2019

The Restoration Initiative

Year in Review

THE RESTORATION INITIATIVE

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A stand of planted trees in the Central African Republic.
Photo by FAO

2020 begins with an urgent call to action: to restore the natural systems that underpin the health and wellbeing of all who share our planet.

01 | Foreword

On behalf of our three partnering agencies, we are extremely pleased to present this first annual Year in Review of the Restoration Initiative. In it, you will find highlights and stories from the first year of implementation of The Restoration Initiative (TRI) – a path-breaking Global Environment Facility (GEF) programme supporting 10 Asian and African countries in achieving shared restoration goals.

2020 begins with an urgent call to action: to restore the natural systems that underpin the health and wellbeing of all who share our planet. From the United Nations General Assembly declaration that 2021 to 2030 be the *UN Decade on Ecosystem Restoration*, to the Bonn Challenge goal of bringing 350 million ha of degraded lands into restoration by 2030, to the growing commitments and actions of countries, communities, donors, the private sector and practitioners – a growing coalition of partners seeks to transform the way in which we care for and utilize natural resources. Partners recognize that the restoration of degraded and deforested lands is both *integral* and *essential* to achieving shared goals, including the sustainable development goals on climate, food security, health, sustainable forest management, biodiversity conservation and more.

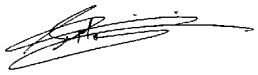
The Restoration Initiative is at the forefront of these efforts. With support from the GEF, TRI brings together the collective strengths and resources of our institutions and participating countries to address the particular challenges and opportunities for restoration that different landscapes and contexts present. Be it restoring coastal mangroves and degraded rice fields in Guinea-Bissau, improving the management practices of China's large and vital network of state-owned forest farms to ensure a continued flow of ecosystem services, enhancing the productivity and resilience of degraded agricultural and pastoral lands in the South Kivu province in the Democratic Republic of the Congo, or empowering local communities to conserve and sustainably manage the Tana River Delta in Kenya, TRI is helping turn ambition into effective action on the ground. Moreover, this diversity of landscapes, partners and challenges is one of the great strengths of the programme as it provides abundant opportunities for exchange, partnership and shared learning.

While just over one year into a five-year programme of work, there is already much to tell. A number of projects are engaged in participatory identification and landscape-level planning of restoration work, building on prior assessments. Efforts to improve the enabling in-country policy environment for forest landscape restoration (FLR) are underway, with the establishment of advisory panels, cross-sectoral planning and other activities in Sao Tome and Principe, the Democratic Republic of the Congo, Kenya, China and elsewhere. An online community of practice to support knowledge sharing, learning and partnership on FLR has

been established. A new tool providing information on threatened species and links to FLR is being piloted in five TRI countries. And partners have accessed training and support on a number of priority restoration topics and tools, including through two programme-level workshops and other regional and national events.

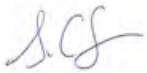
Among the wonders of nature is its ability to restore itself – to come back from the brink of collapse and revitalize the forests, waters and soils that too often are taken for granted. Harnessing this innate potential, and finding a way to ensure its persistence for the benefit of all, is what The Restoration Initiative is all about.

We look forward to the work ahead.



Stewart Maginnis, Global Director
Nature-based Solutions Group
International Union for Conservation of Nature

Mette L. Wilkie, Director
Forestry Policy and Resources Division
Forestry Department
Food and Agriculture Organization of the United Nations



Susan Gardner, Director
Ecosystems Division
United Nations Environment Programme

TRI workshop, Naivasha, Kenya.
Photo by IUCN

02 | Coalition of partners

The Restoration Initiative (TRI) unites 10 Asian and African countries and three Global Environment Facility agencies – the International Union for Conservation of Nature (IUCN), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Environment Programme (UNEP) – along with national and local governments and a host of strategic partners in working to overcome existing barriers to restoration and restore degraded landscapes at scale, in support of the Bonn Challenge.

Founding partners

The Restoration Initiative is supported by the **Global Environment Facility (GEF)**. The initiative contributes to the GEF's commitment to assist developing countries in meeting the objectives of multilateral environmental agreements, including those on combating land degradation, mitigating climate change and halting biodiversity loss. GEF support for TRI is also enabling partner countries to deliver on commitments made to restoration initiatives, including the Bonn Challenge and AFR 100.

International Union for Conservation of Nature (IUCN) serves as lead agency for TRI, providing programmatic coordination, integration, and harmonisation of work across the 11 partnering country projects, agencies, and partners. IUCN is also leading support for partnering countries in strengthening the enabling in-country policy environment for forest landscape restoration. IUCN is the implementing agency for four TRI national projects in Cameroon, China, Guinea-Bissau and Myanmar.

Food and Agriculture Organization of the United Nations (FAO) leads support for partnering countries in the capture and dissemination of best practices on forest landscape restoration and in capacity building on a wide range of tools and topics integral to this subject. FAO is the implementing agency for five TRI national projects in the Central African Republic, the Democratic Republic of the Congo, Kenya's arid and semi-arid lands, Pakistan, and Sao Tome and Principe.

United Nations Environment Programme (UNEP), through their UN Environment Finance Initiative, a 25-year public–private collaboration with a network of more than 300 financial institutions, supports partnering countries through technical assistance and capital markets connections in efforts to mobilize and catalyse domestic and external funding for large-scale restoration. UNEP is the implementing agency for two TRI national projects in the Kenya Tana Delta and the United Republic of Tanzania.

Executing and government partners

Nature Kenya (Kenya, Tana Delta)

Kenya Forestry Research Institute (Kenya, arid and semi-arid lands)

The International Network for Bamboo and Rattan (Cameroon)

Institute for Biodiversity and Protected Areas (Guinea-Bissau)

Ministry of Environment and Sustainable Development (Democratic Republic of the Congo)

Ministry of Agriculture and Rural Development, through the Directorate of Forests (Sao Tome and Principe)

Ministry of Natural Resources and Environmental Conservation, Forest Department (Myanmar)

Ministry of Climate Change (Pakistan)

Vice-President Office in partnership with the National Environment Management Council (United Republic of Tanzania)

Ministry of Environment, Sustainable Development, Water, Forestry, Hunting and Fisheries (Central African Republic)

National Forestry and Grassland Administration (People's Republic of China)

Additional partners

Bioversity International
Bioversity International provided technical support through the development of training modules and the facilitation of capacity development for national TRI project teams on forest genetic resources for forest landscape restoration during the second global TRI event in October 2019. Experts from Bioversity International also undertook support missions to both Sao Tome and Principe and the Central African Republic to identify capacity building needs and formulate capacity development plans for improved integration of forest genetic resources into forest landscape restoration.

Newcastle University
Researchers at Newcastle University, UK, together with IUCN, are supporting development and piloting of the Species Threat Abatement and Recovery (STAR) metric – a new tool providing practitioners with enhanced information on the impacts of restoration actions on threatened biodiversity. The use of STAR is being piloted in five TRI projects: Cameroon, Central African Republic, Kenya (both projects) and Myanmar.

WRI
The World Resources Institute supported TRI national projects in the Central African Republic, the Democratic Republic of the Congo, and Kenya by conducting assessments on restoration needs and opportunities using the Restoration Opportunities Assessment Methodology.

03 | TRI Programme overview

Mission

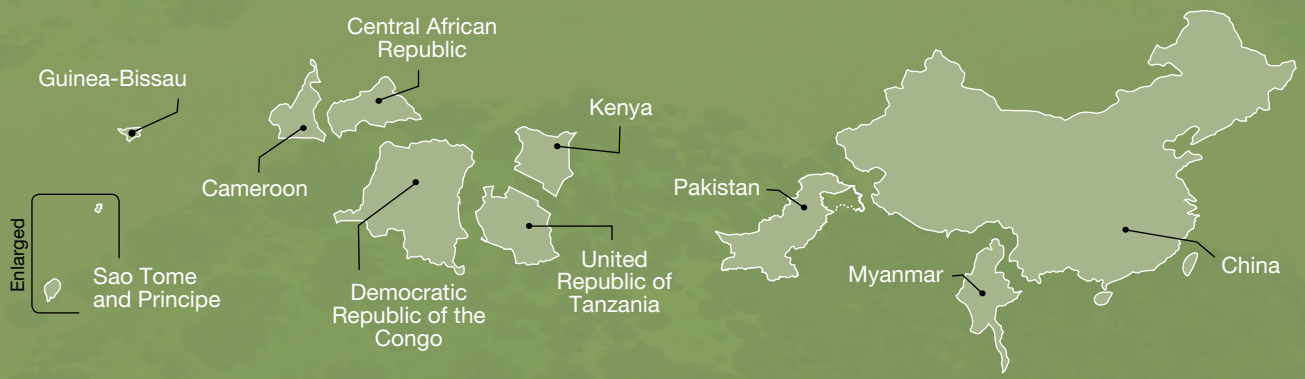
To contribute to the restoration and maintenance of critical landscapes to provide global environmental benefits and enhanced resilient economic development and livelihoods, in support of the Bonn Challenge.

The Restoration Initiative (TRI) was developed to help address one of the defining challenges of our time: land degradation and the realisation that transformational changes, including the restoration of degraded and deforested lands, are urgently needed to safeguard the well-being of people and nature.

Restoration promises to generate significant and needed benefits for food and water security, climate, biodiversity conservation, jobs creation and more. However, significant barriers must be overcome for restoration to be successful and long-lasting. These include: alignment of relevant policies, laws and governance structures to create

TRI Programme at a glance

Countries



Funding

USD 54 million | GEF grants
USD 201 million | Co-funding

Duration

2018 – 2025

Project components

- Policy development and integration
- Implementation of restoration and complementary initiatives
- Capacity building and finance mobilization
- Knowledge sharing and partnerships

TRI seeks to capitalize on the growing political support for restoration, as evidenced by country commitments to the Bonn Challenge goal of bringing 350 million ha of degraded lands into restoration by 2030.

an appropriate enabling environment for restoration to move forward; accurate and detailed information on the status, nature and extent of deforestation and degradation, and restoration opportunities; mobilization of financial and technical resources, including from the private sector; and awareness raising and sharing of best practices.

With support from the Global Environment Facility (GEF), TRI brings together three GEF agencies – the International Union for Conservation of Nature (IUCN), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Environment Programme (UNEP) – and 10 Asian and African countries to provide knowledge, tools and financing to help overcome existing barriers to restoration and generate global environmental benefits while furthering national sustainable development goals.

Representing the largest ongoing GEF investment in restoration, the programme consists of 11 national projects (two in Kenya) supported by one central project providing global coordination, technical support and knowledge capture, and dissemination. While national projects are tailored to the particular context, needs, and objectives of partners, all share a common framework addressing key barriers to restoration and utilizing a common set of indicators for tracking progress.

Spanning two continents and with a diversity of project objectives, the programme offers a wealth of opportunities for knowledge exchange and partnership. TRI supports and facilitates this exchange through annual programme-wide workshops; an online community of practice; and support for harmonized monitoring, learning, and the capture and sharing of experiences. In addition, by providing key supports through a jointly implemented global support project, TRI promises to generate cost savings and enhanced outcomes

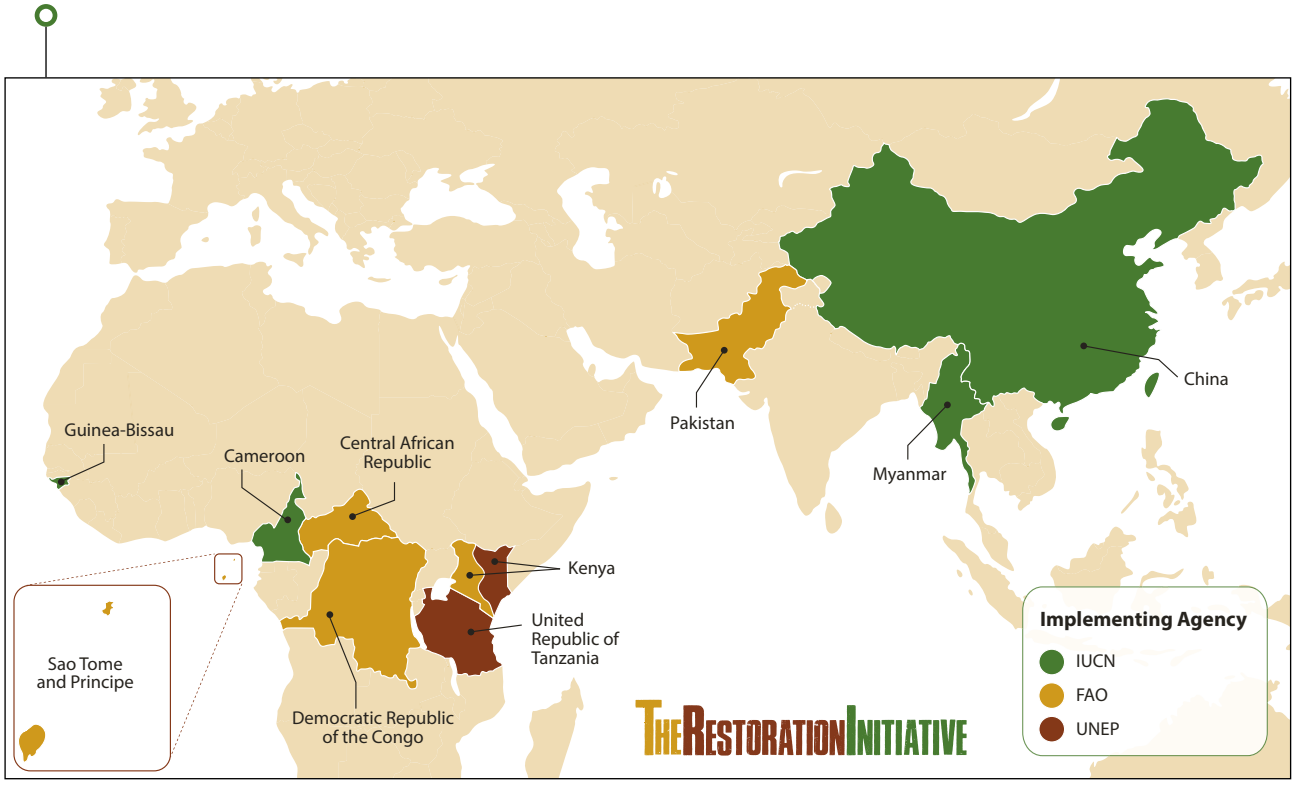


Figure 1. Country projects and respective implementing agencies participating in TRI.

over a collection of individual projects. This shared implementation approach adopted by the three implementing TRI agencies, each providing a unique and complementary set of resources and support tools, is already showing promise and has been referenced and adopted in more recent GEF-7 programming, for example.

TRI seeks to capitalize on the growing political support for restoration, as evidenced by country commitments to the Bonn Challenge goal of bringing 350 million ha of degraded lands into restoration by 2030,[1] and further reflected in international policy, including the United Nations General Assembly declaration that 2021 to 2030 be the *UN Decade on Ecosystem Restoration*.

TRI is expected to generate significant global environmental benefits. In aggregate, these include 483 000 ha under restoration; 1.8 million ha under improved sustainable land management; and 30.4 million tCO_2eq mitigation/ sequestration (20-year timeframe).

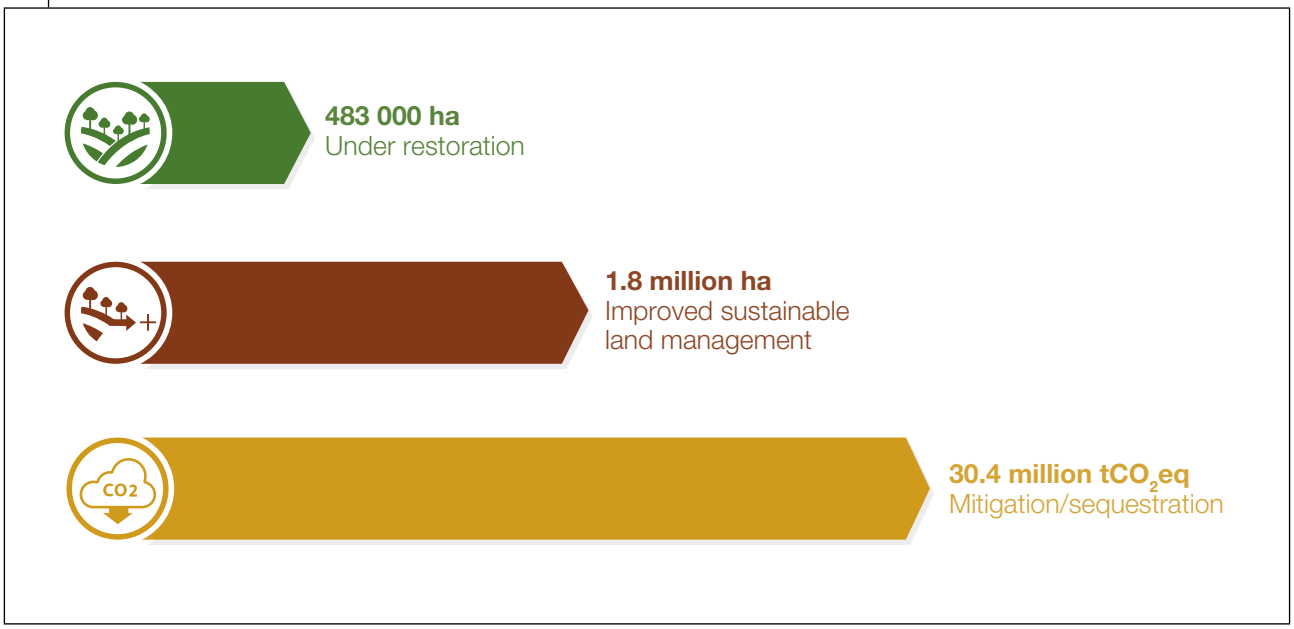


Figure 2. Anticipated global environmental benefits from TRI.

1 http://www.bonnchallenge.org/

04 | Year 1 programme achievements

Implementation of national projects began in late 2018, following an intensive period of work to develop the overall programme architecture and individual projects (also called 'child projects'). TRI's Programme Framework Document (PFD) was approved by the GEF Council on 1 June 2016, with subsequent endorsement by the GEF CEO of all fully developed TRI child projects completed in August 2018.[2]

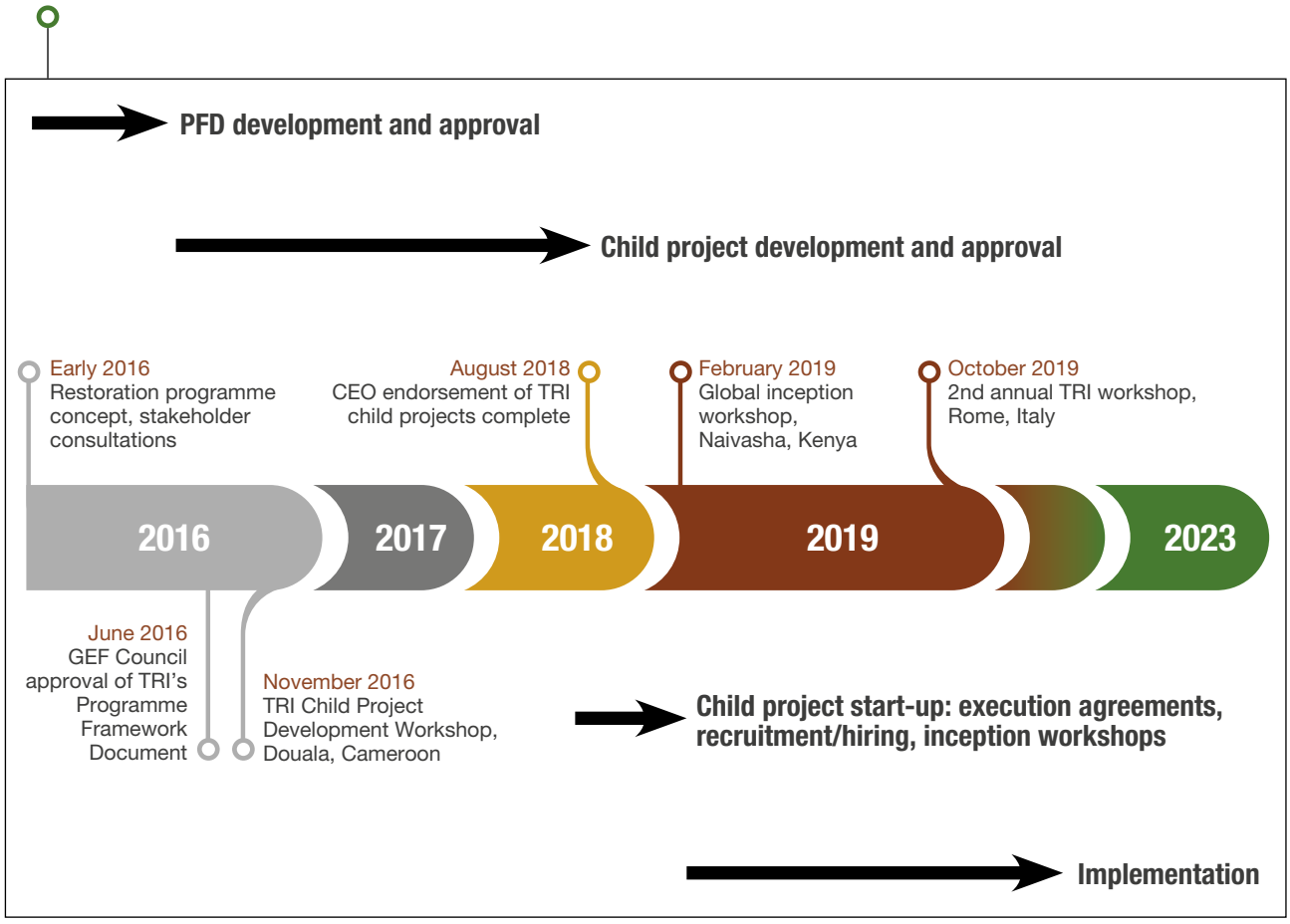


Figure 3. Key milestones in the development and implementation of TRI.

2 TRI's child project in the United Republic of Tanzania is expected to begin implementation in the first quarter of 2020. In the interim, TRI project partners in the United Republic of Tanzania have participated in all TRI knowledge sharing and capacity building events.

At the programme level, a number of key events and developments in the implementation of TRI took place over the past year.

Global inception workshop: Coming together to raise the restoration agenda

More than 50 representatives and project team members from all 10 partnering TRI countries gathered in Naivasha, Kenya, for TRI's global inception workshop. This five-day event in February 2019 came at a critical juncture for TRI, with projects fully designed and approved, project teams assembled, and implementation beginning in earnest. It was an important opportunity to build programmatic understanding and coordination, and cooperatively plan Year 1 activities. Key outcomes included: refined programmes of work from the global support project to national child projects; identification of shared topics and areas for learning and partnership; establishment of a community of practice and increased cooperation under TRI; adoption of a set of core indicators to track the progress of TRI at the programme level, with subsequent follow-up work to define associated monitoring approaches and tools; identification of, and plans for, capitalizing on the many opportunities for cross-team learning and exchange going forward; and overall enhanced support for the programmatic approach with linkages to the broader Bonn Challenge.

It was an important opportunity to build programmatic understanding and coordination, and cooperatively plan Year 1 activities.

Development of harmonized results framework

In line with new GEF-7 policy on tracking results from GEF-supported programmes and projects, agency and national partners developed a revised set of core indicators and associated guidance for tracking progress of TRI. The indicators include four core GEF indicators complemented by an additional five indicators, which are specific to TRI. Use of the nine TRI indicators by all national child projects will harmonize the tracking of progress, facilitating 'apples-to-apples' comparison and learning.

Core TRI indicators

1. Policies and regulatory frameworks in TRI countries, which support FLR
2. Area of land restored
3. Area of land under improved practices
4. Greenhouse gas emissions mitigated
5. Number of direct beneficiaries (male, female)
6. Number of cross-sectoral and planning mechanisms supporting FLR
7. Value of resources flowing into restoration in TRI countries
8. Number of bankable FLR projects developed
9. Number of TRI knowledge products developed and disseminated

Regional workshop on ecosystem services valuation, incentives and payments for ecosystem services to support restoration

In September 2019, FAO and the IUCN China team working with state-owned forest farms co-organized a regional workshop in China on valuation of ecosystem services and payment for ecosystem services (PES) incentive schemes to support FLR. More than 40 people from TRI's three projects in Asia (China, Myanmar and Pakistan) attended, together with presenters from the Research Centre for Eco-environmental Sciences of China Agricultural University, the Economic Research Centre of the National Forestry and Grassland Administration of China, McGill University, UNEP, IUCN and FAO."

PES schemes – in which people who benefit from ecosystem services (e.g. clean water, pollination services) compensate others who ensure the provision of these services – have been set up in many parts of the world. A classic example is found in New York State in the the United States of America, where landowners in the upstream Hudson River water basin that supplies water to New York City (NYC) residents receive payments from NYC to protect this water source through, among other actions, controlling farm runoff and erosion.[3] The result of this programme has been significant savings for NYC, allowing it to avoid construction of large and costly downstream water filtration plants.

The same principles can be applied to FLR, which can help enhance and secure the provision of ecosystem services at both local and global scales. PES schemes are, therefore, being considered as potential sources of revenue to support investment in FLR.

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The workshop increased understanding of the importance of ecosystem services valuation, the underlying principle in PES schemes, and its potential to support FLR by providing incentives for those implementing activities on the ground. For TRI countries, this would include benefits for smallholder producers and rural communities through income diversification and enhancement, and jobs creation.

A mix of presentations and hands-on exercises made the workshop very productive. Participants applied introduced concepts and methodologies to the context of their respective TRI projects and explored what would be appropriate and necessary to establish PES schemes at project sites. Each team left with a clear plan on next steps for piloting a PES scheme at their respective project sites, and FAO is providing support for these efforts.

3 https://www.cbd.int/financial/pes/usa-pesnewyork.pdf

TRI's second programme workshop: Deepening knowledge on methodologies and tools for effective restoration

Building on TRI's global inception workshop, this five-day event in October 2019 at FAO headquarters in Rome, was an opportunity for more targeted and intensive capacity building addressing a range of topics, tools and identified needs. More than 70 participants attended training sessions on a number of tools and thematic areas integral to FLR and the work of the national child projects. These included:

- Carbon estimation using the **EX-ACT**[4] tool;
- **Collect Earth**[5] and **Sepal**[6] tools and approaches for monitoring and assessing land cover change using remotely sensed imagery coupled with field-based surveying and ground-truthing;
- Assessing restoration opportunities using the **Restoration Opportunities Assessment Methodology (ROAM)**;[7]
- Tools and approaches for mobilizing finance for FLR, including **Incentives for Ecosystem Services (IES)**;[8]
- Understanding the role and importance of **genetic diversity in the context of FLR**, and tools and approaches for selection of planting materials;[9]
- Training on **Gender-Responsive FLR**,[10] on the importance of considering gender issues in the planning and implementation of FLR, and on tools and approaches for doing so;
- Training on the **Free, Prior and Informed Consent (FPIC)** standard,[11] which ensures that indigenous peoples' rights and concerns are mainstreamed into FLR planning and implementation;
- Piloting the **Species Threat Abatement and Recovery (STAR)**[12] tool, which allows for estimating, quantifying and monitoring the impacts of alternative FLR interventions on threatened biodiversity; and
- Strengthening the design and implementation of **Policy Influencing Plans (PIP)** that define TRI project strategies for enhancing the enabling environment for FLR in partnering countries.

Workshop participants also had the opportunity to take part in a field visit to the Model Forest of the Aterno Valley,[13] Sirente Velino Natural Park,

4 http://www.fao.org/tc/exact/carbon-balance-tool-ex-act/en/
5 http://www.openforis.org/tools/collect-earth.html
6 http://www.openforis.org/tools/sepal.html
7 https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam
8 http://www.fao.org/in-action/incentives-for-ecosystem-services/toolkit/en/
9 http://forest-genetic-resources-training-guide.bioversityinternational.org
10 https://www.iucn.org/news/forests/201803/gender-specialist's-view-responsive-forest-landscape-restoration
11 http://www.fao.org/indigenous-peoples/our-pillars/fpic/en/; and https://www.iucn.org/sites/dev/files/content/documents/iucn_rba_systematization_compiled.pdf
12 https://www.iucn.org/regions/washington-dc-office/our-work/species-threat-abatement-and-recovery-star-metric
13 http://ilexitaly.com/portfolio/the-aterno-valley-model-forest-project/

Farmers sort chillies before sale in Harakisa Farm, Kenya.
Photo by UNEP/J. Adero

in Abruzzo (Italy). The visit helped demonstrate that the practice of forest restoration goes beyond tree planting – serving here to connect people and nature across sectors and institutions and maintain the livelihoods of communities.

TRI knowledge-sharing community of practice and programme webinars

The logistical challenges of working with numerous national and local partners and NGOs across 10 countries prompted the creation of TRI's knowledge-sharing community – an online community of TRI practitioners powered by a platform called Dgroups.[14] Dgroups was designed by several development organizations to work in countries where low bandwidth internet service is a common challenge.

TRI's online community provides and facilitates several services for programme participants: (1) knowledge sharing on partner-led topics of interest relevant to TRI and FLR; (2) storage and access to key documents in the library, including guidance documents, briefs, reports, presentations, and webinars; and (3) informing TRI partners about upcoming events through a regularly updated group calendar.

Alongside TRI's online community, TRI's global support partners also organized two programme-wide webinars in 2019: one on refining and accessing support from TRI's global support project, and a second one on the harmonized monitoring and evaluation of TRI. This second webinar covered changes made to TRI's monitoring and evaluation framework, including the adoption of nine core indicators and related guidance to be utilized by all child projects, as well as the role of the Programme Advisory Committee.

14 https://en.wikipedia.org/wiki/Dgroups

TRI brings together partners among East African countries in the fight against degradation

Land degradation is one of East Africa's leading environmental challenges – one that urgently needs to be addressed if the region is to manage the increasing impacts of climate change and provide sustainable livelihoods to its growing population.

Partners anticipate that TRI's national projects in the United Republic of Tanzania and in Kenya will help meet this challenge, with cross-border collaboration and sharing of lessons laying the groundwork for an East African approach to restoration.

"There is a clear need to increase investment and strengthen policy support to address land degradation," said Paul Matiku, Executive Director of Nature Kenya. *"The GEF funding under TRI's project is an excellent foundation upon which restoration barriers will be addressed."*

While TRI's project in the United Republic of Tanzania prepares to commence implementation in 2020, in Kenya, both projects have hit the ground running, adopting a collaborative approach in the implementation of project activities to promote effective partnership and reduce costs.

In Kenya, both projects have hit the ground running, adopting a collaborative approach in the implementation of project activities to promote effective partnership and reduce costs.

Executing partners Nature Kenya and the Kenya Forestry Research Institute (KEFRI) have shared workplans and monitoring and evaluation plans, and organized joint meetings to better align project activities, prevent duplication of work, and generate cost savings. Key areas for collaboration include joint support for developing a national FLR action plan, the implementation of a Mapathon (including training) for assessing land cover conditions (see below), and joint training on the Restoration Opportunities Assessment Methodology, including sharing of lessons and experiences.

Paul Matiku says that Nature Kenya aims to replicate the lessons learned from the implementation of the FAO/KEFRI project in the Tana River Delta when the formal Mapathon and ROAM process starts.

"Nature Kenya is keen to use the lessons learned to catalyse nationwide engagement of government, private sector and local communities," Paul said. *"We also hope lessons from TRI projects will be able to inform the East African Community agenda on environmental leadership in the region."*

An early beneficiary of the collaboration is the Kenya Forest Service, the lead agency for forest conservation and protection in Kenya. The Kenya Forest Service is the agency supporting the Ministry of Environment and Forestry in coordinating FLR efforts in Kenya. It seeks to scale up forest and landscape restoration initiatives in the country in order to achieve the national commitment to restore 5.1 million ha by 2030.

In 2019, the Kenya Forest Service was tasked to develop an a FLR action plan for implementation – including a roadmap and a monitoring framework – through a ministerial directive. Recognizing both the synergies with their own objectives and the need to combine resources to achieve the action plan, FAO/KEFRI and UNEP/Nature Kenya agreed to collaborate under TRI to support the Kenya Forest Service to develop the plan.

"Together with support from TRI's project teams, we are now confident that in early 2020, Kenya will have a national FLR action plan for implementation towards achieving Kenya's national restoration commitments under the Bonn Challenge," Kenya Forest Service Assistant Director, Rose Akombo said.

Building capacity for FLR with remote-sensing tools, imagery and analysis

To better address land degradation and deforestation, and plan and support FLR, stakeholders need access to up-to-date, accurate and detailed information on land cover and land cover change. In the past, Kenya relied on field-based surveying and other manual mapping techniques that are costly, slow and prone to error. Through TRI, FAO and UNEP are partnering to bridge this gap, providing technical and financial support for the monitoring of land cover and land-use change using satellite imagery.

Digital technology and satellite imagery can transform the way countries assess, monitor and plan the use of natural resources, including the monitoring of deforestation and desertification. The technology offers wide coverage, is faster than ground-based sampling methods and supports long-term monitoring of land coverage and usage.

Using the FAO tool, Collect Earth, FAO and UNEP assessed and mapped land cover in two different project landscapes: Mukogodo Forest in Laikipia/Isiolo Counties and Mount Kulal in Marsabit County, Kenya. The work was done with the support of local community members through a five-day data collection exercise called a Mapathon.

Collect Earth is a free and open-source land monitoring software tool that enables data collection through Google Earth images, in conjunction with Bing Maps and Google Earth Engine information. By using Collect Earth, users can assess and analyse high-resolution satellite imagery for a wide variety of purposes, including:

- Supporting multi-phase national forest inventories;
- Conducting land use, land-use change and forestry assessments;
- Monitoring agricultural land and urban areas;
- Validating existing maps;
- Collecting spatially explicit socio-economic data; and
- Quantifying deforestation, reforestation and desertification.

Partnership results

Thanks to this collaboration between FAO and UNEP, local government and non-governmental institutions, including KEFRI and Nature Kenya – the two executing partners for TRI projects in Kenya – are now better able to plan and monitor FLR

work. Other institutions and stakeholders benefiting from the improvement in land cover assessment and monitoring are the Kenya Forest Service, the Laikipia Wildlife Forum, the Northern Rangeland Trust, National Museums of Kenya, the Centre for Training and Integrated Research in Arid and Semi-Arid Lands (ASAL) Development, county governments and the respective local communities.

Overall, 23 staff from partnering institutions were trained on how to use Collect Earth, and partners collected data from over 10 000 plots at the project sites – information that will act as the baseline for monitoring the land use and land-use changes in these areas as project and other related work move forward.

The partnership represents a significant strengthening of the collaboration between FAO and UNEP and has further served to increase awareness and implementation of FLR work.

"The Mapathon process was very useful to us in Nature Kenya. It opened the world of open-access GIS tools, which can be used to assess restoration change in our target landscapes. These tools are easy to use and rely on stakeholder inclusivity in the assessment process. This legitimizes the results we recorded. We intend to replicate these lessons in TRI's project in the Tana River Delta,." said Paul Gacheru, Species and Sites Programme Manager, Nature Kenya.

A STAR is born

STAR

A new tool, under development with support from TRI, promises to help practitioners better design and monitor restoration projects to help conserve biodiversity.

Throughout the world, life as we know it is under severe threat. As many as one million plant and animal species are presently facing extinction, and the loss of these species, in turn, threatens the ecosystems and ecosystem services that humanity itself depends upon.[15]

While restoring degraded and deforested lands promises to reduce threats to endangered species, estimating and measuring the impacts to threatened species from different restorative actions is challenging. Challenges include the inherent complexity of ecological systems, the time required for restoration and the fact that impacts on biodiversity may not be apparent until much later, making the development and testing of methodologies a potentially costly and slow process. Moreover, the few approaches that have been developed are often incompatible with one another, or limited in what they can say about restorative work at different sites or at different scales.

A new tool under development by IUCN and partners, the Species Threat Abatement and Recovery (STAR) metric, seeks to address these issues and provide practitioners with information that can support improved design and monitoring of restoration projects aiming to conserve threatened biodiversity. Utilizing data from IUCN's Red List of Threatened Species – the gold standard for information on threatened species, with over 90 000 species assessed to date – STAR identifies which threatened species are found in a landscape, the scope

15 Brondizio, E.S., Settele, J., Díaz, S. & Ngo, H.T., eds. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* Bonn, Germany, IPBES secretariat.

and severity of the threats facing those species, and what kinds of restorative actions will most benefit their conservation. Importantly, STAR gives practitioners, investors, and other stakeholders a quantitative measure of benefits to biodiversity from different restoration and conservation actions. This measure can be compared against other projects and investments at any scale, from project-sized landscapes of a few hectares, to national, regional and global initiatives.

This cross-compatibility of STAR assessments opens up a range of possibilities, from allowing investors to compare the potential value of alternative investments in conservation, to helping practitioners design restoration projects that maximize benefits to biodiversity and other objectives, to developing country-level targets for nature, based on each country's potential for conserving globally threatened biodiversity.

From theory to landscape – supporting project partners with STAR assessments

A number of TRI projects have the conservation of threatened biodiversity among their key objectives to be achieved through FLR. These include TRI projects in Cameroon, the Central African Republic, Kenya (both projects) and Myanmar. TRI will support these conservation objectives by providing STAR assessments covering targeted landscapes in each country.

Assessments will be done in two stages, with a first stage based on readily available global datasets completed by February 2020, and second stage assessments relying on additional gathering of local and field-based survey data to be completed by the end of 2020.

The partnership with TRI will both support the work of the five partnering projects and allow for testing and enhancing of the STAR tool for the benefit of the wider restoration community moving forward.

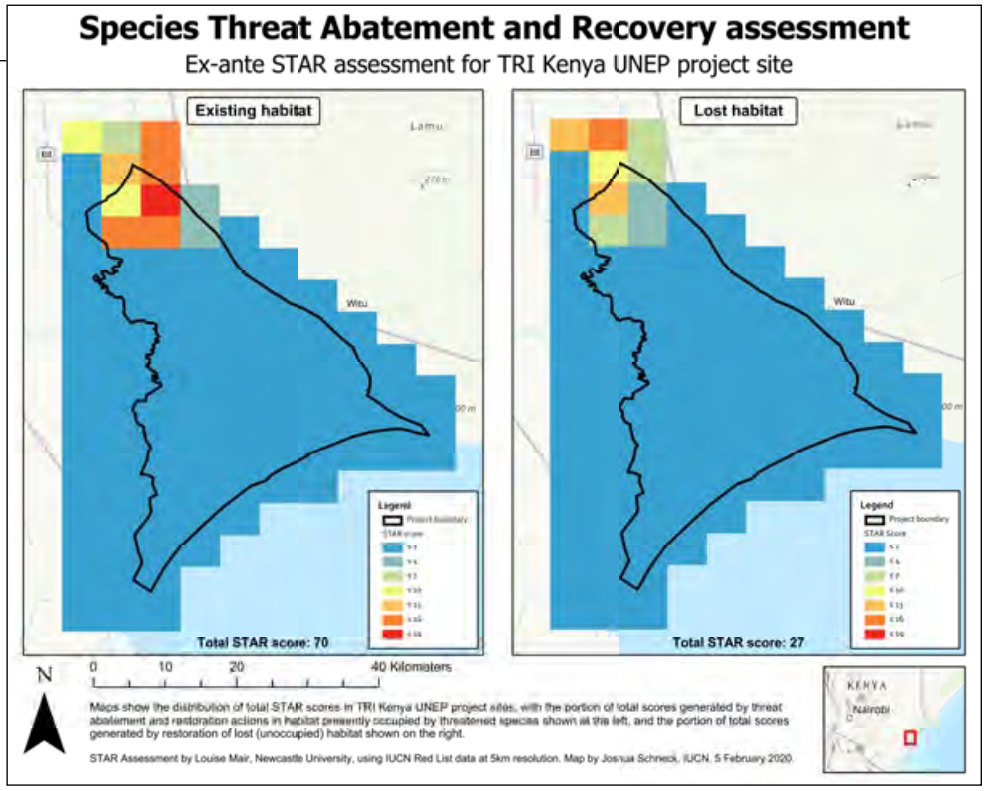


Figure 4. STAR assessment map for TRI's Kenya Tana River Delta project, showing areas of high priority for threatened species in the northwest region of the project site. Identified threatened species at the project site include the Tana River red colobus monkey, spotted ground thrush and others.

05 | Country project highlights

CAMEROON

TRI Cameroon project at a glance

Funding

USD 1.3 million | GEF grants

USD 9.1 million | Co-funding

Duration

2019 – 2024

Institutional arrangements

Implementation by IUCN

Execution by the International Network for Bamboo and Rattan (INBAR)

Project components

- Strengthen Cameroon policy commitment to FLR and sustainable land management
- Pilot application of restoration using *Bambusa* spp. and other indigenous species and ensure the development of associated value chains
- Enhance institutional capacities and financing arrangements to facilitate large-scale FLR at project sites
- Improve knowledge of best practices in landscape restoration and monitoring and evaluation among project stakeholders and external audiences

Targets

Area under restoration (ha)

6 000

Increased area under improved practices (ha)

6 000

Greenhouse gas emissions mitigated (tCO_2eq)

384 218

In brief

Supporting landscape restoration and sustainable use of local plant species and tree products for biodiversity conservation, sustainable livelihoods and emissions reduction in Cameroon.

TRI's project in Cameroon is working to support the implementation and scaling-up of FLR in Cameroon to facilitate biodiversity conservation, sustainable land management, climate resilience and improved community livelihoods.

An innovative focus of the project is on piloting and assessing the role that bamboo can play in supporting restoration efforts in Cameroon. Bamboo is indigenous to Cameroon and possesses qualities that potentially make it suitable for restoration of degraded lands in certain areas. Those qualities include an ability to grow on degraded soils and steep slopes where many plants cannot, and an extensive and fibrous root system that helps to stabilize loose soil and prevent erosion. In addition, bamboo is a fast-growing species that can be further utilized as a building material, food, or fuel source. The substitution of bamboo for fuelwood extracted from natural forest can help reduce pressures on natural resources and threatened biodiversity. Moreover, through value chain enhancements, bamboo can provide an important revenue source for communities.

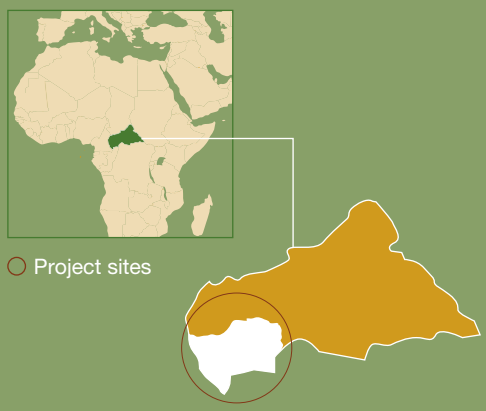
Project updates

- Project Steering Committee established, chaired by the Ministry of Environment, Nature Protection and Sustainable Development and the Ministry of Forestry and Wildlife.
- The project is presently conducting ROAM assessments in each of the three implementation sites to define restoration priorities and actions.
- A policy influence plan is being formulated to define concrete actions and mechanisms by which policies on FLR in Cameroon can be improved.
- One of five TRI projects piloting the application of STAR assessments, identifying high-priority areas and actions for biodiversity conservation through FLR.
- A number of workshops to support implementation of FLR activities are planned starting in Year 2.

Bamboo planting demonstration in Cameroon. Photo by INBAR

CENTRAL AFRICAN REPUBLIC

TRI Central African Republic project at a glance



Funding

USD 6.5 million | GEF grants
USD 10.4 million | Co-funding

Duration

2018 – 2023

Institutional arrangements

Implementation by FAO

Execution by the Central African Republic Ministry of Environment, Sustainable Development, Water, Forestry, Hunting and Fisheries

Project components

- Filling knowledge gaps on ecosystem service valuation and restoration opportunities, and support for the enhancement of national policies for sustainable land-use planning
- Implementation of restoration programmes and complementary initiatives in five pilot sites in the Southwest, targeting abandoned, unproductive lands, with 3 200 ha in restoration transition
- Capacity building for state ministries and local populations on FLR, agroforestry and forest management, as well as private-sector finance mobilization
- Knowledge capture and sharing, monitoring and assessment

Targets

Area under restoration (ha)
3 221

Increased area under improved practices (ha)
3 221

Greenhouse gas emissions mitigated (tCO_2eq)
3 185 597

In brief

FLR supporting landscape and livelihoods resilience in the Central African Republic.

The Central African Republic (CAR) is a landlocked, sparsely populated (just under five million inhabitants) country, which has suffered from numerous security conflicts over the past several decades and is among the ten poorest countries in the world. While the country once had the third largest area of rainforest cover in Africa, today forest cover is estimated to be 36%, with the densest, most intact forest cover remnants found in the southwestern provinces.

These southern provinces are increasingly threatened by unsustainable slash-and-burn agricultural practices and unsustainable timber exploitation. With little in the way of sustainable models for managing natural resources, TRI's CAR project project seeks to provide an alternative, piloting a wide-ranging set of interventions to restore degraded and abandoned lands at five sites in four southern provinces.

Piloted interventions include support for a public-private partnership between the government, a private company and local communities to restore degraded lands through the promotion of the best forest and agroforestry practices, as well as direct support to communities, providing incentives to restore abandoned, degraded lands in place of expansions through slash-and-burn agriculture. Other work will include mapping and characterizing the country's remaining biodiversity, which includes forest elephants and lowland gorillas, to support conservation efforts.

Project updates

- Private-public partnership opportunities are being evaluated to promote agroforestry practices.
- A request from the government was received to start developing a new Least Developed Country Fund project managed by the GEF as part of a collaboration with United Nations Forum on Forests.
- A capacity needs assessment study has been carried out with the support of an international expert, and a roadmap for training needs was developed.
- The project will provide a platform for exchange on the development of commercial enterprises linked to restoration.
- The Project is one of five TRI projects piloting the application of STAR assessments, identifying high-priority areas and actions for biodiversity conservation through FLR.

Rich biodiversity in Bayanga landscape in the Central African Republic.
Photo by Nuria Ortega/ WWF CAR

CHINA

TRI China project at a glance

Funding

USD 7 million | GEF grants

USD 54 million | Co-funding

Duration

2019 – 2022

Institutional arrangements

Implementation by IUCN

Execution by the National Forestry and Grassland Administration of the People's Republic of China

Project components

- FLR-based forest management plans created for seven pilot state-owned forest farms focusing on key ecosystem services
- FLR plan for one city (Bijie) and two counties (Fengning and Xinfeng), demonstrating the integration of FLR into regional ecological restoration and development
- Capacity building for state-owned forest farms to understand and implement FLR
- Ecosystem service valuation and monitoring systems in place; knowledge capture and sharing

Targets

Area under restoration (ha)
208 919

Increased area under improved practices (ha)
208 919

Greenhouse gas emissions mitigated (tCO_2eq)
3 793 952

In brief

Enhancing ecosystem services from planted forests in China through FLR and governance innovation.

TRI's project in China is working to improve the ecological health of state-owned forest farms (SFFs), to ensure that they provide long-term, sustainable ecosystem services, including clean water, soil productivity and stability, and carbon sequestration.

There are 4 855 SFFs in China, which together employ 750 000 people and cover 77 million ha or 8% of the total land area of China. Around 45 million ha of this total is forest land.

Historically, these SFFs have been managed using a narrow set of objectives and practices (e.g. timber production through monocultural tree plantations). These and other factors have, in some areas, led to soil and land degradation and fragmented forests, with declines in the quality and quantity of ecosystem services.

Together with the National Forestry and Grassland Administration, TRI's project in China is working at three different sites and seven SFFs to pilot new approaches to management, including restoration. If successful, lessons from these experiences will be scaled up and incorporated in the management plans of the broader network of SFFs.

Project updates

- Completed assessment of key ecosystem services for each pilot forest farm based on landscape-level analysis.
- Outlined FLR-based forest management plans for seven SFFs, detailed plans to be completed mid-2020.
- Assessment report for three landscapes on geo-ecological dynamics and key ecosystem services for both society and environment.
- Drafted FLR plan for Bijie City.
- Organized six international and national training sessions for 200 people from three provinces and seven SFFs. Training topics included FLR theory, PES and FLR-based forest management plans in China.

Presentation on the management of larch plantations in China. Photo by PRC-GEF state forest farm project

DEMOCRATIC REPUBLIC OF THE CONGO

TRI Democratic Republic of the Congo project at a glance

Funding

USD 3.9 million | GEF grants
USD 12.4 million | Co-funding

Duration

2018 – 2023

Institutional arrangements

Implementation by FAO

Execution by the Democratic Republic of the Congo Ministry of Environment and Sustainable Development (MEDD)

Project components

- Development of policy for enabling the promotion of FLR interventions at provincial level
- Demonstration of the FLR approach and sustainable use of natural resources in the Kabare (Kabare Territory) and Ngweshe (Walungu Territory) chiefdoms, South Kivu Province
- Reinforcement of institutional and financial capacity to scale up the FLR approach at provincial and national levels
- Knowledge sharing on FLR, partnerships and FLR monitoring and assessment

Targets

Area under restoration (ha)
4 800

Increased area under improved practices (ha)
4 800

Greenhouse gas emissions mitigated (tCO_2eq)
1 064 457

In brief

Improved management and restoration of agro-sylvo-pastoral resources in the pilot province of South Kivu.

The South Kivu Province of the Democratic Republic of the Congo (DRC) is one the most densely populated and poorest provinces in the country, with some 80% of the population living below the poverty line. Population pressures, together with poor land management practices including overgrazing and unsustainable timber and fuelwood harvesting, have resulted in significant forest and landscape degradation.

Addressing this degradation is a priority for South Kivu, and the project is supporting government and community partners in this effort in several ways including the development of a provincial-level strategy for FLR.

Using ROAM – a flexible and cost-efficient framework developed by IUCN and the World Resources Institute (WRI) for stakeholders to quickly identify and

assess FLR opportunities and priorities – FAO and WRI have been supporting government partners in developing the foundation for a provincial FLR strategy for the South Kivu Province.

In the field, the ROAM approach was carried out in two stages, beginning in October 2019 with a two-day workshop with stakeholders and community leaders to take stock of the existing restoration initiatives, collect data required for preliminary analyses and develop an overall vision for FLR in the province. Following this, household surveys of community members were undertaken to better understand communities' needs and priorities, and identify the most relevant and feasible types of restoration interventions within the assessed restoration sites.

A follow-up workshop, involving research and academic institutions, religious actors, civil society organizations, as well as state institutions, used results from the first workshop and household surveys to develop draft maps identifying FLR opportunities and interventions for the South Kivu Province. A template for the FLR provincial strategy was also discussed and validated by participants.

Some specific policy suggestions supporting FLR proposed by participants to the workshop include:

1. Re-establish forest rangers to help support protection of threatened areas;
2. Reinforce the laws on the prevention of bush fires;
3. Undertake a land reform for land redistribution;
4. Raise awareness and understanding of environmental protection laws; and
5. Increase state agents' awareness of environmental protection laws.

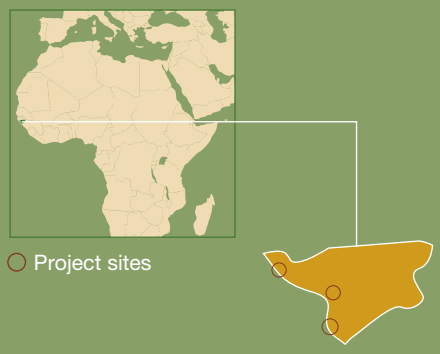
Project updates

- Draft provincial FLR strategy under development for validation.
- Local development plans in the chiefdoms of Kabara and Ngweshe are being revised with support from the German development agency, GIZ, taking restoration and sustainable forest management into consideration.
- Roadmap developed for capacity development of project stakeholders and beneficiaries following a capacity needs assessment.

Agroforestry landscape in the South Kivu Province in DRC. Photo by Christophe Cirumira

GUINEA-BISSAU

TRI Guinea-Bissau project at a glance



Funding

USD 3.3 million | GEF grants

USD 41.1 million | Co-funding

Duration

2019 – 2024

Institutional arrangements

Implementation by IUCN

Execution by Institute for Biodiversity and Protected Areas (IBAP)

Project components

- Improved policy environment for mangrove restoration, including a draft law on mangrove conservation
- Community-led restoration of abandoned rice fields and high-value agricultural fields
- Strengthened capacity of national institutions for management and restoration of mangrove ecosystems, and for accessing international climate and conservation finance
- Knowledge sharing, and monitoring and evaluation

Targets

Area under restoration (ha)
2 700

Increased area under improved practices (ha)
2 700

Greenhouse gas emissions mitigated (tCO_2eq)
520 493

In brief

Protecting and restoring mangroves and restoring degraded rice fields for food security and climate mitigation in Guinea-Bissau.

TRI's project in Guinea-Bissau is working to restore and protect mangrove ecosystems – among the most productive and threatened ecosystems in the world.

Found in the intertidal zones of coastlines, mangrove ecosystems are dominated by mangrove trees or shrubs, which are well-adapted to living in such salty environments. Specialized adaptations include complex root systems that extend above and below the water line and help to anchor the mangrove plant in place. In doing so, these root systems help prevent coastal erosion while providing habitat, nurseries and feeding grounds for numerous fish and other organisms. In addition, mangrove ecosystems provide coastal protection from storms, as well as carbon storage, food, timber and livelihoods.

In Guinea-Bissau, mangroves face a number of threats – principally conversion for agriculture and coastal development. As a result of these and other drivers, the total area covered by mangroves has declined by 32% since 1940.

One type of agricultural practice particular to Guinea-Bissau is the cultivation of rice in coastal areas of cleared mangrove forest, using earthen dikes to protect

the rice fields from seawater ingress. This labour-intensive farming requires constant maintenance to safeguard and reinforce dikes. Moreover, if these agricultural fields are abandoned due to labour shortages, changes in rainfall patterns, or other reasons, and dikes are not simultaneously removed, the tide may not penetrate sufficiently into the formerly cultivated areas to encourage the natural restoration of mangroves, and the soil becomes prohibitively salty and acidic. In this situation, both farmers and the environment lose out.

TRI's project in Guinea-Bissau aims to reverse this trend by supporting communities through increasing the productivity of existing agricultural fields and restoring abandoned fields. To this end, the project is working with communities to rehabilitate the rice fields that the communities themselves consider most essential to their food security, by providing them with the means to reinforce dikes and improving hydraulic management of cultivated areas. In return, the villages commit to flatten the upper part of the dikes of abandoned rice fields to allow the sea to enter again and mangrove seedlings (called propagules) to grow again, and thus promote a natural restoration of the mangroves.

Interpretation of the landscape from aerial images in Guinea-Bissau. Photo by IBAP and En Haut!

Experiences from TRI's project in Guinea-Bissau will be captured and shared and, pending success of pilot interventions, support replication at other sites where appropriate. In addition, the project is helping support the creation of a national law on mangrove conservation and restoration, and build capacity of national institutions to better manage and conserve these important ecosystems.

Project updates

- The project is presently supporting territorial diagnosis in three intervention sites, using a participatory approach and employing a mixture of ground-based and aerial-based (drones) surveying.
- During field visits farmers provide information on the history of their lands, how they have been managed over time and propose solutions for the future. Different options are then discussed and evaluated on technical and financial merits before any decisions are taken.
- In the coming months formal agreements will be signed by the stakeholders allowing work on rice field rehabilitation and mangrove restoration to proceed.

Compared with other projects focused on agriculture and food security, TRI's project in Guinea-Bissau is characterized by an ecosystem-based approach utilizing nature-based solutions, implemented through a participatory approach, and with consideration of anticipated impacts from climate change.

KENYA – TANA DELTA

TRI Kenya – Tana Delta project at a glance

Funding

USD 3.6 million | GEF grants

USD 36.5 million | Co-funding

Duration

2019 – 2024

Institutional arrangements

Implementation by UNEP

Execution by Nature Kenya

Project components

- Integration of FLR and sustainable land management in policy and institutional frameworks
- Implementation of restoration programmes and complementary initiatives
- Building capacity of institutions to access finance for FLR at scale
- Knowledge sharing and scaling up best practices and tools for monitoring FLR

Targets

Area under restoration (ha)

10 000

Increased area under improved practices (ha)

130 000

Greenhouse gas emissions mitigated (tCO_2eq)

6 686 291

In brief

Enhancing integrated natural resource management to arrest and reverse current trends in biodiversity loss and land degradation for increased ecosystem services in the Tana Delta, Kenya.

TRI's project in the Tana Delta, Kenya is working to strengthen integrated natural resource management and restoration of degraded landscapes in the Tana Delta, and systemically scale up best practices and lessons learned to other priority landscapes in Kenya.

Over the past decade, conflicts have been increasing in the Tana Delta over access to natural resources. A growing population and the lack of a framework to guide development and management of this fragile ecosystem have been the principle challenges. The Tana River Delta land-use plan, developed by villagers and local authorities in 2014 with help from Nature Kenya and other partners, is a major breakthrough towards sustainable development and management of the delta.

TRI's project in Kenya builds on this plan and is developing value chains and encouraging private sector investment to support local livelihoods, while promoting adoption of participatory forest management approaches for sustainable forest management, supporting the application of emerging methodologies for evidence-based decision-making on restoration and advising on policies and strategies to sustainably manage the delta.

Project updates

- Community participation in land-use decisions is having an impact, with Nature Kenya helping more than 100 villages to develop land-use plans and realize better management of natural resources, advocate for land restoration and conservation, and influence local government policy on land use.
- A ROAM assessment is scheduled for March to October 2020. TRI's two child in Kenya, implemented by FAO and UNEP, respectively, have agreed to hold a joint ROAM for the two target landscapes.
- The Tana Delta Indigenous and Community Conservation Area (116 000 ha), established in 2019, has a participatory management plan and governance structure. The county government has allocated USD 179 428 towards its implementation through its integrated development plan.
- Five community forest associations were initiated in five forest reserves in Tana River. Three socio-economic surveys, five ecological assessments and three draft participatory forest management plans have been completed for Kilelengwani, Kipini and Ozi Forests. The socio-economic surveys and ecological assessments yielded critical information that serves as baseline data for project monitoring.
- Green value chains, including nine biodiversity-linked nature-based enterprises were initiated in the Tana Delta, targeting 1 500 beneficiaries. Over 70% of the Tana Delta population is poor. Land degradation is linked to poverty, including charcoal-making, unsustainable farming and fishing methods, and overharvesting of natural products. The sustainable nature-based enterprises are expected to reduce pressure on natural resources.
- The implementation of recommendations from the Tana River Delta land-use plan is prioritized – such as a green, nature-based park feasibility assessment and initial support to local producers through the operationalization of a bulking center.

TRI's project in Kenya is designed to support biodiversity conservation in this fragile ecosystem. Hippos in the Tana Delta, Kenya. Photograph by Peter Usher/Nature Kenya

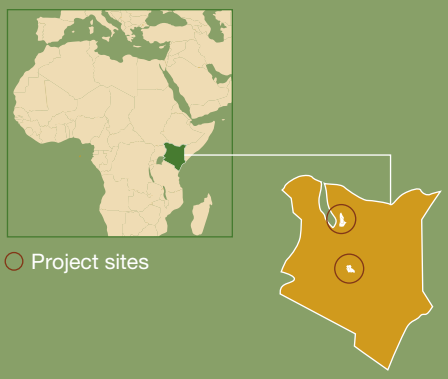
- The Physical and Land-Use Planning Act (2019) became law in Kenya, with sections on land-use planning borrowing heavily from the Tana River Delta land-use plan development process. The National Environment Management Authority is initiating the development of Tana River and Lamu County environmental action plans. The Kenya Forest Service has drafted a national forest landscape restoration action plan, with joint support from FAO and Nature Kenya/UNEP TRI projects. Tana River County has developed a draft environment bill and forest restoration strategy.
- On scaling up, the National Environment Management Authority is starting to support Tana River and Lamu Counties to develop county environmental action plans. Kilifi County has adopted a forest policy, while Taita Taveta County has drafted a forest bill and forest policy. A Mt. Kenya forest ecosystem services report, a Mt. Kenya forest restoration strategy and action plan and Mt. Kenya forest restoration business case were completed. In Siaya and Busia Counties, land-use plans have been completed, informed by a strategic environmental assessment, and in Yala, the ICCA (territories and areas conserved by indigenous peoples and local communities) has been set up and has initiated support to sustainable fish farming, papyrus production and eco-tourism, among other enterprises.
- Nature Kenya also participated in the global knowledge workshops in Naivasha and Rome, learning finance, policy and monitoring tools, such as Collect Earth, and have started applying these tools to project implementation.
- This project is one of five TRI projects piloting the application of STAR assessments, identifying high-priority areas and actions for biodiversity conservation through FLR.

Elema Godana herds his cattle in the fragile Dide Daride Community in the Tana Delta, Kenya. Photograph by Lisa Murray/UNEP

KENYA

KENYA – ARID AND SEMI-ARID LANDS

TRI Kenya – Arid and semi-arid lands project at a glance



Funding

USD 4.2 million | GEF grants
USD 12.5 million | Co-funding

Duration

2018 – 2023

Institutional arrangements

Implementation by FAO

Execution by Kenya Forestry Research Institute

Project components

- National and county-level policy and regulatory frameworks, including those on non-timber forest products, strengthened to support FLR
- Improved land management and restoration of degraded landscapes through a participatory, community-led approach
- Strengthened institutional capacities and financing arrangements are in place and facilitate large-scale restoration and maintenance of critical landscapes
- Improved FLR monitoring, reporting and knowledge dissemination at a national level

Targets

Area under restoration (ha)
8 700

Increased area under improved practices (ha)
152 661

Greenhouse gas emissions mitigated (tCO_2eq)
820 089

In brief

Restoration of Kenya's arid and semi-arid lands through bio-enterprise development and other incentives under TRI.

Over 80% of Kenya's lands are classified as arid and semi-arid (ASAL), based on the relatively low amounts of annual rainfall received.[16] Often marginalized, and with high rates of poverty, the 16 million people residing in these areas (~30% of Kenya's population) earn their living principally through a mix of pastoralism and small-scale agriculture.

Arid and semi-arid lands are particularly susceptible to droughts and flooding, and with increasing impacts from climate change, these areas are considered to be at risk of desertification. Moreover, a large percentage of ASALs have been degraded from deforestation and overgrazing, which further reduces the productivity of these lands, threatening food security, livelihoods and biodiversity.[17]

16 **FAO**. 2006. *Kenya country pasture/forage resource profiles*. Rome.

17 **World Bank**. 2018. *Land and natural resources degradation in the arid and semi-arid lands in Kenya*. Technical report. Washington, DC. (Also available at: http://documents.worldbank.org/curated/en/461701571216895387/pdf/Land-and-Natural-Resource-Degradation-in-Arid-and-Semi-Arid-Lands-in-Kenya.pdf)

Kenyans living and working in the arid and semi-arid landscape. Photo by FAO

TRI's Kenya ASAL project is working to address these challenges by providing alternative models for sustainable land management, restoring degraded lands, and supporting the development of diversified livelihood options, which include enhanced use of non-timber forest products (NTFPs), such as gum resins, honey and agave, as well as through the development of ecotourism.

The project is being implemented in two different areas: Mount Kulal Biosphere Reserve in Marsabit County, a UNESCO Man-and-the-Biosphere reserve due to its unique and varied ecosystems; and Mukogodo Forest and landscape in Laikipia and Isiolo Counties, which also is home to iconic and threatened biodiversity.

As with all TRI projects, the Kenya ASAL project is working across the four intervention areas of policy, restoration, capacity building and knowledge sharing. On the policy front, the project will work to support the integration of enabling policy on NTFPs for clarifying access and benefit-sharing from the use and sale of NTFPs. A national action plan on FLR will also be developed with the aim of accelerating interventions on the ground to restore and sustainably manage deforested and degraded landscapes.

Restoration work includes support for participatory development of sustainable pasture management plans, which include shifting grazing away from degraded core zones of the forest, allowing natural regeneration to take place. In the Mukogodo area, the project will support the development of management plans for group ranches, as well as support for establishing tree nurseries to aid in tree planting campaigns in the Mukogodo Forest.

To support the development of sustainable livelihood options, the project supports a range of activities, including assessments of the commercial viability of different NTFPs in project areas, awareness raising and capacity building, including entrepreneurship training and linkages with ongoing Forest and Farm Facility[18] supported work in Kenya, and the development of marketing and commercialization strategies for identified products.

NTFPs include berries and fruits, honey, gums, nuts, vegetables, fish and game, medicinal plants, essences, and a range of barks and fibres, such as bamboo, rattans and a host of other palms and grasses. In many rural areas throughout the world including in Kenya, governments and development agencies have been encouraging the sale and domestication of NTFPs as a way of boosting incomes for rural households and food security. As part of these efforts, TRI's Kenya ASAL

18 More information on the Forest and Farm Facility online: http://www.fao.org/forest-farm-facility/en/

project contracted a private-sector development expert to undertake a value chain analysis of NTFPs in Isiolo, Laikipia and Marsabit Counties.

The expert, in consultation with KEFRI, the Gums and Resins Association of Kenya, and other key partners, carried out a value chain analysis of prioritized NTFPs with commercial potential in the three counties. The work included field visits to the respective counties where key informant interviews and focus group discussions were organized with the community members, government officials and traders within the area, to fully understand the challenges and opportunities for an inclusive value chain development of selected products.

The development of ecotourism and several NTFPs, including gum arabic, gum resins, *Agave sisalina*, aloe and bee keeping was identified as having commercial potential in the targeted landscapes. More work is needed to determine which NTFPs can be sustainably commercialized. Various concerns on the production, processing, policy environment, standardization and marketing must be adequately addressed for the promotion of NTFPs to be successful.

Several development partners, including World Vision, GIZ-Acacia EPZ, IUCN and county governments and Concern Worldwide are also working to support the development of NTFPs. TRI's Kenya ASAL project is exploring potential opportunities for future collaboration.

Project updates

- A study on value chain development potential in the Kenyan ASALs carried out.
- A training was organized for project stakeholders on biophysical data collection through Collect Earth and 10 000 sample plots have been assessed.
- Roadmap validated for the development of an FLR implementation action plan.
- Pilot STAR assessment implemented to identify high-priority areas and actions for biodiversity conservation through FLR.
- An inaugural project steering committee held in April 2019 reviewed and approved the 2019–2020 work plan, budget and the monitoring and evaluation framework.
- Four land management committees established in the two ecosystems.
- At least 27 capacity building activities/workshops/meetings involving about 380 beneficiaries.
- Collaboration with World Agroforestry on the preparation of the national agroforestry strategy.
- Development of synergies through inclusive action planning with the Kenya Forestry Research Institute, Kenya Forest Service, Laikipia Wildlife Forum, Northern Rangelands Trust and UNEP/Nature Kenya.

MYANMAR

TRI Myanmar project at a glance

Funding

USD 2.7 million | GEF grants

USD 12.1 million | Co-funding

Duration

2018 – 2022

Institutional arrangements

Implementation by IUCN

Execution by the Myanmar Ministry of Natural Resources and the Environmental Conservation Forest Department

Project components

- Enhancing support for FLR among national and subnational policy frameworks. Includes support for a national cross-sectoral advisory group on FLR; watershed FLR plans; protected areas FLR
- Restoration of priority areas in Sagaing Region
- Support for FLR finance mobilization and the development of complementary small and medium-sized enterprises
- Knowledge capture and exchange of lessons

Targets

Area under restoration (ha)
89 005

Increased area under improved practices (ha)
1,295 007

Greenhouse gas emissions mitigated (tCO_2eq)
861 128

In brief

Reversing forest degradation and deforestation and restoring forested landscape through local multi-stakeholder management in Myanmar.

The forests of Myanmar are under severe pressure. As recently as 1948 – the time of independence – forests covered 70% of Myanmar, whereas today, forests cover just 48%. Between 2010 and 2015, Myanmar lost an average of 546 000 ha of forest each year – the third highest annual deforestation rate in the world, behind Brazil and Indonesia.[19] Principal factors driving deforestation in Myanmar include unsustainable and illegal logging, extensive conversion to agriculture, including oil palm and pulpwood plantations, and unresolved land disputes. And with conversion to a market economy and rising population growth, pressures on Myanmar's forests are only expected to increase.

TRI's project in Myanmar is part of efforts to address these challenges. Working in the Sagaing Region – the dry central part of the country that has experienced extensive deforestation and land degradation – the project is helping advance partnerships between the state forest department and local communities to restore and better manage these lands. The approach calls for clarifying land

19 **FAO**. 2015. *Global Forest Resource Assessment*. Rome. (also available at: http://www.fao.org/3/a-i4808e.pdf)

tenure; avoiding conversion to non-forest uses; supporting natural regeneration and assisted natural regeneration in heavily deforested and degraded areas; and integrating biodiversity conservation into management plans.

Community forestry taking root

TRI's project in Myanmar has supported a series of assessments using ROAM, identifying 26 prioritized FLR areas covering more than 250 000 ha. ROAM has been applied using a three-pronged approach whereby the resolution and detail of the assessment increases after each stage, from national to local levels. More than 260 participants from various government departments, civil society organizations, the private sector and communities participated in the three-day ROAM workshops.

The training was hands-on with exercises on how to implement ROAM, conduct participatory mapping of FLR sites, identify FLR options, conduct policy analysis, consider the role that NTFPs can play in local economies and conduct cost–benefit analyses to weigh different options.

One priority FLR opportunity that communities identified during ROAM assessments is community forestry supported by the formation of community forestry user groups (CFUGs). CFUGs have been promoted by the Myanmar Government since the mid-90s, but the pace of CFUGs establishment has increased over the past five years, particularly after the Myanmar Government introduced the 10-year Myanmar Reforestation and Rehabilitation Programme in 2017. Under the programme, CFUGs receive a 30-year (renewable) certificate of lease for the land.

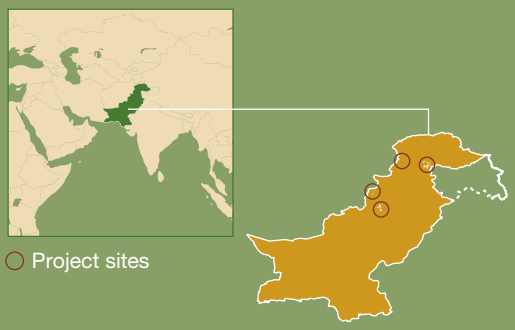
Assessment of community forests shows a positive impact on livelihoods, with communities benefiting from enhanced land tenure security over community forest land. The forest department is providing crucial support to the development of CFUGs through provision of free seedlings, advisory support, monitoring and training in management of the community forests, tree establishment and seedling production.

Thein Htay was one of the community participants in the project-supported ROAM assessment work. In 2002–2003, Htay and other people from his community extended their agricultural land in the Yin Khae Forest Reserve, located in the Katha Township of the Sagaing Region, when the area was fallow land. In 2016, a CFUG for the 153 ha Yin Khae Forest Reserve was established, and Htay was appointed leader. He reports that members of the CFUG have planted 56 550 trees in the community forest, mainly in agroforestry systems, with teak, *Xylia xylocarpa*, *Acacia mangium*, ironwood and *Sterculia versicolor*. They envision expanding the area under the community forest in the village.

Community mapping in Myanmar.
Photo by IUCN

PAKISTAN

TRI Pakistan project at a glance



Funding

USD 4.3 million | GEF grants

USD 24 million | Co-funding

Duration

2018 – 2022

Institutional arrangements

Implementation by FAO

Execution by the Pakistan Ministry of Climate Change

Project components

- Strengthened regulatory and policy environment for integrated and sustainable management of chilgoza forest ecosystems
- Conservation, restoration of chilgoza forest landscapes; value chain development
- Strengthened local institutions for management of chilgoza forest ecosystems
- Knowledge capture and exchange

Targets

Area under restoration (ha)
4 400

Increased area under improved practices (ha)
34 400

Greenhouse gas emissions mitigated (tCO_2eq)
2 782 420

In brief

Reversing deforestation and degradation in high-conservation value chilgoza pine forests in Pakistan.

TRI's project in Pakistan is working to restore and protect a unique and threatened ecosystem – chilgoza pine forests – found in the Hindukush-Karakoram-Himalaya region of North Pakistan at elevations of 2 000 to 3 350 metres. These forests, which include a mix of chilgoza pine trees,[20] as well as other species of coniferous trees, including the deodar and the blue pine, hold tremendous importance from both ecological and economic perspectives.

Within chilgoza forests, the deodar and the blue pine are valued principally for their timber, while the chilgoza pine tree is valued for its nuts, which are consumed locally and sold on both national and international markets. Other important goods sourced from these forests include medicinal plants, mushrooms and honey, which all positively contribute to local livelihoods. In addition, this ecosystem is home to globally threatened fauna, including the rare and endangered snow leopard, the Himalayan lynx, the Kashmir markhor, wolves and black bears.

20 Chilgoza pine trees (*Pinus gerardiana*) are classified as 'near threatened' on the IUCN Red List of Threatened Species. See: https://www.iucnredlist.org/species/34189/2850009

Despite its high value, the chilgoza forest ecosystem is being degraded through a number of factors, including illegal wood harvesting. In some cases, the forest is degraded by the very practices used to harvest the chilgoza pine nuts. And natural regeneration of the forest is hindered by uncontrolled grazing, overexploitation of medicinal plants and overcollection of cones in some areas.

The solution to combatting degradation could ultimately come from the chilgoza pine itself, by providing an economic incentive for conservation and restoration.

With project support and taking advantage of increases in the price for chilgoza nuts, local people are increasingly motivated to stop cutting trees and collect the nuts for revenue instead. Communities in all four project sites have agreed on a plan for the collection and use of the pine cones, and have established guidelines for cone collection to avoid any injury to the trees and surrounding forests.

TRI's Pakistan project is also working with local communities to enable them to capture a greater share of the revenue from post-harvest processing of the chilgoza nuts. Development of local processing and value-added capacity will in turn provide further incentives to sustainably manage the chilgoza ecosystem.

Another way in which TRI's project is working to support the sustainable management of the chilgoza ecosystem is through the promotion of chilgoza forest protection and conservation committees (CFPCCs). CFPCCs are comprised of community members and registered by the local forest department. Once registered, CFPCCs are given responsibility for managing grazing exclusions in the forests, supporting assisted natural regeneration where needed,

Chilgoza nuts harvesting tool kit presented to community members in Pakistan.
Photo by FAO

managing plantations and supporting biodiversity conservation. CFPCCs also play a role in controlling illicit cutting of trees for timber and fuelwood.

Entering its second year, the project will support 12 CFPCCs with 2 200 ha under restoration practices, including 1 800 ha through assisted natural regeneration. The system will create strong incentives for the local communities to support the chilgoza ecosystem over the long term.

Mr Irfan Kalash, a village elder in Chitral Valley, declared, *"It is unfortunate that we are losing our precious God-given natural resources due to our own carelessness. For centuries, our ancestors have protected the valley's natural ecosystem by sustainably using and managing natural resources. Unless we take urgent action to restore these sustainable practices, the reality will continue to pull us into darkness."*

Project updates

In collaboration with IUCN, the project conducted a ROAM training session with 44 professionals from all four provinces in November 2019 in Chitral. Following the ROAM training session, a full survey will be conducted in the four project districts where restoration opportunities have been identified. The assessment report will be ready by April 2020.

A set of guidelines on good practices in natural resource management were prepared based on an extensive literature review and field visits for Sherani District. Best practices from past projects in the landscape are being reapplied as they are applicable to TRI's project in Pakistan.

In total, 14 core areas and 48 assisted natural regeneration sites have been selected and the following activities have been conducted:

- Criteria for the selection of core project intervention areas have been developed in consultation with provincial forest and wildlife departments and community organizations.
- Fourteen terms of partnership with the local communities, through CFPCCs, have been signed to ensure their commitment to the sustainable management of this fragile ecosystem.
- Project staff conducted meetings with the communities to explain the objective of assisted natural regeneration and the proposed strategy for implementation.
- Awareness of the importance of the chilgoza ecosystem for livelihoods and global environment benefits has been raised via meetings with community organizations and through other events, including the project inception workshops, a toolkits distribution ceremony and more.
- Seedlings for use in restoration were procured for the identified sites.
- The CFPCCs were provided with 150 sets of chilgoza harvesting toolkits in order to improve the quantity and quality of the harvest and to minimize life and property losses.
- A scoping mission was undertaken by an FAO specialist in sustainable financing mechanisms and incentives. The mission served to: (1) deliver training on ecosystem services valuation, incentives and PES to support the implementation of FLR activities as part of TRI, and (2) access the feasibility

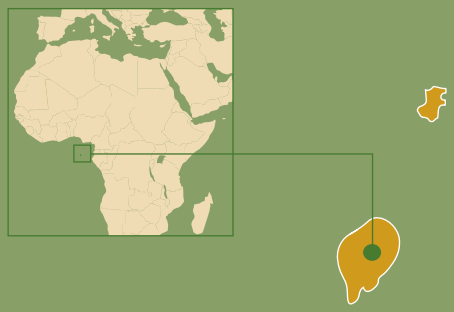
of PES in three communities in the Chitral District. This mission is now followed by an expert mission to gather the key elements to develop a PES scheme.

- The stablishment of the biophysical baseline for the project began in December 2019 with a five-day training session on Collect Earth, followed by a Mapathon to collect information on land use in the target valleys where restoration activities will be carried out.

Safety demonstration for cone harvesting in Pakistan.
Photo by FAO

SAO TOME AND PRINCIPE

TRI Sao Tome and Principe project at a glance



Funding

USD 5.1 million | GEF grants
USD 16.7 million | Co-funding

Duration

2018 – 2023

Institutional arrangements

Implementation by FAO

Execution by the Sao Tome and Principe Ministry of Agriculture and Rural Development through the Directorate of Forests

Project components

- Policy development and integration
- Implementation of restoration programmes and complementary initiatives. Restoration of approximately 36 000 ha of forest landscapes
- Capacity building and finance mobilization
- Knowledge sharing and partnerships

Targets

Area under restoration (ha)
35 500

Increased area under improved practices (ha)
35 500

Greenhouse gas emissions mitigated (tCO_2eq)
8 034 828

In brief

Landscape restoration for ecosystem functionality and climate change mitigation in Sao Tome and Principe.

The small island nation of Sao Tome and Principe (STP) in the Gulf of Guinea is often referred to as 'the Galapagos of Africa' – in reference to its rich and diverse forest ecosystems. However, STP's fast-expanding population and rising demands for food, energy and space are increasing the pressure on these natural resources. About one-third of STP's forests have been converted to coffee and cocoa plantations, and those that remain are under increasing threats from clearing and overexploitation of fuelwood.

The Government of STP recognizes the threat that continued unsustainable practices pose to livelihoods and economic growth, particularly in the face of anticipated impacts from climate change, and has identified FLR as a strategic priority for the country. TRI's STP project is the first initiative supporting FLR in the country, which to date has only engaged in fragmented attempts to reverse deforestation and degradation trends.

One sign of STP's strong support for FLR was the swift establishment of an FLR platform involving 40 participants from a broad range of institutions – national and local administration, civil society, the private sector, the army and police, and research bodies – recognized by the Ministry of Agriculture through an official decree. The FLR platform is organized into thematic subgroups and will play a

pivotal role as an advisory body to the project team, spreading the word on FLR around the country and facilitating the consolidation and scaling-up of FLR work.

One of the unique features of the STP project is the degree to which its impacts will be felt throughout the country. In meeting the project's target of approximately 36 000 ha under restoration, over one-third of the country's land area will be directly impacted by the initiative, and most of the population will likely participate and/or benefit to some degree from the project outcomes.

Project updates

- A training programme to develop the capacity of the National Platform for FLR has been established and is ongoing.
- National consultants and service providers for policy and capacity development work have been identified and onboarded.
- The Directorate of Forests and Biodiversity is engaged in the production of a baseline assessment, landscape mapping, a seedling production plan and FLR plans for each target landscape. These should be completed by the end of 2020.
- A National Forest and Landscape Monitoring System has been established in collaboration with the United Nations Development Programme.[21]
- A partnership agreement is being signed with a local NGO for the implementation of the project's information hub.

TRI team and partners in the field in STP. Photo by FAO

21 https://www.snmf.app.gov.st

UNITED REPUBLIC OF TANZANIA

TRI United Republic of Tanzania project at a glance

Funding

USD 12.2 million | GEF grants

USD 64.3 million | Co-funding

Duration

2020 – 2025

Institutional arrangements

Implementation by UNEP

Execution by the Vice-President's Office in partnership with the National Environment Management Council and the IUCN United Republic of Tanzania Office

Project components

- Development of policy and institutional frameworks that reduce landscape degradation
- Implementation of sustainable landscape restoration plans
- Monitoring, knowledge sharing, and resource mobilization for FLR

Targets

Area under restoration (ha)

110 000

Increased area under improved practices (ha)

87 245

Greenhouse gas emissions mitigated (tCO_2eq)

2 224 846

In brief

Supporting the implementation of an integrated ecosystem management approach for landscape restoration and biodiversity conservation in the United Republic of Tanzania.

TRI's project in the United Republic of Tanzania is designed to strengthen integrated natural resource management and restoration of degraded landscapes for resilient socioecological systems in the United Republic of Tanzania.

More specifically, the project will: (1) enhance the national enabling environment, country capacity and the commitment of stakeholders to sustainable landscape restoration efforts; (2) improve landscape management through the implementation of restoration plans and integrated landscape management practices in selected wards and districts in the Great Ruaha, Lake Rukwa and the Malagarasi basins; and (3) develop and share knowledge, disseminate good practices and put in place appropriate monitoring and evaluation systems and financing arrangements to support the adaptive management of FLR interventions and strategies.

Project updates

- The Vice-President's Office, the United Republic of Tanzania Forest Services and the National Environment Management Council participated in the global knowledge workshops held in Naivasha, Kenya, and Rome, Italy, in 2019.
- The United Republic of Tanzania has used these training opportunities to learn from a range of finance, policy and monitoring tools, which they plan to apply during the implementation of this project.
- The ROAM assessment has been prioritized to identify feasible FLR and biodiversity conservation options for specific land uses and for different actors, and is scheduled to be completed by the end of 2020 in partnership with IUCN United Republic of Tanzania.
- Other priority activities identified for 2020 relate to this initial decision-making tool that will help with raising awareness at all levels on the need for FLR; engaging communities to identify implementation options and the modalities of implementation; facilitating interactions among communities, the private sector and the government in FLR; and documenting the process of planning and implementing sustainable landscape restoration on the ground, and assessing its outcomes.

Goat herding is an important livelihood, but it contributes to degradation if uncontrolled in the United Republic of Tanzania. Photo by Remy Venturini

06 | Looking ahead to 2020
Exploring sustainable financing options

Only a fraction of the total annual funding needed for restoration and conservation is presently being met – about 10% (USD 50 billion) of the USD 350 to 450 billion needed.[22] Moreover, of the USD 50 billion annual funding mobilized, the private sector contributes just one-fifth despite having a significant influence on how land resources are managed and utilized and awareness of the multiple services these ecosystems provide to companies' bottom lines. This will clearly not be sufficient to support the kinds of transformational changes needed.

This lack of funding at scale is surprising, considering that every one dollar invested in restoring degraded land generates an estimated seven to thirty dollars in economic benefits, including improved food production, carbon sequestration and water quality.[23]

While the economic case is increasingly clear, it remains difficult to finance restoration at scale due to a number of reasons, ranging from inadequate policies, to unsupportive regulations, to misaligned incentives and higher perceived risks compared to business-as-usual alternatives.

As TRI enters its second year, the global support project will prioritize efforts to tackle these financing challenges, recognizing the importance of overcoming them to achieve restoration goals and objectives. It will also strive to connect more projects to more financiers by addressing the language and perception gap that exists between the two groups. A big focus will be put on providing project developers with the necessary capabilities to turn their projects into viable investment prospects, looking at both public and private finance opportunities.

To this end, UNEP, in close collaboration with IUCN and FAO, has set out an ambitious programme of work built around four main components:

01 | Assessing readiness for FLR finance

Recognizing the importance of an enabling framework for scaling up finance for restoration projects, the global child project team at UNEP has started off 2020 with the development of the enabling investments rapid diagnostic tool, a light

22 **Global Canopy Program (GCP).** 2012. *The Little Biodiversity Finance Book*. Third edition. Oxford, UK. (also available at: https://www.globalcanopy.org/publications/little-biodiversity-finance-book-3rd-edition-2012)

23 **Verdone, M. & Seidl, A.** 2017. Time, space, place, and the Bonn Challenge global forest restoration target, *Restoration Ecology*, 25(6): 903–911

decision-support framework aimed at giving country projects a user-friendly platform to assess their financing potential, based on various criteria.

The tool is intended to provide an early indication of a project's ability to access funding in a structured format and will highlight key in-country policy, regulatory, institutional and/or financial obstacles that currently stand in the way of investing in restoration activities. It will likewise provide suggested measures for reform, depending on the bottlenecks identified. The tool is foreseen to be ready by the end of the first semester and will be accompanied by specific support for countries interested in applying it.

02 | Accelerating FLR implementation by mobilizing existing funding

Projects seeking to access finance, especially at scale, cannot only count on unlocking new sources of financing. They need to catalyse existing funding flows, which demands an understanding of the flows' nature, size and direction, and the conditions and criteria to harness them.

To help project developers map out financing opportunities for FLR, UNEP is partnering with the European Forest Institute to provide training and assistance to use the land-use finance tool, which enables a quantitative and qualitative analysis of the alignment of public and private spending with climate, forest and restoration objectives. The analytical framework can help answer questions such as:

- What is the volume and nature of past and current investments supporting forest and climate objectives?

Tana Delta aerial view in Kenya.
Photo by UNEP/J. Nyunja

- What are the main funding gaps and barriers to investment in sustainable land use?
- Who are the main actors involved in financing land-use sectors?
- How could investments be better aligned with climate and forest objectives?

The tool builds on several years of work conducted by the Climate Policy Initiative and the European Forest Institute on mapping financial flows at the global level. It is complemented by the extensive work of the United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation in designing financial plans for REDD+ economic opportunities. Support is expected to start in the first quarter with a series of webinars aimed at familiarizing TRI's community with the tool's approach and key implementation considerations.

03 | Support for development of bankable FLR projects

TRI projects are at different stages with respect to the mobilization of finance for FLR. In 2020, some TRI countries may be sufficiently advanced in their reflection on financing to justify targeted support for the development of bankable proposals and other in-country financial mechanisms and incentives to facilitate the mobilization of funding for FLR. In a limited number of cases, and after assessment of the project's opportunity of maturity, TRI global support project teams will determine a support programme that will capitalize on the broad range of expertise and skills offered by the global project, to best accompany projects in their engagement with financing outlets, both public and private. Support may include the provision of tools and training materials, workshops, training sessions on local regulatory frameworks, business plan development, financing requirements and project lifecycles, and which kinds of investors might be appropriate to approach, and at which stage. Interested country teams are encouraged to contact the UNEP global team for questions and requests for assistance.

04 | Catalysing change through capacity building: TRI annual workshop focusing on finance

To celebrate 2020 as the year of finance for TRI, finance will be the main theme of TRI's annual workshop, to take place towards the end of the year in Kenya. The workshop will provide country child projects with practical tools and solutions to their financing needs, in addition to other policy and capacity issues they may have identified or experienced over the course of the year. To that end, leading thinkers and financiers from the public and private sector engaged in, or interested in engaging in, restoration will be linked with national TRI partners and other organizations active in restoration in the child countries. Specialized clinics will be organized, in which impact investment experts will provide their views and run a rapid assessment of the projects and their ability to mobilize private finance. Public donors will also be invited to talk about their grant and non-grant funding windows and highlight important considerations for countries interested in submitting funding proposals.

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