

ETHIOPIA

Country Information Brief

Best practices, opportunities and bottlenecks for scaling-up regreening practices

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Image: Farmers in Alage, Shashogo District discussing benefits enjoyed from the enclosed area in their locality.

Introduction

This document is a brief synthesis of best practices and opportunities for scaling-up greening /land restoration and sustainable land management from the implementation of the European Union (EU)-funded Regreening Africa program and the experience of implementing partners. This will be useful for informing future EU efforts to support greening in Ethiopia, notably EU programming at the country level upon request and other initiatives.

For a decade, Ethiopia has been committed to transition from a predominantly agrarian to a modern industrialised economy by developing the manufacturing sector and promoting export-led growth. Yet, the development of an industrial strategy, and investments made in the construction of industrial and agro-industrial parks, and measures taken to liberise the economy have not brought about the foreseen structural transformation nor changed employment patterns in the country. Worse, without coupling this with environmental stewardship, this could lead to further degradation of agricultural lands, grazing lands and forests. Based on the assessment conducted by the Environment, Forest, and

Climate Change Commission, 73% of Ethiopia's land area was identified as having potential for tree-based landscape restoration. Restoration success is crucial to achieving Ethiopia's economic, social, and environmental goals.

Two million young Ethiopians are entering the workforce every year. The current labour market is masking high levels of vulnerable employment, further exacerbated by recurrent large-scale humanitarian shocks and political instability crises. The government's development plans have been largely focused on industrialisation, but there is need to look beyond manufacturing. This would allow facing the employment challenge and better enabling sustainable job creation within rural areas as well as secondary cities and towns. Enabling sustainable job creation while reversing land degradation has become a top priority for Ethiopia to improve citizens' welfare and ensure peace and stability.

The country's land degradation neutrality commitments call for "urgent and significant actions like stopping uncompensated artificialisation /urbanisation of arable lands, through urban densification and the "building city on city" approach; restoring as much as possible lands degraded by pollutants that originate from untreated urban, industrial, and mining contaminants; revitalising vegetation on degraded slopes, dried lands, closed mines, infrastructure

(airports, harbours, roads, dams and reservoirs) using pools of endogenous species and further sustainable use and promoting plantation of indigenous tree species, and improve the productivity of 33,452 ha of artificial areas by the year 2026.

Through sustainable land management practices, particularly by implementing biophysical soil and water conservation practices, improve the productivity of 3,751,173 ha of bare land and other areas by the year 2036; by 2040, ensure the increase of carbon stock in the country by 148.67 million tons of carbon between 2016 and 2040 through achieving the above-mentioned targets.

The Team Europe Initiative (TEI) and EU delegation in Ethiopia envisage many aspects in their next program, some of which are directly addressed by the Regreening Project. Those that could be directly addressed by the project include:

- Generating sustainable and green rural jobs;
- Supporting sustainable and environmentally compliant agro-pastoral production and a sustainable value chain (farm-to-fork); and
- Supporting climate-smart agriculture and permaculture to regenerate landscapes and agriculture that increase rural employment and improve livelihood prospects and resilience in rural communities.


Improve the productivity of
 **3,751,173 ha**
of bare land
by 2036

Image: Landscape view of Ambassel District.
 Photo: Habtamu Regassa/World Vision Ethiopia.

¹Regreening refers to an increase in tree/vegetation cover as a step towards full landscape restoration, through the promotion of planting/growing a diversity of tree species and farmer-managed natural regeneration (FMNR) in agricultural and pastoral systems, including associated sustainable land management/soil and water conservation measures, livestock management and other related policy engagement processes.

What have been the main restoration successes achieved under Regreening Africa in Ethiopia?



Image: Kiros Hadgu, ICRAF's Country Representative, inspecting a nursery run by farmers in Alage, Shashogo District.



The ultimate aim of the EU-funded Regreening Project in Ethiopia is to foster a massive, sustained landscape restoration movement with nationwide uptake. The project has built on the successes of existing restoration programs providing a solid basis for nationwide scale-up. Restoration efforts have been established in new locations in Oromia, Amhara, SNNPR and Tigray. The program expansion was achieved by building a coalition of local, national and international non-governmental organisations (NGOs) and civil society organisations, collaborating with government at all levels, and with the technical support and overall coordination by World Agroforestry.



Mindset change is a fundamental aspect of building a restoration movement. Thus, the project has focused on shifting the attitudes of all stakeholders by improving their understanding of the many benefits received from investing time and effort in landscape restoration.



A strong technical capacity is imperative for the successful restoration of agricultural land, forested areas, grazing land and watersheds. The project has focused on building technical capacity among government experts, development agents and beneficiaries through continuous awareness creation, training, experience-sharing visits, and peer-to-peer learning opportunities.



Project support was critical to the formation of the national Watershed Management and Agroforestry Platform, an inter-ministerial body that will provide leadership and coordination for landscape restoration in the coming years. Regional Watershed Management and Agroforestry Platforms are now being launched to assist with the coordination and guidance of local level implementation.



During the past three years, the Regreening Africa project partners' scaling-up action has resulted in the restoration of 105,925 ha (97,505 ha directly facilitated, and 8,420 ha leveraged through affiliated organisations) of land located throughout Ethiopia. The program has reached 93,456 households (87,468 directly facilitated and 5,988 leveraged). This rapid success will allow for an accelerated rate of adoption in the coming years.



One of the most important project advances has been the widespread action by farmers to protect and manage naturally regenerating trees on their farmland. The widespread action stems from an enhanced awareness and knowledge of the benefits that on-farm trees provide in food production and environmental amelioration. Using farmers as restoration agents is expected to accelerate program adoption allowing for the restoration of tens of millions of hectares of land during the coming decade.



Successful engagement with female project beneficiaries who have established fruit orchards in their home gardens. The fruit produced enhances family nutrition and provides an additional income source.



There are some 30,000 government-run tree nurseries in Ethiopia. The quality and quantity of tree seedlings in government and community nurseries have been improved through better technical training, tree varieties, and material support. This effort is preparing the way for government nurseries to be turned into local job-creating and income-earning businesses in rural areas nationwide.



The establishment of Rural Resource Centers (RRCs) has created job opportunities for unemployed women and youth groups. Similarly, tree-based value chain development enterprises in the areas targeted for scaling-up were trained and supported with production materials that generated incomes of USD 5,876, thereby contributing to improved livelihoods.

What are the best restoration practices and scalable models for Ethiopia?



Farmer-Managed Natural Regeneration (FMNR) of trees on farmlands

is a practice with a long history in Ethiopia and is estimated to be practiced by over a million farmers. It involves the nurturing of indigenous trees in crop fields to improve soil health and water infiltration as well as increase crop yields and livestock fodder supplies. In particular, the growth of *Faidherbia albida* (momona) trees is encouraged. This native, nitrogen-fixing leguminous species is highly compatible with crops, boosting yields through its organic fertilisation effects. The value of this indigenous practice has only recently been recognised in agricultural science and subsequently promoted. The Regreening Project has been the most important and widespread effort to date in Ethiopia to scale-up FMNR on farmlands.

FMNR has enormous potential to direct Ethiopian agriculture toward sustainable agroecology and agroforestry solutions. The FMNR scaling effort uses the Volunteer Farmer Trainer (VFT) extension approach.

The importance of FMNR goes beyond its role in farming systems. The assisted natural regeneration (ANR) of vegetation in degraded watershed and pastoral systems within community-managed lands allows for ecosystem restoration and ultimately improved productivity of fodder, honey, fruits and fuelwood. Due to the proven success and low cost of FMNR, local communities, experts and government officials are focusing on rolling out the practice in most communal land areas.



Enrichment planting with water harvesting structures in area closures.

The enrichment planting of economically important trees and bee forage in drought-prone areas with high water scarcity, along with water harvesting structures, enhances vegetative growth and provides economic benefits to the community through sustainable harvesting. To scale-up these solutions, awareness creation and capacity-building on tree management practices and sustainable resource utilisation have been pursued with all stakeholders in the target areas. These efforts have been carried out in collaboration with local government and extension experts.

These models of improved closure management have the potential to enhance the value of these closures. The recommendations can now be adopted by watershed closures in jurisdictions throughout the country.

The solid foundation established by the project over a few short years will enable FMNR and ANR to be scaled-up, targeting moisture-stressed areas that are most vulnerable to climate change as well as areas where pastoralists are in dire need of fodder for their livestock.



Image: Habtamu Regasa, interim World Vision project manager, taking in the view of an enclosed hill in Ambassel District. Photo: Eyob Getahun/ World Agroforestry.



Homestead tree planting with fruit orchards and gesho.

Establishing fruit orchards around the homestead, where the agroecology is suitable, is one of the most preferred practices by beneficiaries. Selected farmers that are currently practicing regreening technologies and that have access to water at their homesteads, have been provided with improved seedlings for fruit orchard establishment.



Tree planting in woodlots and farmlands offers opportunities to increase biomass available for timber, fuelwood, fodder, and fencing materials.

This is achievable through improved tree integration planning on farmlands and the sensitisation of farmers on the benefits of combined crop and tree production systems.



What are the social, cultural and technological issues that may hinder the adoption of regreening activities?



The main issues hindering the wider adoption of FMNR are farmers' concerns surrounding the shading effects of trees on their crops; their lack of awareness and technical skills in best tree management practices; and the destruction of tree seedlings by free grazing livestock.



The main bottlenecks faced by restoration initiatives in communal lands are the uncontrolled grazing of livestock; the lack of participatory management plans; the limited economic options available to farmers in restored closures (often only grass harvesting and beekeeping is permitted); weak local governance in equitable management of the closure (often disadvantaging the poorest families); and ineffective by-laws.



Shortage of quality germplasm and high prices of grafted fruit seedlings also hinder the adoption of regreening practices. This issue can be addressed through the privatisation of nurseries, strengthening the capacity of community nurseries, and establishing RRCs.

Image: As part of the Regreening Africa project, farmers have started growing papaya trees on their fields.

What are the main policy, regulatory and governance barriers to regreening activities and how can they be addressed?



There is a need for improved stakeholder coordination and cross-sectoral collaboration. This is currently being addressed by the newly established Watershed and Agroforestry platform.



The scale-up of agroforestry practices by the agricultural and environmental sectors at both regional and district levels is hindered by **knowledge gaps and underfunded extension systems.**



The project has worked intensively with the government to develop an agroforestry strategy to effectively the technique agroforestry throughout the country. The draft strategy for improved implementation is ready for approval at the ministerial level. It will establish a suitable extension system, strengthen the technical capacity of stakeholders, and provide subsidies and tax exemptions to significantly benefit the adoption of agroforestry.



Uncontrolled grazing greatly affects seedling survival rates, hindering both the active restoration of degraded communal lands and the natural regeneration of seedlings on farmlands. Efforts made so far to control free grazing by developing by-laws have failed to bring about change. This issue needs to be addressed by regional and national level officials. The project has supported the development of national legislation to set guidelines on how grazing should be managed at the local level in the future to optimise successful tree establishment.

Image: A village below a hill enclosed in Ambassel District as part of the Regreening Africa Project.

What are the most promising value chains and investment opportunities that could incentivise regreening activities, and how could they be supported?

VALUE CHAINS THAT HAVE THE POTENTIAL TO INTENSIFY REGREENING PRACTICES INCLUDE THE PRODUCTION OF HONEY, POLES, TIMBER, FIREWOOD, AND BAMBOO.



Honey

Source of production: area closures in Gulomekada, Shashogo, Jeju, Medebayzana and Asigedetsmbila, Degua-Temben, and Enderta.

Market: Mekele, Adigrat, Shere, Shashogo, and Jeju.



Key constraints for sustainable commercialisation

- Lack of credit access for the RRCs and demand and supply imbalances for some fruit tree species; and
- Poor product quality, lack of capacity, no value addition, poor packaging, lack of market linkages, lack of equipment and associated accessories.



Potential methods for overcoming key constraints

- Provision of modern beehives, accessories, and bee colonies (depending on the group needs);
- Market linkages created with identified markets in nearby areas; and
- Provision of training to improve product quality and value addition, technical support, market linkage and financial management.





Poles and timber

Source of production:

woodlots and area closures in Gulomekada, Ganta-Afeshum, SaesieTsaedaEmba, and Sire.



Key constraints for sustainable commercialisation

- Poor timber and pole quality due to a lack of technical skill in tree management and post harvesting, lack of harvesting equipment and poor market linkages.



Potential methods for overcoming key constraints

- Training delivered on tree species selection, tendering, and cutting skills, provision of materials (axes, hammers, and saws), market linkages, and by-law development.



Bamboo furniture production

Source of production: communal and private land in Hula.



Key constraints for sustainable commercialisation

- Market linkages, technical capacity and shortage of materials.



Potential methods for overcoming key constraints

- Group provided with simple hand tools to increase production capacity.



Summary of sustainable land management investment opportunities

Key national tree-based landscape restoration investment opportunities identified by the commission are:

- Restore degraded forests through area enclosure, FMNR and enrichment planting;
- Scale-up agroforestry- increase the number of trees on existing crop, pastoral and agro-pastoral land that is sparsely covered;
- Woodlots and home gardens - expand the small-scale production of wood (for example, fuelwood, timber for construction) and non-wood products (for example, honey, fruits, forage) for domestic and commercial use on both communal and private land; and
- Increase adoption of agri-silviculture, agro-sylvo-pastoralism and sylvo-pastoralism.

What are the best practices for gender and youth inclusion in the regreening movement?



FMNR is one of the best and most cost-effective scalable practices for enhancing the welfare of women and youth. By adopting FMNR the amount of time spent collecting fuelwood for household cooking, a task performed by women and youth, can be greatly reduced.



Home gardens (fruit orchards and gesho plantations) and RRCs. These solutions are particularly effective in improving the livelihoods of women and youth through the improvement of family nutrition, provision of additional income, and the creation of jobs in processing and marketing.



The RRCs provide job opportunities thereby improving the income of unemployed youth and women.



The use of quality tree germplasm by government and private nursery operators. Woreda level actors supporting project and national level tree planting programs use quality planting material to improve survival rates. Further, production is enhanced by focusing on a selection of quality forestry plantation species.

Image: Thousands of seedlings including this *Cordia africana* seedling have been planted in an enclosed area in ALage, Shashogo District. **Photo:** Eyob Getahun/ World Agroforestry.



What are some key tools and methods for monitoring regreening activities?

The **Regreening Africa App** is a mobile-based android application that allows users to collect data at farm level on a range of land restoration practices that allows for robust landscape level monitoring.



Regreening Africa App



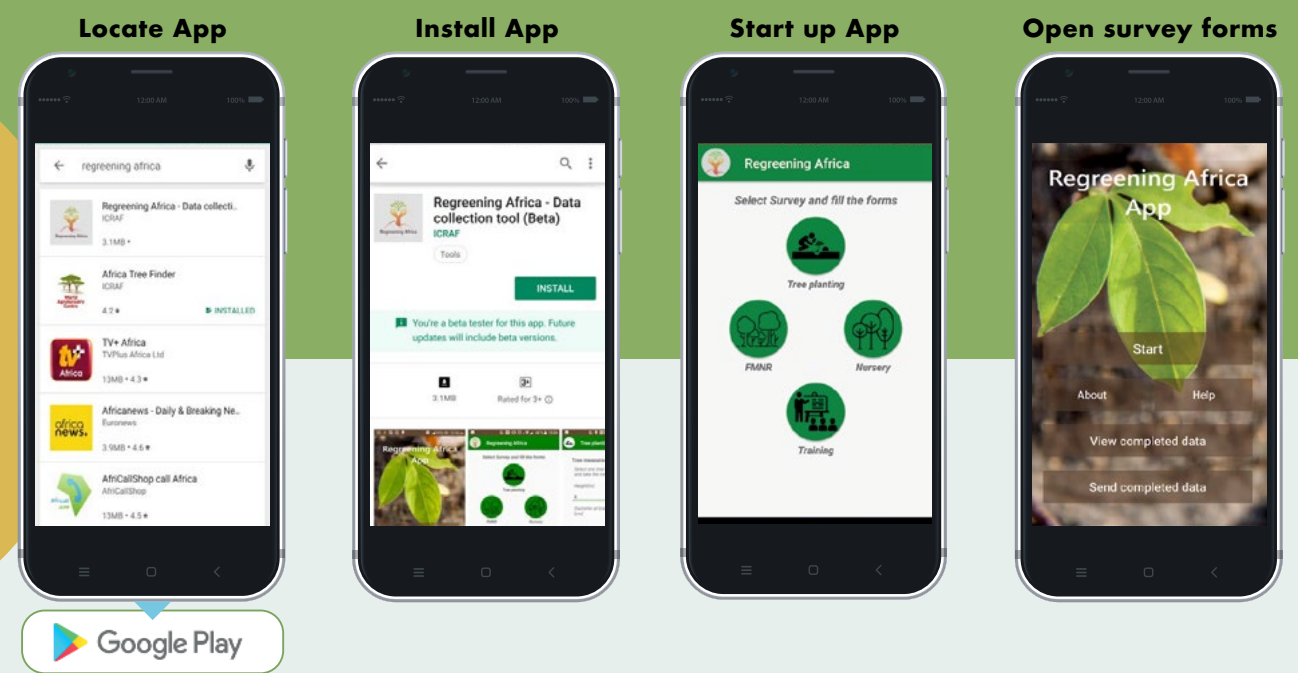
“The beauty about this App is its simplicity. I have used it to record trees on many farms and have been fascinated to see what the data looks like once it is processed”.

Mohamed Dicko,
project officer, Oxfam Mali.

Photo: Joseph Bidiar/ World Vision Senegal.

Why do we need it?

The Regreening Africa App links land restoration activities implemented by farmers farmers and pastoralists to large global initiatives, providing evidence that can positively inform these efforts, whilst simultaneously assessing their effectiveness on the ground.



What is unique about the Regreening Africa app?



The App is a data collection and monitoring tool. The information collected can be integrated into various types of analytics and combined with information on land health and other thematic data.



The App enables stakeholders including farmers to record and track their land restoration practices. The locations of their activities are geo-referenced and species diversity and growth are recorded in real-time.



Data collected through the App is freely and instantly available to the users and various outputs from the synthesis of the data, such as



critical land health indicators, are then shared with the public through the Regreening Africa Dashboard.



The App is continually updated and the design and interface amended, based on farmers, extension agents and project implementing teams to add requested data and ensure the design and functionality match the user needs.

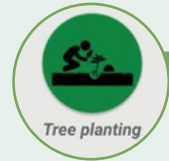
The Regreening App was developed in close consultation with stakeholders, with continual interaction between the World Agroforestry development team and users.



Project implementors are able to use the data for real-time decision support in project implementation and monitoring.



Data collected using the App is combined with spatial assessment of land health and can be applied in soil carbon monitoring, relating directly to climate neutrality goals or restoration targets.



TREE PLANTING MODULE

- Record details of farmers and regreened plot
- Track tree growth
- Date(s) planted
- Characterise species composition and assess tree planting practices
- Field boundary recorded
- Location of trees planted
- Number of trees planted
- Survival of trees



FARMER MANAGED NATURAL REGENERATION (FMNR) MODULE

- Record details of farmers and regreened plots
- Assess FMNR practices
- Characterise dominant species composition



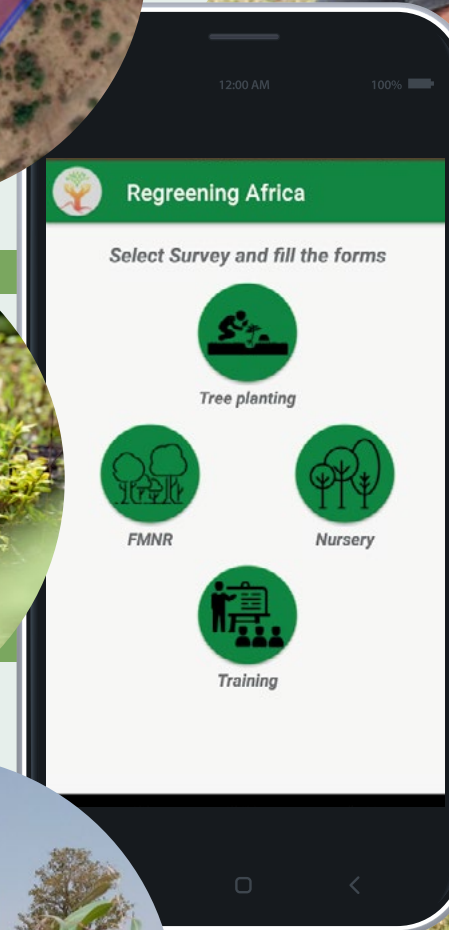
NURSERY MODULE

- Ensuring that farmers have access to quality planting materials and a wide range of species for tree planting
- Record nursery practices
- Record nursery information and location
- Record nursery production



TRAINING MODULE

- Record training details
- Record gender participation in training sessions



Assisted crowd sourcing, through data collection across multiple countries and contexts is giving critical insights into drivers of land degradation. This will allow for more effective restoration efforts to be designed and implemented on the ground.

Photo: Felix Mulindagabo/ World Vision Rwanda.



Image: Project staff collecting data on farmland using the Regreening Africa App in Dodota Woreda. Photo: Malefia Tadele/ CRS Ethiopia.



A Regreening Ethiopia dashboard is under development. It will be available in 2021 to ensure that project data is widely available to the public. The dashboard will include monitoring results from the project baseline survey, the tree establishment mobile phone application, and land health and climate information. The dashboard can be augmented to accommodate additional monitoring results.

 An infographic titled "WELCOME TO THE Regreening Ethiopia Decision Dashboard". It features the logos for "Regreening Africa" and Ethiopia. The main heading is "Using this decision dashboard". Below this, there are several sections:

- What is a dashboard?**: This section explains that dashboards allow information to be quickly and easily communicated to key users and decision makers. It notes that decision dashboards are customized to the Ethiopian context and include key technical officers, departments, and stakeholders. It also states that the dashboard can include quantitative and qualitative information in various visualizations like graphs, charts, photos, videos, and maps. A final point mentions that dashboards enable accurate data to be viewed interactively in real-time, often with dynamic interfaces for programming and updates.
- Who are the intended users of Ethiopia Decision Dashboard?**: This section lists various stakeholders: Technical extension staff, Farmers/producers, Local authorities, Local communities, Regreening Africa project partners, NGOS, Development partners, Project planners, Scientists, M&E Department officers, Academic research staff (national and local level), Private sectors, Decision makers, Policy makers, and Government (national and regional level).
- How was the Ethiopia Decision Dashboard developed?**: This section is partially visible at the bottom of the infographic.



Image: Farmers organised in an association sharing their experiences since adoption of regreening practices, at the projects' JRLM mission.



Valuable resources that can be consulted for further information:



- **Reversing Land Degradation by Scaling Up Evergreen Agriculture Country Baseline Survey Report, Ethiopia**



Regreening Africa



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