

Investment Factsheet:

Integration of agroforestry and carbon markets for value chains improvement



Kilombero landscape is known for its agricultural production and rich conservation value and is home to a population of smallholder farmers who rely on rivers, springs, and streams for their water supply. These farmers produce crops such as rice, sugarcane, banana, cocoa, and maize. But the rapid expansion of agricultural production and the related value chains in the landscape has been transforming forest systems, threatening both ecological and agricultural functions.

Problem statement

Human activities, lack of financial resources and poor knowledge of sustainable agricultural practices have contributed to the **degradation of the village and the surrounding Mngeta (lwungi) forest** in the Kilombero landscape, as well as inadequate production systems. All this hinder the full potential of other relevant value chains developed in the area or in nearby lands, such as rice, from being leveraged.



Proposed action

Promote an **agroforestry model** centred on the strategic establishment, maintenance and management of **tree systems** that not only enhance carbon sequestration but also deliver co-benefits such as improved soil moisture retention, reduced erosion, and increased overall land productivity. The system will allow communities to sell carbon credits (from carbon sequestration results) on the **Voluntary Carbon Market (VCM)**.

With the **income** generated, the communities could address the lack of finance and support and improve agricultural practices, investing in other value chains such as the rice production.

Investments needed

- **Estimated initial investment:** about USD 57,000 (costs include boundary resurveying; boundary enrichment planting; restoration of graded areas; preparation of bylaws, etc).
- **Average operating costs:** USD 15,000 per year (costs include evaluation meetings; maintenance costs; staff costs, raw materials; forest monitoring, etc).

Potential areas to be implemented

Mngeta (lwungi) Forest in Mlimba Ward



Beneficiaries: Community of Mngeta Village.

Partnerships for success: African Wildlife Foundation (AWF) (implementation support), Tanzania Forest Services Agency (TFS) (implementation support), Tanzania Forest Fund (TaFF) (financing), Reforest Africa (implementation support), Udzungwa corridor (blueprint).

Expected benefits

New farmers' income from the sale of carbon credits, knowing that Mngeta is a tropical forest (mean of CO₂ sequestration is 11 CO₂ tonnes by year), that the number of ha is 587, and the average cost of the VCM is 6.53 USD/tons **(42,000 USD/year)**.

	2026-2030	2026-2035	2026-2050
Total present Costs (USD)	117,980	175,269	334,467
Total present Benefits (USD)	147,165	301,447	618,150
Financial Net present value (FNPV) - (USD)	29,185	126,178	283,683
Financial Rate of Return (FRR) - %	23%	38%	40%
Benefit-Cost Ratio (BCR)	1.2	1.7	1.8

Break-even point: in Year 4 the initial investment is overpassed, and revenues start to be higher than costs, being the net cash flow of that year: **USD 16,733**.

Environmental:

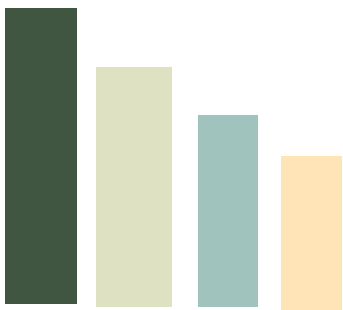
CO₂ reduction resulting from forest conservation and protection activities.

Social:

Strengthening community work in forest management, conservation methods and VCM operation. The strategy will select the final participants according to their motivation and related work and experience, attempt to maintain an equitable number of women, men and young people.

The **profitability** of implementing agroforestry activities in Mngeta forest becomes evident from the early years, directly benefiting farmers.

Potential for success



- Development of activities to address one of today's most pressing environmental problems while strengthening community work.
- Possibility of generating income from environmental actions.
- Engagement of key stakeholders in the forest management and conservation efforts.
- Creation of a self-sustainable financing system to develop rice value chain.

Opportunities for enabling NbS investments

Regarding one of Kilombero's main value chains, *sugarcane*, a suite of NbS can be implemented that would contribute to the agricultural sustainability of the landscape. These include:

- Include **drought-tolerant sugarcane varieties**, such as those developed by Sokoine University of Agriculture (SUA) that reduce irrigation needs, helping preserve river ecosystems during the dry season.
- **Integrated Pest Management** (IPM) using natural predators and pheromone traps minimizes chemical inputs while promoting ecological balance.
- Soil and water conservation practices, such as **contour farming and mulching**, retain moisture, prevent erosion, and enrich soil organic matter.
- **Alley cropping** with nitrogen-fixing trees like *Gliricidia* enhances soil stability, provides windbreaks, and regulates the microclimate around sugarcane fields.