Trillion Trees
TREES

WCS WWF BirdLife INTERNATIONAL

Trillion Trees ReForest Fund
2021 Annual Report

The world is at a crucial moment in defining how we steward our planet. Trillion Trees believes preserving and restoring forests is critical to responding to the challenge of the biodiversity and climate crises.

Restoring forests – for people, nature & climate

The Trillion Trees ReForest Fund returns the right trees to the right places, and in the right way. Our projects focus on recovering and regrowing natural forests, but we take a landscape approach, using a wide range of methods, and looking for opportunities to provide livelihoods improvements and address the underlying drivers of deforestation. This ensures our efforts make a lasting contribution to reducing carbon in the atmosphere and preserving critical biodiversity.

In 2021, Trillion Trees made its first ReForest Fund grants to projects in Kenya, Madagascar and Tanzania – planting a total of 67,994 trees. The project teams spent the first part of the year raising seedlings and getting them in the ground, and the second part of the year making sure those seedlings are surviving. To ensure long term success of restoration efforts, project teams monitor restoration areas over several years, carrying out necessary maintenance to keep trees growing.

Thanks to the generous support of you, the individuals, foundations and companies that have donated to the ReForest Fund we will be able to expand the programme this year to new landscapes in Kenya and Tanzania, but also to support forest restoration in the Atlantic Forest of Brazil, and to support communities planting trees in the Bismarck Mountains of Papua New Guinea. This report provides a brief update on the first three projects, and a short introduction to the 2022 portfolio.

In all, Trillion Trees has more than 50 projects worldwide that need support to restore degraded forest and re-create habitat for endangered species; recreating connectivity for chimpanzees in Rwanda, or new jungle for jaguars in Guatemala. With your support, we can deliver assistance to more of these projects, bringing back biodiversity, while also benefitting the climate by removing carbon dioxide.

In 2021, the ReForest Fund supported projects in Kenya, Madagascar and Tanzania.

At each place, we have built trusting relationships with local communities and work with them to develop appropriate solutions for all stakeholders. Support from the ReForest Fund helps these projects expand their efforts on the ground and increase their scale of ambition: planting more trees and restoring more forest.
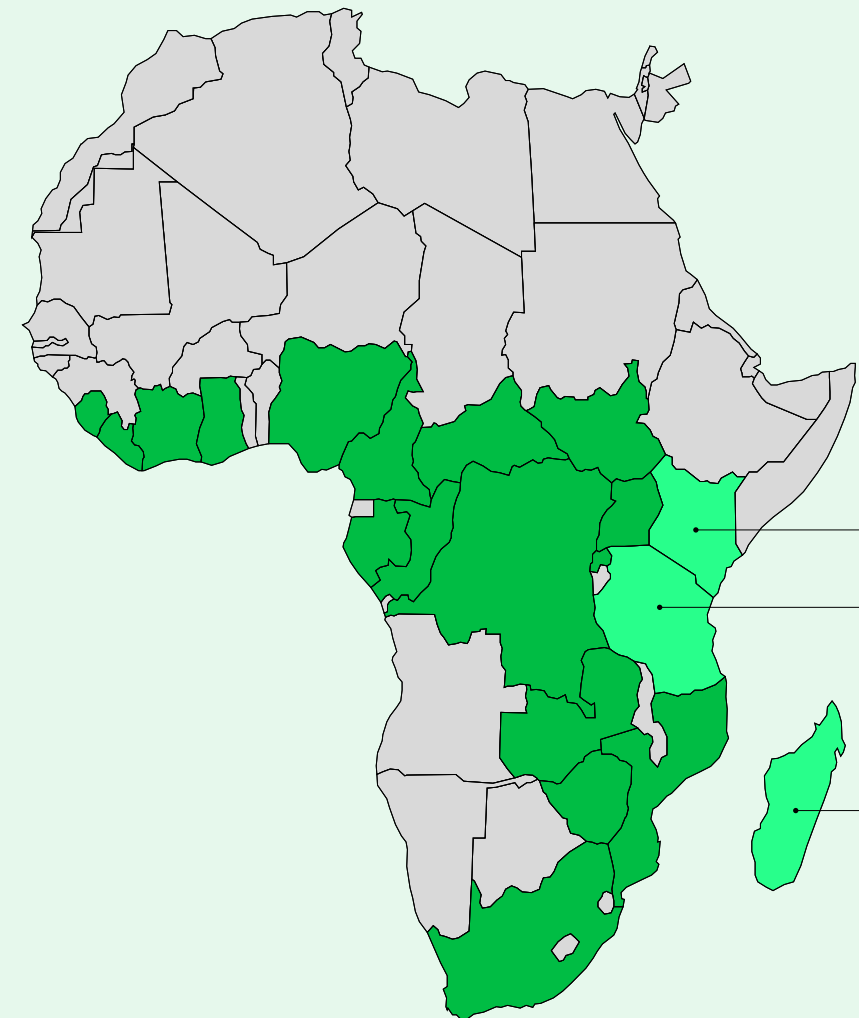
Mount Kenya
Restoring forest and saving water

Coastal Forests, Tanzania
Restoring degraded forest

Makira, Madagascar
Connecting forest patches

With further support we can bring in more projects and scale our impact. See below for new projects coming in 2022. Please visit **trilliontrees.org/reforest-fund** to make a donation.

2021 Projects

Restoring forest and saving water in Kenya

Trees planted: 25,000 (14 species)

Hectares restored: 40 ha

Local beneficiaries: 8,284

Mount Kenya forest area is globally recognized as an Important Bird and Biodiversity Area, Key Biodiversity Area, Alliance for Zero Extinction site, and UNESCO-World Heritage Site. Its rich natural biodiversity includes 778 plant species, and iconic animals like the African elephant, leopard, and endangered black rhino. It is one of the last few east African homes for the bongo (a forest antelope), along with giant forest hogs, black-fronted duikers, and mole shrews. Its cherished birds include rare Abbott's starling and the endangered Sharpe's longclaw.

Due to deforestation, habitat suitability for these iconic species and others has severely decreased, increasing the risk of species extinction. This project targets restoration to increase critical habitat for biodiversity and to meet the target of restoring nearly 6,200 hectares of forest, as laid out in the Mount Kenya Restoration Strategy 2019- 2029. Restoring native vegetation, will also positively impact water quality and access for the 2 million people who depend on Mount Kenya for drinking water.

Over the past year with the support of the ReForest Fund, Nature Kenya (BirdLife Partner) worked with the Kangaita Community Forest Association (CFA) to plant 25,000 seedlings during the March-May planting season, using seedlings grown by the CFA – contributing directly to restoring 40 hectares of degraded forest. In October-November 2021 following planting, maintenance of the restoration area through removing invasive weeds and supplementing with new seedlings replacing dead seedlings, was carried out by the Kangaita. This ensures a tree seedling survival rate and restoration targets are above 85%.

Further to this, in 2021 local communities earned KSh 1.5million (USD 13,000) from the sale of indigenous tree seedlings, provision of transportation services, and casual labour during the tree growing activities. A total of 2,071 local community members benefit directly from this project, with a further 8,284 people indirectly benefitting. Since 2020, the project has planted 69,000 tree seedlings.

Challenges still arose from restricted movements and gatherings due to Covid. Additionally, in areas where the invasive shrub *Lantana camara* grows, there were increased costs for site maintenance due to its rapid growth. And finally, there was prolonged drought in the region in 2021, which affected sapling seedling survival; however, survival was still high.

Monitoring biodiversity

Nature Kenya has been monitoring bird species diversity and abundance in Mt Kenya forest since 2018, comparing natural forest, restored forest, open forest glades, and plantations; this includes plantations where community agriculture is incorporated at early stages of plantation growth (Plantation Establishment and Livelihood Improvement scheme).

Overall, indigenous natural forest has the highest species diversity, while restored forest areas have higher species diversity than nearby plantation areas, resulting in improved habitat quality for biodiversity as restored areas mature. Birds are great indicators of habitat health and can be used as a proxy of the restoration of other vital ecosystem services, like water and climate regulation capacity.

Interestingly, open forest glade (grassland) areas had high species diversity, and therefore should be protected and no trees planted in these areas.

Community Forest Association member tending to the tree nursery. Photo: Nature Kenya

2021 Projects
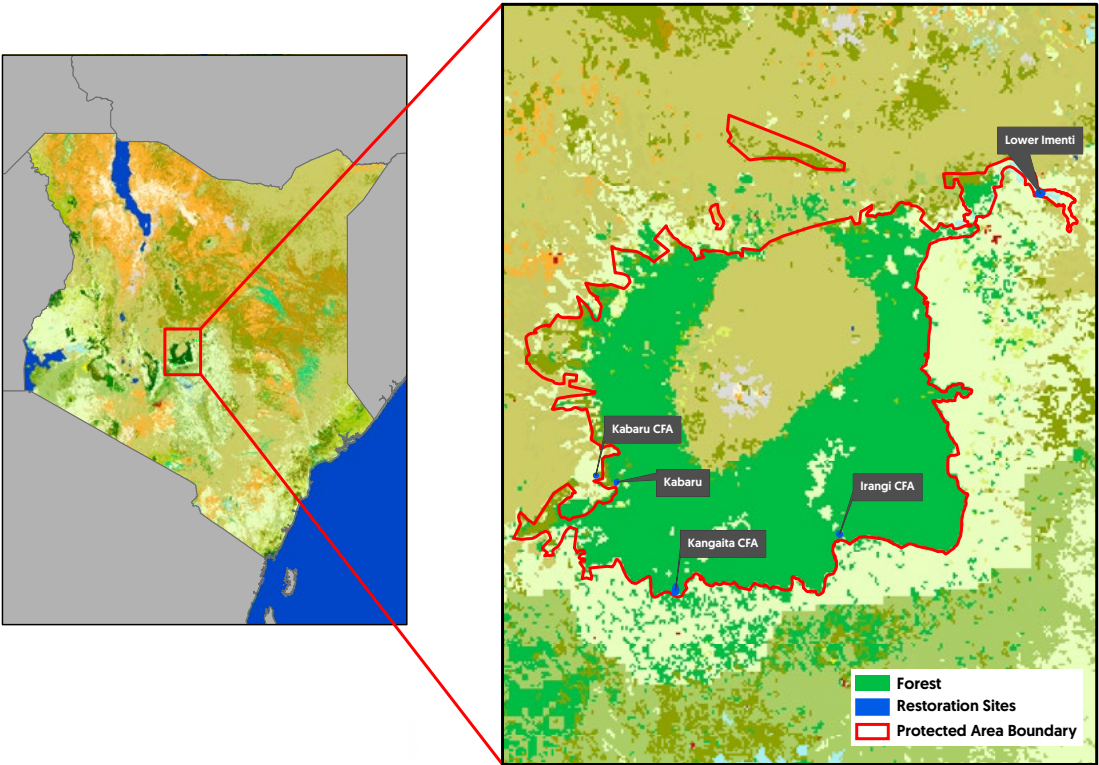
Connecting forest patches in Madagascar

Trees planted: 18,494 (22 species)

Hectares restored: 20.3 ha

Local beneficiaries: 91

The Makira Natural Park in the MaMaBay landscape in northeast Madagascar makes up the largest remaining intact humid rainforest in Madagascar. Madagascar is known for its endemic species, and 20% of all Madagascar's diversity is found in Makira's forests – including the highest number of lemur species (17) and many of the known amphibian and reptile endemics. Despite its size and importance, the forests of Makira remain under threat from deforestation and unsustainable resource extraction. In 2019, Madagascar's government made reforestation a national priority, pledging to reforest 40,000 hectares annually and setting a target for protected area managers to reforest the equivalent of 1% of their surface area each year within the landscape.

Restoration within the park focuses on particular forest 'corridors' which are important to increase the resilience of the forest landscape, and to allow forest-dependent species such as Makira's famous lemurs greater freedom to move. In total 1,800 hectares of degraded forest within these corridors are in urgent need of restoration. In addition, in the community managed lands around the margins of the park, we estimate there are a further 15,000 hectares of degraded forest which can be restored.

WCS has identified 36 native and lemur-friendly tree species for use in ecological restoration. The target restoration zone is a forest corridor known as "Anjanaharibe," which surrounds a community-managed forest that is within Makira protected area. Seeds were collected in the park and grown in community nurseries near restoration sites. In 2021, the team was able to collect 15,542 seeds and produce 12,198 seedlings – the remaining seeds are still germinating.

In addition to supporting ecological forest restoration the project also works with local farmers to improve farmer livelihoods, aiming to reduce the pressure on forest land. The team supports farmers to adopt agro-forestry techniques and grow cloves and vanilla, which perform well in forest gardens and can attract good prices.

A total of 18,494 (22 species) seedlings were planted in degraded areas of Makira Natural Park, covering an area of about 20.3 hectares. Ninety-one people from the local community were involved in the work, producing seedlings, planting trees and caring for restored sites. This included groups of a youth football association who work closely with the field teams. Outside of the park, 40 farmers benefitted from 1200 shared and transplanted young vanilla vines and clove tree seedlings. The farmers' lands are permaculture demonstration sites for improved agroforestry techniques, and the farmers help monitor and conserve the restored areas and share skills with other farmers.
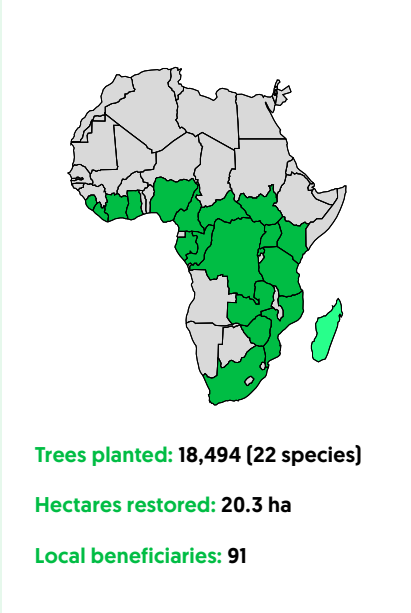
Tree nursery in Beanana, Madagascar for community forest restoration. Photo: WCS Madagascar
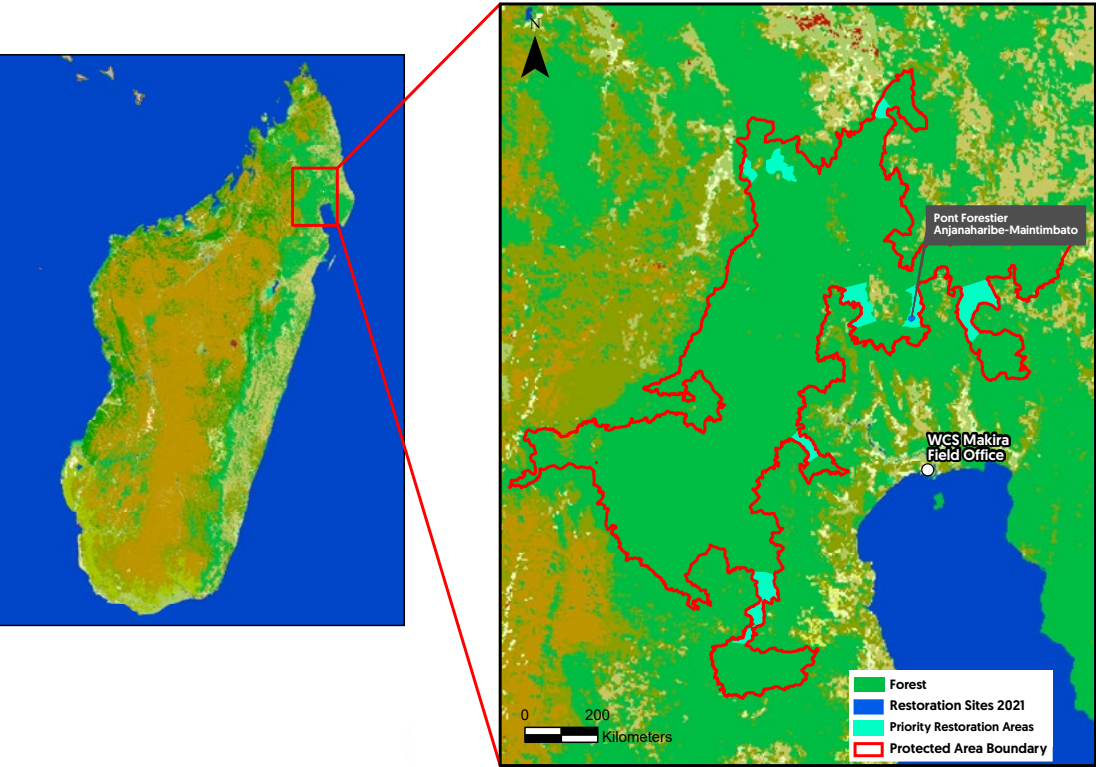
2021 Projects

Restoring degraded forest in Tanzania

Trees planted: 24,500 (6 species)

Hectares restored: 30 ha

Local beneficiaries: 124

Pugu, Vikindu and Kazimzumbwi forests now form the Pugu-Kazimzumbwi Nature Forest Reserve and are among the last remnants of Tanzanian Coastal Forests in Kisarawe and Mkuranga Districts. They are part of the Eastern Afromontane Biodiversity Hotspot due to their exceptional level of biological diversity and species endemism. Environmentally and socio-economically, these forests play a vital role in maintaining ecosystem services and functions for the millions of people living in and around them, including Dar es Salaam. Being so close to a dense urban area has resulted in illegal activities and poverty has forced massive extraction of forest products from the reserves for livelihoods. Unsustainable utilization of the forest resources and adverse environmental conditions has caused remarkable degradation of habitats for species of ecological significance in these forest reserves.

For the past five years, Trillion Trees partner WWF has been working in partnership with Tanzania Forest Service to restore these forests through tree planting and conservation campaigns using Earth Hour, National Tree Planting days, World Environment Day and the World Forest Day as platforms. One major outcome of these engagement and educational efforts was formally creating the Pugu-Kazimzumbwi Nature Reserve, providing increased protection of the forests, and making them a popular ecotourism destination. As a result of this, youths in Kisarawe district have formed a tour guide group, which serves about 500 local and international tourists per month.

To restore these forests, WWF has been targeting forest gaps – or areas where trees have been lost – to reconnect forest patches. This includes a combination of natural forest restoration, agroforestry and woodlots. In 2021, 24,500 native seedlings were planted and by also protecting parts of the forest, the project has facilitated further natural regeneration. An assessment of naturally regenerated areas registered an average of 2,558 stems per hectare. This suggests the forest is recovering after suffering heavy human disturbances. Fires have had an impact on tree survival in some areas, so a new assessment will be carried out in 2022 to determine further activities to mitigate this.

Over five years, this project has successfully planted 73,500 tree seedlings and has provided lessons to be carried across to other restoration projects in Tanzania, such as 1] the importance of fire awareness among communities, 2] that ecotourism is one of the best strategies for forest restoration, benefitting communities and nature and 3] government engagement is of critical importance because of the influence they have and for helping manage restored areas. These lessons will be used to inform the new project the ReForest Fund will support in the Usambara mountains.
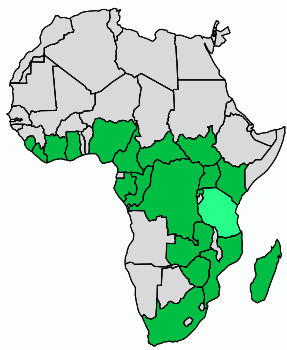
Ecotourism has become an important aspect of Pugu-Kazimzumbwi Nature Forest Reserve. Photo: WWF Tanzania
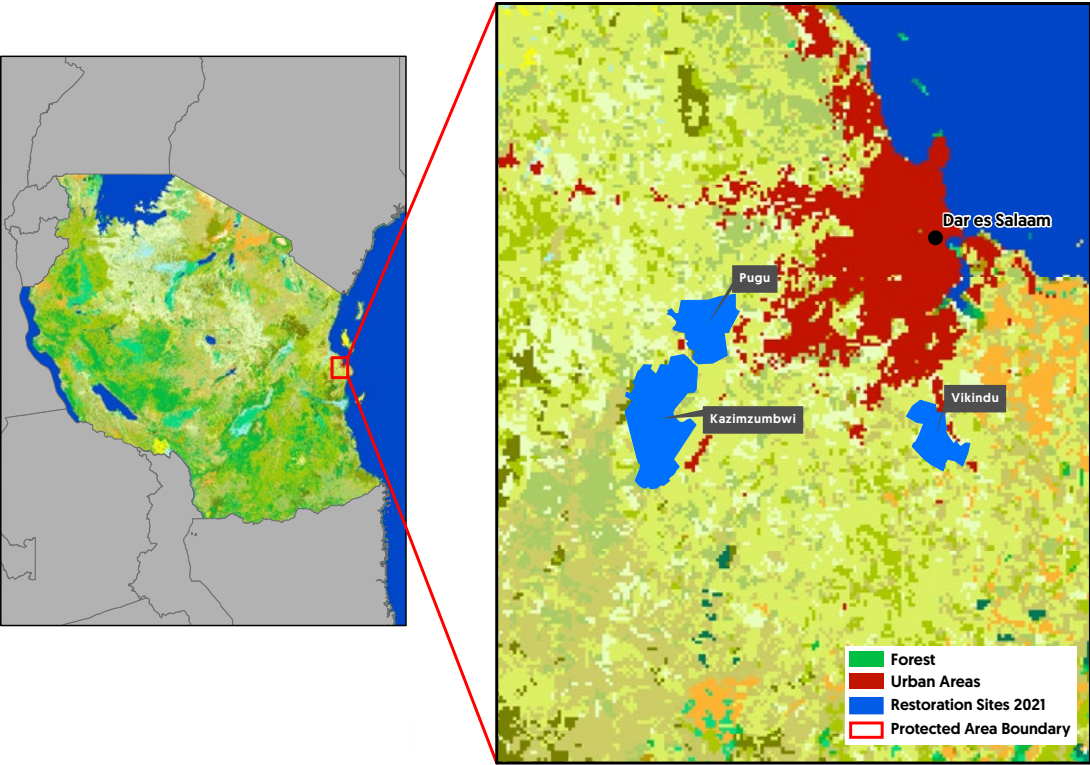
Tracking our progress

Trillion Trees tracks the performance of restoration efforts using a mapping tool that has been developed for the ReForest Fund.
The tool, called FORMAPP, uses open source software, and allows projects to map their restoration sites via the free Cybertracker smartphone application.

Each site where trees are planted is mapped via the application and we ensure that important details of the site are recorded prior to any interventions.

For example, projects must ensure that any existing natural forest on the site is not disturbed during planting operations. The number of trees planted and the species used are recorded. Photos of the sites are recorded before and after planting to allow us to track changes over time. The process also ensures that the ownership of the land (tenure) is recorded and the landowner's consent to participate in restoration actions has been properly documented.

FORMAPP allows projects to create their own database of restoration sites and permits the automatic sharing of restoration information with Trillion Trees without the need to invest in technical GIS skills or expensive GIS software.

The tools are open source and free to use. Trillion Trees is still refining the tool, but will soon be able to provide it to anyone engaged in restoration activity.

New ReForest Fund projects in 2022

But there is much more to be done. With your help, we will expand our support to more projects restoring forests and tackling the causes of deforestation in some of the world's most biodiverse forest ecosystems.

■ Trillion Trees partnership forest conservation work

■ Future pipeline projects
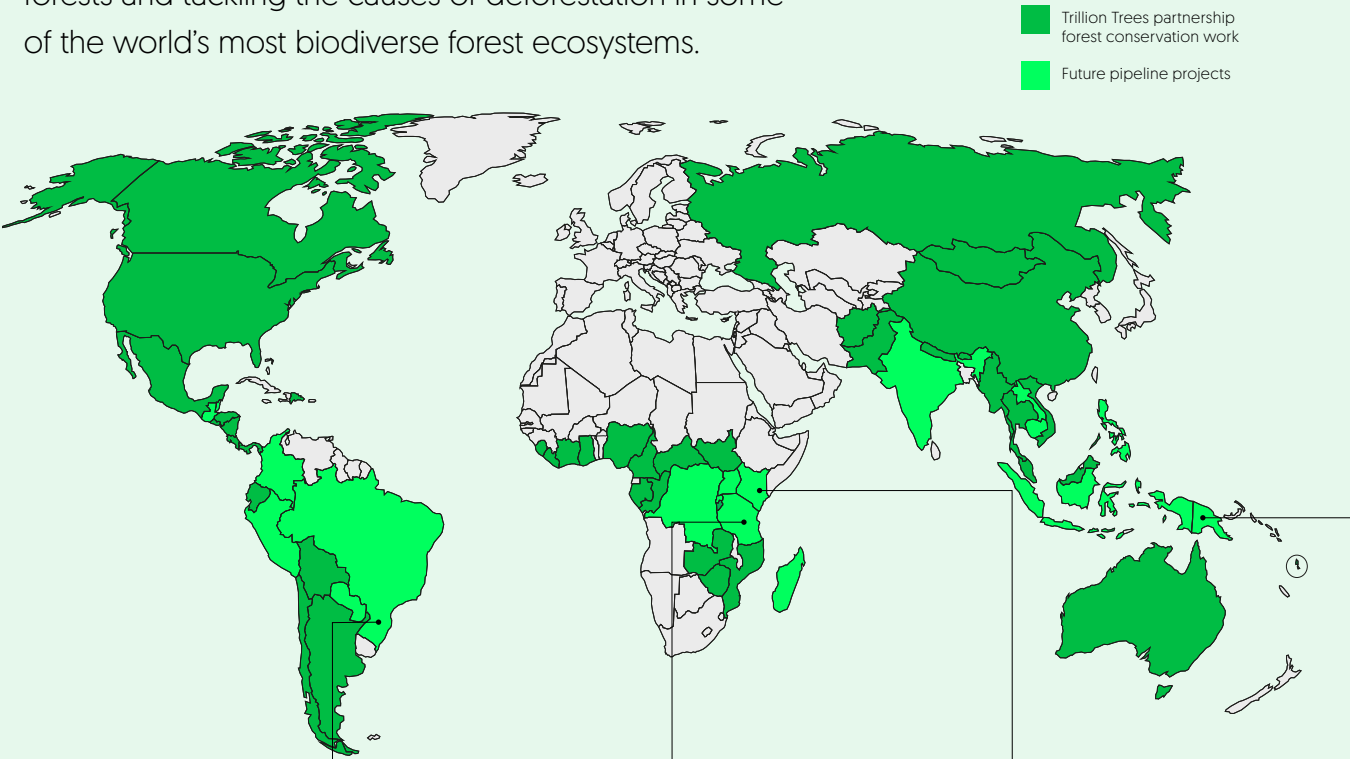
Atlantic Forest, Brazil

This project is investing in 'food forests,' blending the best economic, environmental and social returns through agroforestry. It aims to enhance connectivity between natural forest fragments, while ensuring food security and access to market for farmers.

Usambara Mountains, Tanzania

The restoration project aims to use innovative and multiple landscape restoration approaches to both enhance human wellbeing and biodiversity. This will enable natural regeneration, sustainable management of community forests and more sustainable sources for fuelwood and livelihoods.

Kaptagat, Kenya

This region is an important water tower and also a training ground for elite athletes. The project is establishing agroforestry and clean energy solutions within a forest-based landscape and laying the foundations for work over the coming years that will reduce emissions, contribute to poverty alleviation and address land degradation.

Bismarck Mountains, Papua New Guinea

This project is working with local communities to restore tree cover in deforested areas and enrich degraded forest with species of key importance for animal food, stabilising soil, ensuring clean water provision, and enhancing socio-economic benefits to rural communities.

Photo © WWF Tanzania

The right trees, in the right places

Trillion Trees applies a science-led approach to regrowing the right trees in the right places – and in the right way.

This means we prioritise the restoration of natural forests with native species; we apply the landscape approach to address the underlying drivers of forest loss; and we ensure local people are in control of decision making.

We aim to always ensure that our efforts conserve biodiversity, sustain ecosystems, and lift people out of poverty.

We recognise that restoring forests in the right way takes time and money.

• Native species, locally sourced:
Our projects promote natural regeneration where possible, and source seeds locally when planting is needed to restore natural forest. We support community groups to establish nurseries to provide for future plantings.

• Consultation and consent:
We choose projects that have long commitments in landscapes, and have taken the time to develop effective partnerships with local community structures. Our funds help projects to develop and deepen these relationships.

• Monitoring and verification:
We ask our projects to map their restoration sites, so that the eligibility of the land can be independently verified, and so that the success of restoration efforts can be monitored in the future. We use a custom-built data storage system to track the progress of our projects.

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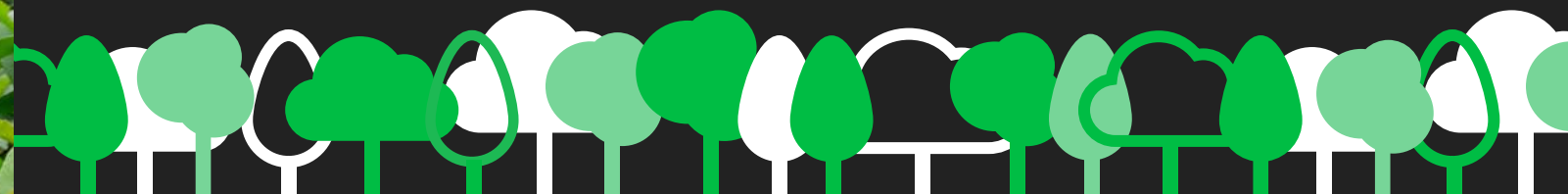
Thank you

Thanks to significant donations from
Starling Bank, Climate and Land Use Alliance,
Global Returns Project, Rakuten, Salesforce,
and all of the individual donations that have
made the ReForest Fund possible.

With continued support, we can restore our
forests and protect the future of our planet.

For further information about Trillion Trees
and how you can play a vital role,
please contact Jack Lloyd at
action@trilliontrees.org

You can donate directly to the ReForest Fund
at **trilliontrees.org/reforest-fund**

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