



This project involves the reforestation of degraded land in Tanzania to sequester carbon emissions from the atmosphere. The emissions reductions have been verified to the Verified Carbon Standard (VCS) and the Climate, Community & Biodiversity Alliance (CCBA). In addition to its emission reduction activities, the project is making a significant contribution to the local communities around the forest.

## The project

Based in the Southern highlands of Tanzania, this project establishes commercial forests across the Uchindile and Mapanda districts. Four varieties of trees are to be planted – two each of eucalyptus and pine - covering 7,252 hectares at Uchindile and 3,562 hectares at Mapanda. In July 2009, this became the first 'Agriculture, Forestry and Other Land Use' (AFOLU) project to be validated under the Verified Carbon Standard (VCS).

The project reduces carbon dioxide emissions through sequestration or 'carbon sinks': a process which removes greenhouse gases (GHG) from the atmosphere. Forest ecosystems are considered natural carbon capture and storage systems, however they are under increasing threat. Globally, deforestation and changes in land use generate approximately 1.6 gigatonnes of CO<sub>2</sub> a year, which is the equivalent of around 20% of all annual GHG emissions. The environmental impact of this is twofold: not only does deforestation cause a direct rise in emissions, it reduces the planet's natural ability to remove CO<sub>2</sub> through carbon sinks.

Between 1990 and 2005, Tanzania lost 14.9% - or just over six million hectares - of forest cover through deforestation. The Tanzanian government has responded with numerous policies to stem further degradation, however with limited public funds these policies lack the financial incentives to be widely effective.

Prior to planting, the project area was degraded grassland, with significantly lower sequestration capacity than an established forest. The project activity uses a sustainable harvesting practice, which is the cyclical, non-exhaustive removal and replanting of trees. This type of harvesting ensures a base forest cover and capacity for regeneration is constantly maintained. Harvesting the eucalyptus and pine trees will occur every 13 and 21 years respectively, with the resulting timber being used to make transmission poles, furniture and pallets. The net growth of the forest biomass throughout the harvesting cycles is monitored through geographic information system (GIS) satellite imagery, as well as by ground staff and local residents.

A range of exotic and indigenous tree species plus local fruit crops have also been planted on the project sites to improve species diversity, ensuring the forests' health and resilience. Conservation of rare, threatened and endangered tree species is integral to this project and the local communities work in partnership with the project developer to protect them.

## Community investment

Ten per cent of the carbon revenues from the forests have been allocated to initiatives which will benefit the local communities. The decision on how to spend this money is agreed with the local villages based on their list of priorities. The project provides ongoing employment opportunities plus training on land-use planning, conservation and sustainable forest management. Infrastructure improvements include the development of approximately 200 kilometres of new roads and 100 kilometres of road renovations plus improved road signaling and signs. Access to potable water has increased through the construction of bore holes in villages and social services have improved with the building of schools and hospitals.



Some of the eucalyptus and pine stands within the project.

## Continued investment

The project developer has an ongoing commitment to fund several projects for the local community, including investments in local healthcare and education provision for the residents and project workers.

As part of its commitment to supporting the local communities around the project area, the project developer has made considerable investments in classrooms, teachers' and nurses' accommodation and village government buildings. Construction of teachers' houses will enable more consistent teaching and overcome the high turnover and irregular attendance of teachers at the school who currently have to rent sub-standard accommodation some distance away. In addition, a nurses' house in Mapanda village will help the local health centre provide a more reliable health service locally.



Seedlings being grown ready to plant in the forest.

## About afforestation and reforestation

Afforestation and reforestation projects are the planting or seeding of non-forested land. The difference between them is the length of time the land has not been a forest; for reforestation this is on or after 31 December 1989 and for afforestation, it needs to be for at least 50 years.

Forests have a crucial role in the carbon cycle and in climate change mitigation. Through photosynthesis, trees and plants capture and store carbon dioxide within their growing biomass (i.e. branches, leaves and tree trunks). As a result of this process, approximately 50% of dry matter within forest ecosystems is carbon. CO<sub>2</sub> is also stored below the ground, and these carbon stocks are reliant on the forest remaining intact. Some CO<sub>2</sub> and oxygen is released during the process of 'respiration', but a forest that is increasing in biomass – or growing - will always absorb more carbon than it releases. As such, growing and sustaining forests is crucial to the sequestration potential of forestry projects. Forest ecosystems are a living environment in a state of natural flux: as carbon is sequestered or 'sunk' in forests, it is exposed to the risk of release through infrequent events such as forest fire or insect attacks. To address this risk of non-permanence, the Verified Carbon Standard requires that upon verification of carbon credits, a percentage is withheld in a central buffer from each project. These units are withheld from sale and used as an insurance against any adverse events which would unexpectedly reduce the forest's carbon stock.



The village government office and classrooms, paid for by the project.

## Validation and verification

This project uses an approved United Nations (UN) Clean Development Mechanism (CDM) Afforestation/Reforestation (A/R) methodology permissible for use under the Verified Carbon Standard (VCS). The VCS integrated A/R projects through the inclusion of an Agriculture, Forestry and other Land Use (AFOLU) protocol in the 'VCS 2007.1' release. This project is the first to be validated through that process.

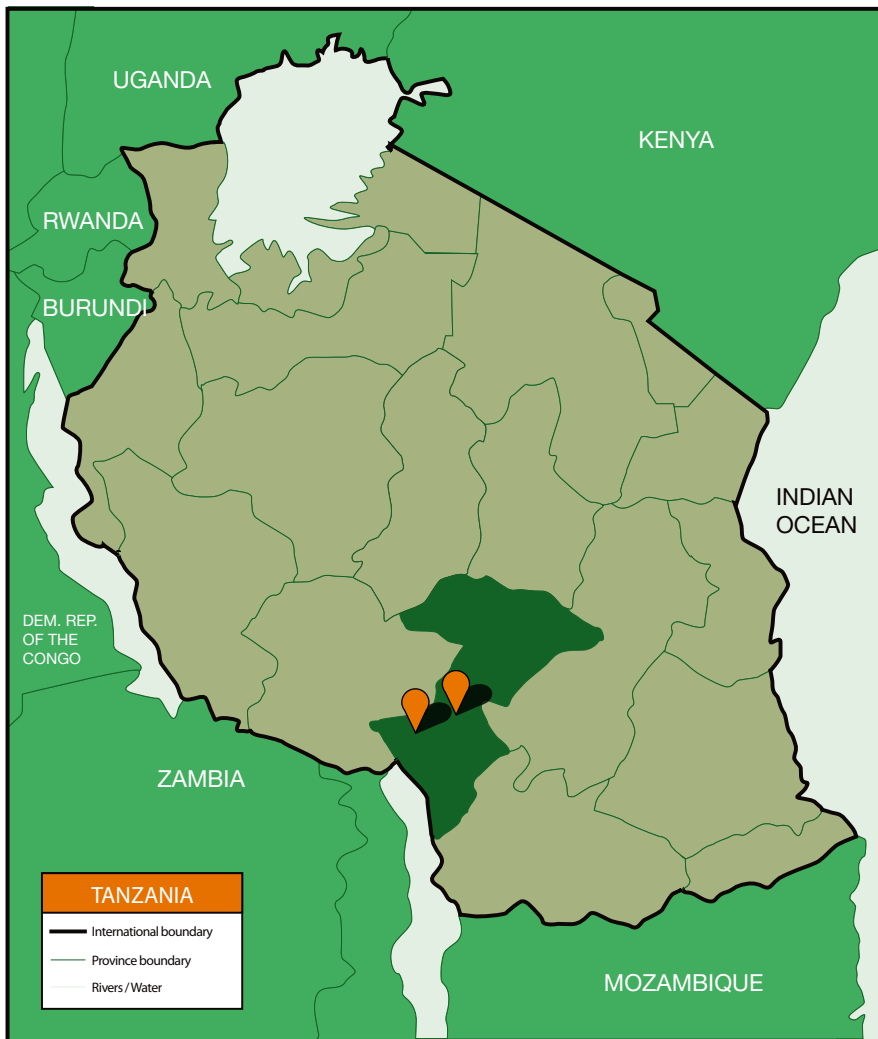
The project was validated by an independent Designated Operational Entity (DOE) accredited by the UN. Additionally the project has been validated to the Climate, Community and Biodiversity Alliance (CCBA) standard.

Forest verification is carried out periodically and must be conducted at least every five years. In this case the project developer has scheduled bi-annual verifications. Along with the carbon stock verification, the project will be periodically verified to the CCB standard to evaluate the social and environmental co-benefits.

The VCS rules require that carbon credits sold from all A/R projects must adhere to 'ex-post' accounting: credits verified for sale can only correspond to carbon sequestered in the past, not in the future (ex-ante).



Project members tending seedlings for planting.



Project location: Uchindile is located between latitudes 8°39'34" south to 8°44'55" south and longitudes 35°23'28" east to 35°32'59" east.

The Mapanda site is located within latitudes 8°24'30" south to 8°33'19" south and longitudes 35°65" to 35°72" east.