



Outstanding Practice in
AGROECOLOGY 2019



FACTSHEET

Global – Farmer Managed Natural Regeneration (FMNR, 1983)

IN BRIEF

FMNR was first developed in Niger and is now implemented in at least 24 countries. It is a low-cost, scalable, farmer-managed technique that counteracts fertility loss, soil erosion, biodiversity loss, food insecurity and dysfunctional hydrological cycles (flood and drought) by restoring woody vegetation on deforested and degraded land. In a social context, it contributes significantly to lifting yields and income and hence contributes to counteract food insecurity. Changing attitudes has been key to the practice's success. It is much more than an agricultural technique, as it inspired a farmer-led movement re-greening land in the Sahel region. In Niger, FMNR spread to 5,000,000 hectares. The practice is highly innovative in the sense that upon its implementation it offers rapid results towards sustainable agriculture without incurring any additional costs for tools and inputs.

ABOUT THE PRACTICE AT A GLANCE

Organisation: World Vision (NGO)

Implemented in: Developed in Niger, but now widespread in at least 24 countries: Somalia, Ethiopia, Kenya, Tanzania, Rwanda, Uganda, Malawi, Zambia, Zimbabwe, Lesotho, Democratic Republic of Congo, South Sudan, Chad, Niger, Mali, Burkina Faso, Ghana, Senegal, India, Myanmar, Indonesia, East Timor and Haiti.

Year: 1983

Beneficiaries: Land users (farmers, pastoralists, forest users) and their families; city people

Topic(s): Production, agroforestry

PROBLEMS TARGETED / CONTEXT

By restoring woody vegetation on deforested and often degraded land, the practice addresses multiple problems simultaneously, including land degradation and fertility loss, soil erosion, biodiversity loss, food insecurity, fuel wood and building timber shortage, fodder shortage and dysfunctional hydrological cycles. Because FMNR contributes to lifting yields and income, it has a positive effect on livelihoods, food security, resilience and risk reduction.

FMNR was developed with farmers by the NGO World Vision as a distinct practice in 1983 in Niger as a response to deforestation, the failure of conventional tree planting practices and deteriorating livelihood conditions of smallholder farmers. Its development followed the observation that, contrary to perceptions, apparently tree-less landscapes often contain a vast repository of living tree stumps with the capacity to regenerate, referred to as an “underground forest.” In areas with no or few living tree stumps, usually there are tree seeds in the soil, and all that is required is a change of behaviour. This ‘discovery’ led to the realization that the main constraints to reforestation were social and policy related. In 1983, it all began by experimenting and promoting the concept with 10 farmers. During the severe famine of 1984, a food-for-work programme introduced some 70,000 people to farmer-managed natural regeneration and implemented its practice on around 12,500 hectares of farmland. From 1985 to 1999, the project continued to promote the method locally and nationally.

KEY FEATURES OF THE SOLUTION

FMNR is a low-cost, quick and simple method to regenerate living tree stumps or tree seeds in the soil, that can be executed at scale, enabling large-scale regeneration of apparently tree-less landscapes through slight adjustments in behaviour and land management practices. It is a farmer-managed practice that requires no external inputs or additional utensils to those available even to very poor farmers and offers rapid increasing returns. The practice quickly spread to a global scale through a combination of promotion by World Vision and word-of-mouth recommendation.

Firstly, farmers survey their land and choose the right ones to regenerate from the existing local species. Secondly, farmers select a few stems, which they want to grow up and cut away the rest (and use it for fodder or mulch). Selected stems are then pruned to halfway of the trunk and finally, the farmer marks the re-growing trees and protects them. This process is repeated every two to six months. It is a simple, locally adaptable, low cost (circa \$20 per Hectare) method that combines easily with other methods and spreads quickly through peer-to-peer learning among farmers.

In terms of initial training, World Vision offers face-to-face workshops and training events led by “FMNR experts”, and “experts” have also been trained up through an on-line-training course (since 2015). As mentioned, once this process of learning has started, the simplicity and clear effectiveness of the practice lend themselves to its quick adoption and propagation through peer-to-peer learning. World Vision Australia is also in the final stages of producing an FMNR Manual, which will be made available online.

Challenges are addressed through awareness creation, advocacy, capacity building (especially peer to peer), development of pilot sites, facilitating exchange visits, regular follow up, partnering with all stakeholders, creating an enabling environment including favourable policies, creating market opportunities.

As the main constraints were social and policy related, much effort went into awareness raising and popularizing the idea of FMNR, which went against standard practice of clearing fields of all woody vegetation. Today, organizations such as The World Agroforestry Centre, The World Resources Institute and World Vision advocate to governments for more enabling policies.

INNOVATIVE ASPECTS

- Farmer-driven, low-cost solution that guarantees rapid growth in yields and returns for smallholder farmers.
- Changing attitudes has been key to this practice becoming successful. It is much more than an agricultural technique; it inspired a farmer-led movement re-greening land in the Sahel region.
- Global scale of FMNR is encouraging reconsideration of policies that prevent farmers from taking responsibility and counteracts tree destruction.
- Can and is being applied to very different land use types, including agricultural, pastoral and highly degraded land, and forests; and adopted in extremely arid, arid, semi-arid, humid and tropical countries, and on flat, sloping and quite hilly land.

FACTS & FIGURES

- In the last five years, 437,894 individuals were trained in Face-to-Face workshops of World Vision Programmes.
- 121,050 households are known to be applying FMNR on their land, it is estimated that due to word-of-mouth the number of households implementing FMNR exceeds this number.
- FMNR is rapid in terms of tree growth, (even in semi-arid Niger, trees could reach 1-2 meters in year one, and 3 meters+ by year two). This is because most FMNR trees are growing from mature living tree stumps and root systems, which can access soil moisture and nutrients, which can draw on stored energy reserves.
- FMNR is rapid in terms of spread of the technology. In Niger, over a twenty-year period from 1984 till 2004, FMNR spread to some 5,000,000 hectares.
- The FMNR method has restored 50,000 km² of land with over 200 million trees in Niger alone. It has the potential to restore currently degraded drylands with an area the combined size of India.

OUTCOME, IMPACT & EFFECTIVENESS

- Farmers in Niger produce an additional 500,000 tons of cereal per year because of the widespread adoption of FMNR, leading to enhanced food security for 2.5 million people.
- Gross income in the Maradi Region of Niger has grown by 17 - 21 million USD, due to

FMNR, which translates to around 1,000 USD per household each year. Extrapolating this added income from FMNR to the entire five million hectares (pre 2017 estimate) implies aggregate income benefits of \$900 million/year accruing to approximately 900,000 households or 4.5 million people.

- FMNR guarantees significant increase in grain yields compared to traditional land management practices (no tree cover, no inputs) – 767 Kg/ha compared to 296 Kg/ha.
- FMNR has substantially alleviated the fuelwood energy crisis in Niger and in other countries, where it has been adopted. In the Aguié district of Niger for example, farmland that was virtually treeless in the early 1980's now has 103-122 trees per hectare and sustainably harvested fuel wood is not only being sold to nearby Niger markets, but also across the border into Nigeria.
- Farmers are more likely to survive drought, because of improved growing conditions and because they now have a greater range of products to harvest such as honey, wild foods, fodder, fuel wood, timber and traditional medicines even in years when annual crops fail.
- Early and increasing returns. Poor farmers begin to realize benefits from FMNR even in the first year, particularly in terms of small amounts of fuel wood and fodder (from some species), but additionally, the existence of even small trees in fields has a number of benefits to crops – including some flow on impact from improved microclimate through reduced temperatures and wind speeds, increased soil microflora and soil fertility.

OUTLOOK, TRANSFERABILITY, SCALABILITY & COST-EFFICIENCY

FMNR adoption has spread rapidly within the last 3-5 years, however due to the lack of a central reporting system it is estimated that the practice is even more spread out than confirmed in official numbers. Because FMNR does not require additional inputs for smallholder farmers, the practice costs nothing to the farmer except his/her labour. The practice has proven to be highly transferable, but in order to scale it up further awareness, research, training and funding are required. Regarding the actual practice, no technology is needed, however it would be very beneficial to develop a platform to monitor the spread of FMNR.

FMNR is scalable. FMNR rapidly went to scale in Niger primarily as a bottom up, farmer led movement. Today, World Vision and other organizations are promoting the technique to governments, non-government organizations and farmers and community organizations. We are beginning to see early signs of scale up in Ethiopia, Kenya, Tanzania, Rwanda, Uganda, Malawi, South Sudan, Mali, Ghana and Senegal.

A 2013 Social Return on investment report on World Vision Ghana's Talensi FMNR project calculated that, after accounting for discounting factors, World Vision's investment of funds, staff and technical input generated in the target communities a SROI ratio of 6:1 by year three (end of the project). The study also calculated that the project will generate a ratio of 17:1 by year seven and 43:1 by year 13 (10 years after project closure).

Rinaudo has won a number of awards, most recently the Right Livelihood Award (2018), but also others including: Interaction 2010 Best Practices and Innovations Initiative; World Vision Global Resilience Forum, 2011; Arbor Day Award for Education

Innovation, 2012; UNCCD Land for Life Award, 2013.

INTERVIEWEE FEEDBACK

Number of points: 22.5 out of 23

Summary: The interview provided a helpful and full insight into the inception, development and implementation of the practice. The practice scored very highly across all sections and only lost 0.5 points overall, specifically in the question on local markets.

1 (Sustainable use of resources) - 5.5/6 – Promotes biodiversity, soil conservation, recycling of minerals and nutrients, synergies in food system through fodder, diverse food sources, water cycle etc.

2 (Equity and eradication of poverty) - 4/4 – Farmer income increased, more opportunities for women and for youth (for those who do not own land, can hold bees or hold more fodder). Students involved in environmental clubs. 0.5 lost here as no real work to promote local market access.

3 (Precautionary approach to human health, natural resources and ecosystems) - 2 / 2 – Increased tree presence carries multiple benefits for human and natural health, in terms of clean water, lower wind speeds and dust in air, less easy for pathogens to spread. Projects are farmer/ community managed and they decide how to implement.

4 (Public participation and access to information) - 3/3 – Workshops, exchange visits, extension agents, brochures and radio used to maintain contact and ensure communication. Co-creation of knowledge as each project is contextually based and must be adapted to each context.

5 (Governance and human security) 3/3 – Ensure good leadership and create transparency. Policies in place for corruption. Grievance mechanism in place for illegal clearing etc.

6 (Integration, interrelationship- human rights, social, economic and environmental objectives) - 3/3 – Strong policies in place which ensure empowerment of marginalised groups. Work with indigenous species and also increase diversity of food types.

7 (Common but differentiated obligations) - 2/2 – All FMNR projects are adapted to the specificities of the target area. FMNR is actually a re-introduction of traditional practices in many places.

CONTACT

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LINKS AND FURTHER READING

FMNR Hub Reports: <http://fmnrhub.com.au/resources/research-reports/>

FMNR: Everything is connected, Video: <https://www.youtube.com/watch?v=p-ter-QL6RO0>

World Vision Ethiopia, FMNR made visible difference during the 2015 drought in Ethiopia: <https://www.worldvision.org/wp-content/uploads/FMNR-case-story-in-fighting-drought.pdf>

World Vision Social Return on Investment Report: <http://fmnrhub.com.au/sroi-report-measuring-the-impact-of-fmnr/#.Wx7rjIozY2w>

Right Livelihood Award Website, 2018: <https://www.rightlivelihoodaward.org/laureates/tony-rinaudo/>

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