# RERENIC AFRICA FINAL REPORT



















**Regreening Africa** 

Foreword

Regreening Africa has been a resounding success story. It was remarkable to witness over the last five years how this programme managed to holistically address land degradation, improve livelihoods, and foster resilience in the face of climate change across eight different countries in Africa. Regreening Africa has played a vital role in restoring stability to communities in regions where healthy lands are integral to their well-being.

The success of this programme can, to a large part, be attributed to its ability to bridge the gap between research institutes, communities, government, and civil society. The co-created knowledge produced, and lessons learnt on climate resilience, value chain development, and sustainable land management will be invaluable for future interventions in Africa – by the European Commission but also other stakeholders who have been influenced along the way by Regreening Africa's successes.

Regreening Africa was initially conceived as a pilot project to inspire broader action to combat land degradation. However, its impressive achievements have gone beyond its pilot nature in terms of scale, acting as an important benchmark for future projects. The accomplishments of the programme are a key enabler of our commitment to the Great Green Wall, and we seek to carry forward Regreening Africa's restoration legacy through it. It is increasingly becoming clear that the path to a climate-neutral and nature-positive world requires (the right) trees to be grown, and soils to be restored at significant scales. We are glad to have supported such an exceptional programme to drive home this message.

On behalf of the European Commission, I would like to congratulate the implementing organisations and the wide range of partners who contributed to the success of Regreening Africa. Your commitment, dedication, and hard work is what made it possible in the first place.

### Carla Montesi

Director Green Deal and Digital Agenda European Commission – Directorate-General for International Partnerships REGREENING AFRICA WAS CONCEIVED AS A PILOT PROJECT TO INSPIRE BROADER ACTION TO COMBAT LAND DEGRADATION. HOWEVER, ITS IMPRESSIVE ACHIEVEMENT SHOWS IT WENT BEYOND ITS PILOT NATURE IN TERMS OF SCALE, THEREBY ACTING AS AN IMPORTANT BENCHMARK FOR FUTURE PROJECTS.



# **Reflections from the partnership**

Regreening Africa Phase 1 demonstrated its ability to reach and impact almost a million hectares of land and over 500,000 households in the Sahel and the Horn of Africa. The regional population is in the hundreds of millions, with huge growth projections in these already marginal landscapes. Growing vulnerabilities from dynamic climate impacts and increased land degradation creates a clear and urgent need to scale the Regreening Africa approach. We need to transform many more communities where vulnerability to climate change is eminent, and rapidly scale up the restoration of livelihoods and landscapes across the whole of Africa's semi-arid regions.



Regreening Africa has shown that it is possible to tackle the nexus of land degradation and poverty by combining technological innovations, strong inclusive community engagement, and collective learning and adaptation approaches among key partners to build livelihood resilience in 'regreened landscapes'.

Land degradation leaves entire landscapes vulnerable to climate change, including through more severe droughts and higher frequencies of extreme events such as floods. Integrating land restoration interventions effectively by linking trees, water, land, and livelihoods, as Regreening Africa has done, demonstrates that systemic approaches deliver multiple benefits. When local and indigenous species are planted or regenerated, the results are not just increased biodiversity on land and in the soil, but an increased store of carbon in soil and trees, shrubs, and grasslands, better water and nutrient-holding capacity, and more bountiful harvests. Better jobs, higher income, and less forced migration follow.

Prominent international initiatives, including the United Nations Decade on Ecosystem Restoration, African Forest

Landscape Restoration Initiative as part of the Bonn Challenge, and the Great Green Wall Initiative, are rallying calls for the protection and revival of African ecosystems. Supporting these multilateral as well as national initiatives is an imperative need that Regreening Phase 1 has set the foundation for. Its unique consortium, confidencebuilding experiences and outcomes, technologies, and networks are available to be leveraged to help meet these aspirations.

Practices such as Farmer Managed Natural Regeneration, a cost-effective way to manage the natural regeneration of trees and shrubs in agricultural landscapes, complementary tree growing, soil and water conservation measures, and improved grazing management are just a few of the scalable solutions that simultaneously address climate change, biodiversity, security, water, land degradation, and livelihood needs in Africa. Restoring agricultural livelihoods in Africa is inextricably linked to restoring the land. Regreening Africa's first phase offers proof of how large-scale effective restoration can take place. Its implementation, led by a unique partnership, has provided a robust evidence base and has forged delivery mechanisms across eight very different country contexts. The hypothesis Regreening Africa was built on is that system transformation is possible across landscapes through integrated, systemic context-relevant approaches. That hypothesis, Regreening Africa showed, is correct.

### Ravi Prabhu

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Materials for the report are drawn from workshops, dialogues, reports, and briefs developed by the whole Regreening Africa team across the eight countries.

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## **Acronyms and abbreviations**

ANR	assisted natural regeneration
CARE	Cooperative for Assistance and Relief Everywhere
CRS	Catholic Relief Services
DRS	data reporting system
ELD	Economics of Land Degradation
EU	European Union
FMNR	farmer managed natural regeneration
GIZ	German Federal Ministry for Economic Cooperation and Development
GPM	Global Precipitation Mission
GTA	Gender Transformative Approach
ICRAF	World Agroforestry
JLRM	Joint Reflective Learning Missions
LDN	Land Degradation Neutrality
LDSF	Land Degradation Surveillance Framework
NDC	Nationally Determined Contribution
NDVI	Normalised Difference Vegetation Index

NGO	non-governmental organisation
NOCC	National Oversight and Coordination Committee
NRI	Northern Ghana Restoration Initiative
OxC	Options by Context approach
PMNR	pastoral managed natural regeneration
RinD	Research in Development
RRC	rural resource center
SARIMA	Seasonal AutoRegressive Integrated Moving Average
SHARED	Stakeholder Approach to Risk-Informed and Evidence-Based Decision-making
SLM	sustainable land management
SOC	soil organic carbon
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WV	World Vision

# CONTENIS



Foreword	2
Reflections from the partnership	3
Acronyms and abbreviations	4
1. Introduction	6
A dynamic partnership	8
Regreening practices – an Options by Context approach	10
2. Impact	16
Achievement of targets	17
Level of regreening	21
Tree cover	23
3. Benefits from regreening	24
Land and soil health	25
Livelihood benefits and the costs	29
Value chains	31
4. Policy engagement and behaviour change	32
Facilitating change at global, regional and national levels	33
Dutcome mapping results by country	34
conomics of Land Degradation Initiative's contribution	37
Impact on the ground	39
Success factors of the Regreening Africa Programme approach	43
orking locally	44
ue chain development	46
usion	48
ement building	52
arch in Development	54
holder engagement with evidence and adaptive management	59
v lessons, reflections, and next steps	62
s from across country contexts	63
next?	67

6 | REGREENING AFRICA FINAL REPORT



# INTRODUCTION

At least 65 percent of Africa's productive land is degraded, ' resulting in reduced agricultural productivity, biodiversity, resilience, and capacity to deal with climate shocks. Addressing land degradation on the continent is thus urgently needed.

#### 7 | REGREENING AFRICA FINAL REPORT

Globally, there is considerable commitment to both halt and reverse land degradation, with Africa committed to do so through several important regional initiatives, including the African Forest Landscape Restoration Initiative (AFR 100), which aims to restore 100 million hectares by 2030, and the Great Green Wall, with the Accelerator Strategy outlining a target of reaching 100 million hectares of land by 2030.

Land restoration contributes to Nationally Determined Contributions (NDCs) under the United Nations Framework Convention on Climate Change (UNFCCC), to Land Degradation Neutrality (LDN) targets under the United Nations Convention to Combat Desertification (UNCCD), to the conservation of biodiversity through strategies and action plans under the Kunming-Montreal Global Biodiversity Framework, and to many of the broader sustainable development goals.

At the European Union level, land restoration contributes to streams of work such as the European Green Deal, the Farm to Fork Strategy, the Biodiversity Strategy (including NaturAfrica), the Forestry Strategy, the Forest Landscape Restoration partnerships, as well as to stability and security in the Sahel and Horn of Africa. At the global level, the United Nations declared 2021-2030 the Decade on Ecosystem Restoration. The first phase of the Reversing Land Degradation by Scalingup Evergreen Agriculture (Regreening Africa) Programme, funded by the European Union (EU), was implemented from September 2017 to March 2023. **Regreening Africa's ambitious first phase dedicated five and a half years to restoring large areas of land across eight countries in sub-Saharan Africa for the benefit of people**, **biodiversity, and climate.** 

The programme's headline goal was to reverse land degradation over an area of at least one million hectares of farm and communal land and benefit 500,000 farm households in eight African countries across East and West Africa: Ethiopia, Kenya, Rwanda, Somalia (Somaliland and Puntland), Ghana, Mali, Niger, and Senegal, with a light touch in Burkina Faso.

Through a separate funding stream from the EU to the German Federal Ministry for Economic Cooperation and Development (GIZ), which ended after three years of the programme, an assessment of the Economics of Land Degradation (ELD) was undertaken to contribute to decisionmaking and policy strategies in the programme countries.



1. Mansourian, S., & Berrahmouni, N. 2021. Review of forest and landscape restoration in Africa. Accra. FAO and AUDA-NEPAD. https://doi.org/10.4060/cb6111en





Regreening Africa was driven by a partnership of organisations that approached development from three different perspectives: **policy**, **implementation** (practice), and **research**.

The research partner, World Agroforestry (ICRAF), also played the lead role in coordinating the Regreening Africa consortium. This was comprised of international non-governmental organisations (NGOs) World Vision (WV), Catholic Relief Services (CRS), Cooperative for Assistance and Relief Everywhere (CARE), and Oxfam, and of a national NGO, Sahel Eco, all tasked with scaling-up agroforestry and other land restoration practices. Each partner brought their unique skills, approaches, and networks to the programme. NGOs offered an extensive network of technical support, and research partners brought an enquiring perspective, data to determine progress and impact, and adapt implementation strategies and tactics if needed. Close coordination among the implementing consortium partners was important to ensure coherent and effective implementation. National **Oversight and Coordination Committees** (NOCCs), chaired by a senior government agency representative, ensured strong linkages to policy and provided strategic advice.

A **dynamic partnership** between communities, development actors, government, and research institutions enabled the extensive scaling of contextually adapted practices, generated essential evidence, and facilitated the exchange of knowledge to enhance impact, and effectively influence policy. Land restoration efforts have little chance of achieving enduring results if they do not involve landowners, land managers, and local communities. Regreening Africa worked at a local scale with diverse farmers and land managers, actively addressing the engagement of women and youth, amongst others, by leveraging and boosting the capacities of local cooperatives and community-based organisations, while sharing information through farmer-tofarmer approaches. Strongly building off these powerful local networks, **the programme created robust linkages and synergies between implementation on the ground and continually adaptive technical support**.

At sub-national and national levels, Regreening Africa worked with a range of stakeholders to **provide evidence suggesting useful policy and investment shifts** and so helped usher in policy and institutional environments that enabled and facilitated the successful scaling of sustainable land management practices by and for communities.

REGREENING AFRICA HAS SHOWN THAT BRINGING TOGETHER A RANGE OF PARTNERS WITH A DIVERSITY OF SKILL SETS, RESOURCES, AND CAPABILITIES IS TRANSFORMATIVE: THE PARTNERSHIPS BETWEEN RESEARCH, DEVELOPMENT, COMMUNITIES, AND GOVERNMENTS HAVE BEEN KEY TO THE SUCCESS OF THE PROGRAMME.



## THE REGREENING AFRICA PARTNERSHIP WAS MADE SEAMLESS AMONG CONSORTIUM

PARTNERS, WHICH ALLOWED US TO WORK EFFECTIVELY TOGETHER DESPITE COMING FROM DIFFERENT POLICY AND OPERATIONAL BACKGROUNDS. TRANSPARENCY, RESPECT, AND CONTINUOUS ENGAGEMENT WAS CENTRAL TO MAKING THIS PARTNERSHIP A SUCCESS.

- EDWARD AKUNYAGRA, WORLD VISION GHANA

9 | REGREENING AFRICA FINAL REPORT



Figure 2: Regreening Africa was a partnership across practice, policy, and research with each partner bringing their skills, networks and expertise to support scaling at the local level





## **Regreening practices** – an Options by Context approach

**Building on existing organisations and processes** allowed Regreening Africa's implementation partners to identify successful and scalable local solutions, leverage existing expertise and resources, and ensure that interventions were appropriate to local contexts. In this way, Regreening Africa tackled the challenge of delivering on global and regional commitments to land restoration through proven and effective approaches that were not only adaptable to local contexts but that could also be accurately monitored, verified, and evaluated and scaled to other contexts.

The **Options by Context** (**OxC**)<sup>2</sup> **approach** to land restoration involves matching and tailoring restoration options to local, social, and agroecological conditions,

as well as farmer circumstances. As smallholder farmers differ in their needs, opportunities, and constraints, a key step in addressing land degradation is to start from a good understanding of which restoration options work best where, and for whom. To scale land restoration efforts, we thus need to understand which restoration practices best suit different farming and household circumstances, and what the potential barriers to adoption might be. Restoration efforts that ignore this diversity and promote a limited number of predefined practices across a large area rarely deliver, as farmers are less likely to adopt and sustain these promoted practices.

Taking the OxC approach to deliver relevant and sustainable outcomes, Regreening Africa deployed a

diversity of land restoration practices and promoted a range of policy changes based on their suitability for different agro-ecological conditions and for the socioeconomic needs of farmers. **Interventions were tailored to specific contexts** right down to those of individual farmers, their fields and incentives.

 Crossland, M., Chesterman, S., Magaju, C., Maithya, S., Mbuvi, C., Muendo, S., Musyoki, M., Muthuri, C., Muthuri, S., Mutua, F., Njoki, C., Sinclair, F. Winowiecki, L., (2022) Supporting farmer innovation to restore: An illustrated five step guide to applying the Options by Context approach to land restoration. Nairobi, World Agroforestry. 11 | REGREENING AFRICA FINAL REPORT





The following approaches and practices have been central to the programme:

## PRACTICE



## FARMER MANAGED NATURAL REGENERATION (FMNR)

The selective management of naturally regenerating trees and shrubs from stumps, seeds or roots. This practice also involves adapting local knowledge on managing tree species that regenerate. Practised in farming areas.

## CONTEXTS WHERE THE PRACTICE WAS MOST EFFECTIVE

- Compared to tree planting, FMNR is very low cost, typically costing between one and three orders of magnitude less per live tree, because it requires minimal equipment and training.
- Farmers mostly deploy it in sites with larger farm sizes and with lower rainfall, and where the tree and shrub species naturally regenerating are those that farmers want to keep.
- Farmers will choose which regenerating species to keep and which tree management interventions (pruning, pollarding, training, tree spacing and densities, management of draft animals for ploughing and livestock for browse, etc.) to use depending on their contexts.
- Where farmers want more tree diversity, enrichment planting can be integrated while taking care to manage demand for exotic trees and avoiding invasives.
- Like tree planting, FMNR is also applied in carbon projects where wildings are regenerated.

## **ASSISTED NATURAL REGENERATION (ANR)**

ANR is a term used mostly for regeneration of degraded forest areas that is assisted in communal areas but also used in the Sahel interchangeably with FMNR. The method aims to accelerate, or reduce barriers to natural forest regeneration such as soil degradation, competition with weedy species, and disturbances (e.g., fire, grazing, and wood harvesting).

- ANR works well in areas that can be managed collectively by the community, and where desirable indigenous tree species naturally regenerate. This approach is most successful where communities benefit from the restored resources, making effective community resource management and exploitation plans key to its spread.
- It is most effectively utilised at the landscape level to restore the protective functions of forests, such as watershed protection and soil conservation. Techniques are flexible, and allow for the pursuit of various objectives, such as timber production, biodiversity recovery, and the cultivation of crops, fruit trees, and non-timber forest products in the restored forest or communal area.



## PASTORAL MANAGED NATURAL REGENERATION (PMNR)

Involves building livestock production resilience and carrying capacity through special attention to diverse livestock forages under silvo-pastoral management plans, to rehabilitate degraded areas through tree and shrub regeneration and management.

- PMNR can most usefully be deployed in communal areas that are managed by pastoralists rather than farmers and where grazing pressure is the main factor influencing the regeneration of grasses, shrubs, and trees. It may involve boosting animal production under adaptive multi-paddock systems or grazing management and complementary feeding approaches that manage biomass regrowth to help close seasonal feeding gaps.
- PMNR typically aims to manage naturally regenerating trees and shrubs at appropriate densities.
- Possible enrichment planting with direct seeding of indigenous grasses.



## **HOME GARDENING WITH TREES**

A garden near the home that includes trees and or shrubs.

• Particularly successful in areas where women have limited access rights to land and where the demand for tree based leafy vegetables and fruits is high but not met by farms.

## PRACTICE

## CONTEXTS WHERE THE PRACTICE WAS MOST EFFECTIVE



## SOIL AND WATER CONSERVATION PRACTICES

Can include zaï pits, halfmoons, bunds, terraces etc. May involve the integration of the zaï, stone bunds, trenches, water storage ponds and planting of crops, grass strips and trees on the same plot.

- Useful where there is water or wind erosion, and water is flowing rapidly from the land and the area is often dry.
- Needs labour to be available on farm or collectively for construction. Often used in combination with other practices.



## **TREE PLANTING AND GROWING**

Deliberate growing of trees matched to sites to provide environmental and/or livelihood values.

- Planting, the most expensive and labour-intensive way of bringing trees back into landscapes, is typically used when trees are wanted by the community or land managers but are not naturally regenerating or are needed for a specific purpose such as fodder, wood or fruit, where superior genetic planting material is available to develop a certain value chain.
- It is also a useful approach when close control on growing niches, tree densities and their complementarity with other farm enterprises, such as food crops and mechanised farm operations, is desired or important. Where superior genetic planting material is available, this promotes the development of local tree-based value chains.
- Finally, enrichment planting is often used in conjunction with FMNR to fill diversity gaps or raise the value of the production obtained from naturally regenerated trees. It works best where water supplies through rain or irrigation are sufficient; the seedlings can be protected through their first, fragile years, and subsequent tree management encourages growth and production.



## GRAFTING

Powerful vegetative propagation technique to rapidly obtain desired qualities in terms of fruit size, taste, colour/texture, and disease resistance, from improved varieties of the same species.



## TREE NURSERIES

- Grafting operations can be carried out on nursery seedlings stock or in situ on already established trees and shrubs in farms.
- Grafting is a valuable tool where local capacity exists (or can be developed), where scions and
  rootstock can be accessed, and where grafting will produce more productive plants. Examples include
  Ziziphus, shea, mango, and avocado.
- Useful when there is a need to raise tree planting stock for growing and direct sowing, or when regeneration is not feasible.
- Nurseries are most viable when set up close to the planting site, or where demand for seedlings is high. Requires labour, shade, pots, soil, seeds, and water.

## **RURAL RESOURCE CENTRES (RRCs)**

Peer-learning hubs on tree planting, material production, growing, and management. Serves as a local point for advisory/ education and outreach to harness tree and other farm enterprise goals. Where land is available, they can provide sources of improved scions and seeds through mother blocks, vegetable gardening and other input support.

- Most are developed following tree nursery investments where tree propagation, growing or domestication skills are knowledge intensive or inadequate.
- RRCs work well where resources to build them are available, where there is an effective, wellmanaged community or cooperative group to build and run it, and where they can act as hubs for members to link up with local advisory services and sell their production to buyers. Local ownership is critical.

## BOX 1 EXCLOSURES FOR ECOSYSTEM RESTORATION AND LIVELIHOOD IMPROVEMENT IN ETHIOPIA

Exclosures are the main landscape restoration strategy in Ethiopia to help it realise the ambitious land restoration target of rehabilitating 22 million hectares of degraded land under the Bonn Challenge and AFR 100. Exclosures are areas protected from human and animal interference to rehabilitate degraded communal lands. Soil and water conservation, assisted natural regeneration, and enrichment planting are also practised in exclosures to support restoration.

The implementation approach for exclosures involves the following steps:

- Community consultations to raise awareness and support mobilisation.
- **Organising communities into groups and cooperatives** to facilitate the process of issuing land use certificates.
- Site delineation and capacity building on restoration practices such as FMNR, tree management, and silvicultural practices.
- Establishing bylaws that define the roles and responsibilities of partners and penalties to be paid in case of violations.
- **Developing management and business plans** in consultation with the communities.



## **KEY OUTCOMES UNDER REGREENING AFRICA**



More than 110,000 hectares of degraded communal land delineated and put under area exclosures in Ethiopia's Oromia, Tigray, and Amhara regions.



Improved vegetation cover due to enrichment planting and natural regeneration and increased species diversity.



Enhanced provision of ecosystem services e.g., provision of fodder and fuel wood and less soil erosion.



The creation of incentives for restoration through tree-based value chains including seedling production, beekeeping and fruit orchards that created job opportunities, especially for the youth.

## BOX 2 APPLICATION AND ADOPTION OF FMNR IN SENEGAL

FMNR was implemented through two strategies: directly through training and indirectly through influencing other actors. The programme team selected and trained 48 facilitators on good agroforestry practices, who in turn went on to train 45 lead farmers. These lead farmers then undertook training in their own villages and neighbouring villages. Administrative and territorial authorities were involved in this process, which was done in collaboration with technical services.

## FACTORS LEADING TO SUCCESSFUL FMNR ADOPTION

- **Retraining and technical supervision** missions to farmers already trained.
- Broad communication and sensitisation programmes on FMNR through radio broadcasts, and awareness raising caravans that made it easy to learn about the approach.
- Inter-zone exchange visits; the creation of dedicated livestock rangelands.
- **The diversification of practices** including direct seeding, planting, and introduction of improved species, which supported cohesion between farmers and herders.
- The use of improved cooking stoves to reduce tree cutting.



# IMPACT

Regreening Africa has played a role in catalysing the realisation of global, regional, and national commitments in eight African countries. By scaling sustainable land management practices, Regreening Africa has supported over 600,000 households, covering nearly one million hectares of land. The cost of implementing regreening practices was from as low as 30 EUR, depending on the specific context. The programme's impact has also stimulated a broader effort to restore tens of millions of hectares of degraded land throughout Africa.



## Achievement of targets

## TARGET: 1,000,000 HECTARES AND 500,000 HOUSEHOLDS

Regreening Africa set two adoption categories:

- 1. **Directly facilitated adoption:** Expected through the programme's own community-level activities.
- 2. Leveraged adoption: Evidencedbased projection of the adoption of the promoted interventions that was expected (or known to have occurred) following the dissemination of regreening approaches among non-programme related initiatives and investments. Leveraged adoption could for example result from a complementary project implemented by one of the NGOs that are members of the consortium and that embrace the same approaches promoted by Regreening Africa. It could also stem from another organisation or government institution adopting and implementing the scaling approaches developed under the programme.

## REACH

Reach was defined as households trained, those reached through nurseries, tree-based enterprises, farmer-tofarmer efforts, or local advisory services, and the land these households could regreen. Reach was reported by each implementing partner based on their records.

The programme reached:

## 607,088 HOUSEHOLDS

- → 404,076 households in direct intervention areas
- → **203,012** households in leveraged sites
- → with access to **954,440 HECTARES** of land for regreening, including 700,536 hectares from direct intervention areas and 253,904 hectares from leveraged sites.

Household surveys in direct intervention areas found that **50 percent of the households surveyed acknowledged receiving regreening knowledge and skills**. Once a household has been reached, it must decide which practices to adopt and the extent of land over which to apply them. This decision process is then reflected as "uptake" or "adoption". However, because some households, despite receiving information, chose not to adopt the promoted practices, the number of households reached is in most cased higher than those actually adopting.

## 

Baseline and endline surveys were conducted in all direct intervention sites. A total of **9,835 households** were surveyed at baseline in 2019, with **7,683** re-interviewed at endline in 2022. Somalia's surveys were conducted in 2019 and 2021, covering 469 individuals.

By comparing endline and baseline survey results for biophysical and socioeconomic indicators at household level, following the programme's Theory of Change, progress in achieving household and hectare targets were assessed, as well as changes in regreening practices. This causal estimation approach is known as the first difference estimation strategy and the estimation approach and overall monitoring process are outlined in the baseline and endline survey reports.<sup>3,4</sup>



- Hughes K, Oduol J, Kegode H, Ouattara I, Vagen T, Winowiecki LA, Bourne M, Neely C, Ademonia D A, Carsan S, Van Schoubroeck F, Chomba S. 2020. Regreening Africa Consolidated Baseline Survey Report. World Agroforestry. Nairobi, Kenya.
- Teşfaye Woldeyohanes, Hilda Kegode, Karl Hughes, İbrahim Outtara, Tor-Gunhar Vågen, Leigh Ann Winowiecki, Jasper Kleinsmann, Ravi Prabhu, Mieke Bourne. 2023. Regreening Africa Consolidated Endline Survey Report. World Agroforestry, Nairobi, Kenya.

## HOUSEHOLDS

**Direct adoption** estimates are for households that were reached by different sources and adopted new or intensified existing regreening practices. Baseline and endline data were combined with demographic data from the intervention areas to estimate these results.

In direct intervention areas, a total of 160,981 households have confirmed adoption. Surveys in the direct intervention areas covered 234,144 households, so **65 percent of the direct intervention target** was achieved within four years. Over time it is expected that more households will take up the practices.

In the **leveraged sites**, uptake surveys were conducted in two countries, revealing lower adoption rates of approximately 10 percent. However, these figures are likely underestimated as not all sites could be measured. Among the regreening practices, those most widely adopted included improved management of established trees, tree planting and FMNR followed by nursery establishment, and grafting.





## **HECTARES**

Land was considered "regreened" if **tree cover increased over four years** through practices like assisted natural regeneration by farmers, pastoralists, and communities or through tree planting and management, often combined with soil and water management techniques.

The calculation of 'regreened' hectares involved estimating the number of households that established or managed trees within the past four years, multiplying this by the area covered by tree growth, and then further multiplying by the average land size of the farms involved. Survey results did not encompass communal areas and some of the leveraged sites, whose regreening status was calculated using data from the Regreening Africa citizen science app (which is detailed later in the report).

Across leveraged areas, **216,087 hectares were confirmed to be under regreening through household surveys, while 136,489 hectares were confirmed through the Regreening App**. In total, 352,577 hectares have been confirmed, representing 35 percent of the total target.

Some countries exceeded 50 percent of their hectare target, such as Ghana (61 percent), Mali (90 percent), Somalia (Somaliland 107 percent and Puntland 51 percent). Conversely, some countries achieved limited

progress, like Rwanda (3 percent) and Niger (25 percent), due to a disparity between the target and the available land for regreening in the intervention areas. The current hectare figure is considered an underestimate since certain communal areas and leveraged sites were not sufficiently captured. This figure will grow over time as households recognise the benefits of regreening and extend their practices to more of their land.

## METHOD

App data was drawn from all leveraging sites in Kenya, which had low regreening signals, and from communal areas in Migori and Homabay counties with ongoing efforts. In Ethiopia, communal areas above 10 hectares were included due a regreening signal on over 50 percent of plots. For Ghana, all communal areas above 10 hectares were included, except for Mion due to a low regreening signal. In Mali, communal areas above 10 hectares were considered if over 10 percent of plots showed regreening. In Niger, plots above 50 hectares were included as communal areas. App data were not utilised for Rwanda, Somalia, and Senegal.

Ethiopia

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## **REGREENING ACTION INDEX**

The process of regreening encompasses various elements that vary depending on the context. To capture this complexity, a multidimensional Regreening Action Index was developed through the programme, considering four distinct dimensions.

All of these dimensions have been measured and captured using baseline and endline survey data. Figure 4 summarises data across the programme and the eight countries. A quick comparison between the first bar (baseline) and the second bar (endline) indicates increases in the extent, intensity, and diversity of the practices, as well as improvements in the equity dimensions. While there is variation within countries, sites and between households, this graph shows an overall result. These findings are important as they demonstrate that regreening occurred across different parts of farms, at an increasing intensity and with multiple species and practices. Evaluating intra-household equity is crucial, as the involvement of both men and women in decision-making, tree management, and product sales fosters a more equitable distribution of effort and benefits from regreening. Notably, Ghana was the sole country with a significant increase in the intra-household equity dimension.







Endline

Baseline

Ghana 5 4 2.3 -0 Baseline Endline







Figure 4: Regreening Action Index, with dimension and indicator contribution at baseline and endline

REGREENING AFRICA FINAL REPOR

Regarding the intensity and diversity of regreening practices, the following points are noteworthy:

ACROSS ALL HOUSEHOLD LAND USE AREAS, THE TOTAL ESTIMATED NUMBER OF TREES INCREASED FROM AN AVERAGE OF 67 TO 129 TREES



Ø

THERE WAS A GENERAL RISE IN TREE DENSITY, FROM AN AVERAGE OF 43 TREES PER HECTARE (BASELINE) TO 120 TREES PER HECTARE (ENDLINE)

Rwanda demonstrated the highest density at endline: an average of 397 trees per hectare, followed by Kenya: an average of 247 trees per hectare

## THE NUMBER OF EXOTIC TREES **IN EAST AFRICA INCREASED** COMPARED TO NATIVE TREES

In Rwanda, this included a greater prevalence of high-value trees like eucalyptus, grevillea, mango, and avocado.

## WEST AFRICA WITNESSED AN **INCREASE IN INDIGENOUS TREE** SPECIES

These include *Combretum glutinosum*, Faidherbia albida, Guiera senegalensis, Adansonia digitata (baobab), Piliostigma reticulatum, and Ziziphus mauritiana. In Ghana, the Shea tree (Vitellaria paradoxa) was among the most prevalent species in the programme sites.



# Level of regreening

Detecting a greening signal in the context of land restoration can pose challenges, particularly in drylands where the signal can be relatively subtle. Additionally, such assessments must account for factors such as variations in rainfall, ascertaining whether shifts in vegetation cover are attributed to land restoration interventions or natural dynamics. For instance, during a wet year, an area might exhibit increased greenness regardless of any programme activities.

In the context of Regreening Africa, the land health team developed an innovative approach. This method employs vegetation time series data from Landsat 8, an earth observation satellite, in combination with a spatial model that incorporates rainfall as an external predictor. Greening was determined by assessing whether individual farmer fields exhibited an actual vegetation signal over at least two consecutive years that exceeded the signal predicted by the model. An example is shown below in Figure 5, showcasing cases with strong greening and no greening, respectively.

This analysis was conducted to assess the Greening score by comparing NDVI time series during the programme period with the period from 2013 to 2017 for surveyed households within the programme. An observable greening signal is indicated when this score is higher than 0.5.



## METHOD

The **Seasonal AutoRegressive Integrated Moving Average (SARIMA) model** was trained to predict vegetation signals in farmers' fields using Normalised Difference Vegetation Index (NDVI) data from 2013 to 2017. This model was then used to forecast signals post-2017 based on rainfall variations, utilising data from the Global Precipitation Mission (GPM). NDVI is a method used in remote sensing where the difference between reflectance of near-infrared light which vegetation reflects and visible red light which it absorbs to quantify vegetation.

Results were validated with field data and highresolution satellite images where available. The model applied achieved an 87 percent accuracy in independent tests conducted in Niger (arid), Ethiopia (semi-arid), and Rwanda (sub-humid).



**Figure 5:** Examples of greening (left) and no greening (right) are shown, along with their Greening scores. The polygons represent individual farmer fields from household surveys. The black line shows actual monthly normalised NDVI values, and the red line indicates predicted NDVI values with yellow ribbons denoting 50 percent and 80 percent prediction intervals. On the left, the black line goes above the red dashed line and yellow ribbon, while on the right, it does not.



**Figure 6:** Boxplot showing the Greening Score distribution per country, based on the monthly NDVI time series from 2013 to 2022. The values indicate the relative amount of greening detected after 2017 (i.e., at programme start), relative to 2013 to 2017 (i.e., pre-programme). The solid line within each box is the median value while the dashed line represents the mean.

Based on data collected through household surveys, **Ethiopia registered the highest relative Greening Score at country level** (see Figure 6), with significant variations observed between districts, as indicated by the box height. Rwanda, Kenya, and Ghana also exhibit a significant number of households where a vegetation cover increase is detected. While the mean scores for Mali, Niger, and Senegal remain below 0.5, we are also detecting increases in some districts within these countries. Overall, we are detecting greening (score > 0.5) in approximately 70 percent of plots in Ethiopia, 49 percent in Ghana, 38 percent in both Rwanda and Kenya, and between 26 percent and 28 percent in the Sahel.

There may be many reasons for the weaker signal in the Sahel, but one explanation could be the prevalence of FMNR systems, where trees and shrubs are often pruned or lopped, potentially leading to a partial underestimation of greening levels. Additionally, trees in the Sahel are primarily deciduous, meaning that they lose their leaves during parts of the year.



THE LAND HEALTH TEAM DEVELOPED AN INNOVATIVE APPROACH, EMPLOYING VEGETATION TIME SERIES DATA FROM LANDSAT 8, AN EARTH OBSERVATION SATELLITE, IN COMBINATION WITH A SPATIAL MODEL THAT INCORPORATES RAINFALL AS AN EXTERNAL PREDICTOR.

## **Tree cover**

## METHOD

To further assess changes in vegetation cover, the Land Degradation Surveillance Framework (LDSF)<sup>5</sup> database and remote sensing data were used to predict and map tree cover specifically, also based on Landsat 8. In this context, trees are classified as woody vegetation that is 3 metres or more in height. This approach uses satellite reflectance data to develop a predictive model based on LDSF field data on the presence/absence of trees and their density. The result is a map with tree cover (percentage) predicted for each pixel, which we can then extract values from for farmers' fields to compare baseline and endline conditions.



5. http://landscapeportal.org/blog/2015/03/25/the-land-degradation-surveillanceframework-ldsf/ LDSF was developed in response to a lack of methods for systematic landscape-level assessment of soil and ecosystem health. The methodology is designed to provide a biophysical baseline at landscape level, and a monitoring and evaluation framework to assess processes of land degradation and the effectiveness of rehabilitation measures (recovery) over time.



Predictions of tree cover are less affected by short-term rainfall variations compared to the general fractional signal. Figure 7 shows the results of this analysis. Niger exhibits consistently low tree cover with no noticeable change from 2017 to 2022, while we see a decrease in tree cover in Senegal. On the other hand, Rwanda demonstrates a notable increase in tree cover. The mean values for 2017 and 2021 are 20 percent and 24 percent, respectively, along with a rise in plots with more than 50

percent tree cover during the programme period.

Multiple factors might contribute to the observed increase in tree cover in Rwanda. One factor is the predominant planting of fast-growing exotic species like avocado, eucalyptus, and tree tomato (tamarillo). Additionally, dominant species are often planted in woodlots or fruit tree orchards where tree densities are relatively high. In other countries, tree cover might not be fully registered yet, as the model only accounts for trees above three meters, which may not be achieved in the programme period.

**Figure 7:** Boxplot showing predicted tree cover for each country based on LDSF field data and remote sensing, comparing baseline and endline values for the main cropping field. The box covers 50 percent of the scores, with the solid line showing the median or midpoint. The lines coming out of the box represent the lower and upper 25 percent of scores, while the dots representing outliers.

# three

# BENEFITS OF REGREENING



Assessments and mapping of soil and land health were conducted for seven countries. These assessments and maps were developed using data from the LDSF, which contains field and laboratory data from more than 40 countries. As part of Regreening Africa, field sites were added from Rwanda, Niger, and Senegal. Key indicators of land and soil health, soil organic carbon and erosion, were analysed for both baseline and endline households.

## **SOIL ORGANIC CARBON**

Soil organic carbon (SOC) is an important indicator of soil and land health because it influences a range of ecosystem services provided by soil, and because it provides an important opportunity for carbon sequestration while also enhancing the resilience of ecosystems to climate change. Increased SOC can play a critical role in enhancing land health and agricultural productivity, given its influence on soil nutrients and their availability to plants, water regulation, and biodiversity.

## METHOD

SOC, expressed as the grams of organic carbon per kilo of soil ( $gC kg^{-1}$ ), was estimated utilising soil data from a global network of LDSF sites and Landsat remote sensing data. Machine learning algorithms (models) were trained to predict SOC based on satellite image reflectance values.<sup>6,7,8</sup> The accuracy of the SOC maps is greater than 80 percent, which is considered high. As anticipated, significant variations exist between countries due to the diverse range of climate zones, altitudes, and management systems represented. **Ethiopia holds the highest overall SOC**, followed by Kenya and Rwanda, although considerable variations are observed (see Figure 8). The higher SOC in Ethiopia can be attributed to lower temperatures (higher elevation) in some of the programme districts, higher rainfall, and soils with high clay content in some cases. Conversely, **in the Sahel SOC is generally very low** due in part to a combination of lower rainfall and more sandy soils. Given the variations in climate, underlying soil properties, land cover, and land use, impacts of interventions on SOC and other land health variables are likely to also vary strongly both between and within programme countries.

The mean baseline SOC across the programme area was about 9.75, which increased to  $10.02 \ gC \ kg^{-1}$  at the endline, reflecting **a relative increase of 3 percent over the programme period**. While this increase is quite marginal on average, specific programme areas show somewhat stronger increases, such as Sire district in Ethiopia. No changes or slight decreases in SOC were observed in Senegal (all districts), Simiri (Niger), Tominian and Koutiala (Mali), Enderta (Ethiopia), and Ghana.

The absence of SOC changes in the drier Sahel areas aligns with expectations, as it often takes years for intervention impacts to manifest in these regions. This highlights the need for **long-term soil and land health monitoring**. Additionally, the baseline SOC is generally very low in these regions, signifying substantial constraints at the onset of the programme. Nonetheless, it is important to recognise that even small changes in these more marginal areas can significantly impact productivity and overall resilience.

 Vågen, Tor-Gunnar T.-G., and Leigh A. Winowiecki. 2013. "Mapping of soil organic carbon stocks for spatially explicit assessments of climate change mitigation potential." Environmental Research Letters 8 (1): 015011. https://doi.org/10.1088/1748-9326/8/1/015011.

 Vågen, Tor-G., Leigh A. Winowiecki, Assefa Abegaz, and Kiros M. Hadgu. 2013. "Landsat-based approaches for mapping of land degradation prevalence and soil functional properties in Ethiopia." Remote Sensing of Environment 134 (July): 266–75. https://doi.org/10.1016/j.rse.2013.03.006.

 Vågen, Tor-G., Leigh A Winowiecki, Jerome E Tondoh, Lulseged T Desta, and Thomas Gumbricht. 2016. "Mapping of soil properties and land degradation risk in Africa using MODIS reflectance." Geoderma 263 (February): 216–25. https://doi.org/10.1016/ji.geoderma.2015.06.023.



A SMALL, POSITIVE, AND SIGNIFICANT STATISTICAL RELATIONSHIP WAS FOUND BETWEEN SOC AND THE GREENING SCORE FOR SIX OUT OF SEVEN COUNTRIES, WITH GHANA BEING THE EXCEPTION, SHOWING A NEGATIVE RELATIONSHIP. THIS INDICATES THAT GREENING IN GENERAL IS LINKED TO IMPROVED SOC LEVELS. When looking at tree cover relative to SOC (see Figure 9) an overall increase is observed across all programme countries. However, the trajectories differ for each country due to inherent system properties such as climate and soil properties. Taking site-specific factors into account is important in the design and implementation of land restoration interventions, as well as for monitoring change over time.



Figure 8: Distributions of SOC at baseline (top plot) and endline (bottom plot) across seven of the programme countries. The dashed line represents the median and the colour shows the level of SOC, with browner representing more SOC.



## **SOIL EROSION PREVALENCE**

## METHOD

In the LDSF, soil erosion is classified into different forms during field surveys (none, sheet, rill, gully/mass) and scores are generated at the plot level based on the number of subplots with observed erosion. This score reflects the severity of erosion in each LDSF plot.

Maps of erosion prevalence were developed using ICRAF's georeferenced database of ecosystem health indicators, coupled with remote sensing imagery<sup>9</sup> at the same spatial resolution as the maps of vegetation cover and SOC above. For the assessment of soil erosion across the programme areas, predicted erosion values were extracted for individual farmer fields in the same way as SOC. The accuracy of the soil erosion prevalence maps is approximately 86 percent.

Figure 10 shows an example for Garu (Ghana) of an erosion map from 2020/2021 with farmer field polygons overlaid.

 Vågen, T.-G.; Winowiecki, L.A. Predicting the Spatial Distribution and Severity of Soil Erosion in the Global Tropics using Satellite Remote Sensing. Remote Sens. 2019, 11, 1800. https://www.mdpi.com/2072-4292/11/15/1800



**Figure 10:** Satellite image (top) and map showing soil erosion (bottom) for an area near Garu in Ghana. The green boundaries on the map are farmer fields outlined as part of household surveys.



We do not observe substantial changes in soil erosion across the programme overall (Figure 11). Notably, Kenya demonstrated a shift towards lower erosion prevalence. Ethiopia, Ghana, and Rwanda also have somewhat lower median erosion in 2021 compared to 2017. Among the programme countries, erosion prevalence is lowest in Rwanda. Conversely, Niger and Senegal we see slight overall increases in erosion.

Soil erosion is a relatively dynamic indicator of soil and land health that can vary quite significantly between years. It is strongly impacted by management practices such as soil and water conservation, which mitigate runoff and maintain soil cover. Additionally, extreme weather events like heavy rainfall can significantly influence erosion. In drylands, prolonged droughts followed by intense rainfall can exacerbate soil erosion, making measures to increase permanent land cover critical.

A positive and significant statistical relationship was found between lower erosion and higher Greening scores in Ethiopia, Niger, Rwanda, and Senegal. However, no relationship was found for Mali, Kenya, and Ghana.



**Figure 11:** Boxplot showing the distribution of soil erosion prevalence (%) extracted from the sample farmer's fields by country at baseline and endline, respectively.





## Livelihood benefits and the costs

### Benefits from regreening were measured in terms of:



tree products





farm income









## dietary diversity



# TREE RELATED PRODUCTS FROM ON-FARM AND COMMUNAL LANDS

- The percentage of households using fuelwood from on-farm and communal land increased from 30 percent at baseline to 60 percent at endline across seven countries. The change is particularly significant in Ethiopia, Ghana, Kenya, and Niger.
- Across all seven countries, the percentage of households reporting the consumption of fruit and nuts increased from 19 percent to 37 percent, with significant increases observed only in Ghana, Mali, Niger, and Rwanda.
- The utilisation of fodder shrubs increased considerably in the Sahel region (Mali, Niger and Senegal). Similarly, relatively many households in Ghana, Mali, and Niger scaled up the use of medicinal plants.
- Households intensifying their consumption and general use of tree products experienced improvements in dietary diversity.



## SELLING TREE-RELATED PRODUCTS COLLECTED FROM ON-FARM AND COMMUNAL LANDS

- While the overall average income remained stable during the programme, the number of households earning additional income from trees significantly increased from less than 600 to over 1500 over the programme period.
- The sale of tree-related products increased from 8 to 20 percent, with significant variation across countries. Notably, in Ghana and Mali, there was a noticeable increase in the percentage of households selling fruits and nuts, rising from 8 to 30 percent and 14 to 28 percent, respectively.
- Similarly, the percentage of households that reported selling fuelwood increased from 3 to 12 percent in Ghana and from less than 1 to 3 percent in Mali.

 A small yet statistically significant positive relationship was found between asset gain and income from trees, indicating the importance of additional income for asset accumulation and household resilience.

Revisiting these indicators in another few years will be important to understand if more time is required to shift certain indicators and to monitor if progress achieved sustains.





## **COST OF REGREENING**

Analysis of the cost efficiency and effectiveness of regreening was undertaken for Rwanda and Ghana using Dioptra.<sup>10</sup>

- For Ghana, the total programme cost including policy influencing, communications, cross-learning, programme management and reaching the community was 74 USD (65 EUR) per household.
- For Rwanda, the total programme cost was 155 USD (137 EUR) per household.
- In terms of cost per hectare, it amounted to 52 EUR per hectare in Ghana and 1,097 EUR per hectare in Rwanda.

10. Dioptra is a web-based software which pulls from existing financial information and walks users through a standardised methodology for estimating cost-per-output - https://www. dioptratool.org/ This analysis was conducted by CRS in collaboration with the programme teams in each country.



Across sites in seven countries, at least **18 enterprises involving 11 different actor types have received support** (see Figure 12). Priority agroforestry value chains were selected in each country and, in Kenya, Rwanda and Ethiopia, beekeeping for honey production emerged as a value-add activity on farms and communal lands with FMNR and area enclosures/ex-closures. As the implementation of the programme progressed, the emergence of new value chains became evident, such as the firewood value chain utilising pruning material from FMNR. Prioritisation across and within countries supported greater focus, since in most sites more than one competing enterprise was identified and strengthened.

**Tree nurseries** have also emerged as an additional business option, catering to the growing demand for superior quality and diverse plant materials following initial investment in tree genetic resources. Training support, processing equipment, installation, setting market outlets, provision of knowledge products and linkage of actors through dialogue platforms were provided. Intensive partner trainings on value chain concepts and business plan development in Ethiopia, Mali, Ghana, and Niger helped greatly strengthen product business development work.

Issues such as poor management of bee colonies and inadequate forage plants which led to low yields, and poor harvest techniques which compromised quality, were addressed through **the promotion of FMNR and tree growing** to increase the diversity of forage plants, and technical skills on colony management and provision of equipment for honey production and processing. Local artisans in Kenya composed mainly of youths received training on fabrication of modern hives during the project no-cost extension period. Bee-keeping practices in all project countries was supported through training and demonstrations on beehive use, processing equipment and value addition on local products.



Additionally, **circular value chains** were also promoted. For example, for shea butter, support to establish fast growing multipurpose trees to supply wood fuel for processing of shea fruits was offered in Ghana. Water used in shea processing was recycled using biochar and the shells obtained from nut crushing were used as manure and wood fuel.

Figure 12: Prioritised value chains

VALUE CHAINS WITH EQUITABLE ECONOMIC BENEFITS AND POLICIES THAT SUPPORT AN ENABLING ENVIRONMENT ARE CRITICAL INCENTIVES TO SCALE UP LAND RESTORATION.

# POLCY ENGAGEMENT AND BEHAVIOUR CHANGE

Regreening Africa's partnership-based model has played a pivotal role in facilitating the exchange of insights between global policy processes and regional, national, and local levels.

# Facilitating change at global, regional and national levels

## **GLOBAL AND REGIONAL**

Regreening Africa's partners are actively engaged in UN Decade on Ecosystem Restoration task forces and other global initiatives such as the Coalition of Action for Soil Health. Their contributions extend to a number of global policy forums, including the UN Food Systems Summit.

Regreening Africa has maintained close collaboration with key African regional institutions and initiatives, including the **African Union Commission**, **AFR100**, and the **Great Green Wall** initiative. Representatives of regional institutions and initiatives were invited to Regreening Africa workshops and events to facilitate the dissemination of emerging lessons from the programme and to encourage the broader adoption and scaling of successful solutions.

## NATIONAL

At the national level, NOCCs have played an important part in shaping policy processes, which included:



The programme **adopted consultative approaches with decision-makers at various levels** to gauge the alignment of policies, bylaws, and institutions with land restoration goals. This facilitated the presentation of evidence supporting effective land restoration and enabled discussions on ways to enhance its enablement within participating countries.

**Cross-sectoral coordination among decision-makers was actively fostered** through the programme to enhance political backing for land restoration initiatives.



Leveraging policy analysis desk studies and initial stakeholder engagements, **the programme utilised outcome mapping to pinpoint necessary behaviour change shifts** and influential mechanisms for shaping policy advocacy. This approach placed a strong emphasis on the integration of evidence.



**Noteworthy policy advocacy outcomes were highlighted through outcome stories**, underscoring the tangible changes resulting from such efforts.



Regreening Africa played a role in **advancing movement building** through initiatives like the Kenya National Landscape Restoration Scaling Conference, action groups, and the Northern Ghana Restoration Initiative (NRI).

Policy engagement was implemented in various ways, both virtual and in-person. This involved organising multi-team and cross-country learning events focusing on specific topics towards advocacy for change. Additionally, the programme convened Stakeholder Approach to Risk-Informed and Evidence-Based Decision-making (SHARED) workshops that aimed to bridge the gap between scientific insights and policy implementation. Examples of successful policy engagement under the Regreening Africa programme include the NRI, the Senegalese transhumance corridors, the FMNR Decree in Niger, and the development of agroforestry strategies in Ethiopia and Kenya.



**GREAT GREEN WALL INITIATIVE ALREADY.** [...] THE EMPHASIS ON TAKING ADVANTAGE OF SYNERGIES AND SUPPORTING COLLABORATION AND INFORMATION SHARING ARE HIGHLY RELEVANT FOR THE GREAT GREEN WALL INITIATIVE.

> - DR ELVIS TANGEM, COORDINATOR FOR THE GREAT GREEN WALL INITIATIVE (GGWSSI) AT THE AFRICAN UNION COMMISSION

# Cutcome mapping results by country

Each country team identified policy and institutional challenges they planned to address through targeted activities to shift behaviour of stakeholders. Each year activities were undertaken and assessed to see the changes taking place. Outcome mapping was used to track the process. The following maps highlight the action and change observed in each country.

## POLICY/INSTITUTIONAL SHIFT

Women having access to land.

#### ACTIONS

Advocacy conducted with traditional authorities, customary land right holders and elected officials, in charge of land right formalisation.

#### CHANGE

Twenty women groups operating in non-timber agroforest product processing obtained land ownership certificates over 60 ha of agroforestry parks of shea, néré, cashew, and moringa.

## GHANA

#### POLICY/INSTITUTIONAL SHIFT TARGETED

District and community bylaws against land degradation enacted.

### ACTIONS

Dialogue with the district assembly and departments, drafting of bylaws or review of existing.

#### CHANGE

Environmental committees formed in the Bawku West District and the Management Plans for their operation established as well as committees in Mion District that are operational.

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Coordination and planning for the northern regions.

#### ACTIONS

Workshops, dialogue, advocacy with stakeholders, review of evidence.

### CHANGE

Northern Restoration Initiative (NRI) developed as a multi-stakeholder approach to the northern regions with a shared vision.

## NIGER

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Enhanced land and tree tenure through the FMNR decree.

#### ACTIONS

Field visits, dialogue and decree preparation followed by decree translation and distribution.

#### CHANGE

Presidential decree on FMNR giving greater tree use rights to land managers and more awareness of the decree through local language.

### ETHIOPIA

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Woreda officials, experts and District Assemblies actively support programme implementation.

### ACTIONS

Joint visits to the field, workshops, training and regular meetings and sustainability planning.

### CHANGE

Integration of FMNR in the district government annual plan, user groups in exclosures are allowed to practise FMNR and utilise the resource from pruning, thinning and cut and carry grass.

## rwanda

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Agroforestry task force established.

## ACTIONS

Discussion with government and stakeholders and meetings to identify scope and role of the task force.

### CHANGE

Task force established and members appointed.

## SENEGAL

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Communes / municipalities to join the association of green communes to support FMNR.

#### ACTIONS

Sharing of training materials and sensitisation caravans as well as dialogue with communes led by the mayor leading the green communes.

### CHANGE

Three new communes joined and others showed interest to join.

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Grazing areas for transhumant cattle herders in communes established in collaboration with the community.

#### ACTIONS

Discussions with key stakeholders, particularly traditional, religious, and local elected authorities to understand their opinions regarding pastoralism management in the area, and the solutions. A formal multi-stakeholder platform was formed, and committees established to receive and orient pastoralists and resolve conflict.

#### CHANGE

Seven committees for the orientation and installation of pastoralists entering the area of Touba Mbella.



## KENYA

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Regreening included in government strategies and policy documents for increased tree cover and enhanced funding for implementation.

### ACTIONS

Input to the Forest and Landscape Restoration Implementation plan, agroforestry strategy and county policies.

### CHANGE

Draft restoration plan and agroforestry strategy awaiting launch.

#### POLICY/INSTITUTIONAL SHIFT TARGETED

Enhance coordination of restoration stakeholders in the country.

### ACTIONS

Kenya Landscape Restoration Scaling movement supported through action groups and conferences.

### CHANGE

Seven action groups representing around 100 organisations formed and at least two continuing. Two conferences held.

## somalia – somalilani

## POLICY/INSTITUTIONAL SHIFT TARGETED

Government incorporates FMNR into their strategic, development and budget plans and resource FMNR and agroforestry work.

### ACTIONS

Series of consultative meetings with the Ministry of Environment took place to discuss how to mainstream FMNR in the ministry strategy and national policies.

#### CHANGE

The Minister of Environment and the Director General of the Ministry of Environment mainstreamed FMNR in their strategic plan.

## somalia – puntland

## POLICY/INSTITUTIONAL SHIFT TARGETED

Government ministries include FMNR and enabling conditions in state policy and strategy documents.

## ACTIONS

Consultative meeting held for line ministries and relevant stakeholders to mainstream FMNR into existing policies.

### CHANGE

FMNR incorporated into the policy document.

## BOX 3 TREE USE RIGHTS

Tree tenure, use and ownership rights are critical for farmers' livelihoods, and are incentives to upscale land restoration practices in Africa, especially in the Sahel where underlying policy, regulatory, and institutional barriers persist. Through structured, and tailored actions, the Regreening Africa programme contributed to addressing these issues.

In **Niger**, the programme's financial, and technical support contributed to the successful completion of the first ever presidential decree reforming the practice and benefit sharing of FMNR. The decree clarifies tree tenure, lifts certain permit requirements, and gives land managers more rights over the trees they have nurtured. Building on this experience, Regreening Africa organised a cross-country policy learning visit to Niger for decision makers from Senegal and Mali to learn from the advocacy and policy influencing processes that led to the completion of the Niger FMNR decree. This enabled crosslearning, perception, and behavioural changes as well as strategic planning of future policy influencing work in these countries.

Following the recommendations from the policy learning visit, the programme produced a research paper analysing the policy and regulatory barriers to the upscaling of FMNR in Senegal, to provide decision makers with more evidence, and support advocacy work.<sup>11,12</sup>

In addition, the programme initiated an advocacy process with the Minister of Environment of Mali for a reform of agroforestry and FMNR in the country. Evidence of the need for reform was brought, and the Minister has commissioned a taskforce to further explore the issue and suggest a draft of reform. The process is ongoing.

11. 'Trees are not all the same' Assessing the policy and regulatory barriers to the upscaling of FMNR in Senegal) https://doi.org/10.1080/14728028.2023.2229355

12. https://regreeningafrica.org/in-the-news/enhancing-tree-use-rights-in-the-sahel/





ECONOMIC VALUATION CAN REVEAL THE TRUE COST OF CONTINUING CONVENTIONAL AGRICULTURE, AND THE LARGE POTENTIAL GAINS OF ADOPTING MORE SUSTAINABLE PRACTICES.

- NINA BISON, ELD COORDINATOR



From 2017 to 2020, the ELD Initiative, together with its partners and with financial support from the EU and GIZ, contributed to the implementation of Regreening Africa with two major activities. Firstly, **it raised awareness and informed decision-making** related to the costs of land degradation and the economic benefits of investments in sustainable land management (SLM). Secondly, it **strengthened the capacity of national research and government institutions** as well as experts to provide and utilise this information and evidence in relevant decision-making contexts.

There is an urgent need at the country level to translate findings from ELD studies and political commitments to Land Degradation Neutrality into sustainable action on the ground. Assessing the costs and benefits of sustainable land management is a prerequisite for making the economic (and financial) case for investment and can contribute to attracting the interest of policymakers and stakeholders, informing decisions, and evaluating changes.

Using selected findings from ELD's Regreening Africa case study processes, what follows are key economic arguments for investing in sustainable land management.

For more information and specific land degradation neutrality targets in Regreening Africa focus countries please refer to ELD's Regreening synthesis report.<sup>13</sup>



13. ELD Initiative (2020). Findings and Lessons Learnt from Economics of Land Degradation (ELD) Country Studies. Synthesis Report on the ELD Initiative in connection with the «Reversing Land Degradation in Africa by Scaling Up Evergreen Agriculture» Project. Available at: www.eld-initiative.org

## **KEY ECONOMIC ARGUMENTS FOR INVESTING IN SUSTAINABLE LAND MANAGEMENT**



## Land degradation causes economic losses.

The studies have shown that the various sites are affected by land degradation, including soil degradation and loss of vegetation cover. These forms of degradation result in overexploitation and conflicts of use, leading to significant losses of ecosystem services. Additionally, the cost of land degradation, i.e., the loss of earnings in agricultural production due to soil depletion and reduction in vegetation cover is much higher than the opportunity cost.



In **Ethiopia**, the annual aggregate crop production loss between 2003/04 and 2015/16 amounts to 104 million tons with a market value of 48.35 billion USD due to soil nutrient depletion and loss.



## Conventional agricultural practices using non-organic fertilisers yield low profits.

In most studied areas, a mismatch between spatial differences in soil fertility and fertilisers doses applied leads to a depletion of soil nutrients and physical quality, as well as to low efficiency and low profitability for the operator. Moreover, it weighs heavily on public finances since most countries provide subsidised fertilisers and implement guidelines encouraging the over-utilisation of fertilisers.

In **Mali**, organic cotton farmers have an average yield of 450 kg/ha of cotton, which is half that of conventional cotton farmers. However, due to significantly lower input costs, the profits of organic farmers are slightly higher than those of average conventional farmers. These calculations do not include the societal cost of production, which is much higher for conventional farming.



## SLM measures are cost-effective and increase food security and climate

**resilience.** Most of the options assessed in the studies are financially and economically viable, making the case for large-scale adoption. Communities that have adopted SLM practices are more food secure, thanks to increased productivity and diversification of crops.

In **Ghana**, FMNR constitutes a long-term investment in soil quality. By implementing FMNR and crop rotation practices, farmers can increase the productivity of their cropland by an estimated 83% within five years.

## SLM practices are profitable within specific

timeframes. Studies need to look at different time frames, both medium and long term, to identify the most optimal SLM practices. For most practices, investments require at least three to four years to start generating additional net value compared to business as usual. The benefits of agroforestry are usually longer term and require greater initial investments while vegetative strips or organic fertilisation are easy to establish and maintain and have relatively low costs.



In **Senegal**, the fallow of rainfed crop areas in Kamb is profitable only in the medium and long term, beyond four years. All other SLM options, such as organic or mineral fertilisation and agroforestry, are profitable regardless of the period considered.

## $\square$ Barriers to the uptake of SLM practices.



The gradual abandonment or non-adoption of the measures assessed, despite their overall financial and economic profitability, suggests that there are other barriers to adoption. Among these are lack of awareness, knowledge, and skills of farmers, farmers' equipment, access to credit and labour, as well as weak land and tree tenure and initial investments needs in terms of labour and equipment.



In **Mali**, transitioning to SLM practices requires initial investments in labour and other agricultural inputs. It is therefore important to facilitate access to low-rate credit for smallholder farmers.



## Financial engineering can help remove financial barriers to initial investment.

The lack of capital and the shortfalls of years of investment could act as a barrier to the adoption of measures that are otherwise financially profitable. Mitigating this initial cost can be in the form of credit or subsidies and/or reductions in transaction costs associated with the various financial instruments.

In **Senegal**, the domestication of improved varieties in the Kaffrine region causes a financial loss of more than 1 million FCFA in the first year, which will be difficult for the village community to bear. However, the losses in years 2 and 3 (15-20,000 FCFA) should be manageable by the community.



### Socio-economic factors and institutional environment are determinants. Equitable

access to the economic benefits of conservation, gender inclusion, accountability of resources, inclusivity, and participation as well as the broader institutional environment are key determinants for the uptake and sustainability of SLM. 99 | REGREENING AFRICA FINAL REPORT

# five

# IMPACTON THE GROUND

## RWANDA Shaping landscape restoration and livelihoods through cooperative groups

A cooperative of 36 members (27 women and 9 men) purchased 4.5 hectares of degraded land in Rwanda's Nyagatare District to grow a Eucalyptus microcorys woodlot, with the aim of selling mature trees for timber and wood. Despite facing the obstacle of not having the funds to purchase the land, they were successful in securing a loan of 4,600 USD. This was made possible by their legal registration with the Rwanda Cooperative Agency and the submission of a detailed proposal. The Regreening Africa programme supported the cooperative with technical assistance and tree seedlings, recognising that in the degraded land, Eucalyptus was an appropriate tree. Alongside generating income, their efforts to restore the land also improved the ecosystem.







## ETHIOPIA > Home gardening enhances conservation and food security

**Regreening Africa introduced fruit tree farming to smallholder farmers in Ethiopia**, including Mrs. Mamitu Kumbi who previously had unproductive land. After receiving training and support, Mrs. Kumbi established a fruit orchard on her 0.9 hectares of land, which generates an average annual income of 9,600 Ethiopian Birr (about 181 USD) and provides her family with nutritious food. With the success of her orchard, she encouraged fellow farmers to adopt home gardening.

## GHANA A regreening champion: The story of Emmanuel Biliguri as a community leader

Emmanuel Lag, a retired teacher in a farming community in Ghana, educated locals about climate change and the importance of planting and growing trees. He started with a nursery, which grew into a tree farm covering 15 acres of land in Kukpalgu. In 2018, Kukpalgu was added to the Regreening Africa Programme as a beneficiary community. After he was shown FMNR techniques, his woodlot began producing larger trees at a faster rate. He sells the majority of these trees as logs and roofing rafters, hires women to help him harvest shea nuts and raises seedlings for demonstration. Emmanuel was appointed as a sub-chief in his community due to his dedication to forestry. To expand regreening practices in the community, he established Savings and Internal Lending Communities groups.





## **KENYA**

## Expanding food systems and income sources for tree farmers

In Kenya's Migori County, farmers were enhancing their land, turning their farms into diverse havens of trees, fruits, and vegetables. Through the integration of bee farming within tree-based restoration initiatives, farmers unlocked

additional income and food sources. Equipped with training on beekeeping, site selection, and hive management, they became beekeepers who monitor and care for their hives, boosting productivity. The training not only empowered farmers but also fostered community engagement and co-learning.



MALI How women are tapping into sustainable land management for livelihoods and landscape restoration

Djelika Malle, a farmer in the village of Dintiola, Mali, was able to improve her crop yields and income by planting and caring for trees. Thanks to Regreening Africa, she learned how to properly plant and care for trees, which helped prevent soil erosion, conserve water resources, and restore soil health. Djelika planted a variety of trees on three hectares of land and saw increased water retention and crop yields as a result. The programme also provided women with alternative sources of food and income, as well as technical training in production and processing.



## SENEGAL Promoting the regreening of Senegal through the airwaves

**Regreening Africa in Senegal was reaching many farmers thanks to community radio stations.** The community radio programmes, which were presented in local dialects and through portable devices, created a space for discussion and awareness raising. More than 15,000 people listened to one-hour broadcasts on 12 community radio stations in Fatick, Kaolack, and Kaffrine. The practices promoted over the air included tree planting, FMNR, soil-restoration techniques, and the establishment and management of tree nurseries. The radio programmes enabled farmers to diversify income-generating avenues, improve soil fertility, increase crop yields, and restore their environment.

## KENYA Kenyan schools championing regreening initiatives

Kenya committed to restoring 5.1 million hectares of land by 2030 through tree planting and other restoration practices under AFR100. Regreening Africa partnered with Trees4Goals to upscale tree planting in schools, with 500 trees planted in five schools in Kenya. The two partners further rolled out the tree planting activities to four schools in Kajiado County. However, the dry area presented challenges, with the lack of water resulting in many of the trees dying. Grace Koech, a Junior Scientist at World Agroforestry, advised the teachers and pupils to use drip irrigation and create boundaries around the trees to protect them from livestock.





43 | REGREENING AFRICA FINAL REPORT

# SUCCESS FACTORS OF THE REGREENING AFRICA PROGRAMME APPROACH

44 | REGREENING AFRICA FINAL REPORT

## REGREENING AFRICA ACHIEVED IMPRESSIVE RESULTS BY STRATEGICALLY INVESTING IN THE FOLLOWING KEY AREAS:







Regreening Africa's success can be attributed, in part, to the programme's concerted efforts in **identifying and closely collaborating with lead farmers and other locally based agents**, enabling the programme to reach a large number of households at a relatively low cost.

Each country team utilised its own advisory model to engage with land managers, broadly categorised as training of trainers, lead farmers, and community-based organisations.

## **THREE MAIN ADVISORY MODELS HAVE BEEN PROMOTED** TO WORK WITH COMMUNITIES DURING THE REGREENING AFRICA PROGRAMME:



**Training of Trainers:** Direct farmer training and working with government extension officers







**Community based organisations** or community network-based scaling approaches such as saving groups, church groups, youth soccer tournaments, and community associations

## Value chain development

The successful implementation of regreening requires robust value chains and enterprises that incentivise reinvestment in agriculture and agroforestry. Tree-based value chains provide an opportunity to establish communitybased businesses, enhance rural employment for women and youth, and diversify income streams, thereby empowering communities and supporting food security. However, despite an untapped growth opportunity in tree-based value chains compared to agricultural commodity crops, markets for agroforestry products in Regreening Africa's countries of engagement remain scarce or disorganised, limiting the return on investment for value chain actors and hindering the potential to scale regreening practices across sites.

Regreening Africa focused on supporting value chain development through diverse interventions based on **local need assessments**. Technical support was centred on **enhancing raw material production capacity and product development**, along with the installation of essential processing equipment like nut crushing machines for shea or press equipment for balanites, thereby reducing the time spent on these tasks, particularly for women.

**Mapping of value chain actors** helped improve information flow and enhance the effectiveness of the chain. Identifying quick wins supported additional aspects, such as the need to raise local and national appreciation through business certification, involving the registration and licensing of producer groups and cooperatives. National linkage forums were conducted in Mali, Niger, and Ethiopia to mobilise support for each prioritised value chain.<sup>14</sup>



## **REGREENING AFRICA'S VALUE CHAIN DEVELOPMENT PLAN**





Stakeholder consultations:

- Data collection and analytics
- Prioritisation
- Reports





Validation, learning:Viability check (economic,

- environmental, technology)
- Scalability
- Impact
- Partnerships
- Policies/Regulations



## SUPPORT

- Capacity development:
- Negotiation and brokerage
- Trade fairs and exhibitions
- Linkage forums
- Inputs (e.g. germplasm)
- Business school
- ations



- Business financing:
- Savings
- Credit
- Collateral
- Training records
- Taxation
- Reinvestment

## LIMITING FACTORS AND SCALING OPPORTUNITIES

Some limiting factors were identified that need to be addressed in future efforts:

- Linkage with private sector investors and offtakers is challenging at scale as most indigenous tree species' products are still under-developed, requiring more capital for initial infrastructure.
- Marketing capacity of individuals and community cooperatives is generally low and requires substantial investment linked to product development, covering important elements such as processing, packaging, labelling, and storage.
- Issues of resource governance (land and trees), gender roles and benefits in value chains, and improvement in the health of existing resource bases (land and tree genetic resources) require continuous support.

### Successful scaling opportunities for value chains:

- Promoting tree growing work involving developing tree nursery enterprises especially for timber and fruits (e.g., Rwanda, Ethiopia, and Mali) where previously farmers depended on government seedlings production for forestry with emphasis on few species, no fruits, and temporary nurseries.
- Short maturity tree crops such as moringa, tree tomato, grafted mango, gesho leaves, baobab leaves, avocado, and grafted ziziphus in the Sahel and East Africa invariably supported restoration efforts through home-gardening plans involving women.

**INNOVATION GRANTS** 

**RESULTS-BASED** 

SCALE

• Local business opportunities from FMNR plots such as honey production, livestock fodder from cut and carry systems and firewood obtained from pruning earn farmers money to support household needs in Kenya and Ethiopia.



Regreening Africa recognised that integrating an inclusive approach to land restoration is not only essential for success but also generates additional value by supporting the livelihood activities of both men and women of all ages and backgrounds, which, in turn, enhances the wider community.



## YOUTH

Regreening Africa's youth engagement has demonstrated not only how land degradation is a youth issue that threatens current and future generations' quality of life, but also the importance of including the youth in restoration initiatives and governance. Programme activities have also emphasised the urgency of recognising and promoting land governance for and with the youth – identifying them as catalysts of change and tapping into their energy and ability to easily adopt technology.

Regreening Africa ensured youth engagement in the restoration process through capacity building, promoting their involvement in restoration value chain interventions, supporting nursery establishment and operation by youth, and using sports to promote tree planting and FMNR. Capacity building on technology use and monitoring via training on the Regreening App; fundraising for restoration for local community-based organisations and groups; tree planting in schools,<sup>15</sup> tree nursery establishment and operation, and value chain development were all very well received.

15. https://regreeningafrica.org/wp-content/uploads/2023/05/Regreening-Africa-Schools-Manual.pdf

## OVERCOMING COMMON BARRIERS TO MEANINGFUL YOUTH ENGAGEMENT IN RESTORATION

Regreening Africa's engagement with the youth has shown that there are several common barriers across the eight programme countries that prevent youth from actively participating in restoration and regreening work, and that cut across all agricultural activities beyond land restoration:

## X Land tenure rights and issues:

Many youths work on land that is owned by a family member, limiting their decision-making power on how the land is managed.

### Traditional socio-cultural beliefs:

This includes respect for the traditional leadership role of elders, resulting in the entrenched common belief amongst adults and some youth that elders are better equipped to make decisions about the youth than youths themselves.

- Poor incentives for youth to engage in regreening and restoration activities.
- Inadequate or unappealing livelihood options, resulting in a rural exodus of young people to urban areas in search of job opportunities.
- Shortage of resources, including restrictive access to finance and land.
- Cultivable land insufficiency, making it difficult for youth to appropriate plots.
- X Lack of technical capacity for sustainable businesses, and limited knowledge on tree production, planting, and management.
- A perceived lack of understanding of the timeframe of restoration activities. Youth expectations do not match the reality of restoration activities that take longer to be profitable.



REASSESSING THE DISPARITIES AND COMMUNITY DYNAMICS WITH REGARDS TO WOMEN'S AND MEN'S ROLES IS AN IMPORTANT FACTOR IN ACHIEVING GENDER TRANSFORMATION CHANGE.



## GENDER

**Regreening Africa implemented programme** activities across many landscapes where structural gender-based constraints within cultural systems are prevalent, making land access and control challenging for women. Dominant patriarchal cultural norms and practices often mean that women's access to land is generally mediated by men (through marriage or male relatives) who determine which land uses women can have access to. This results in women having little opportunity to access fertile land and having to travel longer distances to access degraded/communal/state land. Travelling long distances to access land whilst also performing many other household responsibilities can be overburdening for women. Key work to address this was implemented in Ghana addressing gender inclusion and agency in land restoration and how women can be meaningfully engaged in restoration.

**Regreening Africa implemented a Gender** Transformative Approach (GTA) in Ghana across 15 communities and scaled out to six districts through tailored radio programming. GTA adapted several participatory tools that discussed the influences of gender norms on men and women's access to productive resources, decision pathways, and balance of workloads. The GTA process provided men and women, as couples, the opportunity to reflect on their life experiences and commit to change through developed gender indicators. GTA design also included locally cultivated champions that supported households, and indicator monitoring processes provided an additional opportunity to discuss difficult subjects and navigate change pathways towards improved household relations, reflecting men and women's priorities in household decisions.

Over and above Regreening Africa's interventions, change is already happening across the landscape:



a more educated younger generation has encountered gender sensitising or capacity development and has been encouraged to dispel gender stereotypes. GTAs support and enrich this process by **equipping men and women with concepts and tools to discuss sensitive topics, set collective visions, and map desired changes** that benefit them and the well-being of their households.

The GTA has also provided a better appreciation of the responsibility that researchers and practitioners need to assume to be able to deliver on gender equality goals, as well as the need to strengthen the capacity of programme staff and implementing partners. This is a key precondition to successfully deploy context-specific gender tools and approaches that are tailored to the needs and conditions of different communities.

## BOX 4 ADDRESSING GENDER DIMENSIONS OF THE SHEA VALUE CHAIN

The women of the Sahel regions of Ghana depend on land and tree resources for their livelihoods, in particular, the shea tree (*Vitelaria paradoxa*), which provides vital income to many women. The oil-rich nuts of the tree are traditionally a women's resource, providing a cash income that women control and granting them a level of financial independence. However, in recent years, men have asserted greater ownership over shea parklands and extended their control over shea-nut resources, driven by the growing market value of the nuts and the butter made from them. This has been facilitated by customary law that assigns men control over land and has deprived many women of a vital source of income.

Through discussions facilitated by the Regreening Africa Programme, men have highlighted their need for cash from shea nuts to buy farm inputs due to a lack of cash flow at the beginning of the farming season. They explained that shea nuts were a low-investment product and increasingly poor agricultural yields had forced them into this traditionally female domain.

This is a classic example of how cultural norms and customs hinder access to and control over land, as well as undermining fair participation and equal enjoyment of opportunities in northern Ghana. Such challenges are a major barrier to land restoration and must be uncovered and addressed by interventions targeted to deliver gender equity in programmes. Land restoration programmes need to address these dynamics to deliver inclusive and sustainable outcomes.

Accomplishments in tree product value chains and land restoration by members of the women's groups have elevated their social standing, allowing them to express their concerns and advocate for their land rights. Secure land tenure rights not only promote sustainable land management, which improves the effectiveness of efforts to combat and adapt to climate change but are also critical for women's social and economic empowerment. An enabling policy and legal environment boosts the scaling process for both land restoration and women's agency. Land inheritance rights for women in Ghana could potentially set the stage for deeper transformations in the future, but it remains a sensitive topic and men struggled to make a stronger commitment in support of such changes.

The key expected outcomes of this approach include improved access to fertile farming land for women, balanced household chores, greater agency by women in household decisions and improved household relations.

MEN HAD 57 PERCENT MORE ACCESS TO AGRICULTURAL LAND THAN WOMEN, WHO HAVE 39 PERCENT. ALTHOUGH 71 PERCENT OF MALE RESPONDENTS INDICATED THAT THEY DID NOT DISCUSS LAND RESTORATION WITH WOMEN, 59 PERCENT AGREED THAT WOMEN WERE BETTER AT NURTURING TREES. HOWEVER, ONLY 2 PERCENT OF FEMALE RESPONDENTS HAD INPUT INTO FARM DECISIONS ON THE TYPES OF TREES TO PLANT, COMPARED TO 47 PERCENT OF MEN.

> - GLORIA ADEYIGA, RESEARCHER WITH THE FORESTRY RESEARCH INSTITUTE OF GHANA, PHD CANDIDATE WITH BANGOR UNIVERSITY AND THE GHANA FOCAL POINT FOR REGREENING AFRICA



## SUCCESS OF REGREENING AFRICA'S GENDER TRANSFORMATIVE APPROACH

**30 community gender champions have been trained and supported** to continue engagement with individual participating couples (or households in the case of some polygamous families)

**Å** 

Inter-community gender champions workshops have been established. Every 5 months all champions and facilitators have met to review progress, discuss challenges and find strategies to address emerging or continuous problems (e.g. land ownership for women)

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Monthly visits to individual households and community dialogues to **monitor progress on gendered indicators** have been undertaken.

80% of women in 15 communities are now able to access about ≤ 0.5acres to plant groundnuts/Bambara beans/bean/vegetables.

Women's work burdens have been lessened with more than half of male participants now contributing to household chores such as fetching water from longer distances using bicycles or motorbikes, washing clothes and childcare.



Women have greater access to decisionmaking platforms, with more than 70% of women participants feeling included in household decisions.



**Twelve development workers** (6 men and 6 women) were trained and empowered in gender transformative action and participatory learning and action in Bawku West, Ghana.



In 2022, the GTA approach was refined and adopted by World Vision and scaled out to 50 village saving groups across other communities in Ghana, with 1500 members (3,000 considering couple participation). Within participating communities, there is also a high interest from non-participating households.



## FAITH

For several decades, links between faith and environmental restoration have been actively explored. The world's faiths have a profound impact on values and ethics, and because environmental destruction and poverty are, at least in part, crises of values and ethics, the world's faiths can play a role in addressing these issues.

There is a significant opportunity to tap into the motivational energy of faith-based institutions for environmental objectives, particularly in the global south. **Faith-based institutions have the potential to engage in land restoration and inspire individuals and communities to do the same.** They can also leverage their networks to facilitate relationships between stakeholders and implement sustainable land management practices. However, there is a need for capacity building as many institutions lack the understanding of how to effectively engage in land restoration.

All faith traditions emphasise compassion for the poor and weak, and the moral value of helping the most vulnerable of society. Given their highly respected position in many African societies, faith leaders who make the link between spiritual values and restoration can be remarkably successful in generating restoration impacts.

Regreening Africa supported a series of faithbased events, including an action group in Kenya and cross-learning webinars. These webinars and engagements have illustrated that faith leaders increasingly want to learn from researchers and practitioners about how faith communities can address these restoration needs. Among different environmentally based activities, land restoration is particularly amenable to engagement with faith-based communities as it often involves and benefits whole communities. Land restoration can set the pace in the active engagement of faith communities in environmental restoration and conservation, harnessing faith as a key driver of movement building and mindset change.

## BUILDING MULTISTAKEHOLDER PARTNERSHIPS FOR RESTORATION

Partnership-building is one key to the successful implementation of land restoration, especially in communal settings where agreements often need to be hammered out, for example, regarding land and tree ownership, exclosures, value-chain development and access to markets. Understanding the value of partnership-building is one thing, successfully implementing it in different rural contexts is another. The Regreening Africa programme in Niger has deliberately worked with and through local religious structures to foster community-wide engagement for restoration. If restoration experts and faith leaders could plan and implement 5- to 10-year restoration programmes together, the benefits could be significant. Partnerships that harness the social capital of faith institutions and communities for land restoration need to be consciously nurtured.

# Movement building

Regreening Africa leveraged the power of movements to increase involvement and scale restoration initiatives across the target countries. The experience of developing social movements, particularly in Kenya where they have been prominent, offers actionable lessons on how to build a restoration movement.

#### The Kenya National Landscape Restoration

**Scaling Conference** was central to the formation of the 'restoration movement' in Kenya. The conferencebuilt momentum for the movement through a series of pre-conference thematic webinars, and it provided a platform for stakeholders in the restoration space to come together and develop a common roadmap and agree on key actions. One of the key actions agreed upon was the formation of action groups around the various conference themes. The action groups are at the heart of the restoration movement in Kenya. They bring together over 100 organisations to work collectively to scale land restoration.

To effectively build a movement, it is important to identify and align with political opportunities, develop structures for mobilisation and organisation, involve youth, women, and faith communities, engage in continuous mobilisation using clear messages and storytelling, identify passionate leaders dedicated to the cause, and mobilise financial resources for physical activities such as clean-ups and tree growing events. In the Kenya context, existing environmental networks were leveraged to recruit new members, particularly youth, while policies and plans demonstrated strong political commitment to restoration.

## BOX 5

## **KEY ACTIONS OF THE KENYAN RESTORATION MOVEMENT**

The Kenyan Restoration Movement intends to build and sustain momentum for long-term landscape restoration implementation in Kenya by:

- Creating social change by raising widespread awareness of the need for landscape restoration and contributing to shifting mindsets to support restoration.
- Influencing Kenyan society's values, beliefs, and practices to embrace/inculcate landscape restoration/implementation through working with local actors such as faith communities, youth, and women.
- Generating policy change in support of landscape restoration.
- Creating a platform for networking, experience sharing, learning and ideas exchange among actors involved in landscape restoration.
- Mobilising the diverse and numerous stakeholders in landscape restoration to agree on key actions and create a common roadmap for restoration in the country, build synergies, refine landscape restoration implementation processes

and practices, and mobilise funds to support its implementation, etc.

- Scaling the participation of actors, particularly grassroots actors like youth, women, and faith communities through capacity building/ strengthening.
- Showcasing and documenting the work and the successes achieved by different actors in the restoration space.
- Sharing best restoration practice among all actors to increase the effectiveness of restoration actions on the ground.
- Scaling restoration in Kenya across all ecosystem types.
- Strengthening training and capacity-building among all actors engaged in restoration.
- Encouraging more research and analysis to underpin the restoration efforts.
- Stimulating more coordinated and evidencebased monitoring of restoration impacts.

## BOX 6 THE NORTHERN RESTORATION INITIATIVE (NRI) IN GHANA

The NRI is a coordinated effort by a consortium of actors working in northern Ghana on three thematic areas (**landscape restoration, community resilience, and food security**) to support the design and implementation of policies and strategies that promote sustainability of the restoration interventions in the savannah mosaic landscapes of the region. It broadly aims to create a platform for scaling up successful restoration practices in the northern savannah mosaic landscapes in support of Ghana's government's commitment to restore 2 million hectares of degraded lands by 2030 under AFR 100. NRI also aims to serve as a sustainability legacy for the Regreening Africa Programme in Ghana.<sup>16</sup>

#### The two key outcomes of NRI are:

Effective coordination with tailored strategy and interventions to the savannah mosaic landscape.

Accelerated scaling of landscape restoration, increased food security, and resilience to climate change in northern Ghana.

#### Key insights from the NRI on movement building:

Align and take advantage of opportunities. The NRI capitalised on several opportunities. Several partners of NRI were already working to improve the northern landscapes and recognised the urgent need to effectively coordinate these existing efforts for greater impact and sustainability. These landscapes also share common characteristics such as having similar ecosystem types, that make it easier to apply similar restoration designs or approaches. Lastly, the NRI has been supported by local authorities such as traditional leaders and district authorities' officials.

**Rigorous stakeholder consultations and engagement** is critical through multi-stakeholder platforms/forums. The NRI process is characterised by the rigorous stakeholder consultations that fostered collaboration, goodwill, and support for the initiative based on SHARED. The process also created a space for experience sharing by a variety of stakeholders that fostered learning and helped them come up with a common vision and action plan for scaling restoration interventions based on identified priority actions derived from lessons learned.







 https://regreeningafrica.org/wp-content/uploads/2023/05/2023\_Regreening-Africa-GHANA-NRI-Brief Spread Online.pdf



## Research in Development

Research in Development (RinD) is a paradigm that has developed through CIFOR-ICRAF's efforts to ensure that **the research process itself can innovate in a collaborative and reflexive manner** to address the core goal of helping resource-poor and vulnerable people achieve more equitable and sustainable livelihoods from the socio-ecological system they are part of.

Regreening Africa's approach to RinD has focused on direct collaboration with development partners, communities, policy actors, and other stakeholders to ensure that the programme's interventions respond to specific local and national contexts (OxC), address expressed needs and priorities, and draw on the best available evidence. Building on the experience of past programmes implemented by CIFOR-ICRAF, Regreening Africa was able to introduce the RinD paradigm in the initial phases of the programme's development, thereby ensuring that the design and implementation drew on robust evidence and science to inform programming in terms of targeting, planning, implementation, and adaptation.

## THE RESEARCH IN DEVELOPMENT PARTNERSHIP IS UNIQUE – LAND RESTORATION IS BEST DONE TOGETHER, WHERE WE CAN ALL USE OUR DISTINCT CAPACITIES TO SUPPORT ONE ANOTHER.

- DAVIS WAMAWUNGO, WORLD VISION AUSTRALIA





LARGE SCALE IMPACT REQUIRES EVIDENCE-BASED INNOVATIONS TO BE WIDELY ADOPTED ACROSS MULTIPLE CONTEXTS. THE RIND APPROACH USED BY CIFOR-ICRAF AND PARTNERS ESSENTIALLY INTEGRATES RESEARCH DESIGN INTO IMPLEMENTATION WHILE PROVIDING REAL-TIME FEEDBACK FROM AND WITH FARMERS.

- LEIGH WINOWIECKI, CIFOR-ICRAF



## **INNOVATIVE MONITORING**

Regreening Africa adopted a monitoring and evaluation system through which both short-term outputs and mid-term or longer-term outcomes and impacts would be assessed. The overall monitoring objective was to assess the programme's progress towards the key targets and objectives and to estimate the impact to deliver lessons for future restoration efforts. The aim of this innovative approach of combining satellite imagery and data from household surveys was to track and understand the impact of land restoration activities on key biophysical indicators and socio-economic outcomes and to combine more structured surveys with lower sample numbers with messier and larger numbers of citizensourced data (see Figure 13).

Regreening Africa has integrated several innovative monitoring approaches to understand the dynamics of restoration practice adoption and the resulting land health and livelihood trends and implications through deep integration across components and partners. The programme has innovated by combining systematic biophysical surveys, citizen science, and household surveys.

Bringing together and interrogating evidence from multiple monitoring approaches has allowed a detailed evidence-based understanding of key trends, especially around land health status. The Land Degradation Dynamics component led on land health, which has come from both systematic land health assessments and citizen science via the Regreening App. The Monitoring, Evaluation and Learning Component led on structured household surveys at the start and the end of the programme as well as 'uptake' surveys at different intervals during the implementation period. Households were exposed to restoration practices across the eight countries, and the surveys allowed for a detailed understanding of household-level adoption of restoration options and benefits.



By georeferencing the data, this household data was combined with highly accurate landscape-level understanding of land health dynamics to provide a novel unpacking of key trends and the implications of adopting different restoration practices.

**Continual evidence-based dialogue between scientists and practitioners** has stimulated methodological innovations, such as the deployment of the citizen science-driven Regreening Africa App, to generate robust, real-time evidence across scales. Integrated into online dashboards, this evidence is accessible in an actionable form by multiple stakeholders and delivers evidence at low cost with a high number of data collection points.



Figure 13: Regreening Africa's innovative monitoring and evaluation system, through which both short-term outputs and mid-term or longer-term outcomes and impacts can be assessed.

Regreening App database

connected to Data Lake

Engine for advanced queries

and processing of data,

including normalisation of species names.

## THE REGREENING APP PROCESS



Play store.

 $\checkmark$ Regreening Africa elect Survey and fill the forms







Data uploaded to

Regreening App

database.

Data reviewed by users or Data displayed on data reporting system. project managers.

Data downloaded in real-time for review by project managers on the Data Reporting System (DRS), developed as part of Regreening Africa.



Normalisation of species names, consistency checks and modelling of data.









Examples of indicator maps for northern Ghana. Indicator maps are generated for each country at 30 m spatial resolution to assess spatial variations and changes over time.

Training

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FMNR

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Engagement

Nursery

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20200

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Tree planting



Building on the lessons learnt and stakeholder/user feedback from Version 1, Version 2 of the Regreening App will include:

- New, modern and more **responsive interface**.
- Multiple languages supported within the app itself.
- User/project registration (linked to the new Data Reporting System (DRS)).
- More robust database design, also making future adoption and scaling more streamlined.

**VERSION 2:** Grow with us Sign up, make earth green

### **NEW DATA REPORTING SYSTEM (DRS):**

The new DRS will include data from Version 1 of the app, and will showcase a user-friendly interface, including:

- A simple dashboard for project managers to keep track of data collection
- Tools to filter, manage and download data
- Basic analytics







## THE SHARED APPROACH BROUGHT A CLEAR SET OF PRINCIPLES FOR ENGAGEMENT AND A STRUCTURED PROCESS TO PUT THESE IN MOTION. IN

REGREENING AFRICA, THE SHARED APPROACH CONTRIBUTED TO POLICY ENGAGEMENT. THIS WAS ALWAYS PART OF THE STARTING PROMISE OF THE PROGRAMME – IT WAS ALWAYS ABOUT INFLUENCING POLICY AND A DIVERSITY OF ACTORS.

- BERNARD CRABBÉ, ENVIRONMENT // MAINSTREAMING AND CIRCULAR ECONOMY, DIRECTORATE GENERAL INTERNATIONAL PARTNERSHIPS (INTPA), EUROPEAN COMMISSION



# Stakeholder engagement with evidence and adaptive management

Regreening Africa has prioritised **evidence-based planning, policy impact, and the scaling of interventions for tangible impact at the ground level**, as well as building strong partnerships to deliver impact. SHARED has provided a structured process to facilitate this. The SHARED methodology provides a comprehensive framework, tailored to specific decision contexts. It brings together processes, evidence, and tools and shifts the decision paradigm toward more inclusive, intersectoral, and inter-institutional integration to address complex decisions and achieve desired outcomes. Regreening Africa employed the SHARED methodology to support the linkages and engagement processes between the different levels of the partnership.

Regreening Africa's application of SHARED has supported a **highly inclusive, relationship-centred process** that resulted in the forging of authentic partnerships. The trust and social capital developed through such partnerships are key to effective design and delivery, impact, and sustainability of land restoration programmes. It requires nimble, adaptive support and a significant investment in terms of time, facilitation skills, and dedicated financial support for participatory processes but yields significant results towards programmatic impact.

Multiple stakeholders have highlighted SHARED as one of the key strengths of the Regreening Africa programme, particularly its ability to provide a balance between structure and flexibility in multi-stakeholder deliberations, to support context-specific interventions and adaptive management, and to ensure focused, actionable outcomes. THE SHARED APPROACH IN REGREENING AFRICA HIGHLIGHTED HOW IMPORTANT RELATIONSHIP BUILDING AMONGST ORGANISATIONS IS. WE MAY COME INTO A PROGRAMME ANTAGONISTIC ABOUT ROLES, BUT WE HAVE MOVED TO MUTUAL ENRICHMENT AND SOCIAL CAPITAL. THIS NEEDS TO BE THE ESSENCE OF RUNNING PROGRAMMES AND A BIG SHIFT TOWARDS DOING DEVELOPMENT DIFFERENTLY. BUILDING TRUST AND HONESTY IN THE RELATIONSHIPS AND SEEDING THIS SOCIAL CAPITAL TO INFORM AND PROVIDE A MUCH BIGGER IMPACT THAN A PROJECT TIMELINE.

> - **RAVI PRABHU**, DIRECTOR INNOVATION, INVESTMENT, AND IMPACT, CIFOR-ICRAF



RESEARCH IN DEVELOPMENT IS NOT NEW, BUT **REGREENING AFRICA'S EXTENT AND SCALE WAS A UNIQUE EXPERIENCE** – TO COME TOGETHER AS PARTNERS ACROSS COUNTRIES AND WITHIN COUNTRIES, AS AN EQUAL PARTNERSHIP, AND THE SHARED APPROACH STANDS OUT IN WHAT BROUGHT US TOGETHER. SHARED ENGAGEMENT ALLOWED US TO LEARN ABOUT WHAT IS IMPACTFUL. 777

> - OLAF WESTERMANN, SENIOR TECHNICAL ADVISOR ON CLIMATE CHANGE AND NATURAL RESOURCE MANAGEMENT, CRS

## **ADAPTIVE MANAGEMENT**

Regreening Africa pursued a unique approach, using **structured learning rooted in scientific research and local knowledge**, to inform an adaptive, iterative system for delivering better development outcomes at scale.

Monitoring, reflection, and learning formed the core of the RinD approach. Regreening Africa strongly emphasised collaborative, participatory monitoring, and reflection, fostering trust among partners. This approach facilitated adaptation through lessons learned from programme implementation, enhancing the effectiveness and sustainability of restoration efforts within the programme.

To integrate adaptive management into the complex Regreening Africa programme, which involved multiple implementers and scientific components across eight countries, **a robust engagement process** was devised. This process enabled direct incorporation of experiences and evidence, allowing for adaption in annual planning cycles and implementation strategies.

An innovative application of the SHARED methodology in Regreening Africa involved the establishment of **Joint Reflective Learning Missions** (JRLMs)<sup>17,18</sup>. These missions served as opportunities for implementing NGOs, CIFOR-ICRAF scientists, community members, and oversight partners at the national level to collectively monitor, reflect and learn from each other's evidence and experience. This approach built on programme momentum, considering revised implementation approaches and priorities. The JRLM processes allowed stakeholders to collaboratively assess progress within countries and across the programme, focusing on transitioning country efforts for sustainability.

From the programme's inception, the RinD paradigm was deeply integrated into its design, emphasising consultation, collaboration, and leveraging the best available evidence. This ensured that the programme provided practical, context-specific, and scalable solutions. From day one, the programme prioritised reflection, learning, and adaptation to address challenges promptly, enabling the achievement of programme outcomes despite unforeseen events such as a global pandemic and security issues.



## REGREENING AFRICA HAS BEEN A MODEL APPROACH FOR FIELD AND ENGAGEMENT AND LEARNING AND ADAPTATION – WHAT WE HAVE DONE HAS REALLY WORKED! THE SHARED WORKSHOPS AND FOCUS OF THE APPROACH ON USING

EVIDENCE HAVE BEEN IMPORTANT FOR ENGAGING WITH THE EU DELEGATIONS AND LOCAL GOVERNMENT. THE SHARED APPROACH HAS ENSURED A LOT OF VOICE FROM FARMERS INTO THE EVIDENCE WE CAN USE.

- DAVID RODGERS, WORLD VISION AUSTRALIA

<sup>17.</sup> https://regreeningafrica.org/wp-content/uploads/2022/06/2022\_Regreening-Africa-JRLM-Summary.pdf

<sup>18.</sup> https://regreeningafrica.org/wp-content/uploads/2021/04/2020 Regreening-Africa-JRLM-Summary ONLINE 31 03 21.pdf



**Figure 14:** The application of the SHARED approach within the Regreening African programme. The figure depicts work that was implemented more 'internally' across eight programme countries, alongside key work areas that were more 'external' to a wider stakeholder engagment network relevant to Regreening Africa. Lastly, a selection of impacts from this work are showcased.

REGREENING AFRICA FINAL REPORT

## seven

# KEY LESSONS, RELECTIONS AND NEXT STEPS

63 | REGREENING AFRICA FINAL REPOR



## Lessons from across country contexts

Over five and a half years, across eight countries and multiple partners, five overarching lessons emerged from Regreening Africa that can inform future regreening efforts:



## THINK BIG

Large-scale, impactful restoration is achievable. Regreening Africa has shown us that large-scale land restoration is possible at a much lower cost for return than was previously thought possible. Restoring livelihoods through landscapes delivers on climate, biodiversity, and land objectives.



### THERE'S NO MAGIC BULLET

No single practice works in all situations, and we must match options to local contexts. It is essential to adapt and tailor restoration practices to the specific conditions and needs of each area.



## **BREAK DOWN SILOS**

Close working partnerships across the science-practice-policy interfaces are crucial. We need to collaborate with civil society, community, government, private sector, research, and donors, as each brings something valuable to the effort. It is important to work at the local level, utilising local structures, community groups, and farmer trainers.



## INTEGRATE SCIENCE AND EVIDENCE FOR LEARNING

Scientific tools and evidence integrated into the process make it far more effective and efficient. Science and evidence from multiple sources have a central role to play in enhancing implementation and informing wider practice and policy. Adaptive management and flexibility, based on evidence and engagement, lead to greater impact.



## PROVIDE FAIR ECONOMIC, LIVELIHOOD, AND POLICY INCENTIVES

Inspiring people and communities to engage requires fair economic, livelihood, and policy incentives. Enabling policies and equitable value chains that enhance livelihoods are critical drivers of restoration efforts. Each country faced unique challenges, found solutions, and learnt lessons. Here is a summary of these lessons.

## **NIGER**

- Institutional structures, such as management committees, religious and customary authorities, play a critical role in raising awareness about the importance of land restoration. Engagement through JRLMs had a positive impact on decisions and laws governing land restoration.
- Working with communities and producer groups, providing information, sensitisation, capacity building, and materials, are key elements for successful implementation, ownership, and sustainability of restoration gains.
- Value chain activities enable communities to understand the financial and nutritional importance of planting and preserving species.
- Establishing a multi-stakeholder platform and a sustainable funding mechanism ensures the long-term sustainability of regreening initiatives.
- Promoting the role of producers and building their capacity in governance and sustainable management of natural resources ensures ownership and sustainability of actions and investments.





## MALI

- Cost-effective farmer-led approaches, complemented by digital platforms such as videos and radio programmes, are effective in scaling up land restoration.
- Incentive systems, such as recognition of best performing farmers, accelerate the adoption of land restoration at the local level.
- Women and youth groups are effective promoters of land restoration. Strengthening such groups through training, loans, and savings provides them with the skills and finances to invest in land restoration.
- Advisory agencies should rely more on active learning approaches driven by farmers themselves.
- Combining measures to improve vegetation cover, manage soil fertilisation and water, and develop value chains for non-timber forest products motivates producers to adopt regreening measures as they provide improved agricultural yields and income.

#### 65 | REGREENING AFRICA FINAL REPORT

## GHANA

- The consortium approach facilitates cross-learning and allows partners to draw from each other's strengths for improved implementation.
- Addressing cultural practices that may negatively impact land restoration is essential.
- Alternative livelihoods for beneficiaries have encouraged adoption and assimilation of regreening technologies.
- Empowering households to recognise the value of collective contributions leads to successful land restoration by both men and women.
- Engaging youth through school environmental clubs contributes to intensive awareness creation and adoption of regreening practices in programme communities.

## KENYA

- Strengthening value chains with local, national, and global demand through capacity building and market linkages accelerates regreening uptake.
- Strong partnerships and linkages between ICRAF and World Vision Kenya along with the establishment of stakeholder technical working groups at the subnational level, support adoption and impact.
- Support for participatory forest management enables the restoration of degraded hills.
   Community members should play an active role in forest management through associations to ensure ownership and sustainability.
- Robust monitoring systems, including the use of the Regreening app, contributes to tracking restoration gains in leverage sites.
- Regreening practices such as FMNR, enrichment planting, fruit trees, nursery grafting, and rangeland management have been well-received.



## SENEGAL

- The establishment of village-level committees, RRCs, and farmer-to-farmer exchanges promotes widespread community involvement, ownership, adoption, and sustainability of regreening practices.
- A partnership model involving government research institutes, NGOs, and technical advisory support from oversight committees facilitates the effective delivery of regreening information and technology at different levels as well as ownership.
- Involving pastoralists through the demarcation of grazing areas promotes better cohabitation between farmers and livestock breeders.

- Value chain interventions promote the adoption and scaling of regreening options.
- The involvement of religious and customary authorities facilitates community commitment and engagement in greening initiatives.
- Promoting local governance ensures sustainability.
- The NOCC provides an excellent platform to receive strategic advice from key personalities from reputable institutions.
- Recognising and celebrating the achievements of FMNR champions, like the best farmers and farmer leaders' trainers, supports the adoption of FMNR.



## ETHIOPIA

- FMNR has received more acceptance by the government and communities compared to tree planting in dry areas due to its ease of adoption, low cost, and high success rate. FMNR also reduces the work burden of women in terms of seedling nurturing and fetching firewood.
- Strong partnerships with the government and **active** government engagement in restoration efforts are crucial for success.
- Integration of incentives, such as incomegenerating activities, is key to promoting restoration practices and ensuring their sustainability after implementation ends.
- Large-scale restoration is possible using contextbased approaches that prioritise local needs and conditions, considering Ethiopia's diverse agroecological zones.
- Regular joint monitoring visits and review meetings with stakeholders foster ownership of the programme.
- The **volunteer farmer trainer approach** is effective and cost-efficient.

## SOMALILAND AND PUNTLAND

- Government engagement and involvement is crucial for ensuring quality interventions and sustainability.
- Partnering with other development agencies on the ground for restoration efforts to reach more farmers and hectares.
- A long-term programme with substantial funding is needed to reverse degradation on significant areas of degraded land.
- Changing the community mindset towards FMNR was critical.
- The **traditional norms** (Xeer) played an important role in programme implementation.
- Radio awareness programmes helped to reach as many farmers as possible. The messages had an impact on their attitudes and practices.
- **Existing policies** such as the rangeland management policies played an important role in guiding sustainable land use management.

## RWANDA

- Knowledge about tree species influences their adoption by farmers, emphasising the need to shift from centralised distribution of fast-growing exotic species to locally appropriate native species.
- Rural households are more likely to adopt agroforestry when they understand the benefits and infrastructure of value chains.
- Access to starting capital and building entrepreneurial skills is key to encouraging the adoption of agroforestry, and aggregating producers into groups provides support, connections, and an avenue for training.
- The free seed distribution by nurseries needs to be reviewed due to sustainability issues.
- Alignment between forestry, agriculture, and environmental policies is necessary to address grey areas related to tree product usage, and to promote on-farm tree planting and FMNR in rangelands.
- Local scaling models, such as lead farmers who facilitate farmer-to-farmer exchanges, promote the adoption of regreening options.
- The persistence of diseases and pests without effective treatment solutions is discouraging farmers from growing certain tree species like mango. Research and training will be required to improve response to pests and diseases. Constraints to successful tree growth include droughts, pests/diseases, inappropriate seeds for the local context, and nursery production issues.



Regreening Africa has demonstrated the possibility of addressing the nexus of land degradation and poverty by combining local and technological innovations with strong and inclusive community engagement, focusing on solutions that address the specific challenges faced by communities and building resilience in the landscapes they depend on for their livelihoods. However, continuous reflection and improvement through adaptive management are essential. Recalibration is crucial for enhancing the success of future programmes based on the learnings and reflections from Regreening Africa.

Each country team collaborated with their communities to develop sustainability plans so they could continue

the work of Regreening Africa beyond Phase 1. In many cases, local NGO partners or other projects continued and expanded the work of Regreening Africa.

The lessons from Regreening Africa have been widely shared and integrated into the Great Green Wall, EU programmes in the countries of operation, and reported under the African Forest and Landscape Restoration Initiative. Implementing partners, World Vision, CRS, Care, Oxfam, and Sahel Eco, have adapted their operations as a result of Regreening Africa in the countries and are further scaling the work. Governments and local communitybased networks are also embracing the lessons and practices.

**FUTURE PHASES OF REGREENING AFRICA WILL BUILD ON THESE** LESSONS, ADDRESS KNOWLEDGE **GAPS, AND EXPLORE OPTIONS TO SCALE RESTORATION BEYOND** PROJECTS AND PROGRAMMES. CONSIDERING IMPORTANT LEVERS FOR MORE SPONTANEOUS SCALING OF **REGREENING ACROSS AFRICA AND** BFYOND

## **AREAS THAT REQUIRE GREATER FOCUS MOVING FORWARD**



Enhancing biodiversity and its livelihood **benefits** by increasing species diversity and

restoring other biomes such as grasslands, wetlands, and forests. Considering incentives for biodiversity will be important.



## Incorporating equitable incentives that motivate and benefit those involved in

landscape restoration. Providing opportunities to participate in value chains and granting greater use rights through enabling policies are effective incentives. Emphasising value chains from the onset can lead to enhanced livelihood outcomes. The significant opportunities to transform livelihoods through value chains need to be exploited, also in the context of portfolios of commodities and services that can

be effectively valued in landscapes and across regions, aligned to national priorities.



## Mainstreaming gender and equity in

restoration, ensuring deliberate inclusion from programme design, and considering local sociocultural and power dynamics.

## Engaging communities in the monitoring

and evidence generation process to increase

stakeholder engagement, capacity development, policy influence, and scaling of land restoration.

## Integrating a greater range of practices, especially for rangelands and soil fertility

**improvement.** Ensuring quality germplasm for tree input systems, establishing rural resource centres, and implementing a robust capacitybuilding and training approach are necessary.



#### Monitoring restoration using innovative

**approaches** like the Regreening App and the dashboard and ensuring dedicated time and capacity for evidence interpretation.



### Continuing efforts with a dedicated stakeholder engagement methodology

like SHARED to facilitate adaptive learning and structured inclusive engagement. Emphasising evidence accessibility, interpretation, and inclusion.

19. Fuchs, L.E., Bourne, M., Achieng, W., Neely, C. 2021. Sustainability planning with community and local stakeholders: Guidance Note, Regreening Africa. World Agroforestry (ICRAF), Nairobi: Kenya, 26 pp. https://regreeningafrica.org/wpcontent/uploads/2022/01/Sustainability Guidance Note Final.pdf

















