

Meghalaya Carbon Agroforestry for Community Resilience and Ecosystems (MegCARE) Case Study



INTRODUCTION

Meghalaya, located in North-east India and part of the Indo-Burma Biodiversity Hotspot, is one of the most ecologically rich regions in the country. Around 76% of its geographical area is forested, supporting approximately 3,128 plant species, including 1,237 endemic species, and diverse wildlife such as the Indian elephant, leopard, clouded leopard, and red panda.

Despite this biodiversity richness, Meghalaya's ecosystems are under constant pressure. Between 2021 and 2023 alone, the state lost over 84 km² of forest cover due to shifting cultivation (jhum), illegal logging, and expanding settlements. Nearly 50% of the state's springs have dried, and by 2019, close to 25% of Meghalaya's geographical area was classified as degraded. Soil erosion, declining soil fertility, and climate variability have further reduced agricultural productivity. These environmental changes have numerous social and economic consequences. Indigenous Khasi, Garo, and Jaintia communities depend heavily on agriculture, forestry, and horticulture for their livelihoods. Nearly half of the rural population lives below the poverty line, and declining ecosystem services have increased vulnerability to food insecurity, income instability, and climate risks.

MegCARE, a large-scale agroforestry and climate resilience initiative that brings together ecological restoration, community livelihoods, and carbon finance. Designed to address these interconnected ecological and livelihood challenges through a Nature-based Solution rooted in agroforestry, the project integrates ecological restoration with carbon finance to ensure that conservation efforts also deliver sustained economic benefits to communities. Launched in January 2024, the project works with indigenous communities across Meghalaya to restore degraded landscapes while generating long-term income through high-integrity carbon credits.

It aims to restore 100,000 hectares of degraded community-owned land and enhance agroforestry practices on an additional 50,000 hectares. Agroforestry systems under MegCare integrate 21 native forestry tree species, 10 horticultural species, 18 agricultural crops, and 10 aromatic grasses. This diversified approach supports biodiversity conservation, soil regeneration, water security, and climate resilience, while also strengthening food and nutritional security.

Tailored to the ecological and cultural contexts of the Khasi-Jaintia Hills and the Garo Hills, nine distinct agroforestry models were co-developed through consultations with local communities, forest and agricultural scientists, and government officials.

COMMUNITY AT THE CENTRE

Community participation is central to MegCARE's design and implementation. Indigenous institutions such as Headmen, Nokmas, Dorbar Shnongs, and Autonomous District Councils (ADCs) are formally engaged to ensure cultural alignment, equitable access to resources, and continuity across villages. Local youth play a central role in the initiative. As Agroforestry Carbon Associates (ACAs), they are trained in agroforestry practices, climate resilience, carbon finance, and digital monitoring tools. They work closely with farmers to support onboarding, land parcel mapping, plantation monitoring, and community capacity building. Their strong local presence helps build trust, strengthen accountability, and support long-term stewardship of the landscape. Women are actively participating across nursery management, plantation activities, and community engagement processes. A decentralised nursery model, comprising around 300 village nurseries and 100 cluster nurseries, supports local employment, skill development, and ownership of planting material.



FINANCING RESTORATION THROUGH CARBON MARKETS

A defining feature of MegCARE is its integration of carbon finance to make agroforestry economically viable for smallholder farmers. The project generates Carbon Removal Units (CRUs), where one CRU equals one tonne of CO₂ equivalent removed, certified under the Plan Vivo standard.

CRUs are commercialised through Rabobank's Acorn platform, enabling farmers to receive recurring payments directly into their bank accounts. In June 2025, the project disbursed its first round of carbon payments at EUR 40 per CRU, the highest per-tonne payment for a Nature-based initiative in India and four to five times higher than the global voluntary market average. Seventy percent of this revenue is transferred directly to participating farmers.

Beyond carbon payments, the project is strengthening value chains for agroforestry products such as broom grass, turmeric, citronella, and black cardamom, creating additional income streams and entrepreneurship opportunities.

PROGRESS AND IMPACT

ENVIRONMENTAL OUTCOMES

As of 2025, MegCare has onboarded 20,000 hectares of land for agroforestry under its partnership with Rabobank Acorn, with plantations initiated across 3,000 hectares. The long-term goal remains restoration of up to 150,000 hectares across Meghalaya. The implemented agroforestry models are expected to improve soil health, enhance water retention, support spring revival, conserve endemic biodiversity, and sequester carbon.

ECONOMIC OUTCOMES

Over 250 farmers, primarily from the Garo Hills, received direct carbon payments during the first disbursement cycle. The project guarantees that 70% of carbon revenue is shared with farmers, establishing agroforestry as a reliable, long-term income source. Ongoing support such as organic manure and fencing is provided to ensure plantation success.

LESSONS AND THE ROAD AHEAD

The project shows how impactful outcomes emerge when scientific planning comes together with strong community leadership and institutional partnerships. In a diverse landscape like Meghalaya, context-specific agroforestry models shaped by soil, rainfall, and biodiversity data were essential. Ongoing engagement with communities, active involvement of youth and women, and formal collaboration with state institutions helped reinforce long-term sustainability.

The project also highlights the potential of high-integrity, community-driven carbon finance to support large-scale restoration when backed by robust monitoring, transparent benefit-sharing, and adaptive implementation. Challenges related to terrain, farmer readiness, and awareness of carbon markets were addressed through iterative consultations and flexible planning.

With its strong governance structure, financial model, and community ownership, MegCARE offers a replicable Nature-based Solution that can be scaled across Meghalaya, Northeast India, and other regions facing similar ecological and livelihood challenges.

MEDIA AND VISUAL DOCUMENTATION

MegCARE has gained national media attention for delivering record-setting carbon payments to farmers. The project's visual documentation captures the full journey on the ground—from community awareness programmes and stakeholder consultations to ACA training sessions, plot mapping and monitoring, nursery set-up, plantation work, sapling distribution, and carbon payment events led by the Government of Meghalaya. By bringing farmers, youth, women, and state partners onto the same platform, MegCARE creates a clear and practical pathway for sustainable agroforestry and credible carbon action.

SOCIAL OUTCOMES

More than 60 local youth have been inducted as ACAs. Extensive consultations with village communities, ADCs, and state departments have reinforced community ownership and ensured that agroforestry models align with local priorities. Women and self-help groups are actively engaged in nursery operations and plantation work, supporting inclusive participation.

MULTIPLE BENEFITS BEYOND RESTORATION

MegCARE delivers a range of co-benefits alongside land restoration:

- Improves vegetation cover, reduces erosion, enhances soil fertility, and supports biodiversity through native species regeneration.
- Provides direct income from carbon payments and employment through nurseries, plantations, and value chains.
- Increased tree cover and soil stabilisation reduce risks from landslides, flash floods, and erratic rainfall, while improving water availability and microclimatic regulation.

