



THE REPUBLIC OF UGANDA

FARMER MANAGED NATURAL REGENERATION IS CRITICAL FOR CLIMATE CHANGE ADAPTATION



TECHNOLOGY DESCRIPTION

Farmer Managed Natural Regeneration (FMNR) is a simple technique of systematically regenerating trees from living tree stumps, roots, seeds or seedlings. Using tree stumps, FMNR involves selection of healthy and vigorous natural coppices and cutting or pruning off unwanted ones. It takes advantage of an established root system leading to fast establishment of trees with lower vulnerability to drought, pests and diseases.

It is a low-cost and potentially sustainable technique that aims at restoring degraded forest and agricultural landscapes while increasing tree cover and biodiversity. Farmers can also plant naturally occurring seeds, assist root sprouts or germinating seedlings by selecting vigorous ones, weeding around them to minimize competition from other undergrowth and protecting them from grazing and trampling.

CURRENT TECHNOLOGY READINESS LEVEL

The technology readiness level for FMNR is between 5 (technology validated in relevant environment) and 6 (technology demonstrated in relevant environment). FMNR was introduced to Uganda in 2010, by World Vision Uganda (WVU). Its deployment is mainly driven by non-governmental organizations (NGOs) through, a national FMNR Network, which includes WVU, Vi Agroforestry, Uganda Farmers Federation, World Agroforestry Centre, The Hunger Project, Tree Talk Plus, and National Agricultural Research Organization (NARO). The network has used FMNR, working with the National Forestry Authority, in 34 square kilometers in the Shea Butter belt of Lira, Otuke, Alebtong, Amuria and Agago districts. There is potential to upscale this to all the seven landscapes in the country.

CLIMATE RATIONALE OF THE TECHNOLOGY

The reported climate change and variability impacts (such as: increased temperatures, prolonged droughts, unreliable rainfall patterns, flooding) exert huge pressure on the forestry sector. Whereas there is no comprehensive national climate change vulnerability assessment for Uganda across all the sectors, the reported vulnerabilities in forestry include:

- a) Emergence and proliferation of tree pests and diseases;
- b) Increased risk to destruction from wild fires during prolonged droughts;
- c) Increased encroachment on forests and forest land by communities in forest landscapes driven by escalating land degradation and food insecurity.

Farmer Managed Natural Regeneration can contribute to supply of forest products, local temperature regulation, rainfall formation and carbon sequestration.



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AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIME-LINE

The ambition is to restore 569,403 ha using FMNR across three forest landscapes as direct entry points by 2030. These are: a) Afro-motane; b) Karamoja; and c) Northern moist. This will benefit at least 300,000 households (i.e., 1,800,000 people) directly, of which at-least 30% should be women and the youth. Thereafter, deployment of FMNR can expand to other forest landscapes, including: a) Southern rangeland; b) South East Lake Kyoga flood plain; c) Western mid-altitude; and d) Lake Victoria crescent.

AMBITION FOR TECHNOLOGY READINESS LEVEL OR COMMERCIAL READINESS INDEX

The target for the FMNR technology is to reach Technology Readiness Level 9 (actual system proven in operational environment).

EXPECTED IMPACTS OF THE TECHNOLOGY

- FMNR will benefit many households who rely on tree products e.g., fruits, timber, firewood, herbal medicine, shade, charcoal, windbreaks, income and fodder.
• Regeneration of fruit trees through FMNR will benefit about 40% of households who rely on them for food during hunger months.
• Restored trees will potentially contribute to regulation of the local community climate, Increase water infiltration, slow down runoff flow, and stabilize stream banks.

- Increased supply of timber and non-timber forest products for domestic use and potential income generation.
• High public savings in forest landscape restoration.
• Conservation of biodiversity including indigenous species.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

The following are some of the key relevant policies that are related to the FMNR technology:

- a) Uganda Vision 2040 (NPA, 2007);
b) National Development Plan (NDP) III, 2020/21-2024/25 (NPA, 2020);
c) Uganda National Climate Change Policy, (2015) (MWE, 2015);
d) National Forestry Policy, 2001 (MWLE, 2001);
e) Forest Landscape Restoration (FLR) Opportunities report (MWE, 2016);
f) The Uganda National Land Policy, (2013);
g) The National Land Use Policy, (2006).



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POLICY BRIEF 6. DECEMBER 2021
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PROPOSED POLICIES AND MEASURES TO ENHANCE TECHNOLOGY IMPLEMENTATION

The following policies should be developed and operationalized for FMNR technology implementation within the selected forest landscapes:

- i) Strengthen policy implementation and enforcement. Most importantly, develop and operationalize land-use plans within the 7 forest landscapes. Secondly, update/review of outdated policies-laws during the ongoing review of the National Forest Policy, 2001:
 - Discourage bush burning & stray livestock grazing.
 - Strengthen tree ownership/rights
 Articulate these changes in local ordinances and bylaws.
- ii) Improve access to inputs and services for incentivizing FMNR.
- iii) Create awareness on FMNR
- iv) Build institutional capacity for FMNR

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

It will cost about US dollars 933,800 to achieve the ambition of restoring 569,403 ha using FMNR across 3 forest landscapes by 2030



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LINKS TO TNA REPORTS

<https://tech-action.unepdtu.org/country/uganda/>