. But other times, you need to work with local authorities to change or enforce policies. This can take time – often more than three to four years.

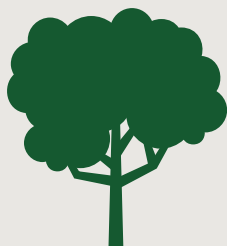
The following are some common legal issues that often require policy change.

- **Land ownership:** Many people don't own the land they work on, which can make them hesitant to invest in FMNR. Working with landowners and the government to secure user rights or ownership can help ensure long-term benefits.
- **Inclusion of women and minorities:** It's essential to include women and minority groups in FMNR activities. They must have equal decision-making power and benefit from FMNR work to ensure the project's success.
- **Rights of herders:** Including nomadic and settled herders in early consultations can help address their concerns about access to grazing lands. Clear laws and bylaws can reduce conflicts between herders and farmers.
- **Tree ownership and use:** Governments often make it illegal to cut trees to protect forests, but these regulations can backfire. Allowing communities to own and sell wood from regenerated trees can provide a strong incentive for FMNR.

- Carbon ownership: For carbon sequestration projects, it's crucial to establish who owns the carbon. Without clear ownership, communities might not benefit from carbon credits, reducing the incentive to practise FMNR. Address this legal aspect before starting carbon trading projects.

Having an enabling policy environment can be extremely helpful for the spread of FMNR and should be pursued wherever possible. However, in practice, policies may take years to change.

Do not wait for policies to change but continue to confidently promote FMNR adoption while working with local authorities. Local authorities are closer to the problems of their communities and generally have a level of flexibility that the federal government may not have.



Impact of land ownership rights

A series of studies undertaken by the World Agroforestry Center (ICRAF) in 2016 examined what factors affected the uptake of FMNR in Tanzania, Uganda, Kenya and Rwanda. In the first three countries, land tenure arrangements were variable. Some farmers owned their land and held the title deeds, some had customary ownership through inheritance or local knowledge but with no title deeds, and some

were reliant on communal land or leased land. In Rwanda, 90 percent of participants held title deeds to their land.

In all three countries with variable tenure arrangements, land tenure was not only raised by the community as a concern and barrier to adoption, it was also found to be a statistically significant factor in defining if a household was more or less likely to adopt FMNR. For example, in Uganda, 59 percent of farmers in the study owned land (without title deeds), but those who did not (eg, farmers on communal and rented land) were 123 percent less likely to take up FMNR. In Tanzania, 82 percent of farmers reported managing trees on their privately-owned land while 91 percent would not manage a tree on communal land.

Reasons identified for this include the following.

The uncertainty created by lack of title deeds could also have discouraged investments that are considered long term in nature, such as tree planting or in this case managing trees for future benefits. Communal land is a common pool resource, where usually no-one is responsible for the state of the resource, yet everyone wants to gain maximum benefits from it. Although some communities have formulated local rules/bylaws that govern land management and tree regeneration, economic forces such as poverty and famine force them to compromise existing bylaws. Culturally, all trees belong to the landowner and these are usually men or household heads. Tenants or squatters do not own trees and this discourages them from participating in FMNR programs. The security and survival of trees planted or regenerating naturally on communal land is questionable and this may discourage people from investing in tree planting and management.

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Changes to forest policy in Ethiopia to encourage land restoration

The 2018 National Forest Law – a revised version of the 2007 forest law – better recognises the rights of communities and their role in restoring and managing natural forests and plantations. In particular, the law recognises participatory forest management as a method of enhancing the role of communities in sharing responsibilities and benefits of managing natural forests in accordance with agreed- management plans. The changes proposed will allow communities to improve their livelihoods through forest restoration and the socio-economic benefits that can come from better forest management, where previously access and rights to forest areas were limited.

For more information see the article [“Ethiopia’s new forestry law: A win for landscapes and livelihoods?”](#).

Other examples of community engagement activities

Here are some additional practical examples of community engagement activities that can make a significant impact.

Awareness campaigns

- Media outreach: Utilise local radio stations, posters and social media to spread awareness about the benefits of FMNR.
- Public demonstrations: Organise live demonstrations of FMNR techniques in visible community areas, such as village marketplaces and clinics, to show practical benefits.

Storytelling and cultural activities

- Theatre and film: Use storytelling through theatre performances or films to convey the importance and benefits of FMNR in an engaging and relatable way.
- Cultural events: Integrate FMNR education into local cultural events and festivals to reach a wider audience.

Engaging children and youth

- School programs: Implement FMNR-focused environmental education programs in local schools.
- Youth clubs: Establish environmental clubs for youth to involve them in FMNR activities and projects.
- Social media and technology: Reach youth using the platforms they are most engaged with.

Partnering with universities and research organisations

- Universities: Weave FMNR content into their existing courses and provide opportunities for Masters and PhD studies in FMNR-related topics. This helps ready the next generation of FMNR champions in government and private and agricultural enterprises for action.
- Research organisations: Capture the impact of FMNR or address new questions about the application of FMNR.

Exchange visits

- Peer learning: Arrange for community members to visit other villages or regions where FMNR is successfully practised. Seeing firsthand examples can inspire and motivate.

Celebrating success

- Recognition events: Host events to celebrate the achievements of FMNR champions and community members who have made significant contributions.
- Awards and certificates: Provide awards and certificates to recognise and encourage ongoing efforts in FMNR.

These engagement activities help to build a strong community connection to FMNR, foster a sense of ownership and ensure that the practice is well integrated into the community's daily life and culture.

By using a variety of methods to engage people, FMNR initiatives can become more sustainable and effective.



Group photo of World Vision program staff with members of the San Vicente de Tablillas community in Ecuador. Photo: Chris Huber

Applying FMNR in different settings

FMNR is a flexible practice that can be implemented by anyone, almost anywhere. Whether it's arid savanna plains or humid, hilly tropics, if an area has living tree stumps capable of resprouting or self-sown saplings, FMNR can thrive. Even in very dry landscapes, with as little as 50 millimetres of rainfall per year, there can be living tree stumps or saplings ready for regeneration. Anyone, anywhere, can uncover the power of the underground forest.

"What will FMNR look like in this community?"

FMNR is shaped more by land use than the environment itself. While FMNR follows a set of core principles, its application depends on the land users' goals, such as increasing crop yields, diversifying income, boosting livestock or forest production or conserving biodiversity. The way FMNR looks will vary based on land use and available tree species. Farmers may choose to regenerate valuable trees, even if they compete with crops, if the potential profit outweighs crop competition. Alternatively, they may focus on species that enhance crop performance.



Photo: By Hellen Owuor, Communications Officer (CRIFSUP), World Vision Kenya

While FMNR has guiding principles, communities and land users are free to adapt and experiment with the practice to best suit their needs, evolving their approach over time.

How can we apply FMNR in these diverse environmental and social contexts? Start by asking three key questions:

1. What is the goal of doing FMNR here?

Is it to grow more crops, restore biodiversity, produce fodder for livestock, or something else? Your goal will guide many FMNR decisions, including how many trees to manage, what types of trees to select for regeneration and how to prune the trees.

2. What is the land like?

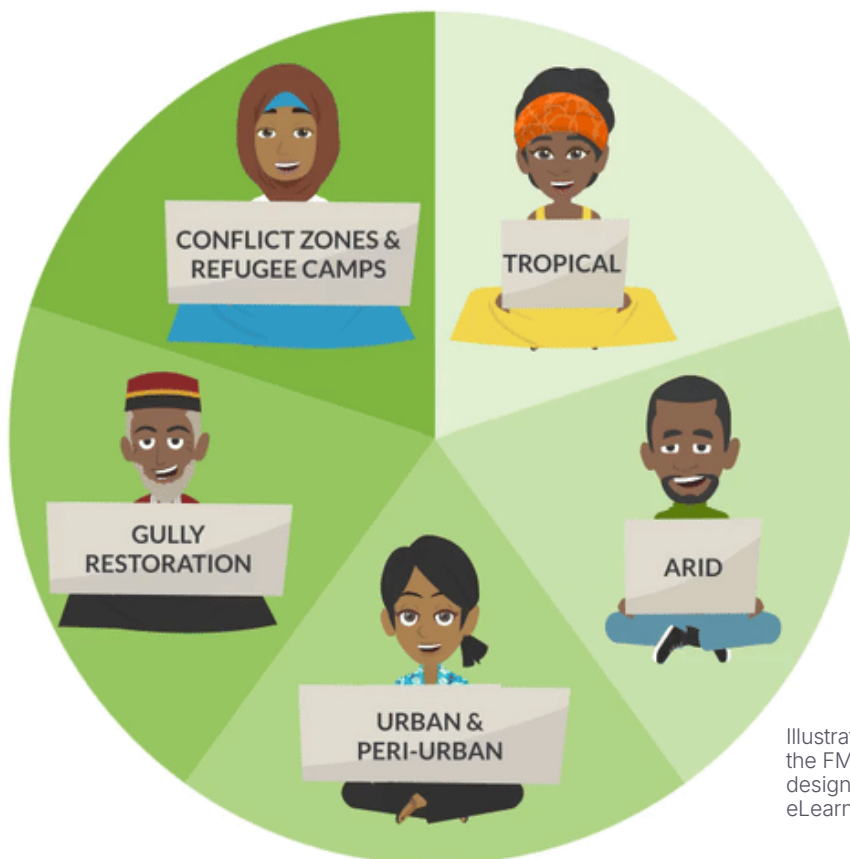
The climate, topography, soil and vegetation all impact how FMNR is practised. In very dry, flat areas, water harvesting structures like zai pits and semi-circular bunds at the base of FMNR trees can help them grow. In wet, sloping areas, combining FMNR with structures like terraces or contour banks can slow down heavy water flows and help water infiltrate the soil.

3. What is the social context?

Are there laws or cultural agreements affecting how trees and natural resources are managed? Who are the stakeholders with an interest in or influence over the area's management? Is there any conflict in the area? All these factors will shape what FMNR looks like in that specific context.

By asking these questions and tailoring your approach, FMNR can be successfully applied to a wide range of environments and communities, transforming landscapes and lives everywhere.

Here are some examples of different contexts in which FMNR has been implemented:



Tropical setting

Faith has a one-hectare farm where she grows vegetables like leafy greens and sweet potatoes. Her farm is on a steep slope in a tropical area with more than 1,500 millimetres of seasonal rainfall. The land is prone to erosion and has lost fertile topsoil during heavy rains.

Faith uses FMNR to hold the soil together and improve its fertility. She prunes her trees in rows along contour lines, with 50 trees per hectare, pruning every two months to minimise shading of her crops. She selects trees that allow plenty of sunlight during the growing season. Faith places the branches and leaves at the base of the trees, which returns nutrients to the soil and slows down water flows during the wet season.

Her community has agreed to keep livestock away from the FMNR areas during the growing season to help the trees establish.

Very arid setting

Ahmed is a semi-nomadic pastoralist whose clan has started practising FMNR on 100 hectares of communal grazing land. Ahmed lives in a very arid area with infertile soils. He hopes FMNR will provide more fodder and grass for his livestock.

Ahmed's clan maintains a higher density of 90 trees per hectare for FMNR, focusing on regenerating tree species with nutritious leaves and pods for livestock and deep roots to stabilise the soil. To address the lack of water, some clan members dig semi-circular bunds to collect water at the base of the FMNR trees. The community also reseeds drought-tolerant grass species to improve livestock productivity. Since the area is openly grazed, Ahmed attaches branches of thorny plant species on the trees to protect them from livestock while they grow.

Urban and peri-urban setting

Yamin lives in a bustling city where neglected areas and vacant lots are common. She dreams of transforming these spaces into vibrant green areas. Using FMNR, Yamin takes the first steps towards making this dream a reality.

Yamin focuses on urban greening, promoting tree growth in vacant lots, along roadsides and in community parks. She selectively prunes native trees and shrubs, encouraging natural regeneration. These green spaces help reduce urban heat islands, improve air quality and increase biodiversity, making the city a healthier place to live.

Community engagement is a key part of Yamin's strategy. She organises workshops and events to foster a sense of ownership among residents. Together, they care for trees, transforming neglected areas into beautiful, usable spaces. This collective effort not only beautifies the neighbourhood but also builds a strong sense of community. In addition to enhancing the environment, Yamin and her community grow fruit-bearing trees that contribute to food security and provide recreational areas.

Gully restoration

John owns a farm in an area plagued by gully erosion, which threatens his land and water resources. Determined to restore his degraded land, John adopts the FMNR technique to stabilise the gullies and protect his farm.

He focuses on selective pruning, encouraging the growth of trees and shrubs along the gullies. The deep roots anchor the soil, while the canopy reduces raindrop impact, improving soil absorption and preventing further erosion. This practice significantly enhances soil stability, protecting both his agricultural land and nearby infrastructure.

By increasing vegetation through FMNR, John also improves the soil structure and water infiltration. This reduces surface runoff and erosion, which is crucial in preventing gully formation. Additionally, the increased tree cover helps regulate the microclimate, moderating the effects of heavy rains that exacerbate erosion. Through these efforts, John successfully restores the gullies on his land, preventing degradation, protecting water resources and improving agricultural productivity. His farm is now more resilient, with healthier soil and better water management.

These examples show us that FMNR can look very different depending on where it's practised. There are core principles that always stay the same – like pruning at regular intervals, using the right tools and protecting trees while they grow.

But many aspects of FMNR can be adapted to fit different needs and conditions, such as:

- the density of the trees;
- the number and types of species selected for regeneration;
- the frequency and intensity of pruning;
- how tree products are harvested and used; and
- the use of complementary greening practices to achieve goals.

By considering the community's goals and the environmental and social context, FMNR can be successful almost anywhere.

FMNR in fragile contexts

Climate change exacerbates fragility, leading to crises such as food insecurity, displacement and violent conflict. Fragile governance limits the capacity of communities to adapt to environmental stresses, worsening degradation and reducing resilience. In these settings, unsustainable practices like deforestation fuel future disasters and cause social systems to break down.

FMNR has been successfully implemented in some of the most fragile contexts in the world, including South Sudan, Somalia, Afghanistan, Mali, Niger, Burkina Faso and the Democratic Republic of the Congo. FMNR is highly suitable for fragile environments because it is low-cost, requires minimal equipment and thrives with or without formal state involvement. It promotes food security, reduces disaster risk, helps prevent resource-related conflicts and has even been used as a tool to foster collaboration between traditional enemies. However, locations with high humanitarian needs or transient populations pose significant challenges, as these factors can hinder cooperation in environmental restoration efforts.

Key challenges in fragile contexts

- Governance: Weak or informal governance structures dominate. FMNR must work with local systems, such as chiefs or clans, and support bylaw development for resource management.
- Psychosocial factors: Chronic stress and low trust complicate community engagement. The spread of FMNR relies on social learning and overcoming aid dependency.
- Recurring disasters: The approach must integrate disaster risk reduction, plan for displacement and consider war tactics that destroy natural assets.

Conflict sensitivity is critical, ensuring interventions do not inadvertently worsen conflicts. Conflict analyses should always be conducted to minimise any harm done.

Projects in fragile contexts often succeed when integrated with broader resilience activities like food and water security. Understanding local governance and market dynamics is essential for success. In places with weak markets, FMNR should prioritise tangible benefits like food or firewood, even if market-based profits are limited.

Go/No-go decision considerations

- Assess relevance to local fragility and resource degradation.
- Evaluate whether lifesaving needs are first being met.
- Consider the population's likelihood of long-term residence.
- Ensure safe, regular access to project areas.

FMNR in camps for internally displaced people or refugees

Landscapes with camps for refugees or internally displaced people often face overexploitation of natural resources, particularly deforestation for firewood and land degradation due to overcrowding and agricultural pressures. FMNR helps restore degraded landscapes in camp settings with minimal tools, supports food production, eases tensions by addressing resource conflicts and provides refugees with a sense of purpose and agency.

Key challenges

- High transience: Refugee populations can be transient, with people moving in and out of camps frequently.
- Weakened governance structures: Governance in refugee camps is often fragmented or informal, complicating the enforcement of rules and the management of natural resources.
- Conflict and security risks: In fragile settings, including refugee camps, FMNR projects must be implemented with a strong conflict sensitivity approach to avoid exacerbating existing tensions over land and resources.

CASE STUDY: FMNR IN BIDIBIDI REFUGEE SETTLEMENT (UGANDA)

One successful example is the Bidibidi Refugee Settlement in Uganda, where FMNR is being implemented to address deforestation and environmental degradation. In this camp, both refugees and host communities have been trained in FMNR techniques. The project has led to the restoration of large areas of degraded land, providing firewood, fruit and other resources for the camp's residents. Additionally, FMNR has helped reduce tensions between the refugee population and local communities, as both groups benefit from the regenerated landscapes.



FMNR Empowers local farmers to support refugees fight hunger. By World Vision Uganda.

Resources

- The [FMNR Hub YouTube channel](#) which has many instructional videos, such as:
 - [How to prune for natural regeneration](#)
 - [FMNR income generation](#)



Photo Credit: Hellen Owuor (World Vision Kenya)

CHAPTER 5

ENSURING FMNR IS INCLUSIVE

Summary: Ensuring FMNR is inclusive

FMNR thrives when all community members are involved. Inclusivity ensures fairness, maximises benefits and strengthens community collaboration for better outcomes. To truly make FMNR inclusive, remember the principle of “nothing about us without us”.

Even those without land can participate meaningfully in FMNR by contributing to communal efforts or taking on non-land-based roles, ensuring their involvement in the process.

Women play a vital role in FMNR, both in managing the land and driving community development. Barriers like limited land ownership and decision-making power can hinder their involvement, but enabling factors such as women’s groups and access to training help overcome these challenges and ensure their active participation.

Collaboration between pastoralists and farmers enhances FMNR’s impact. By working together, these groups can regenerate land while benefiting from increased fodder and improved land management. Indigenous communities bring valuable knowledge to FMNR, and recognising their land rights and practices is crucial for inclusive and effective land restoration.

FMNR offers opportunities for people with disabilities to contribute through the twin-track approach, which combines mainstream inclusion with targeted support. This ensures their equal access to FMNR activities while addressing specific needs, promoting both social inclusion and equal opportunities.

Engaging children and youth in FMNR fosters environmental awareness. Schools and community activities allow younger generations to learn and advocate for sustainable practices.

This inclusive approach helps FMNR benefit not just the environment but everyone in the community, ensuring equal rights and opportunities for all.



Photo: World Vision staff members participate in a field visit as part of a FMNR Scale-Up Learning Event. Photo Credit: Christabel Mundike, World Vision Zambia



Photo: Boosting Women Economic Empowerment Through a Simple Tree Regeneration Technique in Rural Kenya. Photo credit: Hellen Owour, World Vision Kenya.

Why including everyone is important

Involving everyone who uses or has access to land being regenerated through FMNR is crucial for two reasons:

1. FMNR should benefit everyone.
2. FMNR works best when everyone is involved.

A well-designed FMNR initiative includes all stakeholders, from the most powerful to the most vulnerable. Workshops and training should be inclusive of all community members – women, men, youth, ethnic and religious minorities, and people from various livelihoods.

To ensure fairness and success, facilitators should:

- First, do no harm. Do not push for the participation of an individual or group if it is going to put them at risk of harm.
- Involve all stakeholders from the start in consultations, decision-making and creating community bylaws. This includes women, men, youth, elders, crop farmers, pastoralists, non-timber forest product users, nomadic groups, ethnic groups, religious and social groups, minority groups, vulnerable people and people with disabilities.
- Provide equal access to information for everyone.
- Ensure that all members have a share in managing and benefiting from communal trees.
- Recruit individuals from all groups for training and decision-making roles.
- Respect and incorporate local and indigenous knowledge about natural resource management, including any FMNR-like practices traditionally used to manage trees. (This can also increase the participation of elders in FMNR discussions.)
- Support equal access to land and benefits from FMNR products, and shared decision-making rights over the use and harvest of trees and other resources.

Different groups may require tailored engagement approaches, but including everyone ensures FMNR's long-term success.

To truly make FMNR inclusive, remember the principle of “nothing about us without us”. Engage youth, people with disabilities, women and marginalised groups in every decision-making process. Address barriers like land rights and consider the dynamics between indigenous communities and dominant societies. This inclusive approach helps FMNR benefit not just the environment but everyone in the community, ensuring equal rights and opportunities for all.

This chapter offers some suggestions on how to engage various groups and the key roles they play in supporting FMNR's success.

People who do not own land

Community members without land or secure access to it can still benefit from and contribute to FMNR efforts.

On communal land, the landless should have the same participation and access rights as other community members.

For example, in Tigray, Ethiopia, community leaders have allocated plots of communal land to female-headed households, landless youth and people living in poverty for them to manage and benefit from.

In areas without communal land, those without land can support FMNR in various ways, such as:

- Offering insight and assistance with tasks like monitoring and providing other support services.
- Developing enterprises like beekeeping or selling firewood, fodder, medicine and fruits, or tapping into job opportunities in tourism or ecotourism.
- Providing services such as pruning, harvesting wood and non-timber forest products, patrolling fields, reporting infringements or acting as fire wardens.
- Using wild fruits and traditional medicines to improve nutrition, health and income. Through community consultation, vulnerable members may gain agreed-upon access to certain products, even on private land.

Women



Photo: Sustainable Land Regeneration (SLaR) Project. Photo Credit: Hellen Owuor, World Vision Kenya.



Photo: Greater Regeneration for Evergreen Environment (GREEN) Project. Photo Credit: Hellen Owuor, World Vision Kenya.

A meta-analysis found that FMNR projects increase firewood availability by 15 percent, which can reduce the travel time required by women to collect wood. This saved time could potentially allow for more educational, personal development or livelihood opportunities, though it's important to assess how the extra time is actually spent.

Common barriers for women in FMNR

Women face several barriers in participating in FMNR projects. With substantial household and unpaid care responsibilities, they frequently have limited time to engage in FMNR activities. Women often have limited decision-making power over tree resources and livestock management. Female-headed households are less likely to own land, impacting their willingness to undertake FMNR.

Additionally, girls' contributions in environmental management, such as firewood collection and tree watering, are often unrecognised. Finally, a perceived lack of physical strength can exclude women from activities like water harvesting. These barriers hinder women's active participation and leadership in FMNR projects.

In Kenya, some men prevented their spouses from participating in project activities, even attending in their place. A solution has been to invite couples and provide childcare during training sessions, enabling greater participation for women.



Photo: Greater Regeneration for Evergreen Environment (GREEN) Project. Photo Credit: Hellen Owuor, World Vision Kenya.

Common enablers for women in FMNR

Women are often the custodians of the environment, engaging in activities like collecting firewood, gathering wild foods, fetching water and gathering traditional medicine. FMNR can then expand natural-resource-based income-generating opportunities, such as honey production and agroforestry. Additionally, FMNR techniques generally do not require high physical strength, making them accessible to almost everyone, regardless of physical abilities.



How FMNR is uniting women in Kenya

You met Nancy in Chapter 1. She is a leader in the "Taking Care of Home" women's group in Mogotio, Kenya and is a passionate FMNR champion. Her group began as a "merry go round" savings scheme, allowing women to invest in farming or pay school fees. Over time, they expanded into poultry, mango and dairy farming, with each member working independently while training together.

Nancy's dedication to FMNR has transformed her farm. Once, another woman remarked: "You have been blessed with many trees on your farm." Nancy replied: "I have not been blessed; I take care of the trees that I have."



Photo: Greater Regeneration for Evergreen Environment (GREEN) Project. Photo Credit: Hellen Owuor, World Vision Kenya.

Through FMNR, she has increased pasture and milk production, enabling her to pay school fees without stress. Her leadership hasn't gone unnoticed, as she's been chosen for key community roles, including representing women in development matters. "I am proud of FMNR, as it has moulded me as a community leader. FMNR has changed my life," she says.

As FMNR transformed their land, Nancy's husband and other men began helping with the pruning. Even during drought, FMNR has helped them cope. "During this drought, we are cutting the Acacia seyal tree and feeding the bark to the livestock. Without these acacia trees, the livestock would be suffering."

The group has also expanded into beekeeping, with 15 hives, and runs a table banking scheme providing loans as emergency funds for vulnerable community members.

As their efforts gain recognition, the women feel more respected. "There is more time to speak and our views are heard," Nancy says. "We're challenging each other, too – for example, if one of us is producing less milk than the others, then we will work harder to encourage and support them."

Nancy and her group plan to continue raising awareness about FMNR and are always looking for new opportunities to improve agricultural practices in their community.

Pastoralists and livestock herders

In many communities, conflict exists between crop farmers and pastoralists, though collaboration between these two groups can yield far greater benefits than working against each other. Since much FMNR activity occurs where both farmers and herders use the land, cooperation is crucial.

Farmers often experience frustration when livestock damage crops or young trees, especially when the animals belong to others. However, the benefits livestock bring to farms and forests are often overlooked. Fields visited by livestock can yield more than twice the crops of those untouched. Livestock seek shade under trees and feed on leaves and seedpods, fertilising the soil with their dung and urine in the process. Additionally, in areas without tree stumps or seeds, livestock break up hardened soil with their hooves, dispersing tree seeds and natural fertiliser in their dung, aiding regeneration.

FMNR also benefits herders, as regenerating trees increase the availability of grass, leaves and seedpods, providing more fodder each year. Water sources can be replenished through reforestation, and animals suffer less from heat and wind. These improvements enhance livestock health, increase meat and milk production and improve birthing and survival rates.

To foster cooperation between farmers and pastoralists, efforts should focus on building trust and breaking down animosity. This can be encouraged in the following ways.

- Including both groups in early FMNR consultations and exchange visits to demonstrate the mutual benefits, such as increased fodder and free fertiliser.
- Tailoring FMNR communication for nomadic stakeholders, using methods like SMS and radio. (Here's an example of how SMS is being used in Tanzania.)
- Ensuring FMNR agreements and bylaws do not exclude pastoralists from traditional grazing areas, except for short periods when trees are vulnerable – and then only by mutual agreement.
- Encouraging sustainable livestock management to protect emerging trees, rather than destroying them for immediate fodder.
- Encouraging communities to establish mechanisms to ensure fodder is available, risks to trees are reduced and animals are seen as an asset to the FMNR work, such as:
 - o pruning trees in a way that means livestock cannot easily break them;
 - o creating temporary fencing to protect trees in the early stages of regeneration;

- o harvesting seedpods and leaves for fodder;
- o establishing cut-and-carry agreements to make sure that grass is available to herds;
- o cutting grass for hay to provide fodder during dry periods; and
- o encouraging livestock to graze on farmland during the off-season to improve soil fertility for the next crops.
- Considering whether to institute agreements to use livestock for tasks like fertilising, breaking up soil and “cutting” firebreaks, which they often do more efficiently than humans.



Pastoralist Managed Natural Regeneration

Degraded grazing lands are often only visited by pastoralists, making them ideally positioned to implement changes that could reverse the degradation. Pastoralist Managed Natural Regeneration (PMNR), the managed natural regeneration of trees by pastoralists, has the potential to transform vast areas of barren landscapes.

In **Somalia**, PMNR is being used in conjunction with soil and water conservation practices to regenerate trees and grass in pastoral communities. Mohamoud Hassan Duale is a pastoralist who has been applying FMNR on his land. Areas that were once barren began to thrive with regenerated trees and shrubs, offering shade for his livestock and increasing fodder availability.

Mohamoud’s adoption of techniques like tree pruning, half-moon soil bunds and water catchments demonstrates PMNR’s effectiveness in improving grazing conditions and ecological balance. His success illustrates how PMNR can not only restore ecosystems but also enhance livelihoods by boosting livestock health and productivity.

In **Swaziland**, the crucial role of “herd boys” in FMNR was recognised. Herd boy associations were created and training was provided to boost their skills and status. Empowering herd boys to protect and practise FMNR regrowth wherever they take their herds could yield immense results. Pastoralists, often with their livestock for 12 hours or more each day and equipped with a machete, could prune a significant number of trees while going about their normal routines. This could make a remarkable impact on the landscape.

Indigenous populations

Indigenous communities have been practising FMNR for generations, and their involvement is vital. Legal recognition of indigenous tenure reduces deforestation rates significantly. Where possible, advocacy for land rights should go hand in hand with FMNR initiatives.

How to include indigenous perspectives in FMNR implementation:

- Understand which groups live on or use the land upon which you’re working.
- Understand traditional land and vegetation management practices and build on them.
- Understand barriers for their inclusion, such as land rights.
- Understand strengths they may bring, including land, forest and nutrition knowledge.
- Understand the history and current dynamic between them and the dominant society in which they live.
- Utilise this knowledge to ensure activities are inclusive, and add additional activities to address any systemic factors such as land tenure or discrimination.

Ensure their rights and their knowledge are protected – create agreements where necessary.



Photo: Greater Regeneration for Evergreen Environment (GREEN) Project. Photo Credit: Hellen Owuor, World Vision Kenya.

People with disabilities

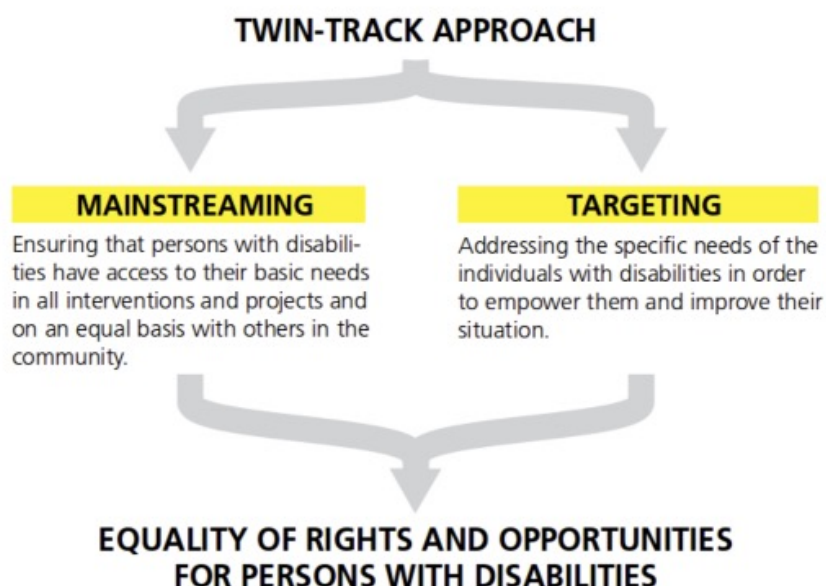


Figure 2: Philemon, Tanzania (2013).
Photo: Tony Rinaudo

"I am a disabled farmer. I grow crops and keep animals, but harvest very little. I am fully involved in FMNR even though physically it is a challenge. My message to other disabled people is: You should participate, no matter what, according to your ability." – Philemon

People with disabilities or debilitating illnesses may worry they can't practise FMNR, but there are meaningful roles for everyone.

The **twin-track approach** to disability inclusion ensures FMNR is both environmentally beneficial and socially inclusive by combining two strategies: (1) mainstreaming, which ensures equal access to all activities (many disabilities don't affect a person's ability to manage trees), and (2) targeted actions, which address specific needs to empower individuals with disabilities. This approach not only changes attitudes and removes barriers but also promotes equality of rights and opportunities for everyone.



For those who may be limited in physical tasks like managing trees, digging or hauling wood, there are many other valuable ways to contribute, such as:

- marketing and record keeping;
- fire scouting and monitoring unauthorised activities;
- helping create bylaws and observing the environment;
- negotiating, problem-solving and resolving conflicts; and
- planning and monitoring progress.

This twin-track approach ensures FMNR is not only about environmental restoration but also fostering stronger, more resilient communities by being socially inclusive and equitable. People with disabilities often bring unique insights into how to manage the environment in ways that reduce barriers. Their adaptability and problem-solving skills can offer innovative solutions for community challenges. Communities can also manage plots of land for those unable to do physical labour, either as a voluntary service or in exchange for other roles that fit their abilities.



Photo: How World Vision's Farmers Managed Natural Regeneration Approach Instilled in a local community. Photo Credit: Bethel Shiferaw Kebede, World Vision Ethiopia.

"If our parents kept destroying the environment at the rate that they were, when we grow up we would not be able to have children of our own, because we would not be able to feed them." – School boy, Senegal

FMNR provides a brighter future for children by restoring degraded land, ensuring a resource-filled environment. By including children in FMNR activities, you not only build their confidence in the future but also reduce their burdens, such as collecting firewood or herding livestock.

Land degradation forces children to work more and face hardships like crop failure, malnutrition and reduced education. FMNR, however, makes resources like firewood more available, allowing children to play, study and attend school, rather than being tied to farm labour. With improved family incomes, parents can better afford school fees, and enhanced nutrition from wild foods leads to healthier, happier children. In some FMNR communities, children have even started income-generating projects by selling wild fruit.

Children can actively contribute to FMNR by:

- Participating in community engagement and advocacy, learning skills that prepare them for future leadership.
- Engaging in decision-making, seeing firsthand the importance of inclusion and cooperation.
- Helping create environmental clubs in schools, spreading awareness at home and within their communities.
- Establishing FMNR plots in schools, which provide practical benefits such as firewood, fodder and improved play environments with more shade and less dust. (Note: it is important to ensure that children who are not in school have opportunities to participate in FMNR training as well.)

Youth benefit in similar ways, with additional opportunities to earn income, build savings, and diversify livelihoods through businesses tied to reforestation. FMNR also keeps youth engaged in productive activities, reducing the risk of hopelessness or trouble.

Any initiative that involves children should also incorporate principles to protect children from injury or abuse. In FMNR activities, this means:

- Supervising younger children using sharp tools.
- Limiting exposure visits to educational purposes, rather than requiring extensive physical labour.
- Ensuring children are not left alone with a single adult, but are under the care of several responsible adults, including parents or guardians.



Photo: Pupils from Lupani Basic School, Zambia who have adopted the concept of FMNR through Liveness. Photo credit: Christabel Mundike, World Vision Zambia.

Special situations: youth- and child-headed households

In communities with youth- or child-headed households, additional support and training will be needed to help them safely and successfully practise FMNR. If they do not have land, they should be given the opportunity to regenerate nearby communal land or provided with a space to practise FMNR. Communities can also assign other roles, such as marketing FMNR products, to offer meaningful opportunities for these young heads of household.



FMNR in schools in Kenya and Ghana

World Vision promotes FMNR not only to land users but also to children and youth. Why? So that the next generation of leaders understands the vital connection between caring for the environment and having enough food for the future.

Promoting FMNR in schools uses creative approaches, including group discussions, poetry writing, essay competitions, dances and drama performances. These activities help children understand the importance of trees, crops and the environment, and they bring these lessons home to their families.



Figure 4: Signs around Kenyan schools remind children of the importance of trees (2016).
Photo: World Vision Kenya

In **Kenya**, FMNR has been introduced in many schools with some exciting results in the community. For Kibe, a primary school student, learning and practising FMNR has brought a range of benefits to his family.

"FMNR has brought many blessings in our home," he says, emphasising the importance of readily available firewood. "We have enough firewood at home that can take us [through] the whole term and I cannot therefore miss classes, as I do not have to go to look for firewood from the forest, which is five kilometres away. I no longer come home as early as 2pm to fetch firewood but stay in school until 4pm studying." Kibe's family is also prospering through increased milk production.

"Our two dairy cows used to produce four litres of milk per day but since practising FMNR they now produce 10 litres per day. I now drink enough milk in the morning before going to school. I am happy because of this project."

Dickson Changwony, head teacher of a primary school in Kenya, saw how FMNR offered new opportunities for his school and community:

"I learnt about FMNR through a sensitisation meeting of head teachers by World Vision. I had non-economical shrubs growing on the school compound and was planning to slash them to make the compound tidy. I once tried to plant exotic tree species in the school but none survived because of the harsh weather conditions in our locality. One teacher from our school was also trained by World Vision as the FMNR site three months into the project and the school management leased out the grass to farmers and we received 3,000 shillings from the site. We used the money to repair desks and buy revision papers for the pupils. Our school has become an FMNR learning site where farmers come and learn from it. We are proud as a school. FMNR is real."

In Ghana, World Vision has facilitated creation of 10 school clubs in the Garu-Tempane District, training members in FMNR to spark children's interest in environmental issues. Children are powerful agents of change, and introducing them to FMNR early helps them spread the concept beyond their communities. It's crucial to engage youth as they are more receptive to new ideas and they will be the ones most affected by the future consequences of environmental degradation.

Since FMNR has been adopted in the area, land users have observed improvements in their land and productivity. The schools have also benefited, with children picking fruit from regenerated trees whenever they are hungry.

Resources

Manuals for including children and youth in FMNR through school programs and environmental clubs



Figure 5: School environment club in Garu-Tempane District, Ghana, whose members have been trained in FMNR (2016). Photo: World Vision Ghana



Photo Credit: Hellen Owuor (World Vision Kenya)

CHAPTER 6

COMMON MISCONCEPTIONS WHEN APPLYING FMNR

Summary: Common misconceptions when applying FMNR

When introducing FMNR to a community, uncertainty or opposition often arises from misconceptions about trees, land management and FMNR itself. Addressing these misunderstandings is key to gaining community support.

One of the most prevalent misconceptions is that burning land promotes grass growth, when in reality it harms the environment, damages trees and degrades soil. Routine fires lead to erosion, nutrient loss and reduced crop yields, which undermines tree regeneration and soil health. Preventing and managing fire is critical in most FMNR projects. This generally involves:

- understanding the cause of fire and the damage it does;
- committing the community to fire prevention; and
- creating a community fire plan.

However, burning land is not the only environmental misconception. Others include the belief that FMNR follows a rigid set of rules, that it's too simple to be as effective as tree planting, or that there are no trees available for regeneration. Additionally, some people worry that trees will overshadow crops or compete for water, while others express doubts because they don't own the land or feel hesitant about trusting a new practice.

Social misconceptions can also hinder the success of FMNR. For instance, some believe that tree management is only men's work, excluding women, or that only landowners can manage trees, ignoring the rights of others.

Social problems related to FMNR can be resolved through community engagement, identifying everyone's interests and brainstorming solutions together. The process includes evaluating options, supporting the community in choosing the best solution and formalising the agreement in writing. Technical problems can be addressed through experimentation, seeking advice from local experts or practitioners and observing outcomes. Mentoring, exchange visits and research also play key roles in finding effective solutions. Training, support, bylaws and clear communication are essential for overcoming challenges and ensuring FMNR's success.



Photo: FMNR Champions learning about fire prevention. Photo credit: World Vision

Environmental and social misconceptions when applying FMNR

When introducing the idea of FMNR to a community, we are sometimes met with uncertainty – and sometimes even opposition. Often, this stems from misunderstandings or incorrect beliefs about trees, land management and FMNR. Addressing these misunderstandings in a clear and compelling way is crucial: without the community's support, FMNR will never get started.

Here are some of the most common environmental and social misconceptions that FMNR facilitators encounter and some ways to respond.

Fire management for FMNR



Photo credit: World Vision

In many countries, people burn grazing land and farmland every dry season. They do this to help new grass grow and to clear fields. However, this practice can be very harmful to the environment when done year on year. Fires can damage or kill trees, destroy habitats and harm essential soil life. Land that is burned every year is more prone to erosion, poor soil structure and nutrition loss, leading to lower crop yields and reduced water retention in the soil.

Practising FMNR requires minimising fire risks. Communities must plan ahead to prevent fires and reduce their impact. While fire can sometimes be used for specific purposes like cultural burning, creating firebreaks or reducing fuel loads, routine burning is detrimental to soils, trees and FMNR adoption.

To ensure FMNR success, communities must:

- **Understand the causes and impact of fire.** Fires may start unintentionally from accidents or intentionally for purposes like hunting, promoting grass growth or causing harm. Educating the community about the damage fire does to land and trees is crucial.
- **Commit to fire prevention.** The community needs to take ownership of fire management. Solutions include creating bylaws, engaging with local fire authorities and developing a community fire plan.
- **Create a community fire plan.** This plan should include fire prevention measures, assigned roles for monitoring and controlling fires, and partnerships with local fire services for volunteer training. Key actions include creating firebreaks, replacing slash-and-burn practices with alternatives like slash-and-mulch, and educating children and the wider community about fire risks.

The following video explains more: [FMNR fire prevention](#)

When we encounter this misconception, we could respond with something like:

While there are some examples of cultural burning that helps grass grow, this often isn't a suitable option to do in the same area year on year. Fires can kill trees, destroy homes for animals and degrade soils. Burned land eventually loses good nutrients and holds less water, making it harder to farm. Some communities stopped using fires and now protect the land. They see better results without burning.

Expert tip: Making the issue personal

A powerful way to engage communities is by asking them what the future consequences will be for their children if they continue harmful practices like burning the land every year. This question makes the problem personal and helps people rethink their actions. When communities recognise the impact on their own families, they are more likely to take responsibility rather than deferring to the government or NGOs. Once people own their problems, we can work together to find appropriate and sustainable solutions.

Changing mindsets about fire: An example from Ghana

Communities embracing FMNR often become committed to stopping fires, which were previously seen as uncontrollable. In Ghana's Tongo Beo community, local leaders shifted the mindset from believing fires were inevitable to actively fighting them. Initially, the community thought stopping annual fires was impossible, but they took key steps to prevent and manage fires:

- Traditional and government leaders held workshops to convince everyone that reforestation through FMNR was in their best interest, explaining that reforestation would only succeed if fires were controlled.
- The community selected 50 young men and 50 young women to receive fire management training from the fire department. These trainees then taught others and took charge of fire prevention.
- The District Chief Executive offered a significant prize to any village that remained fire-free for three years.
- World Vision provided basic tools, such as buckets and rakes, along with t-shirts for each volunteer, elevating their role in the community.

Fifteen years on, the community has remained largely fire-free and has seen healthier cattle and increased FMNR adoption. Similar success stories were seen in Senegal and Indonesia, where communities stopped burning after realising the benefits of preserving organic matter for fertiliser and grass growth. Although changing fire management practices is challenging, it is possible with the right guidance, support and community engagement.



Farmers are putting an end to forced burnings in Uganda – and reaping the rewards

Dratele, a proud land user, leads his herd to graze in this carefully tended FMNR plot in Offaka, Uganda.

Now thick with trees, the land was cleared and burnt annually before FMNR was introduced in 2010. Back then, finding fodder was a struggle.

These days, Dratele not only has an adequate fodder supply for his animals, but also harvests his own firewood and doesn't worry about his livestock wandering into other people's fields – a regular problem in the past. In just four years, thanks to better pastures and fodder, his herd grew dramatically: from 15 goats and five cows in 2010 to 65 goats and 17 cows in 2014.

Proceeds from animal, wood and honey sales have enabled him to pay secondary school fees for his children and to build a new house.



Other environmental misconceptions when applying FMNR

“FMNR has a standard approach and technique”

Some people mistakenly believe that FMNR requires following strict rules – such as how to prune, what trees to keep, how to keep out livestock, etc. This isn't the case.

While practitioners should follow the basic principles outlined in Chapter 3, no one should be a slave to a particular way of doing FMNR. Chapter 4 describes the different ways FMNR is practised in various contexts around the world, highlighting its adaptability and flexibility.

When we encounter this misconception, we could respond with something like:

FMNR is not about rigid rules or fixed techniques. It's a flexible, community-led approach that adapts to the unique needs of the land and its users. There's no one way to prune trees, select which trees to keep or manage livestock. What makes FMNR so effective is the freedom communities have to experiment and discover what works best for their situation.

While basic principles guide the process, FMNR is ultimately shaped by those who use the land. Communities are empowered to make decisions that suit their goals and local context, adapting the approach to fit their specific needs.

FMNR is about regeneration that works for your community. It thrives on flexibility, innovation and community ownership, not on following a single, fixed method.



Photo: Before (1983) and after (2017) of Tony Rinaudo in Niger.
Photo credit: Tony Rinaudo and World Vision.



“There are no trees here”

Communities in arid and semi-arid areas may initially be very sceptical about FMNR. In some places, deforestation happened so long ago that people think treeless land is normal.

Don't be discouraged. If you believe FMNR is suitable, take time to address concerns and explain its benefits. Remember though, there may be some areas without the appropriate root stock to do FMNR – so make sure to check this out first before raising expectations with a community.

Talk to the community, especially elders, and check historical records to understand past land cover. Look for “sentinel” trees, which indicate forests may have existed in the past and point to potential future forests with FMNR and possibly tree planting. If there were forests before, reforestation is more likely to succeed.

It's essential to see FMNR as possible in your own mind first. Convincing others starts with convincing yourself. Often, we even have to convince the staff we work with, not just the community members. People will say “there's no spare land” or “the climate is too harsh”. But in each place, once we overcome these false perceptions, we can work with the hidden potential that's there.

For example, Niger is now a fuelwood powerhouse, with some districts sustainably exporting firewood to Nigeria. What was once perceived as barren land is now thriving because people started to see their landscape differently. It all starts with mindset change.

Dry areas may pose extra challenges and have slower growth, but tree stumps can regrow even in deserts with 50-100 millimetres of rain per year. For example, in Somaliland, digging half-moon water catchments has helped FMNR trees grow well even in arid conditions.

In urban areas, lack of tree stumps and social cohesion can be barriers. However, FMNR can still be practised in places like schoolyards, hospital yards and along streets. People can also do FMNR on their own land.

When we encounter this misconception, we could respond with something like:

It might look like there are no trees now, but it wasn't always like this. In the past, there were likely trees here. We can bring them back with FMNR. Let's talk to the elders and look for old records to see what used to grow. Even in very dry places, tree stumps can regrow. Sometimes it's just a matter of changing how we see the land and believing it is possible.

“FMNR is so simple – it cannot be as good as tree planting”

FMNR may seem too good to be true because it's easy, low-cost and doesn't require external resources. However, it often proves more effective than tree planting, especially in dry areas. FMNR works with existing tree stumps that have strong roots and are already adapted to the environment. This makes it a cost-effective and reliable method for land restoration. Tree planting, while necessary in some cases, can be expensive and has lower survival rates, particularly in areas with limited water or resources. The success of FMNR in places like Niger, where it has thrived with minimal investment, demonstrates its long-term potential and effectiveness.

When we encounter this misconception, we could respond with something like:

I understand why you might think that. FMNR does sound almost too good to be true because it's easy, low-cost and doesn't need outside resources. But the truth is, FMNR can be even better than tree planting, especially in dry areas.

FMNR uses existing tree stumps with strong roots that are already in the ground. These trees can grow back naturally because they are already adapted to the environment. All we do is help nature do its job.

Tree planting can be very expensive, and the trees often don't survive as well as the ones grown through FMNR. Furthermore, experience has demonstrated that farmers may not easily get sufficient trees or trees of the right species in available tree nurseries, as sellers prioritise fast growing exotics in many cases. If we want to restore the land quickly and cheaply, FMNR is a great option. It's also better when there is not much water or other resources.

For example, in Niger Republic, a lot of money was spent to plant 60 million trees, but only 20 percent survived. But with FMNR, less money was spent and 100 percent of the trees survived. FMNR is still spreading and helping people today.



Sustainable Land Regeneration (SLaR) Project. Photo credit: Justin Njovu (World Vision Zambia).

“Trees will overshadow crops and compete for water”

This is a common belief that often stops people from adopting FMNR. Yes, some trees can overshadow crops, take up water and even release chemicals that hinder other plants. But there's more to the story. Farmers need not fear as they actually have a high degree of control over the level of shading and competition from regenerated trees. They can choose which species to regenerate, how many trees to grow and how severely they prune them to reduce shade.

Communities usually know which trees compete with crops and avoid regenerating those in their fields. That's why the people managing the trees should decide which species to keep, how many and how often to prune. Proper management can boost crop yields. For example, some crops can benefit from light shade, growing better and producing up to 50-70 percent higher yields.

Some trees are fantastic for farmland. They fix nitrogen, improve soil and provide light shade during certain seasons. This helps protect crops from extreme heat without reducing harvests.

There are many other local tree species that help crops grow. Communities often know which ones are beneficial, but experimentation is key. Trial and error can lead to great insights. FMNR practitioners observe, learn and adapt their methods based on experience. Research organisations like World Agroforestry can also help validate or add to knowledge about local trees and their benefits.

Encouraging visits between new and experienced FMNR users can be very helpful. Sharing knowledge about local trees, using photos and explaining research in simple terms can boost understanding and confidence in FMNR.

When we encounter this misconception, we could respond with something like:

Some trees can overshadow crops and take up water, but not all trees do this. By choosing the right trees and pruning them properly, you can actually help your crops grow better. Some trees provide light shade that protects crops from extreme heat and even improve the soil. With good management, trees and crops can grow well together.



Figure 2: The beneficial effect of this *Faidherbia albida* for crop growth can be clearly seen (2010). Photo: Peter Weston

“Local indigenous trees are not as valuable as exotic trees”

This misconception has various sources. In some cases, colonial ideas and the introduction of so-called “superior” exotic species have imbued communities with the perception that these trees are superior. In other cases, perhaps large-scale exotic tree planting programs have made an impression on mindsets. The characteristics of the exotic trees themselves, such as hardiness, suitability for coppicing, longevity (eg, eucalypts) and product value (eg, grafted mangoes), have in no small measure contributed to biased attitudes. Far too often, indigenous species are considered “useless bush”. This completely ignores the fact that indigenous forests had long been the supermarket, pharmacy, hardware store, water and temperature regulator and soil builder of past generations, and many indigenous species possess outstanding properties of value to this day.

Some exotic trees might indeed be a great addition to the fields of communities you work with, but we encourage you to have a good look at what is available locally first. Remember to consider:

- What species are already regenerating?
- What characteristics of these indigenous trees might be valuable to the community?

Native trees tend to be adapted to the soil types and water availability of the area and may be well adapted to resist local diseases and pests. This means they usually require less care and fewer resources than exotics and thrive under local conditions.

If the community is considering planting introduced species instead, ensure it has very good reasons for doing so. FMNR is far cheaper and more efficient than planting exotic trees.

When we encounter this misconception, we could respond with something like:

Indigenous trees are often undervalued, but they provide essential benefits like adapting well to local conditions, resisting pests and thriving with minimal care. While exotic trees can have value, native species have supported communities for generations as sources of food, medicine and materials, often requiring far fewer resources to manage.

“Trees grow slowly”

The belief that trees grow slowly tends to discourage people from starting FMNR, because they feel it’s going to take many years to reap the benefits of their efforts. “Is it worth it?” they ask. For communities living on the edge of poverty, focused on where the next meal is coming from, it may seem a waste of time to invest in cultivating trees. In the early days of FMNR development, an incredulous land user asked, “Why should I do this? Perhaps my grandchildren will benefit, or perhaps my children, but I never will!”

While some species do grow slowly, others grow surprisingly quickly. Regenerated trees, in particular, benefit from mature root systems, which allow fast growth. Often there are tangible benefits even in the first year; one or two metres annual growth is very common.

When we encounter this misconception, we could respond with something like:

While some trees grow slowly, many regenerated trees grow surprisingly quickly, often reaching one or two metres within a year due to their mature root systems. FMNR can provide tangible benefits even in the first year, making it a worthwhile investment for communities.

“Trees harbour birds that attack crops”

In the early days of FMNR promotion in Niger Republic, communities explained they had cut down the trees so grain-eating birds would have no place to nest and perch. They feared that by bringing trees back, bird damage to their crops would increase.

In the 30 years since, average tree density in Niger has risen from four to 45 trees per hectare, with more than six million hectares of land regenerated. The authors are not aware of any reports of increased bird damage. This does not mean there has been no damage but, if significant damage had occurred, then almost certainly those land users would have cleared their trees again, especially if facing regular food shortages. Instead, in many situations, birds reported to reduce insect damage to crops have been seen in the regenerated trees.

The Niger case does not mean that bird damage can never happen, but it does demonstrate the importance of challenging assumptions which may not always be true. If a bird pest problem did arise as a result of FMNR, communities should analyse the situation, identify underlying causes and experiment to work out sustainable solutions at a level and in a way they feel comfortable with, until their concerns are resolved.

When we encounter this misconception, we could respond with something like:

Some worry that trees may attract birds that harm crops, but evidence from Niger, where FMNR significantly increased tree density, shows no widespread reports of bird damage. On the contrary, many birds in regenerated trees help control insect pests, benefiting crops and supporting a balanced ecosystem.

“More trees will bring more snakes to our area”

It may be true that increased tree cover will result in an increase in the snake population. Each community needs to weigh up the pros and cons of an increase in snakes, particularly if venomous snakes are endemic to the area. Will the benefits of FMNR outweigh the perceived and real disadvantages of an increased snake population?

The authors know of no examples where a community chose not to implement FMNR because of the possibility of an increased snake population. Incidentally, we do know of two cases where land users have happily accommodated snakes on their land. In Talensi, northern Ghana, community members were very proud of the fact they now had a resident python in their regenerating forest.

The boomslang snake (pictured) is actually highly venomous. Even so, the farmer whose land it resided on said, “We respect each other. I leave it alone and it leaves me alone!” The farmer valued the services rendered by the snake, such as control of pests including rodents, birds and insects.



Figure 3: Boomslang snake found living in an FMNR tree in Chad.
Photo: Tony Rinaudo

Snakes play a very valuable ecological role in the environment, providing pest control services and, in turn, becoming food for their own set of predators. This fact notwithstanding, we have also heard of at least one death from snake bite, so those promoting FMNR have a duty of care to warn of the dangers. To be forewarned means you can be forearmed. With knowledge in advance, land users can be prepared to take precautions such as avoiding thrusting their arm into bushes without a clear line of sight and, if possible, wearing boots, long pants and gloves.

When we encounter this misconception, we could respond with something like:

Some people worry that more trees might mean more snakes, but snakes actually play an important role in nature, helping to control pests like rodents and insects. While it's wise to take precautions in areas with venomous snakes, no community has ever stopped FMNR because of this concern. In fact, some communities celebrate the return of snakes, valuing the balance they bring to the ecosystem.

Social misconceptions when applying FMNR

Social misconceptions can also hinder the success of FMNR. For instance, some believe that tree management is only men's work, excluding women, or that only landowners can manage trees, ignoring the rights of others. Addressing these barriers is crucial for communities to see the true benefits of FMNR and promote inclusive, sustainable land management.

"Why should we care – we don't even own the land"

In many places, people live and work on land they don't own. The land might belong to the government, a community leader or another owner. Sometimes, women or minority groups are not allowed to own land. In these situations, people have little reason to invest in improvements like regenerating trees, because they fear losing the land or resources.

In cases where communal, non-agricultural land is available, it is very important to ensure that all community members have the right to participate in the management of the land and vegetation and to benefit from it.

While FMNR has immediate benefits, the bigger benefits take three to five years to show. To make people feel confident in their efforts, it's important to work with governments and landowners to create agreements on user rights or, if possible, land ownership. These agreements help everyone because FMNR improves the entire landscape.

When we encounter this misconception, we could respond with something like:

Even if you don't own the land, FMNR can still bring many benefits. By working with governments and landowners, you can create agreements that protect your rights to use the land and enjoy its resources. FMNR not only improves the land quickly, but also brings bigger returns in a few years, like better crops and more resources for everyone. These agreements help ensure that everyone benefits from a healthier environment.

“What is this brand-new practice and why should we trust it?”



This misconception is two-fold. First, there is a belief that FMNR is new, which is incorrect. Second, there is a concern that FMNR is risky to try. This is also untrue, as numerous journal articles and successful projects validate FMNR's benefits. FMNR, by other names, has been successfully practised for thousands of years. It has gained significant global attention and momentum after its enormous success in Niger. A wealth of scientific literature supports the benefits of FMNR, validating it as an effective approach for climate mitigation and adaptation. Practitioners are encouraged to start small, gradually building confidence as they observe positive impacts.

When we encounter this misconception, we could respond with something like:

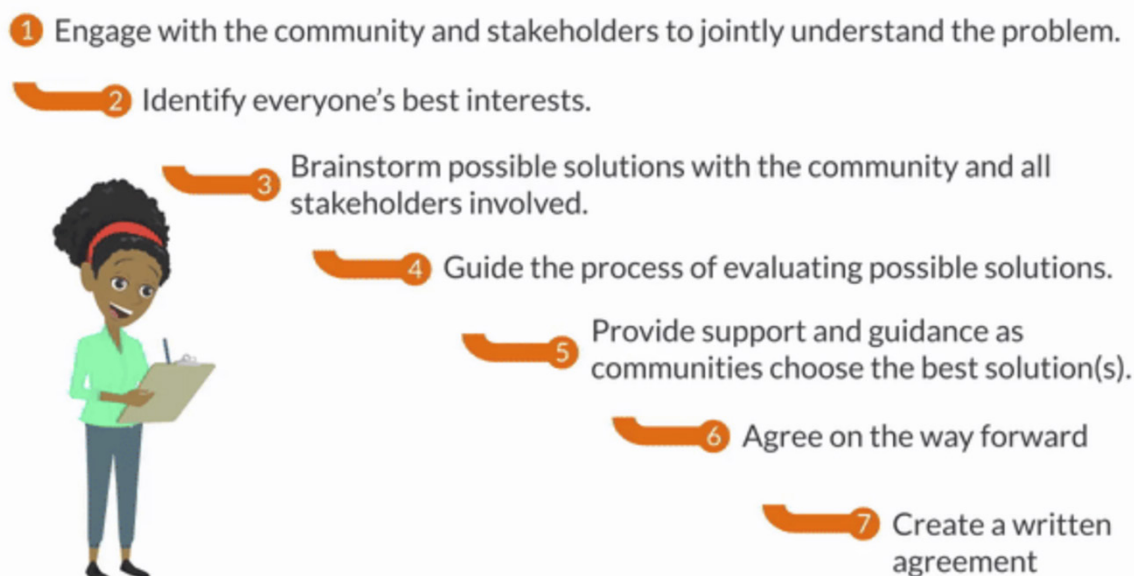
FMNR is not a new practice. Indigenous people have been using it for thousands of years to restore and maintain tree cover. It became well-known globally after it was revived in Niger in the 1980s. There is a lot of scientific research showing its social, environmental and economic benefits. We can try applying FMNR to a small area together and observe the positive effects.

Managing potential challenges

Challenges can occur at all stages of FMNR, from misconceptions during its introduction, through to issues faced when practising FMNR for the first time or managing fire and other threats. Anticipating these problems can help an FMNR facilitator prevent them before they occur.

Training, support, good bylaws and communication are the pillars of FMNR problem solving. Strong leadership helps a lot, too.

Social problems related to FMNR can generally be addressed by following these steps:



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Technical problems can be solved through:

- experimentation and learning from different methods available or those already used;
- seeking external advice from local experts or other FMNR practitioners;
- careful observation of outcomes that result from different practices;
- mentoring;
- exchange visits to learn how other communities deal with similar problems; and
- research.



Tips for preventing problems in FMNR



Illustrations extracted from the FMNR e-course. Graphic design credit: DynaMind eLearning (2024).

Keeping these points in mind when implementing FMNR can help prevent problems from arising.

- Do no harm – think about the way you are engaging with the community and ensure your actions won't have unintended consequences, eg, putting women in an FMNR leadership position that might expose them to gender-based violence.

- Include all stakeholders designing, implementing and monitoring FMNR activities.
- Build on the community's wisdom and experience with their land and any traditional practices related to FMNR.
- Support women, youth, minority groups and others who have not traditionally held power in the community, so they can equally participate in decision-making and benefit from FMNR.
- Ensure the community retains full control over decisions regarding where and how to practise FMNR.
- Encourage land users to experiment with FMNR and adapt it to their specific needs – there is no single “right way” to practise it.
- Strengthen the community's capacity to manage both trees and any challenges that arise from FMNR.
- Collaborate with farming committees, producer groups, women's groups, schools, faith communities, media and other partners to share FMNR knowledge and ensure its sustainability.
- Build the community's capacity to advocate for policies that ensure they can benefit from their tree management efforts.
- Equip the community to teach others how to practise and benefit from FMNR.
- Help connect the community's FMNR efforts to profitable markets for wood and non-wood products and services.
- Avoid providing tools or other inputs – FMNR thrives when it depends on the community's own efforts and resources.¹
- Follow up regularly to help solve problems until FMNR is working successfully and sustainably.



¹ One exception might be when FMNR is used as part of a food- or cash-for-work project during an emergency response. But here, too, making the project as locally sustainable as possible is the best option. The danger with providing tools is that they can encourage dependency and depress self-reliance and innovation. The spread of FMNR in Niger, one of the world's poorest countries, was not a result of providing tools.



Conflict resolution through sustainable tree management in Ghana



Photo: Abu, Fulani herdsman. Photo credit: World Vision Ghana

In Ghana, nomadic herders and farmers are working together to achieve shared goals.

As part of a World Vision FMNR project in Bawku West District, over 300 traditional leaders, herders and farmers participated in training on conflict management and resolution strategies. The focus was on promoting peaceful co-management of natural resources. Role-playing activities highlighted the benefits of cooperation and tolerance.

Abu, a 57-year-old Fulani herdsman, describes how FMNR has improved relationships between the Fulani herdsman and the local farmers.

"Previously, we had to travel long distances for fodder, causing disputes as our cattle destroyed crops. Insults and fights were common. Now, with plenty of fodder at the Akarateshie Natinga FMNR field, we can graze our cattle without damaging farms or quarrelling with farmers."

The dialogue between ethnic groups has led to other positive developments. In exchange for grazing land, the Fulani have started caring for other community members' animals, which has fostered deeper cooperation. As a result, their prospects have improved. "Our income from cattle sales has increased tremendously because the fodder has helped our animals grow larger," says Abu.

Resources

Video: [Preventing Fires](#)



CHAPTER 7

TRACKING PROGRESS AND IMPACT IN FMNR

Summary: Tracking progress and impact in FMNR

Effective monitoring and evaluation is a critical component of successful FMNR. Community members doing FMNR can make observations and records to track how their work is going.

A project promoting or supporting the spread of FMNR can also track key indicators to demonstrate the reach and impact of their project activities.

Key indicators, robust data collection methods, and tools such as photo point monitoring, satellite imagery and platforms like Restor and Solstice can help track and share changes at FMNR sites.

Communities should also track their own action plans and personal objectives. They might use the following tools: FMNR action plans, community regreening plans and personal objectives.

FMNR monitoring is not prescriptive, and the monitoring methods should be adapted to what's feasible for each community. Detailed data is great, but if that's not possible, even basic tracking – like counting trees over time – is valuable.

There are, however, several key FMNR indicators, which should be used in any FMNR project. By using these indicators, we will be able to more meaningfully include the contribution of FMNR activities in the global movement towards restoring 1 billion hectares.

Effective monitoring of FMNR sites is crucial for understanding and demonstrating the impact of our efforts. The essential components of monitoring FMNR sites are as follows.

- Location mapping: Accurately map the location and areas of FMNR sites to allow for tracking of changes over time. Mobile data collection tools such as Solstice (a new tool in development) can help with this.

- **FMNR site monitoring:** While onsite, ask questions about how the land and trees are used, what restoration is being done, the condition of the land and number of trees, and shrubs and species represented. Other questions relevant to your own projects can also be asked.
- **Data collection methods:** Data can be collected in lots of ways including interviews, surveys by community members, photo points monitored over time and satellite imagery to see changes in land cover and tree numbers remotely.
- **Sharing FMNR sites:** Share FMNR site data and stories to engage stakeholders, attract support and inspire other communities.

Two of the most powerful tools we can use to highlight the benefits of FMNR are mapping and photo point monitoring. Accurately map the boundary of the site and capture consistent images from the same spot at the same time of year to show a clear view of FMNR progress over time.



Photo: Humbo Community Reforestation Programme (ERPA) funded by World Bank. Photo credit: Silas Koch (World Vision Ethiopia).

How do we know if the community's FMNR plans are on track and working?

Monitoring is essential for helping communities achieve their FMNR goals and for demonstrating the impact of FMNR to donors and partners when seeking support.

We have two types of questions to ask during and after our projects respectively.

Monitoring questions

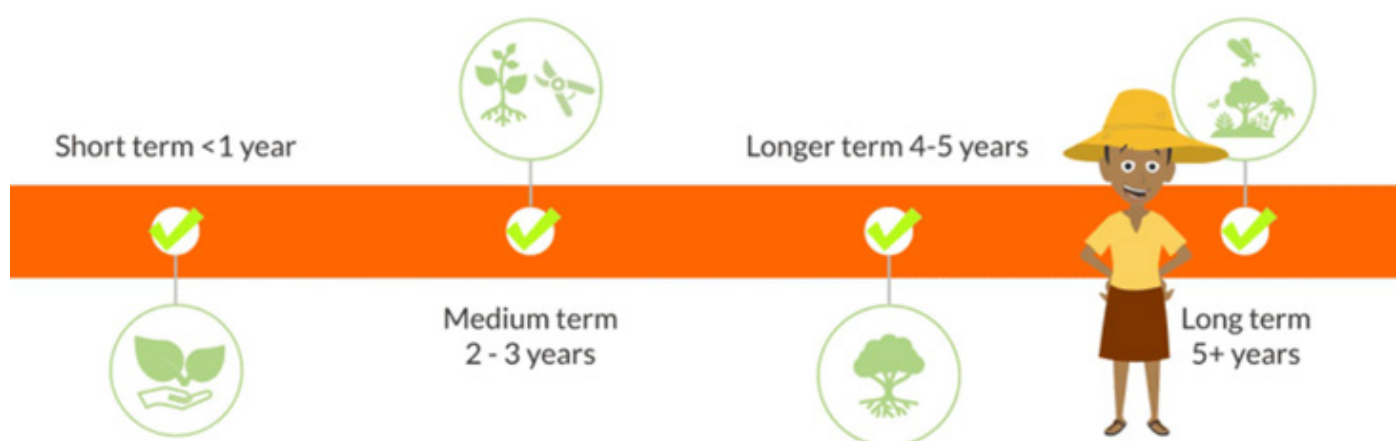
These questions track activities and progress toward FMNR goals. For instance:

- **Track ongoing activities** – Are FMNR or restoration plans being executed as expected?
- **Collect participant data** – Who is being trained? Are we reaching all target groups in the community, especially disadvantaged or marginalised ones?
- **Adoption rates** – Who is adopting FMNR? Where is it being implemented? What complementary practices are being used?

Evaluation questions

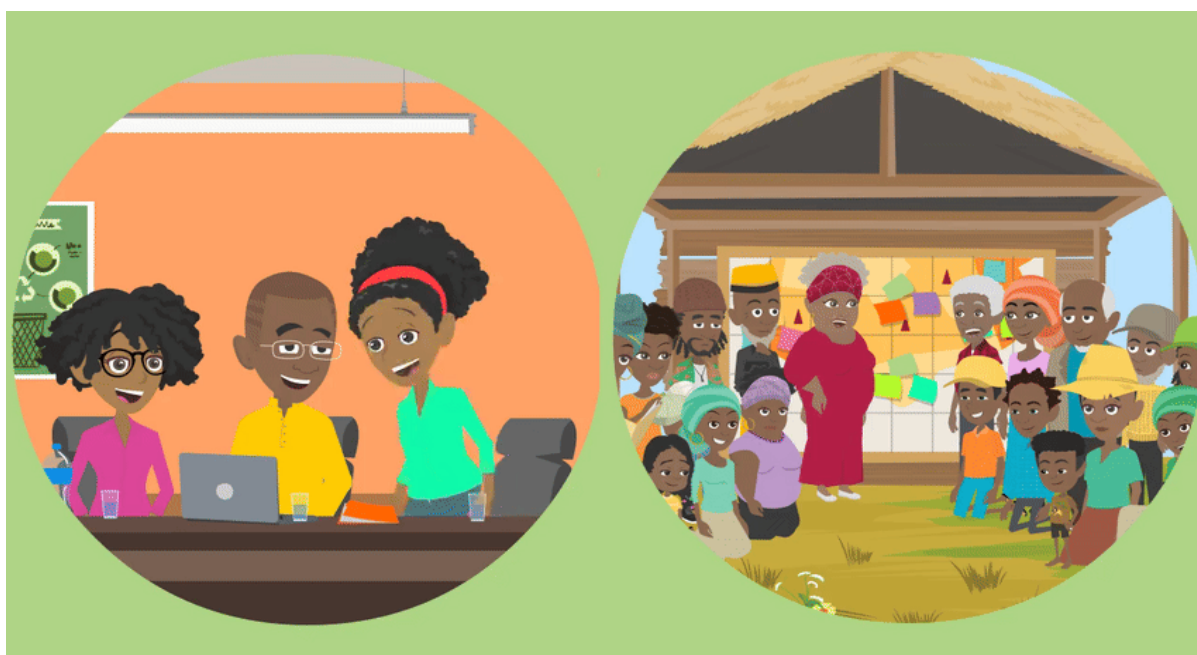
These help us reflect on what changes have occurred as a result of FMNR. Examples include:

- **Social and economic impact assessment** – Who benefits from FMNR? What are the impacts on access to food, child wellbeing and food diversity?
- **Environmental changes** – How has the environment changed due to FMNR? Specifically, how has tree cover changed? What changes have there been in soils, water, crops and biodiversity in the area?
- **Sustainability** – Are the changes sustainable? Will people continue doing FMNR after the project ends?
- **Barriers and enablers** – What factors help or hinder the spread of FMNR beyond our project sites? Are there any signs of FMNR being adopted by others in the community or beyond?



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Who should conduct monitoring and evaluation?



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Both the project team supporting the FMNR project as well as the community who are implementing FMNR should be involved in monitoring and evaluating the FMNR project.

Typically, a project team will use the following tools, adjusted to organisational and/or donor requirements:

- logframe
- workplan

Monitoring and evaluation involve various stakeholders, not just the project team.

Communities should also track their own action plans and personal objectives. For instance, one household may use FMNR to access fodder for livestock, while another may seek more firewood. It's important for each household to reflect on their progress and adjust their practices as needed.

They might use the following tools:

- FMNR action plans
- community greening plans
- personal objectives

Communities can easily start by surveying their FMNR sites. This includes counting the existing trees, stumps or seedlings available for regeneration. As they implement FMNR, they can track how many trees they prune and protect and the different types of trees. If the specific types of trees are not known, even just identifying the number of different types of trees present is valuable. It's also useful to monitor signs of wildlife or other vegetation returning to the site. Communities can note how long the grass stays green into the dry season, indicating soil moisture retention.

For example, in Kenya, World Vision engaged farmers by identifying tree species they wanted to protect. Farmers used red cloth pieces tied around the trees to make them easy to count, even from a distance. This method also helped monitor growth as the cloth tightened around growing trees. Such simple, visual methods are effective, especially in communities with low literacy rates.



FMNR monitoring is not prescriptive

FMNR's strength is its flexibility. It's not prescriptive, and the monitoring methods can be adapted to what's feasible for each community. Detailed data is great, but if that's not possible even basic tracking – like counting trees over time – is valuable. Some different ideas for monitoring are discussed below – choose the options that are most relevant to you.

While a project needs to have clear start and end dates, a budget, activity plan, indicators and targets, it's important to remember one key goal: creating a supportive environment for an FMNR movement.

This movement isn't confined to specific timelines, funding or locations. Instead, it aims for long-term, ongoing impact.

Key indicators to monitor and evaluate FMNR projects

If you are introducing FMNR in a project, the specific indicators of progress will likely change over time. Here are some changes you might observe in the short, medium and long term, respectively.

Short term (< 1 year)

- Community participating in training to practise FMNR
- Trainers and community champions attending Training of Trainers workshops
- Community agreements to support FMNR in communal land
- Land managers testing FMNR on a small area
-

Medium term (2-3 years)

- FMNR being applied in larger areas of land by multiple people in the community
- Increase in access to firewood and fodder from pruning
- Increase in tree numbers on FMNR sites
-

Longer term (4-5 years)

- Increased area of land being managed by FMNR in the community
- Increase in number of trees in the community
- Improvement in soil and water condition in FMNR sites
- Increased resilience to climate related shocks, eg, drought
-

Long term (5+ years)

- Improvement in biodiversity
- Improvement in food diversity and access
- Improvement in soil and above-ground carbon storage
- Increased income from improved production and tree related products

There are, however, several key FMNR indicators, which should be used in any FMNR project. By using these indicators, we will be able to aggregate the reach of all our FMNR activities and show the contribution we have made to the restoring one billion hectares of land globally.

The MOST important FMNR indicators

Activities

- Number of people trained in FMNR
- Number of people adopting FMNR
- Number and proportion (%) of households adopting FMNR
- Coverage of FMNR in the target area (in hectares)
- Total number of hectares protected or under restoration

Impact

- Average tree density (number of trees per hectare)
- % change in tree density in target area
- % of households with improved access to firewood, building poles, timber and non-timber forest products
- % of households with sufficient diet diversity
- % of households with year-round access to sufficient food

Social equity is also a priority for FMNR, so indicators should be disaggregated by sex and disability where relevant. They can be broken down by ethnic, religious or vocational group as well.

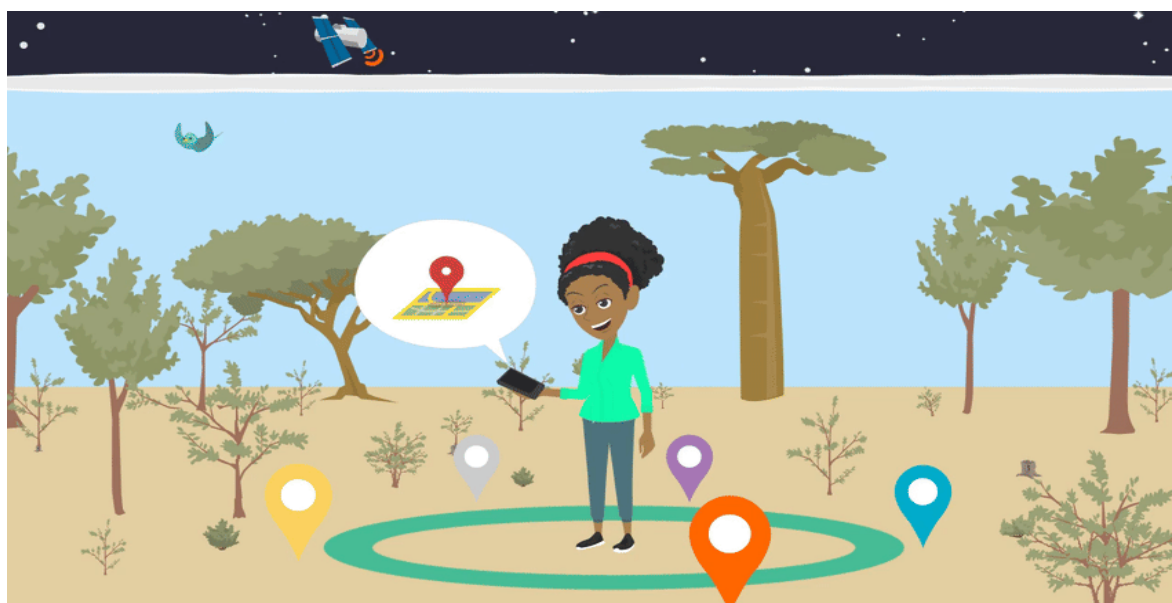
FMNR objectives, activities and indicators should also track the degree to which women, people with disability and other minority or vulnerable groups hold positions of power in FMNR work.

Information on how to measure FMNR indicators can be found on the FMNR Hub

It's important to note that many more aspects could be measured (social, economic and environmental outcomes), but this will depend on funding, staff capacity and the specific objectives of an FMNR project. Of particular interest to me is the social impact. I regularly observe the restoration of hope, a greater sense of wellbeing and a positive outlook for the future in communities that have embraced FMNR. The impact of restored hope in communities struggling to survive shouldn't be underestimated. It can result in significant progress simply because people now believe they have a future and that their efforts can make a difference in creating the future they want.

– Tony Rinaudo

Monitoring FMNR sites



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

Effective monitoring of FMNR sites is crucial for understanding and demonstrating the impact of our efforts. The essential components of monitoring FMNR sites are as follows.

- **Location mapping:** How do we accurately map the location of FMNR sites to ensure precise data collection and analysis? Solstice (a new tool in development) will be ideal to help with this.
- **FMNR site monitoring:** While onsite, what questions should we ask?
- **Data collection methods:** What methods might we use to collect that information?
 - o The power of photo point monitoring – how can this provide visual evidence of changes and improvements over time?
 - o Satellite monitoring – how can we utilise this technology to gain a broader perspective on FMNR sites and track large-scale changes?
- **Sharing FMNR sites:** How can we share FMNR site data and stories to engage stakeholders, attract support and inspire other communities?

Location mapping

To effectively monitor FMNR, the starting point is the location of FMNR sites. This is the foundation for tracking changes in the landscape.

At the simplest level, collect the latitude and longitude coordinates of the property participating in FMNR. However, a single point does not provide us very much information. Ideally, map the boundaries of the property and outline the actual FMNR site. This detailed mapping allows for remote monitoring of changes in land cover and tree density, as well as an accurate calculation of the total area of land under restoration.

The images below show these different ways of mapping site locations, and how much more informative boundary mapping is compared to mapping a single point.

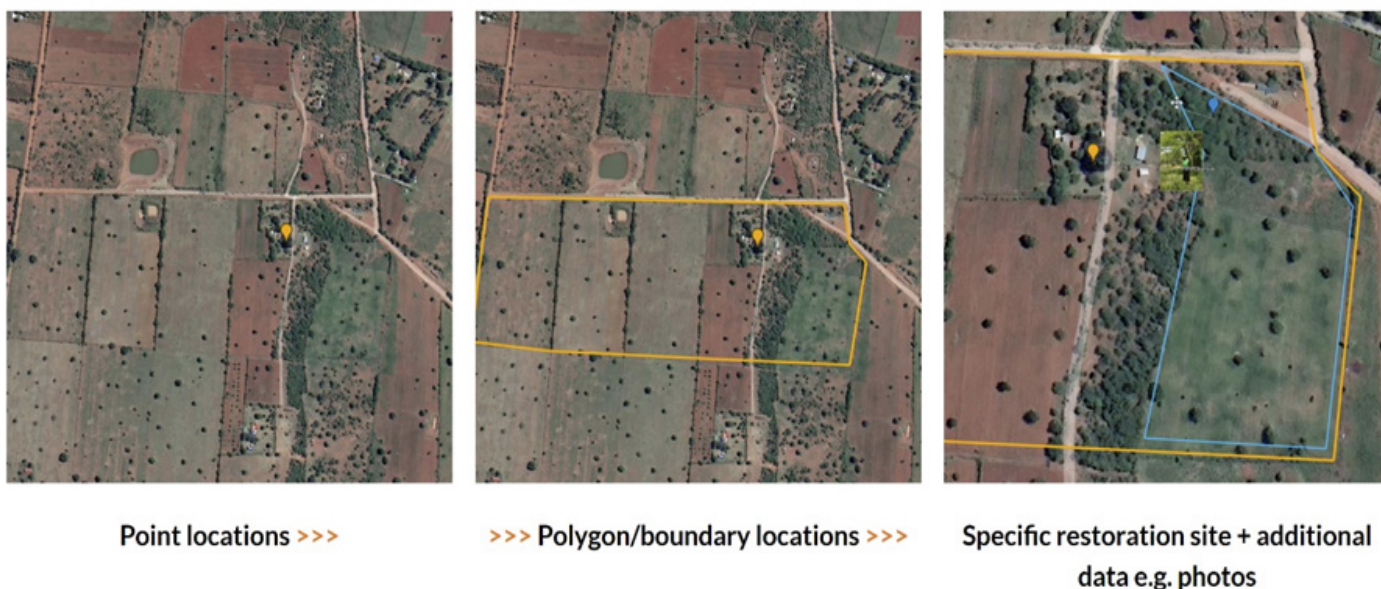


Figure 1: Satellite image of FMNR champion's farm (Year 1 of project) showing their FMNR trial site, photo point location and two photos of the site from ground truthing. Nakuru, Kenya (2018). Photo: Alice Muller

How to map your project sites

Sometimes land managers may know the area of the land under FMNR, but often this information is unknown or inaccurately estimated.

Measuring the area of the site yourself using mobile-based mapping tools is the easiest way to get accurate information. There are a range of tools available, some of which your organisation may already use.

Solstice is a platform that includes mobile mapping tools, as well as an online portal for mapping FMNR sites and creating dashboards for free. Download the (free) Solstice app and look for the publicly available Regreening Site Survey and related guidance and training materials to use in your site mapping and measurement.

FMNR site monitoring

While onsite, you might want to ask the following useful questions:

- Where is the FMNR site?
- How many hectares/acres/other is the area of land managed with FMNR? (Site or total land managed by the FMNR practitioners.)
- When did FMNR/restoration start?
- What FMNR/restoration practices are being used? (For example, enclosure, selection of species, pruning, soil and water conservation practices, sustainable agriculture practices, etc.)
- How is the land used? (Cropping, grazing, forest, degraded/bare land, other?)
- What are the trees used for? (For example, timber, fuel wood, fruits, fodder, shade, etc.)
- What is the ground cover (%)?
- How many stumps/saplings are present?
- How many shrubs are present?
- How many trees are present? (Trees are plants > 1.5m tall and 2cm diameter at breast height, or whatever definition your organisation chooses.)
- What species or how many species are represented on the site? (Species, height and diameter at breast height of all trees present if you want to estimate the amount of biomass or stored carbon.)

Data collection methods



Illustrations extracted from the FMNR e-course. Photo credit: DynaMind eLearning (2024).

There are various ways to collect this information, outlined below.

1. Interviews: Visit FMNR practitioners to conduct interviews.
2. Monitoring sites: Establish permanent monitoring sites and use photo point monitoring (more on this below).
3. Surveys: Conduct surveys, either in-person or via SMS or phone.
4. Mobile data collection tools: Use smartphones or other mobile devices for data collection in the field.
5. Paper records: If digital methods are not feasible, use paper-based recording sheets.
6. Remote monitoring: If physical access to the site is not possible, use satellite imagery to track changes over time (for example, tree cover). This requires the location of the site to be known.

The power of photo point monitoring

One of the most powerful tools we can use to highlight the benefits of FMNR is photo point monitoring. Here, we see two photos from the same location in Ghana.



Photo: Talensi District in Ghana Photo Credit: World Vision Ghana, FMNR Before and After 2010 x 2016.

The first photo is from February 2010 and the second from April 2016. These images vividly show the landscape transformation through FMNR.

Even if you can't gather detailed data on tree sizes or species diversity, simply returning to the site to take photos allows you to visually document the changes.

This method is especially useful if you're frequently working at one location. Over time, it's easy to forget what the site looked like at the start. Photo point monitoring serves as a powerful reminder of the impact of your hard work.

Tips for effective photo point monitoring

1. Record the location: Always note the GPS coordinates, direction and the month and year the photos are taken.
2. Mark the site: Use a stake or another marker to ensure you're taking photos from the same spot each time.
3. Consistency: Try to take photos in the same months each year to avoid seasonal distortions.

Consider the **importance of consistency** in monitoring, as this is crucial for accurate assessment. For example, in the Ghana photos above, the images were not captured in the same month. While the FMNR impact is evident, some of the grass changes are likely to be seasonal, whereas the trees are clearly the result of FMNR. If the photos had been taken in the same month, the impact of FMNR alone would be more apparent.

Here is a guide for photo point monitoring on the FMNR Hub website.

If you have a smartphone, the Context Camera app is fantastic for standardising your photos. It automatically adds information like the direction the camera is pointing, the coordinates, and the date and time. You can also add custom text to note specific details about the site.

Satellite imagery

Even if you can't visit the site, you can monitor changes over time using satellite imagery, which is free on Google Earth.

For instance, a site outlined in 2002 can be compared to its state 18 years later, showing significant tree growth.



This reinforces the importance of mapping the boundaries of your FMNR sites from the very beginning.

Sharing an FMNR site

We can take monitoring a step further by sharing FMNR sites with the broader community using platforms such as the Restor website. This free resource allows you to map an FMNR site and track its progress.

When you upload a site, tag it with “FMNR” so others can easily find it. This helps us and others understand the spread of FMNR globally.

Benefits of using Restor:

- Track progress – monitor changes over time with historical satellite imagery.
- Access information – gather data on variables like biodiversity, tree cover or carbon estimates for your site.
- Connect with others – identify other groups doing or supporting restoration projects in your area.



Photo: Kenya. Photo credit: Hellen Owuor (World Vision Kenya)

Mapping and surveying FMNR sites and using tools like photo point monitoring and satellite imagery to show changes over time, and sharing these stories on platforms like Restor, all enhance our ability to track and demonstrate the impact of FMNR. These practices help us refine our projects and inspire and educate others about the benefits of FMNR.

Some tips for FMNR project monitoring and evaluation

Keeping these points in mind when implementing FMNR can help prevent problems from arising.

- Thinking about how you will assess the effectiveness of your project from the start means you will have the right information at the end.
- Many indicators of change are quantitative in nature, so you'll need to collect quality information about your community at the baseline for comparison at the endline.
- A good monitoring and evaluation plan will ensure that you know who is responsible for collecting what information and how frequently.
- Indicators are important measures of the change that you wish to see. Don't forget to update your indicator tracking table with baseline values at the beginning of your project – otherwise, how will you know what the extent of change is?
- When collecting data, make sure it can be disaggregated into groups – such as male/female and people with disabilities – wherever possible. This is important to demonstrate the inclusiveness of your project implementation. It's helpful to describe what impacts are affecting which people.
- It can be good to report results as both a proportion (such as the percentage of land users and households) as well as in numbers (such as the number of male and female land users), because often donors want to aggregate results to show impact.
- As a final check, it can be helpful to think about five key statements that would interest your donor at the end of your project – and make sure you will have the quantitative data to support these. Donors like numbers!

Resources

On the online FMNR Hub, you can find many templates that are useful for FMNR monitoring, including specific data collection tools.



Photo credit: Hellen Owuor (World Vision Kenya)

CHAPTER 8

SOME FINAL THOUGHTS

FMNR is a transformative technique for regreening degraded land by systematically regrowing trees and shrubs from stumps, roots and seeds through careful pruning and protection. It's a simple yet powerful method that allows communities to revive landscapes using local resources, requiring no costly inputs or complex tools. This makes FMNR accessible to everyone – women, men, children and even people with disabilities. It's also inclusive of those without land ownership, enabling anyone who wishes to participate in restoring their environment and contributing to their community's resilience and wellbeing.

This manual has aimed to equip you with the knowledge and tools to implement sustainable FMNR practices, supporting communities in improving both their land and their lives. FMNR is about more than trees; it's about regenerating hope, fostering community and empowering people to move from surviving environmental challenges to thriving as stewards of the land.

We are excited to welcome you to join us in our global FMNR Scale-Up Initiative of restoration and renewal. Contribute to this global community by sharing your experiences, successes, challenges and insights. Together, we can build a brighter, greener future – one where people and nature flourish side by side, and landscapes remain productive and resilient for generations to come.



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