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Farmer Managed Natural Regeneration, Regreening and Livelihoods:

A Meta-Review of World Vision Australia's Programming

Acknowledgments

This research brief summarises the results from a meta-review of FMNR and Regreening projects in World Vision Australia's programming, conducted from April to August 2025.

World Vision Australia (WVA) commissioned independent consultant Dr. Tafadzwa Nyanhanda from Triumphant Global to perform this study. Oversight and analysis support from WVA was provided by Alice Muller, Senior Monitoring and Evidence Lead - FMNR Scale Up; and Dr. Nami Kurimoto, Evidence Building Advisor - Monitoring and Evaluation. This report benefited from review and input from Harry James, Juliet Bell, Isabelle Gurney, Ellie Wong, Teddy Mekonnen Demeke, Tony Rinaudo, Briah Black, and Elly Torres Maradiaga from World Vision Australia and Yukiko Yamada Morovic, Technical Director, Environmental Sustainability and Climate Action at World Vision International. This study was funded by the Australia Government through the Australian NGO Cooperation Program (ANCP). The views expressed in this publication are the author's alone and are not necessarily the views of the Australian Government.

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Summary of Findings

As the global community seeks to address the rapidly increasing combined crises, of poverty, land degradation, biodiversity loss and climate change, nature-based solutions that can sustainably improve livelihoods and environmental health are urgently required. This meta-review builds on previous reviews[1] to look in more detail at **how Farmer Managed Natural Regeneration (FMNR) and other ecosystem restoration or 'Regreening' interventions have been combined with livelihoods interventions**, exploring their **impact pathways, mechanisms, and contextual factors**. It assesses contributions to various aspects of household well-being, including food availability, income diversification, reduced expenditure, gender empowerment, and social inclusion, while also identifying common challenges and lessons learned for future programming. The review draws on impact evaluations of 11 FMNR and Regreening projects supported by World Vision Australia between 2014 and 2025.

KEY FINDINGS

All projects reviewed were found to have **increased the adoption of FMNR and related Regreening practices**, generating the following positive impacts for children, families and communities *(Figure 1)*:

- **Improvements in land under restoration and tree density contributing to improved ecosystem services providing soil health, wood and forest products, improved crop yields and livestock productivity** in most project areas.
- **Improved household income, asset accumulation, and economic diversification**, though impacts on overall poverty reduction were mixed.
- **Improved household food security, dietary diversity, and year-round access to food**.
- **Improved child well-being** via improved household food security and income.
- **Enhanced social cohesion** through collective decision-making and reduced conflict.
- **Enhanced household resilience** through rapid restoration of tree cover and adoption of more sustainable coping strategies and contributing to peace.

All FMNR and Regreening projects integrated livelihoods programming approaches such as Savings for Transformation (S4T), inclusive Market System Development (iMSD) and Local Value Chain Development (LVCD), Gender Inclusive Financial Training (GIFT) and Women's Economic Empowerment (WEE) to some extent enhancing program participation and impacts including:

- Increased adoption and scaling of FMNR and related Regreening practice in communities, through realisation of financial benefits from the sale of tree-based products and other agricultural outputs
- Financial Inclusion and prioritisation of women's participation facilitated economic empowerment, supported the adoption and sustainability of FMNR/Regreening practices among marginalised groups in the community.
- Enhanced household income and asset accumulation building on the improved natural resource assets resulting from FMNR and Regreening efforts.

Gender Equality, Disability and Social Inclusion (GEDSI) integration was varied:

- Projects that implemented gender transformative approaches observed **enhanced impacts on improvement in women's income**, access to income generation opportunities, resources, and decision-making power.
- There are significant opportunities to increase disability inclusion in Regreening programming, and the participation of children and youth in environmental restoration.

[1] FMNR Evidence Gap Map (2024) available at: https://www.worldvision.com.au/docs/default-source/meta-evidence-briefs/farmer-managed-natural-regeneration-evidence-gap-map-2024.pdf?sfvrsn=793d9b3c_2
Evidence of Impact FMNR (2019) available at: https://www.worldvision.com.au/docs/default-source/meta-evidence-briefs/evidence-of-impact-farmer-managed-natural-regeneration.pdf

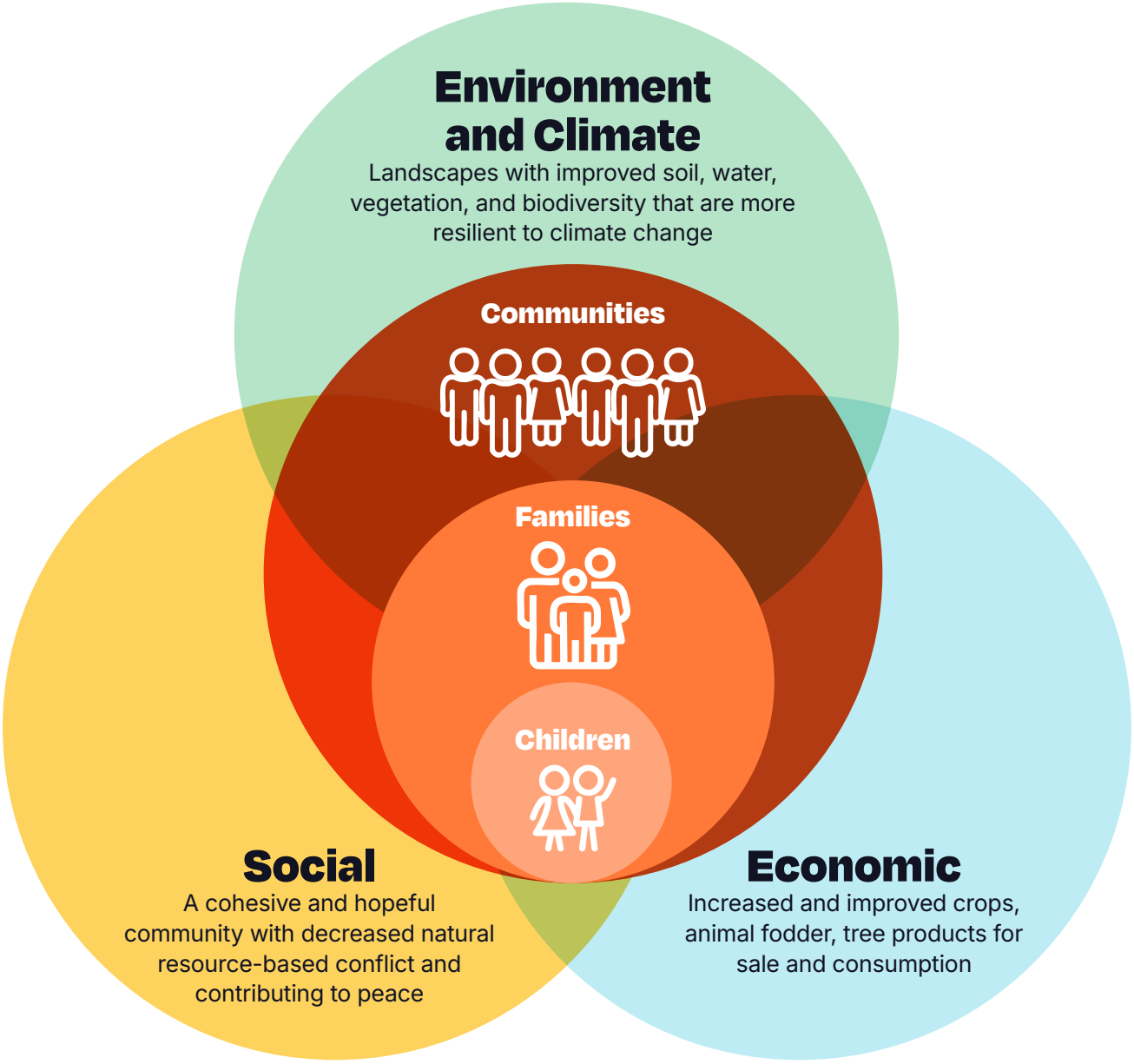

Figure 1 Children, families and communities benefit from the social, economic and environmental outcomes of FMNR and Regreening programmes

Context

Climate change, unsustainable farming practices, and natural resources exploitation are rapidly degrading productive land, exacerbating poverty, food and nutrition insecurity, loss of biodiversity, conflicts and insecurity[2]. Rural communities are more vulnerable to climate crisis and conflict associated with diminishing natural resources. This negatively impacts communities' social cohesion reducing their resilience and ability to recover from climate related shocks and disasters such as drought, floods, fire etc. Often these environmental challenges flow on to affect marginalised and vulnerable groups in the community the most, such as gender-based economic disparities—with women frequently engaged in low-profit agricultural sectors and limited land access.

World Vision Australia (WVA) addresses the root cause of these challenges through land restoration approaches such as FMNR, and community led ecosystem restoration through the RGC project model. These programming approaches intend to enhance social, economic and environmental resilience, contributing to enhanced natural resources, improved agricultural production, and in turn the opportunity for households and communities to improve their income, food and nutritional security, livelihoods and well-being[3].

FMNR and Regreening interventions are often implemented in conjunction with livelihood interventions targeted at income generation and productivity (such as LVCD, iMSD and/or access to finance, such as S4T, with the aim to improve household income and WEE as both an enabler for restoration, and a pathway for community development impacts. Figure 2, shows how FMNR, Regreening and complementary livelihoods approaches such as these contribute to improved household income, food security and adaptive capacity and therefore child well-being and household and community resilience. Box 1 describes some of the most commonly applied complementary approaches and models found in the projects in this review.

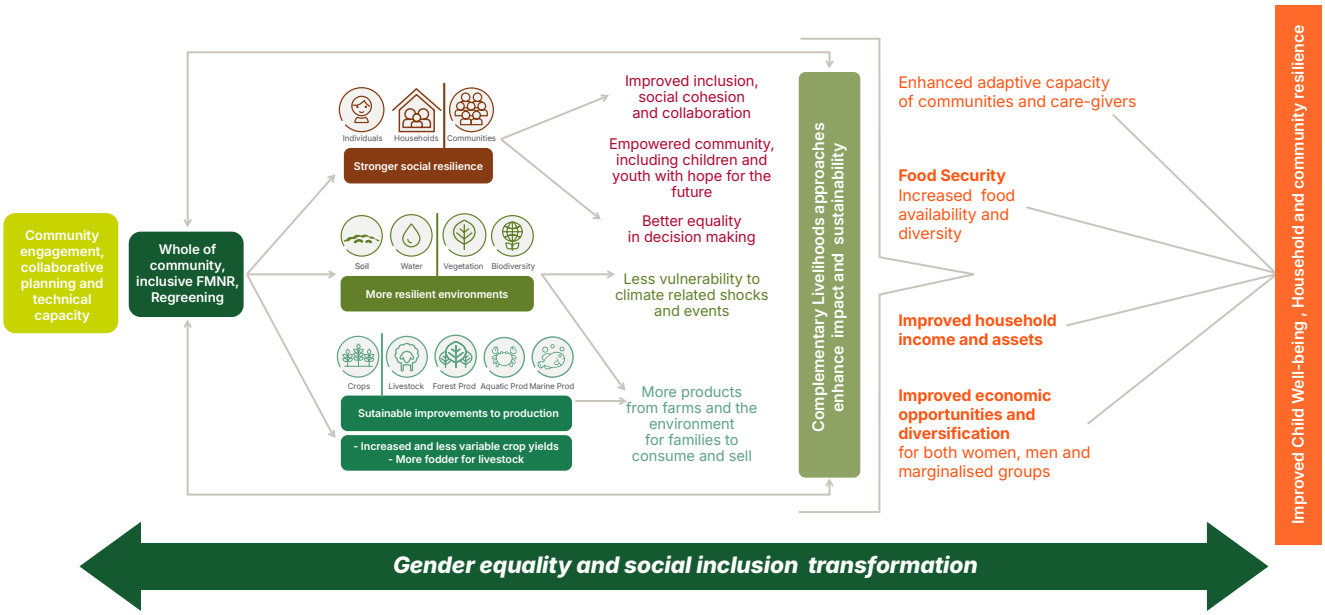

Figure 2 Theory of change for how FMNR, Regreening and livelihoods programming combine to contribute to household income, food security and adaptive capacity and therefore improved child well-being and household and community resilience

[2] UNCCD. Background Document: The Economics of Desertification, Land Degradation and Drought: Methodologies and Analysis for Decision-Making. Bonn: United Nations Convention to Combat Desertification.; 2013.
[3] Rinaudo T, Muller A, Morris M. Farmer managed natural regeneration (FMNR) Manual. Second Edition Melbourne, Australia: World Vision Australia; 2025

Box 1 Project Models and Approaches implemented together to address land restoration and livelihoods

Farmer Managed Natural Regeneration (FMNR): FMNR is a highly effective, simple and low-cost land restoration technique. FMNR involves systematic regeneration, management and regrowth of trees and shrubs from felled tree stumps, roots and seedlings.

Regreening Communities (RGC): RGC project model is a holistic, community-led ecosystem restoration approach. The RGC model guides communities through a participatory process that aims to increase social resilience, environmental health and sustainable production.
Each community selects a tailored set of solutions, which may include scaling up local and indigenous restoration practices, strengthening government partnerships, and introducing proven methods like FMNR.

Climate-Smart Agriculture (CSA): FMNR and Regreening practices align closely with climate-smart agriculture principles based on FAO's CSA framework (1) sustainably increase agricultural productivity to support equitable increases in incomes, food security, and development; (2) adapt and build resilience to climate change; and (3) develop opportunities to mitigate greenhouse gas emissions from agriculture, where possible.

Local Value Chain Development (LVCD): LVCD enables producers to grow their incomes by connecting them to new and more lucrative markets, providing access to vital financial, technical, and business services to strengthen product-market alignment, and building their knowledge and skills to consistently meet market demands.

Inclusive Market Systems Development (iMSD): iMSD is World Vision's core market-based programming approach to increase incomes of the marginal poor. It improves the way how markets function by working with market actors to better serve people living in poverty and marginalised groups (market focus), while also strengthening the productive capacities of these groups to better participate in and benefit from market systems (household focus). By working in both market-focused and household-focused pathways iMSD helps households increase income and have a sustainable livelihoods[4].

Savings for Transformation (S4T): S4T helps vulnerable families – especially women and marginalised groups – build financial resilience and social cohesion. These member-owned savings groups use simple, transparent methods to regularly save small amounts and provide loans for needs such as healthcare, education, or livelihood investment. By fostering economic empowerment, social capital, and collective support, S4T strengthens household stability and community resilience.

Women's economic empowerment (WEE): WEE approach supports women to become stable financial contributors, leading to improved outcomes for children. It focuses on economic advancement, access to resources and opportunities, decision-making power, and equitable systems. By integrating gender into livelihood programs and promoting financial literacy, skills development, and positive social norm change, the WEE approach enables women to participate fully and equally in economic life[5].

OBJECTIVES

This meta-review provides portfolio-level insights on how FMNR and Regreening interventions have been combined with livelihoods interventions, and how these together have influenced the environmental, social, economic and child well-being outcomes achieved. This review has insights for current and future programming, monitoring and evaluation designs to strengthen household well-being outcomes. The results contribute to the global evidence base by offering valuable insights into past experiences, challenges and lessons, and identifies opportunities for future FMNR and Regreening investments. The key questions guiding the review were:

- How effective have the WVA-supported FMNR and Regreening projects been in contributing to household well-being impacts?
- To what extent have FMNR, Regreening and livelihoods approaches been integrated ? How could this be improved to enhance project outcomes ?
- Across the portfolio, to what extent were Gender Equality, Disability and Social Inclusion (GEDSI) processes and outcomes included in the projects?
- What were common challenges and lessons learnt, and what recommendations are there for future programming in FMNR and Regreening?

[4] iMSD is the core approach employed in M4C, which serves as the core project model (CPM) for livelihoods. For more details, refer to the M4C CPM Handbook (2005), available at https://www.wvi.org/sites/default/files/2025-05/Inclusive%20Markets%20for%20Communities%20handbook%20-%20M4C_May%202025.pdf

[5] WEE framework and Program Quality Assurance Standards (2022) available at https://www.wvi.org/sites/default/files/2022-05/WEE%20PQAS_2022_briefing%20paper_final.pdf

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METHODOLOGY

WVA provided midterm and final project evaluations for 11 FMNR and Regreening projects between 2014 and 2025 (Table 1). Data was systematically extracted using a modified data extraction tool based on the WVA Evidence Building Framework (EBF) to ensure the consistent and unbiased extraction of relevant effects and qualitative comparison. This information was then summarised graphically and in tabular and narrative forms. The extracted data included basic document and programming descriptions, methodological approaches, outcome measures, sample sizes, barriers and facilitators to impact, and hypothesised mechanisms of change.

WVA's FMNR and Regreening approaches contribution to targeted outcomes was assessed through both the quantitative presentation of report findings and narrative discussion of how report authors and intervention participants thought change was achieved. Adaptation to local context was examined qualitatively by considering author and participant perceptions of barriers and facilitators to impact. Outcome measurement and gaps were assessed by comparing measured outcomes to WVA's Evidence Building Framework (EBF) in particular the Climate Action and Regenerative Environment (CARE) and Economic Empowerment core, recommended and suggested priority indicator sets, and related broader indicators, to assess impact and through expert reflection on the reporting format. WVA's Climate Action and Regenerative Environments (CARE), FMNR Scale Up, and Impact Evidence Building (IEB) teams advised on sources of data, and/or provided their professional insights into the specifics of this project portfolio through meetings and engagement during the report review process.

LIMITATIONS

The review was limited by the information available in the underlying reports. While consultations with WVA stakeholders provided nuanced evidence, potential biases in data collection and outcome reporting in the original reports may be reflected. As the included reports generally did not all compare results to a counterfactual, the findings primarily reflect contribution rather than direct attribution of outcomes specifically to FMNR/Regreening interventions. FMNR/Regreening practices were integrated with various complementary interventions, meaning that other interventions may have influenced the observed outcomes. The evolving definitions and designs of project models over the reviewed period also made it challenging to isolate the individual contributions of different approaches. The development of EBF indicators for standardised impact measurements began in 2019/2020. Consequently, not all projects included in this meta-review fully align with the EBF, which limited direct comparability across all projects.

Table 1 Overview of World Vision Projects included in the meta-review

Project	Country	Period	Donor	Context and Scope	Project Goal
Landscape restoration, irrigation to benefit most vulnerable Australia Afghanistan Community Resilience Scheme (**AACRS**) Phase 1 and 2	Afghanistan	2014-2021	Australia Afghanistan Community Resilience Scheme (AACRS)	Primarily agricultural, and pastoral ecology Phase 2 of the project implemented in 196 villages in four districts in Badghis Province, including 105 villages continuing from Phase I and 91 new villages inducted at the start of Phase 2.	• Communities and families in Badghis to have livelihoods that are more sustainable and inclusive of vulnerable groups
Rural Economic Development (**IRED**) Project	Indonesia	2016-2020	Australian Government through the Australian NGO Cooperation Program (ANCP)	Sumba Island 6,565 participants from economically deprived and land-degraded areas	• Increase sustainable economic development of Sumba Island utilising FMNR and LVCD approaches
Talensi Managed Natural Regeneration Project Phase 3	Ghana	2017-2020	Australian Government through the Australian NGO Cooperation Program (ANCP)	Sudan climatic zone with marked dry season and 4-6 month high-rainfall wet season Targeted 25 communities	• Improve household food security and resilience for 8,000 people, especially the most vulnerable and their families, by addressing land degradation through FMNR and farmer managed agroforestry systems.
Enhancing Resilience for Improved Livelihoods in Togdheer, Somaliland	Somalia	2017-2020	Australian Government through the Australian NGO Cooperation Program (ANCP)	Arid and semi arid environment, semi-nomadic pastoralists, with agriculture as the main source of livelihood. 13,444 agro-pastoralist participants	• Enhancing resilience through improved ecosystem health and food security of agro-pastoralist communities
Central Rift Farmer-Managed Natural Regeneration Scale-up project (**CRIFSUP I**)	Kenya	2017-2021	Australian Government through the Australian NGO Cooperation Program (ANCP)	Arid and semi-arid counties Project worked with 6,600 Farmer households to implement FMNR and complimentary Regreening practices	• Contribute to improved food security and livelihoods for smallholder farmers and pastoralists, both women and men, in Kenya by 2021 through FMNR and other evergreen agricultural practices.
Integrated Management of Natural Resources for Resilience in the Asal (**IMARA**) Program -	Kenya	2017-2021	Swedish International Development Cooperation Agency (SIDA)	Arid and semi-arid counties of northern Kenya ~15,861 participants	• Increase the resilience of marginalised households to climate change related shocks through diversified livelihoods and improved natural resource management
Regreening Africa	Ethiopia, Ghana, Kenya, Mali, Niger, Rwanda, Senegal, and Somalia	2017-2022	European Union	Degraded land in rural communities Sub-Saharan Africa 607,088 Households reached; access to 954,440 Hectares of land for Regreening	• Improve smallholder livelihoods, food security, and resilience to climate change in Africa while restoring ecosystem services.
Forest Landscape Restoration (**FLR**) for Improved Livelihoods in Rwanda -	Rwanda	2017-2023	Australian Government through the Australian NGO Cooperation Program (ANCP)	Eastern province of Rwanda, drought prone subtropical area with small holder farmers 11,400 small holder farmers (~57,800 participants)	• Improve food security and livelihoods for smallholder farmers in Rwanda by 2023.
Drylands Development Programme (**DryDev**)	Burkina Faso, Mali, Niger, Ethiopia, and Kenya	2019-2021	The Ministry of Foreign Affairs (MoFA) of the Netherlands	Semi-arid areas with yearly rainfall between 400mm and 800mm; Targeted 227,000 farmers across the five countries with proven interventions for ensuring food and water security enhancing productivity at both watershed and farm levels	• Sustained improvements in food and water security, livelihoods, and resilience, and the empowerment of women and disadvantaged groups
Food Security and Resilience in Transitioning Environments (**FORESITE**) Project,	South Sudan	2019-2023	European Union	Arid and semi-arid regions Targeted 21,826 individuals from smallholder farmer and vulnerable households (landless, female-headed, IDPs/returnees)	• Strengthen resilience of communities, improving governance and conflict prevention and reduced forced displacements due to loss of livelihoods
Re-green the Globe Project (**RtG**): Ethiopia -	Ethiopia	2019-2024	Australian Government through the Australian NGO Cooperation Program (ANCP)	Arid and semi-arid regions National focus, in addition to direct programming in 19 communities through cooperatives and demonstration and learning sites	• Scale up FMNR across 752,910 hectares of deforested and degraded land across 33 woredas in three regions (Amhara, Southern Nations, Nationalities, and People's Region and Oromia) of Ethiopia by 2024.

FINDINGS

FMNR and Regreening approaches saw high adoption across all projects—ranging from 51% to 97% of the population in targeted communities —driven by strong knowledge sharing and community-led implementation models. FMNR served as a core practice or was integrated with complimentary Regreening practices including soil and water conservation, agroforestry, improved crop and livestock management[6]. While not explicitly used FAO's Climate-Smart Agriculture (CSA) framework and principles—such as improved productivity, resilience, and emissions mitigation—were embedded and adapted to local contexts[7]. The extent of integration with other approaches varied by project objectives and country settings with a strong focus on linking FMNR to livelihoods through S4T, LVCD, and IMSD. These efforts enabled widespread uptake and scaling, contributing to multiple outcomes including increased tree cover, crop yields, incomes, food security, improved gender equality, and community well-being.

FMNR and Regreening Adoption and Outcomes

There was high adoption of FMNR/Regreening practices - ranging from 51% to 97% of the population in targeted communities driven by effective community engagement, community led planning and technical knowledge sharing, to overcome existing challenges. Strengthening extension services can increase the quality of technical support available to rural communities, resulting in more effective implementation of FMNR and Regreening practices. Adoption of Regreening practices can be increased by supporting farmers to access to financial capital, productive assets, and formal credit or microfinance to invest in Regreening practices and production.

CONTRIBUTION TO BIOPHYSICAL OUTCOMES

Land under Restoration and Tree Density

Collectively 10 of the 11 projects reviewed brought 15,648 hectares of land under restoration. In addition, the Regreening Africa project, led by CIFOR-ICRAF, and implemented by a consortium of partners including WV brought 352,577 ha under restoration across 8 countries. Reported outcomes indicated consistent increases in tree density and canopy cover across all reporting projects (Table 2), suggesting improvements in ecosystem functionality and associated livelihood co-benefits. In FMNR Somaliland, 56% of project households reported more trees, compared to 15% in non-project areas. In East Sumba, Indonesia, 71% of households in the IRED project area also observed an increase in tree numbers. Climatic shocks and long term drought and degradation frequently reversed short term gains made in improved production or Regreening and FMNR particularly in areas where alternative coping measures are not available, making sustaining the benefits, such as increased tree cover, over time more challenging. Yet, while these climatic shocks and droughts reversed some short-term gains, areas with established FMNR and Regreening practices were less affected than others, indicating that these interventions served as protective measures to help communities and ecosystems against the impacts of crisis.

[6] These practices align with those included in the Regreening Communities Toolbox and Model. See Regreening Communities Handbook-compressed.pdf

[7] For more information on Climate-Smart Agriculture in World Vision Australians Programming (2023). Available from https://www.worldvision.com.au/docs/default-source/meta-evidence-briefs/climate-smart-agriculture-in-world-vision-australia-programming.pdf

Table 2 Impact of FMNR and related Regreening practices on land under restoration and tree cover

Project	Land brought under restoration	Change in Tree Density (trees/ha)
CRIFSUP I	2807 hectares (6,938 acres)	Farmland: ↑ 54.2% (from 79.5 to 123 trees/ha) Communal land: ↑ 21.5% (from 90 to 109 trees/ha)
FMNR Somaliland	-	Project area: 4.5 trees/ha (181% higher than comparison site at 1.6 trees/ha)
Talensi	220.4 hectares	↑ 559% (from 79 to 520.6 trees/ha)
FLR	-	↑ 243% in project areas ↓ 50% in comparison areas
FORESITE	3,392.86 hectares	-
IRED	4,931.5 hectares	-
Regreening Africa	352,577 ha (across all implementing partners)	↑ 179% (from 43 to 120 trees/ha)
Re-Green the Globe	4,296.80 hectares directly by WV 774,713 hectares indirectly through FMNR Scaling	

Soil Health (Fertility and Erosion Control)

FMNR and Regreening projects contributed to perceived improvements in soil fertility and reduced erosion by participating households. In CRIFSUP I , households reporting improved soil fertility increased from 16% to 55%. In Rwanda's FLR project, 52% of participants reported better soil fertility (vs. 25% in comparison areas). Erosion reduction was reported by 84% of households in FLR and 62% in CRIFSUP I. Soil organic carbon levels increased by an average of 3% across Regreening Africa sites.

Access and Availability of Tree and Forest Products

FMNR and Regreening efforts enhanced access to tree products and use of on-farm resources, and improved income from tree-based products, though continued efforts are needed to ensure women benefit equally. In FMNR Somaliland, 34% of households reported better firewood availability, and caregivers accessing firewood from their land increased to 33% (vs. 19%). In FLR (Rwanda), access to fodder rose by 136% among livestock owners and women's access to firewood increased from 10% to 63%.

Use and Income from Tree Products

Use of tree products grew significantly as a result of FMNR and Regreening programming. In Regreening Africa, fuelwood use doubled (30% to 60%), and fruit/nut consumption increased from 20% to 37%. In IRED (Indonesia), farmers were able to rely on trees like Leucaena to provide fodder year round. In CRIFSUP I, household income from tree products rose by 50%, and households reporting such income jumped from 13% to 78%.

CONTRIBUTION TO AGRICULTURAL PRODUCTIVITY

Crop Yields and Livestock Productivity

FMNR and Regreening interventions contributed to improved agricultural outcomes in most project areas. In CRIFSUP I, 53% of farmers reported increased crop yields, linked to better input access, irrigation, storage, and FMNR training, which was significantly associated with cereal production. In the FLR project (Rwanda), 46% of households reported increased crop yields due to adoption of FLR practices. Livestock productivity also improved modestly—as 61% of FLR participants reported better livestock outcomes. However, results varied by context, with insecurity affecting progress in some areas.

In FMNR Somaliland, the project interventions contributed to substantially higher crop yields than in comparison sites, including cabbage (464 vs. 240 kg/ha), tomatoes (567 vs. 219 kg/ha), cereals (97 vs. 13 kg/ha), and cowpeas (178 vs. 54 kg/ha).

CONTRIBUTION TO HOUSEHOLD INCOME AND POVERTY REDUCTION

Household Income, Asset Accumulation, and Poverty Reduction

FMNR and Regreening interventions contributed to households' incomes (Figure 3), improved asset accumulation, and economic diversification through the sale of tree and non-tree products. Stronger shifts in household income were seen in projects where a market-based approach was applied to value chain products that could increase incomes and deliver land restoration outcomes. Asset gains were positively correlated with increased use of tree products and Regreening practices.[8] In the CRIFSUP I project, for example, household income from tree product sales increased by 50%, from USD $94.95 to USD $142.21. In FMNR Somaliland, the proportion of households reporting increased income from the sale of fodder rose significantly from 13% to 78%, demonstrating substantial economic value and the potential for livelihood diversification. Further market development and private sector engagement in nature-based products would increase income generation opportunities.

Impacts on poverty reduction and multidimensional poverty were mixed and often constrained by structural factors such as insecurity and limited timeframes for poverty transition.[9]

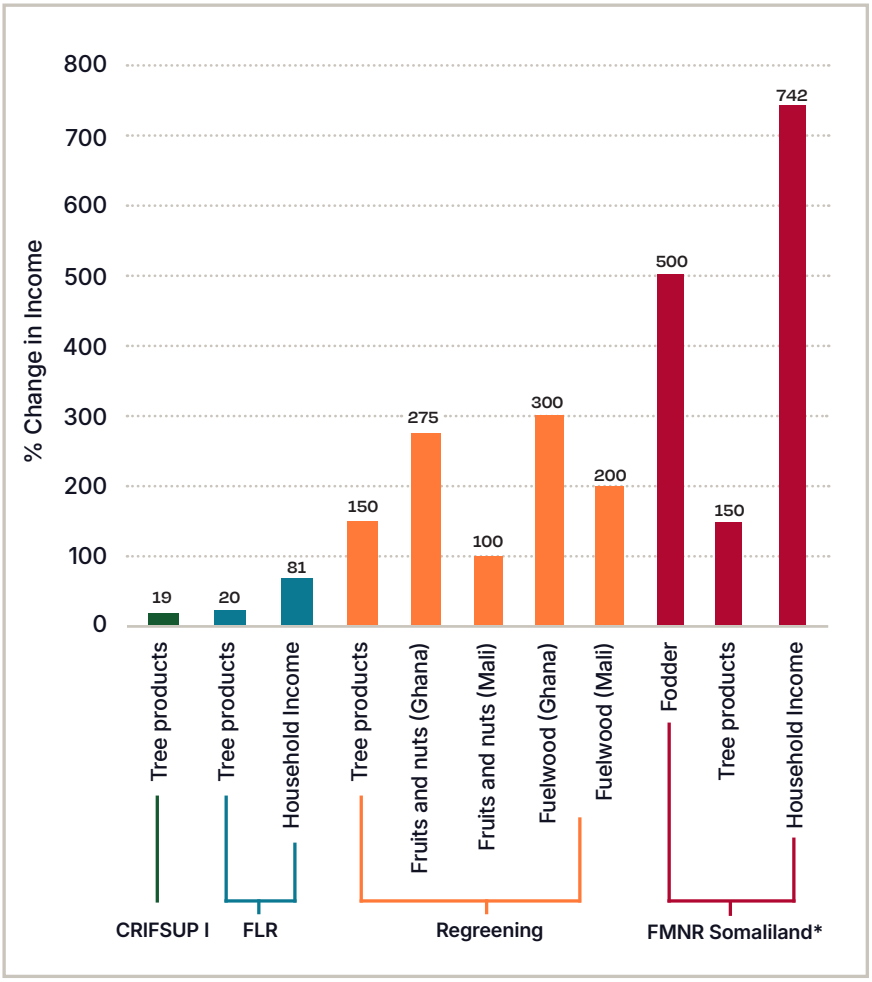

Figure 3 Percentage change in income from different sources, experienced by FMNR and Regreening Project participants

* FMNR Somaliland project area data compared with comparison area

[8] FMNR Somaliland Project, FLR project, and Regreening Africa
[9] DryDev Programme, IRED project and IMARA project


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CONTRIBUTION TO FOOD SECURITY AND NUTRITION

FMNR and Regreening initiatives significantly improved household food security, dietary diversity, and year-round food access across multiple project areas. For example, in the CRIFSUP I project, households with year-round sufficient food increased from 43% to 74%. Similarly, in FMNR Somaliland, year-round food access rose from 44% to 73%, and 71% of households in the IRED project area reported an increase in food availability by at least one month. Children's meal frequency also improved, with 86% of children (6–23 months) in Somaliland receiving three or more meals per day—significantly higher than the 70% in comparison areas. These outcomes demonstrate the value of integrating environmental restoration with nutrition and livelihood support to strengthen food and nutrition security.

FMNR and Regreening interventions contributed to enhanced household food security, dietary diversity, and year-round access to food across several project areas. Positive outcomes were observed in reduced hunger levels, improved consumption patterns, and increased meal frequency for children—particularly in projects that combined environmental restoration with livelihood and nutrition-sensitive activities.

Projects reporting on the Household Hunger Scale and Moderate to Severe Food Insecurity indicators showed significant reductions from baseline levels (Figures 4 and 5), highlighting the potential of integrated approaches to address both ecological and nutritional challenges.

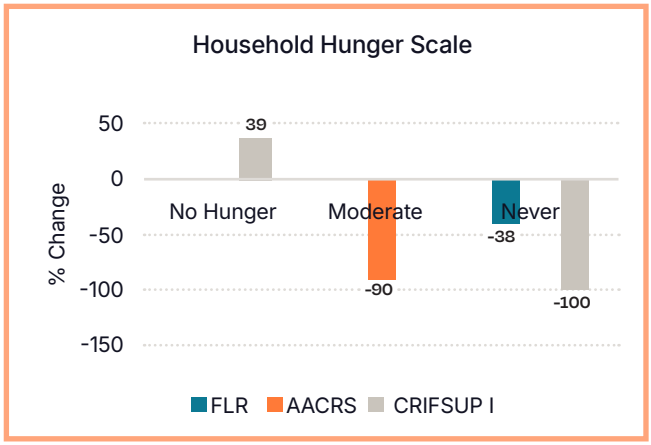

Figure 4 Percentage change in the Household hunger Scale

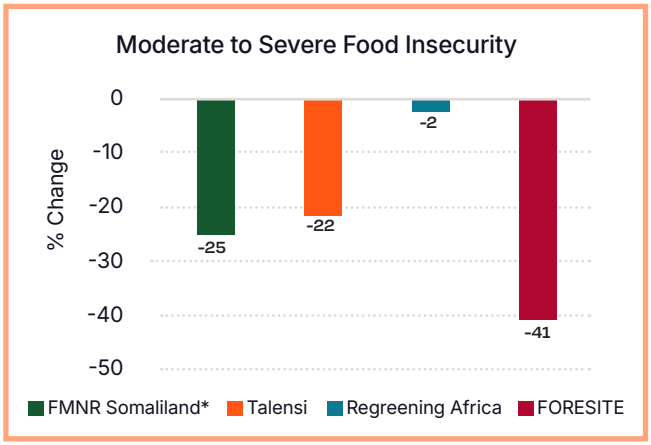

Figure 5 Percentage reduction in number of households experiencing moderate to severe food insecurity

* FMNR Somaliland project endline data was compared to endline comparison area data.

CONTRIBUTION TO CHILD WELL-BEING

Improvements in food security and caregiver capacity likely contributed to better child well-being. However, most projects lacked child-specific indicators, limiting direct measurement. Only FMNR-Somaliland assessed child meal frequency, showing significantly better outcomes than comparison areas. Some projects[10] reported increased caregiver ability to provide basic needs—such as clothing, shoes, and blankets—along with greater confidence in supporting their children. In AACRS (Afghanistan), child well-being outcomes varied, with improvements in Phase II villages but declines in Phase I. These findings highlight the need for more consistent child-focused monitoring in future FMNR and Regreening projects.

CONTRIBUTION TO SOCIAL COHESION AND HOUSEHOLD RESILIENCE

FMNR and Regreening interventions strengthened social cohesion by fostering collective decision-making, enhancing community collaboration, and, in some cases, reducing local conflict—especially where peacebuilding, Community-based Disaster Risk Reduction (CBDRR), or Citizen Voice and Action (CVA) approaches were integrated[11]. At the household level, these practices improved resilience by restoring degraded land, increasing access to natural resources, and enhancing psychological and physical well-being. Several projects[12] reported increased purchasing power, reduced reliance on negative coping strategies like seasonal migration, and a shift toward more positive mechanisms such as savings and borrowing. In DryDev, resilience gains were reflected in more diversified livelihoods and sustainable practices that helped households better withstand climate and economic shocks.

FMNR and Regreening Integration with Other Approaches

FMNR was the foundational practice or was part of broader suite of Regreening techniques and nature-based solutions[13]. While projects did not explicitly use FAO's CSA framework as a design lens, various CSA elements (increasing productivity, building resilience, mitigating emissions) were implicitly embedded and tailored to local needs[14]. The extent to which FMNR and regreening were integrated with other approaches was shaped by specific project objectives and country contexts (Table 3), with a primary focus on complementary livelihoods programming to address the needs of communities (Figure 6).

Project	FMNR	Regreening	iMSD	LVCD	WEE	S4T/FI	CBDRR	EWV	CVA	Peacebuilding	WASH*
CRIFSUP I	X	X		X		X		X	X	X	
AACRS		X		X	X	X				X	X
Talensi	X	X		X		X			X		
Somaliland	X	X		X		X	X		X	X	X
Regreening Africa	X	X		X	X	X			X		X
FLR	X	X	X		X	X			X		X
DryDev	X	X	X	X	X	X			X		X
IRED	X	X		X					X		X
IMARA	X	X	X	X	X	X	X		X	X	X
FORESITE	X	X	X	X	X	X	X		X	X	
RtG	X								X		X

Table 3 Overview of the integration of FMNR and Regreening with complementary approaches and activities

Refer to Box 1 for further definitions of LVCD, iMSD, S4T, and WEE. * For WASH - The main focus was on water management and/or water conservation.

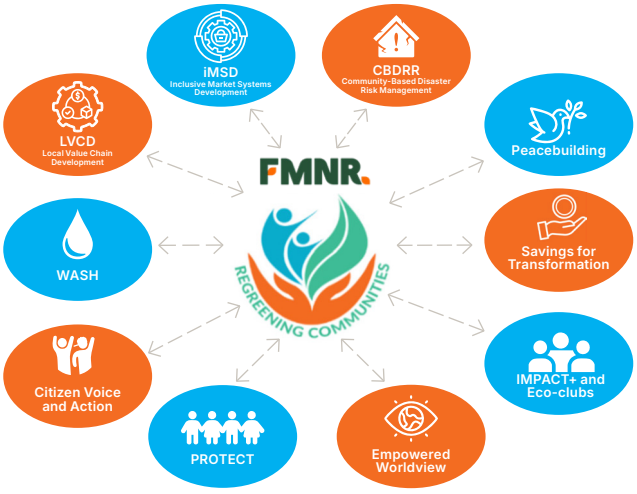

Figure 6: Mutual Influence of FMNR and Regreening with Other Sectoral Approaches

[10] Somaliland project and CRISFUP project
[11] CRIFSUP I, FORESITE, Somaliland and IMARA projects.
[12] CRIFSUP I, FLR, Somaliland and Talensi projects
[13] Regreening Communities Handbook-compressed.pdf
[14] CSA Guidance Note.pdf

All FMNR and Regreening projects integrated LVCD and/or iMSD to strengthen livelihoods and incentivise sustainable land restoration. These approaches helped farmers access market information, form producer groups, and connect with buyers, resulting in increased income from tree-based and agricultural products. For example, the AARCS project used LVCD to support producer group formation and market linkages. The FLR project applied iMSD to mobilise private investment and facilitate contract agreements with nursery cooperatives. Financial inclusion through S4T enabled participants, especially women and vulnerable groups, to access savings, microcredit, and business training. In CRIFSUP I, S4T addressed financial access barriers. In the Talensi project, it supported savings and livelihood diversification. Women's economic empowerment was further promoted through the Gender Inclusive Financial Training (GIFT) training in the FLR project.

Table 4 summarises the factors both enabling and limiting the integration of FMNR and Regreening with livelihoods-focused and other approaches. CVA and Empowered Worldview (EWV) demonstrated strong potential for driving behaviour and systems change but require scaling and deeper integration to realise their full impact. Peacebuilding and CBDRR outcomes were more likely to emerge when FMNR addressed underlying resource competition and environmental shocks. Due to the specific objectives and contexts of the projects, approaches such as WASH, CBDRR, Nutrition were only partially integrated with FMNR/Regreening efforts. These components often lacked dedicated programming or measurable indicators to track impact. Strengthening this integration is an opportunity to enhance child well-being outcomes and the broader potential impact of FMNR and Regreening at scale

Table 4 Overview of the integration of FMNR and Regreening with complementary approaches and activities

Enabling Factors for successful integration	Disabling Factors limiting integration
• Legal access to land, trees, and water • Inclusive natural resource management structures such as water or Regreening committees • Minimal resource-based conflict • Climate stability • healthy ecosystems providing resilient ecosystem services • Access to agronomic support • Financial literacy at household level • Community agency and environmental leadership • Inclusive formal/informal finance mechanisms • Savings groups for vulnerable populations • Integrated finance and income generation approaches • Producer groups for collaboration • Local market access and buyer linkages • Inclusive green business models • Empowered youth with environmental ownership • Strong community mindset and voice in relation to the environment and hope for the future	• Lack of access to productive assets (especially for women and poor farmers) • Weak land/tree tenure systems • Low community agency • Weak disaster preparedness • High levels of conflict and instability • Degraded environments with frequent climate shocks • Limited production capacity • Lack of access to agronomic and technical advice • No access to finance • Lack of business mentoring and planning support • No collective sales mechanisms • Underdeveloped markets and weak value chains • Heavy workloads limiting women's participation • Restrictive social norms excluding women and other marginalised groups from decision making, leadership and markets

Trade offs in integration

In these complex environmental and community development systems where diverse beliefs, technical constraints, political contexts, and socio-economic conditions intersect, trade-offs are inevitable. To more effectively advance child well-being in these environments, future integration efforts must support communities to intentionally navigate trade-offs by defining shared outcomes across sectors, clarifying accountability, and co-designing solutions. Common trade-offs between Regreening and livelihood outcomes may include, land and resource use and access, agricultural product selection, management practice decisions, all requiring a balance between environmental suitability, cultural preferences and income potential. Programs typically manage these trade-offs in a number of ways. Providing short-term alternative income opportunities, such as small livestock, can support households while they are transitioning toward more sustainable practices like agroforestry or FMNR. Selection of more resilient or sustainable crop and livestock options or management practices, can be addressed through improving access to alternative inputs, knowledge or technology or the development of new markets and value-addition opportunities. These approaches enable communities to increase income from sustainable sources—such as honey—while reducing reliance on less resilient practices such as charcoal.

GENDER EQUALITY, DISABILITY AND SOCIAL INCLUSION (GEDSI) PROCESSES AND OUTCOMES

Only 3[15] projects had specific pathways for gender and disability outcomes. While women were prioritised in FMNR training, savings groups, and producer groups, systemic gender barriers such as land access, income disparities, and cultural norms remained largely unaddressed.

Gender Equality

Integrating FMNR with gender-transformative and livelihood approaches contributed to women's economic empowerment, though limited data made it difficult to fully assess the extent of impact. Women saw increased access to income, savings, and participation. For example, the FORESITE project reported a 172% increase in women's median household income, and in FMNR Somaliland, 67% of women had formal savings compared to 37% of men. However, gender gaps persisted in land ownership and access to finance. In CRIFSUP I, women's land access dropped from 43% to 31%, and in IMARA, men had greater access to financial services (91% vs. 78%). Women's leadership and decision-making roles improved in several projects - Regreening Africa in Ghana showed a fivefold increase in women's involvement in agroforestry decisions. In Talensi, women took on leadership roles in producer groups. While some projects reduced women's workloads, others reported persistent gendered labor divisions, especially in firewood collection. Projects that directly addressed social norms - like FORESITE's gender champions and AACRS's collaboration with religious leaders - saw improved community support for women's participation.

Enabling factors included the intentional recruitment of women into FMNR, savings groups, and value chain activities, as well as supportive community structures and increased women's roles in decision-making and leadership. Projects that addressed gender norms helped create more inclusive environments. However, ***key barriers remained*** - restrictive cultural norms, limited land rights, unequal access to finance, and heavy, gendered workloads continued to limit women's full participation and agency. Additionally, many projects lacked clear strategies or pathways in their design to promote gender equality in a systematic way.

> *"Before joining the savings group, it was difficult to send my children to school, and I rarely bought them new school uniforms at the start of the new school term. But since I joined the group, whenever it is time to pay school fees and I have not yet harvested my crops, I borrow from the group and send my children to school with clean uniforms, and I'm able to refund after the harvest season. There is a very big difference between how we take care of our children compare to those that are not in these savings groups." Female S4T group Member, Gatsibo District (FGD) - FMNR Somaliland Project*
>
> *Women have been empowered and the husbands have taken it in a positive manner, trainings guaranteed empowerment of women in meeting both men and women attend. The men got to learn how to treat women and to appreciate that a working woman increases household income. .... Now women are able to air out their views to the public, a thing which was not possible in the past. So, the project really changed the view of women by the men generally. (KII with Local Government official - FORESITE project*

Disability and Social Inclusion

Disability inclusion was limited in FMNR and Regreening projects, with few tracking disability-specific outcomes. Physical barriers like difficult terrain in East Sumba, Indonesia and challenging FMNR practices in Talensi, Ghana restricted participation. Intentional disability-inclusive design and support were limited.

[15] AACRS project, RtG project, FLR project

Social inclusion showed more progress with youth and children. Children participated actively through environmental education and clubs in projects like Talensi, CRIFSUP I, FLR, FMNR Somaliland, and IMARA, becoming advocates for sustainable land management. Youth contributed to income generation and leadership roles—for example, beekeeping in Talensi reduced bushfires and provided livelihoods, while youth groups in IMARA produced over 500 energy-efficient cookstoves annually, increasing income and energy access. To sustain these gains, youth inclusion must be prioritised with intentional support for marginalised groups and pathways to leadership.

> *"My parents did the following to our environment: watering, pruning, and planting more trees on the farm and boundaries. World Vision trained us on how to care for trees and I always make sure I do not harm trees in the school and in my home." – Child, Qoyta Village - Somaliland*

Enabling factors for disability and social inclusion included some use of inclusive community platforms and adaptable gender-focused approaches, alongside shifting social norms that could be leveraged for greater inclusion.

Disabling factors included lack of disability-responsive design and data, physical accessibility challenges, and no tailored training or recruitment strategies, limiting meaningful participation of people with disabilities.

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Lessons and Recommendations

Combine FMNR and Regreening with market systems development and inclusive Green Livelihoods opportunities to further increase incomes and scale Regreening

FMNR and Regreening increases household access to natural resources, production and therefore provide significant opportunities for households to increase their income. Current projects demonstrate that combining market systems development with FMNR and Regreening effectively increases household income while also incentivising further improvements in the natural resource base on which many communities rely. Future Regreening and FMNR projects should deepen this impact through:

- **supporting the development of inclusive and viable markets for tree and nature-based products** to create economic opportunities for rural communities. This should be done through engaging private sector actors and addressing infrastructure and policy barriers to support investment in tree and nature-based value chains.
- **identifying Inclusive and Green Business Models** to enhance nature-based income-generating opportunities for women, youth, and persons with disabilities.
- **integrating producer and savings group approaches with FMNR and Regreening committee structures**, to enhance sustainable production, income generation and savings/financial literacy outcomes, building on the enhanced natural resource base.

Ensure all FMNR and Regreening Projects are deeply inclusive for transformative impacts

Environmental restoration efforts thrive when all community groups are actively engaged. Women, youth, and people with disabilities often face limited access to natural resources such as land and trees, yet they are vital stakeholders in the sustainable management of these resources, and in contributing to the care and well-being of children and families. FMNR and Regreening outcomes can be enhanced through:

- **intentional and strategic integration of GEDSI interventions**, in project design, partnerships with representative organisations and targeted and appropriate participation opportunities;
- **addressing social norms and barriers** for marginalised groups in the community in relation to social, economic and environmental assets and decision making, e.g. land tenure, and group participation and;
- **targeted support and inclusive governance** through supporting leadership and governance capacity and opportunities that give marginalised groups decision-making power in FMNR, Regreening and natural resource management structures, and livelihood opportunities.

Increase the long-term sustainability and resilience of FMNR and Regreening practices and outcomes

Resource limitations often lead to over exploitation of natural assets. While some Regreening practices such as FMNR require minimal investment, some access to financial resources allows households to implement a wider range of Regreening practices, and access complementary income generating activities. FMNR and Regreening projects should include interventions that:

- **increase inclusive access to finances and assets** (particularly for vulnerable households) to support Regreening such as through microcredits;
- **build resilience to climate and related shocks and mitigate risks through interventions** such as soil and water conservation, climate smart agricultural practices and income generation opportunities through restoration-linked enterprises and;
- **invest in the capacity of agricultural extension services to deliver accessible**, quality support and training to low-income and remote households, ensuring equitable knowledge transfer on sustainable land management.

Promote Integrated, Aligned Programming for Child Well-being and Community Resilience

FMNR and Regreening initiatives have improved tree cover, soil fertility, and agricultural productivity, leading to diversified incomes, better food security, and reduced household expenses. These successes were driven by strong policy engagement, stakeholder collaboration, and active community participation. To continue and build on this, projects should:

- **strengthen the integration of FMNR/Regreening** with nutrition, WASH, education, and WEE;
- **clearly define and measure child well-being pathways using a socio-ecological model**, focusing on how improved production and income boost nutrition and food security, how GEDSI fosters inclusion and equality, and how social cohesion enhances resilience; and
- **embed complementary approaches** such as CVA, CBDRR, and EWV to empower communities and build resilience.

Strengthen Integrated DMEL and Multi-Stakeholder Capacity for Data-Driven Decision-Making

Standardised indicators have been developed, providing a foundation for stronger evidence and cross-project comparability; however, further socialisation and consistent application – with the support of M&E tools such as Solstice[16] – are needed to realise their full potential. To continue and build on this, projects should:

- **adopt integrated MEL frameworks with shared outcome indicators** across FMNR/Regreening, livelihoods, and GEDSI components;
- **update Theory of Change** to reflect how household-level improvements (e.g., income, food security, women's agency) influence child well-being;
- **apply mixed-methods and participatory evaluation methodology** with disaggregated data (by gender, age, disability, and socio-economic status) to identify equity gaps and context-specific impacts; and
- **strengthen multi-stakeholder engagement** – including governments, NGOs, academia, private sector, and communities – to address systemic barriers and ensure inclusive, evidence-based programming.

[16] Solstice for FMNR, Regreening Communities and related programming

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