

# Farmer Managed Natural Regeneration in practice

World Vision's experience in implementing Farmer Managed Natural Regeneration (FMNR) to sustainably transform landscapes in over 25 countries has created significant benefits for both the communities and the environment. Research shows that FMNR has a range of direct and indirect benefits, including climate change adaptation and mitigation, improving food security, increasing household income, supporting improved gender equitable relations, addressing the root causes of irregular migration and supporting peacebuilding efforts by bringing communities together to agree on solutions to shared problems.

World Vision has developed an integrated approach to FMNR, amplifies these benefits and include:

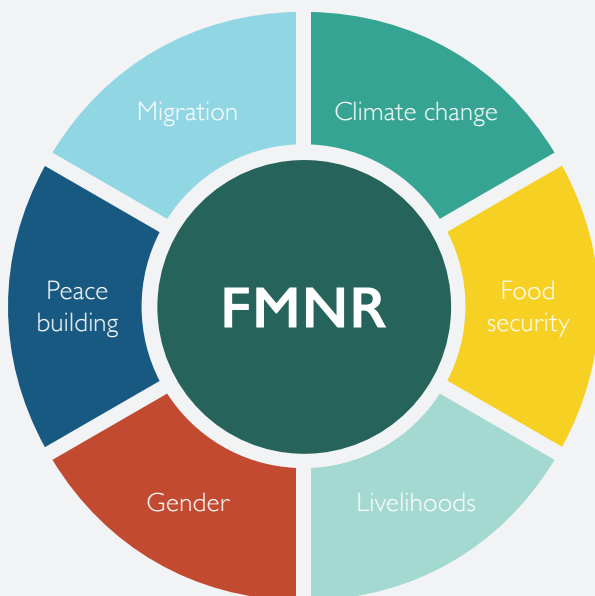
- Coaching communities to advocate for improved environmental policy
- Training farmers in complementary sustainable agricultural practices
- Linking farmers to economic services such as savings groups and markets
- Reaching marginalised people who may not be involved in other agricultural projects

## Climate Change Adaptation and Mitigation

The regeneration that occurs through FMNR notably increases tree density. This net total increase of trees and shrubs thus contributes to climate change mitigation and adaptation. More trees allow for more carbon to be stored and sequestered, thereby reducing air and soil temperature. As communities begin to protect existing trees, FMNR further contributes to the reduction of greenhouse gases emitted from felled trees. Additional benefits of FMNR include reduced land degradation, increased soil moisture, greater drought resilience and increased soil fertility. An evaluation of World Vision's Humbo Community Managed Natural Regeneration Project (2005-2018) in Ethiopia noted that FMNR activities led to a total sequestration of 111,657 tonnes (net) of carbon dioxide from the atmosphere between the period of 2006 and 2016.

## Food security

Introducing sustainable agricultural practices alongside FMNR has significantly increased food security for smallholder farmers and their families. These interventions have contributed to increased and less variable crop yields, and increased and diversified food options. Trees grown with crops have a major impact on crop performance as trees can buffer climatic extremes that affect crop growth such as air and soil temperature, and wind and solar radiation.<sup>1</sup> Tree products also play an important role in assuring food security, especially in the "hunger months" when grain



**Without a healthy, functioning ecosystem, and in the face of cyclical patterns of droughts and floods, rural communities will be perpetually in survival mode. The risks of farming in their environment are so great that there is little incentive to invest in the necessary improvements that drive productivity gains and economic development. FMNR develops community capacity to restore the land, make it productive again, and builds community resilience and opportunity.**

– Tony Rinaudo, pers. comm. June 2016.

1. Mbow, C., Smith, P., Skole, D., Duguma, L. and Bustamante, M. (2014) Achieving mitigation and adaptation to climate change through sustainable agroforestry practices in Africa. Current Opinion in Environmental Sustainability, 6, 8-14.

stores are low.<sup>2</sup> In Niger, farmers produce 500,000 more tons of cereal per year than in the 1970s and 1980s due to FMNR.<sup>3</sup> As a result, 2.5 million people are now more food secure.<sup>4</sup>

**“Before FMNR, I had low agricultural yields which did not exceed 1 ton of millet on an area of two hectares. But since I started practicing FMNR in 2012, my millet production reached 2.5 tons on the same land.”** – Mister Moustapha Ndao, farmer in Malem, Senegal

### Livelihoods and resilience

By regenerating trees in a degraded environment, FMNR can increase the quality and quantity of crop yields, timber and non-timber forest products such as forage, fruits and nuts that can be consumed or sold. Integrating FMNR with Market Systems Development programming allows smallholder farmers to more consistently sell this produce, thereby increasing and diversifying their income and making them more resilient to economic shocks. The integrated activities include improving smallholder farmer linkages with other value chain actors and improving their access to markets, information, technology and training. Introducing financial inclusion initiatives such as savings groups or microfinance further scales up household resilience. In some World Vision projects, income for communities has also been derived through the sale of carbon credits.

**“Among the households interviewed, 47 percent make an income from tree and non-tree products such as charcoal, firewood, fruits, medicine, and bee-keeping. This is higher compared to 31 percent reported in the baseline survey.”** – East Africa FMNR project, Kenya Mid Term Evaluation Report 2016

### Gender

FMNR increases the net total of tree products closer to home, thereby reducing women's labour burden and time spent collecting firewood in the long-term. The proximity of available fodder also reduces the time required by boys to herd cattle. Going beyond the immediate benefits of FMNR, the integration of advocacy programming has given women a voice to influence change in local environmental policy. Income opportunities for women are similarly increased through the integration of gender sensitive Market System Development programming, where women are provided with the resources needed to sell raw and processed non-timber forest products harvested from regenerated trees.

**“The project has provided equal benefits to women as to men and this has actually increased the social standing of the women. When you take five women, you take five men and this has given us pride.”** – Lead farmer, World Vision Senegal SFLEI project

### Peacebuilding

FMNR contributes to peacebuilding by bringing people together over the mutual benefits of a shared natural resource base and the act of working together to solve common problems, especially when practised on communal land. To equitably and sustainably manage and benefit from FMNR, various stakeholder representatives including key community and faith-based leaders must come together to devise and agree on a plan of action. An important cornerstone of community empowerment is the agreed by-laws or regulations which underpin collective action to rehabilitate the landscape. In Rwanda, FMNR provided a platform to build trust and forgiveness, where the tree was transformed into a symbol of reconciliation between community members.

**“When he [Emmanuel] requested to plant a peace tree in my compound, I knew he truly had repented and wanted reconciliation. I also decided to nurture one in his compound as a sign that I had forgiven him. Each day I look at the tree ... it shows me that we have truly put the past behind us.”**

– Alice, Rwanda Genocide survivor

### Migration

FMNR contributes towards addressing several root causes of irregular migration. This includes food insecurity, lack of livelihood opportunities and conflict over scarce natural resources. Degraded landscapes caused by deforestation and climate change can often lead to an exacerbation of these root causes. In extreme cases, individuals and families are forced to flee their homes, and in some cases cross national borders in search of pasture land, economic opportunities and food security. The integration of Market Systems Development programming to FMNR contributes to increased livelihoods and resilience, whereas integrating agroforestry and climate smart agriculture has shown to increase food security for smallholder farmers. The net increase in timber and non-timber forest products can further help evade potential conflict over these natural resources.

2. Faye M.D., Weber J.C., Mounkoro B., and Dakouo J.M. 2010, “Contribution of parkland trees to farmers' livelihoods: a case study from Mali”, *Development in Practice*, 20, pp. 428–434.

3. Reij, C., Tappan, G., Smale, M. 2009, “Agro-environmental transformation in the Sahel: another kind of “Green Revolution””, IFPRI Discussion Paper 00914, International Food Policy Research Institute, Washington DC

4. *ibid*

5. Kamiri, S. Agrilinks (2016) “Regeneration of Trees Enabling Rural Women to Have a Voice in the Community”, [online]. Available at: <https://agrilinks.org/blog/regeneration-trees-enabling-rural-women-have-voice-community>