

Carbon project:

# Mangrove Planting, Sri Lanka



VCS 3357

## A Cool Effect onsite report

October 2025



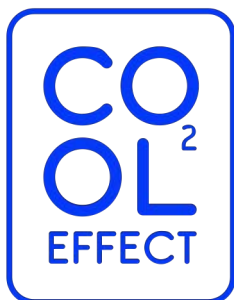
## Blue Carbon



As part of Carbon Done Correctly, Cool Effect conducts a site visit after completing scientific due diligence and ensuring the GHG integrity of each project we represent. Sometimes visits take place before we purchase credits and sometimes after.

The site visit is intended to see operations of the project firsthand, gather information on any outstanding questions, meet the project management team, see them in action and assess project interactions with the local community.

Our team also focuses on gathering details on how revenue from the sale of carbon credits is being used. We look for evidence of how income from previous years has been applied and we discuss funding for future expansion.



# Project specifications

Name of project:

Climate Resilient &  
Community-Driven  
Mangrove Afforestation  
Programme,  
Sri Lanka

Project type:

Nature-based Removal

Standard:

Verra 3357

Methodology:

VM0033



Expected issuance:

20,000 mt in 2026

Crediting periods:

20 years

Over the past several decades, the lagoon islands of Sri Lanka's northern coast have been losing ground. Rising seas, powerful cyclones, and the removal of mangrove cover have left shorelines exposed, eroding the coastal ecosystems on which millions rely.

3,022

hectares across 6 districts have been reforested, for a total of

13.6 Million

mangrove saplings planted!

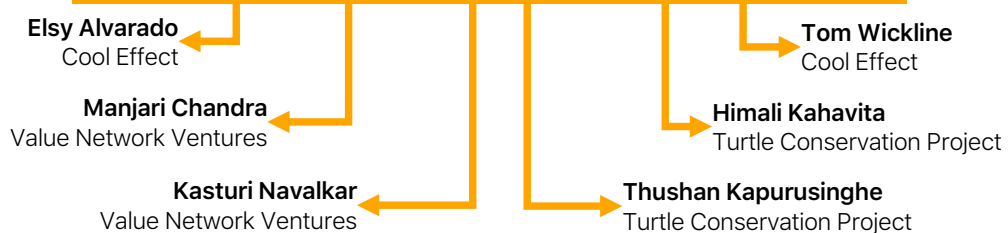
This project counteracts that by replanting millions of mangroves along the degraded edges of the Puttalam and Wannam lagoons. The project is a joint effort between Value Network Ventures, an India-based carbon project developer, and TCP, a local conservation organization.

In total, the project improves lives for

3,733

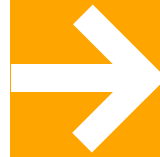
locals both by creating jobs directly and by bolstering demand for local services.

In early October 2025, Cool Effect team members Tom Wickline (Sustainability Coordinator) and Elsy Alvarado (Director of Project Relations) traveled to the project area for the first time.





Thushan  
Kapurusinghe, TCP



# Who is TCP?

Sri Lanka's **Turtle Conservation Programme** (TCP) was founded in 1993 by Thushan Kapurusinghe and Peter Richardson. Initially created to protect endangered sea turtle populations, the organization has grown to recognize the importance of a holistic approach to ecosystem health which puts mangroves at its center.



# What is VNV?

**Value Network Ventures** (VNV) is an India-based project developer with over 130 carbon projects across 15 countries. Cool Effect is engaged with several of VNV's projects throughout South Asia. VNV organizes funding and high-level project structure, then partners with local organizations for implementation.

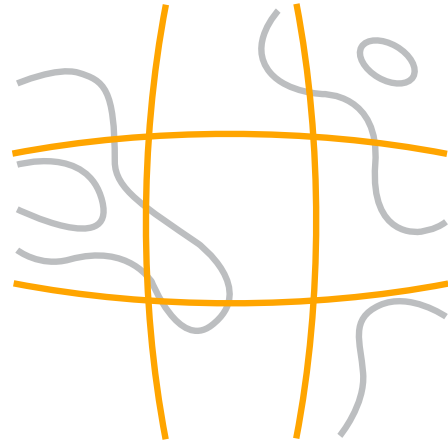


Kasturi Navalkar, VNV

# 3 pillars

## 1 Shoreline Resilience

Mangroves play an essential role in bracing the coast against extreme weather and erosion. As the climate continues to change and sea levels rise, these green walls become even more essential for their ecosystem services.



## 2 Community Investment

The project employs locals across the full planting cycle, from gathering seedlings to nursery management to planting and monitoring. Carbon revenues fund livelihood programs, including sewing training and funding for school supplies.



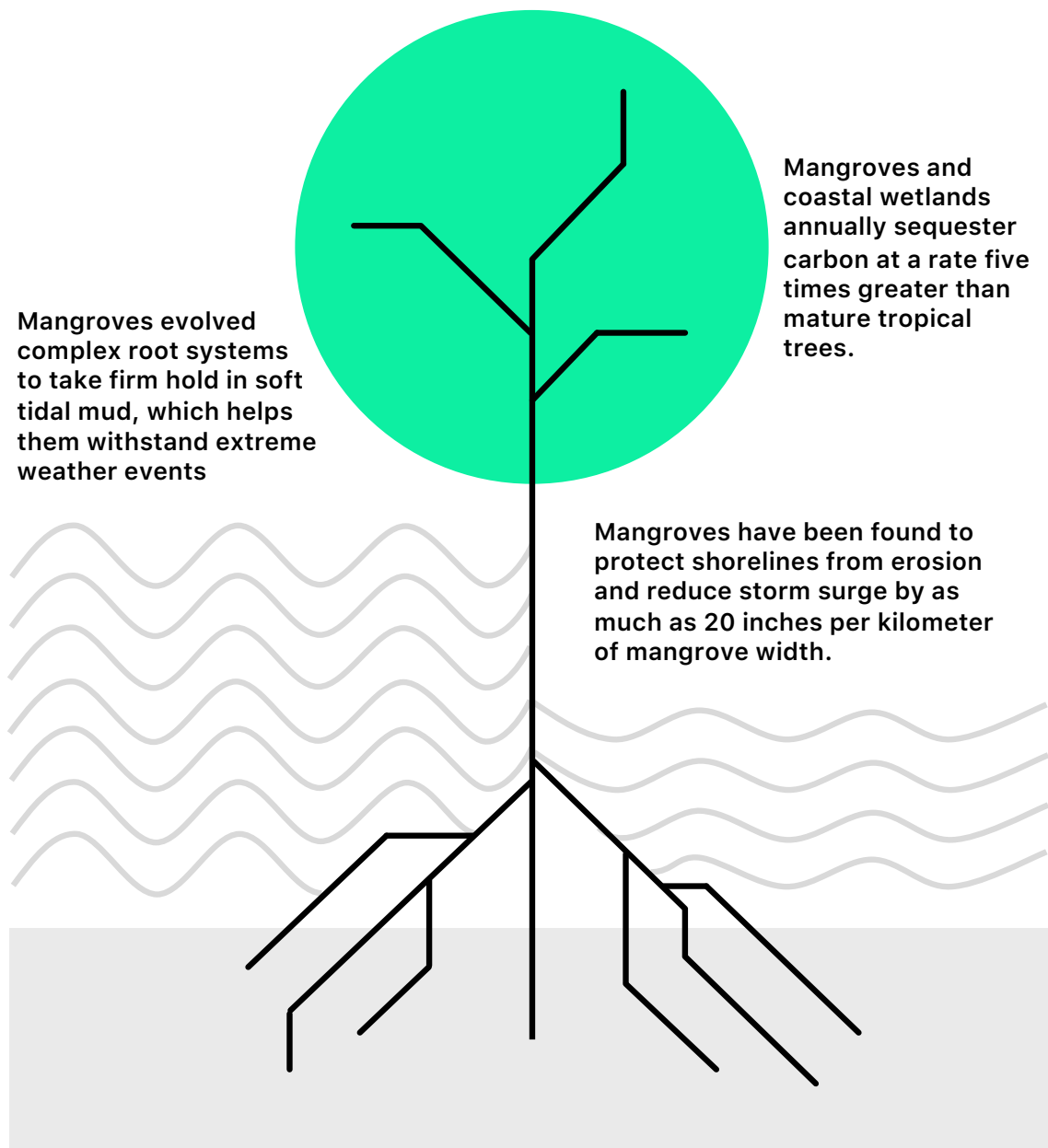
## 3 Habitat Restoration

Sri Lanka is a hub of biodiversity, providing habitat to hundreds of species of flora and fauna. Mangrove forests in the region are under serious threat due to over-exploitation, aquaculture projects, and other development. By restoring these mangrove green belts, local biodiversity is preserved for the community.



# Shoreline Resilience

Sri Lanka's lagoons face serious threats. Low-lying shorelines can be quickly chewed away by the sea, especially during extreme weather events. Saltwater intrusion contaminates freshwater reserves, and intensive aquaculture practices put serious stress on local fish, crab and shrimp populations. Mangrove trees play a crucial role in preventing each of these risks.



# Shoreline Resilience

Mangroves are uniquely suited to stabilize shorelines because they evolved to do exactly that. The soft tidal mud of lagoons and river deltas wouldn't hold an ordinary tree at all, even without extreme weather events. Through generations of natural selection, mangrove species like *mucronata* developed extra large root systems. While most terrestrial trees have about 20% of their biomass underground, what's known as the 'root-shoot ratio,' mature mangroves can invert that, with 20% of biomass in the above-ground shoot and the majority in its vast root system.

The result is a root system that looks like a 3D web, stretching far laterally and quite deep. This web is exceptionally good at trapping sediment, which builds up the shoreline over time. In areas facing sea level rise, this is an adaptation mechanism—the forest can keep rising along with the water.



# Shoreline Resilience

The stability mangroves provide is essential for preventing shoreline erosion. By acting as buffers that catch materials being washed downstream, they help stabilize the land by balancing sediment accretion with sediment loss.

*Mangroves grow upward-facing 'breathing tubes' called **pneumatophores** that reach above the water level to bring oxygen into the organism, even during high tides. Together, the pneumatophores and root systems form a complex web that helps stabilize the tidal soil.*

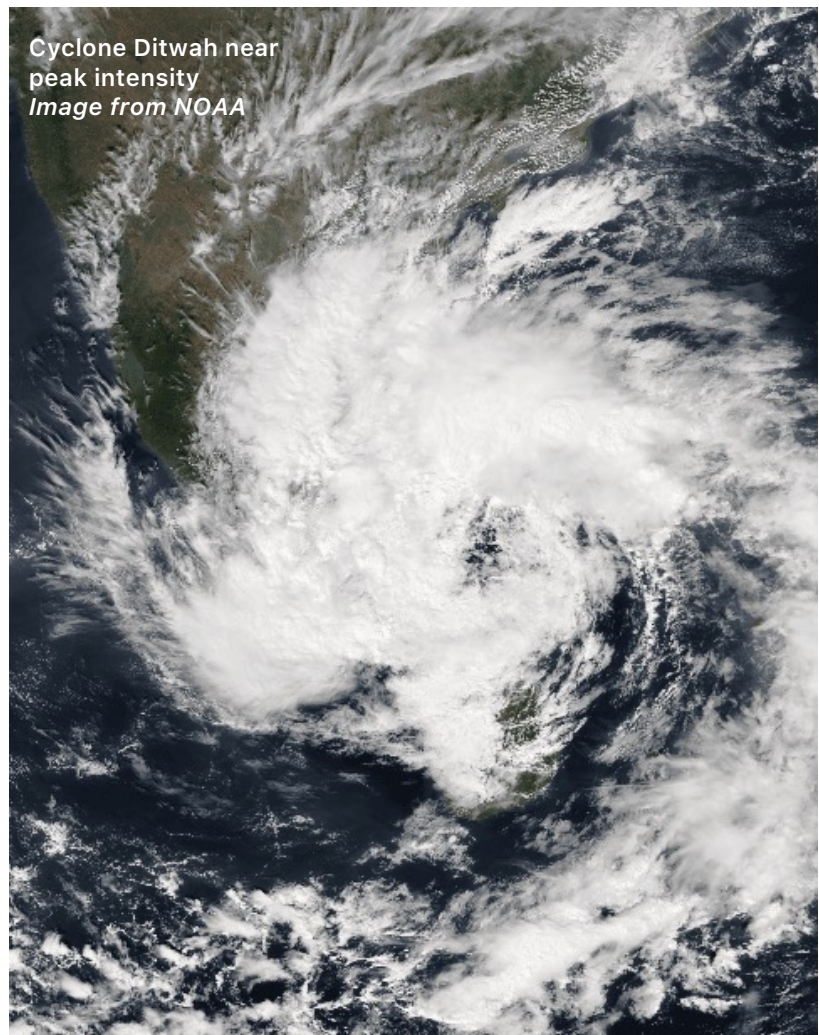


# Cyclone Ditwah: Nov 2025

Only a month after the visit, Sri Lanka was hit by Cyclone Ditwah. The torrential rainfall and landslides that followed made it the deadliest natural disaster Sri Lanka has faced since the 2004 Indian Ocean tsunami, with an estimated \$1.6 billion in damages.

In the aftermath, TCP stepped up as a community leader, coordinating relief for affected residents and distributing food and aid materials to those in need. TCP reports that the impact on the planted mangroves themselves has been moderate to low, concentrated primarily in Puttalam and Batticaloa districts. Despite the storm, the project remains on track for Q4 2026 issuance.

The mangroves stood at the heart of the catastrophe and absorbed the worst of it—exactly the ecosystem service the project was built to provide. That a \$1.6 billion disaster left the planted forest substantially intact is, in itself, the strongest possible argument for what this kind of restoration delivers.



# Community Investment

Beyond the ecological benefits, the project's ethos is deeply rooted in community engagement. Thushan accompanied us throughout the visit and made clear the importance of acknowledging where ecology and community intersect.

A lifelong conservationist who began his career at age 15, Thushan Kapurusinghe trained at the Duke University Marine Lab and completed his Master's at the Durrell Institute of Conservation and Ecology at Kent University. He co-founded TCP in 1993 and has spent more than thirty years building it from a small turtle-conservation initiative in Rekawa into one of Sri Lanka's most respected community-based conservation organizations.

Now, their work spans from turtle sanctuaries to mangrove planting to sewing classes to emergency aid. They have become a fixture of the community, in large part because of Thushan's acknowledgement that change cannot happen without the engagement and enthusiasm of those on the ground experiencing it.

"We have to understand the human element of conservation, or *conservation anthropology*."  
—**Thushan Kapurusinghe, TCP**



# Community Investment

On the second day we visited a local community and asked them directly how the project has impacted their lives.

The project's economic model is built around direct payments to community members for specific tasks. During the active planting phase, workers earned 5 rupees per propagule carried and 5 rupees per propagule planted, with fence construction priced at roughly 3,000 rupees per fence. For a community in a country navigating fuel shortages, post-COVID recovery, and climate threats, those payments represent meaningful and in some cases life-changing income.

In the background of the picture below, the partially-constructed house was financed from carbon revenues. Its owner, Sylvester, explained that he has had to pause construction as the project's issuance continues to be delayed and payments slow down. The structure is a perfect symbol of what carbon projects can accomplish, but also how unforeseen delays on the carbon market side can directly affect communities.



# Community Investment

Beyond direct payments for planting and maintenance, the project supports a wider portfolio of livelihood programs aimed at diversifying community income. On the island we visited, women had been trained on sewing machines provided through the program. Now they produce dresses and plush toys to sell.

In other communities, TCP runs training and equipment programs in batik (a fabric dyeing technique), ornamental fish breeding, home gardening, and textile work. The breadth of the portfolio reflects Thushan's stated philosophy: conservation only works when it improves daily life for the people sharing the landscape with the resource being conserved.



# Community Investment

Beyond the direct employment and training TCP offers, the project activity brings indirect benefits to locals not remotely involved in the project.

Each time stakeholders visit the project site, as Cool Effect did in October and auditors, verifiers, etc. do regularly, local boatmen are employed and hotels and restaurants see increased traffic. In these rural areas, that makes a real difference.

There's even more diffuse benefits: mangroves restore the ecosystem, which bolsters fish, crab and shrimp populations. Much of the rural population depends on these stocks for their food and livelihoods.

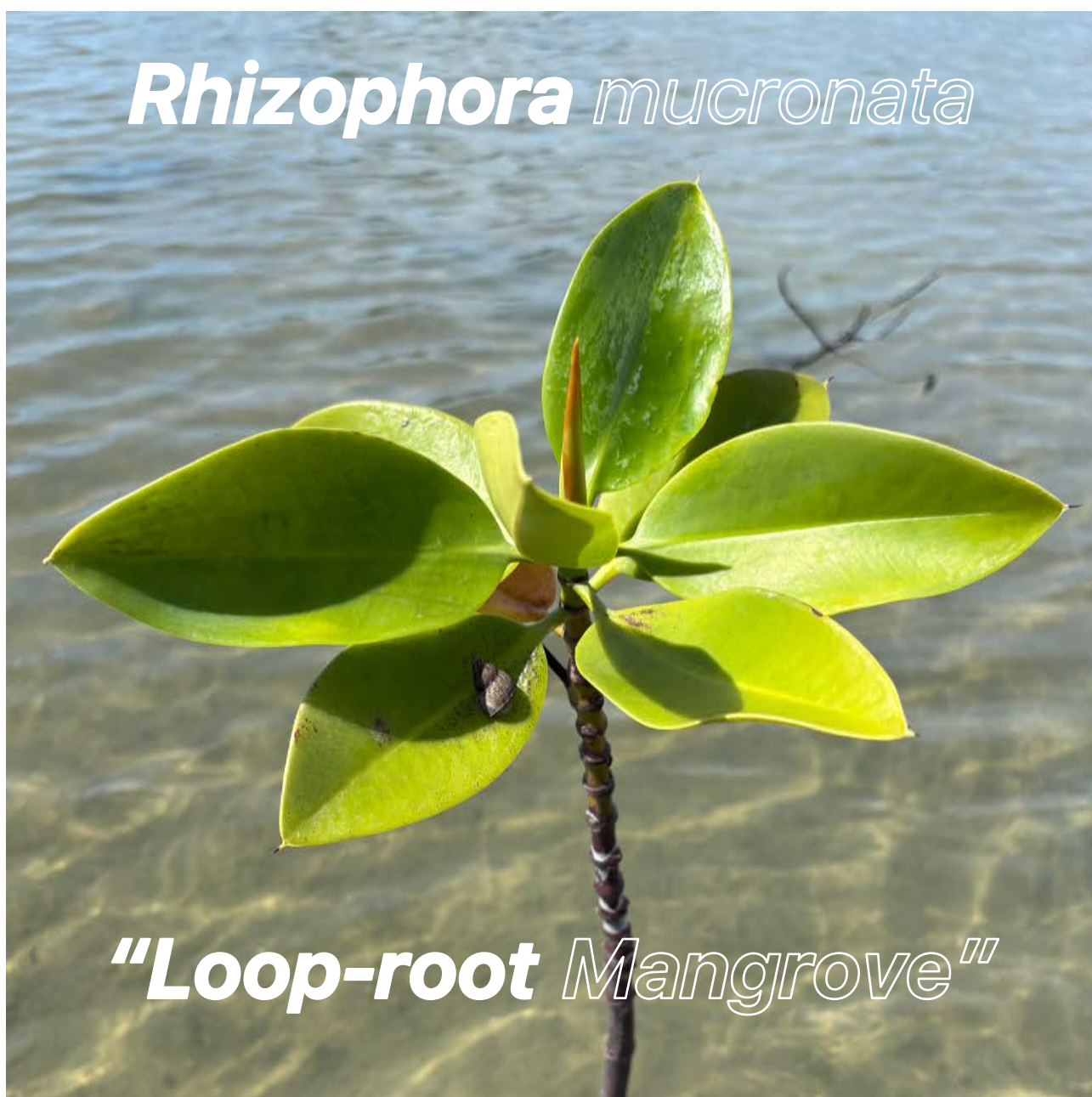
A boat operator that guided the team through a planting site



Mangrove root systems make perfect nurseries for wild fish populations, bringing higher yields to local fishermen

# Habitat Restoration

The foundational species of the ecosystem is *Rhizophora mucronata*, also known as the Loop-root Mangrove. This species grows exceptionally well in the brackish waters of Sri Lanka's lagoons and underpins the region's entire coastal food web. As the mangroves grow, they shed leaves and other detritus that feed crabs, fish, and microorganisms, whose populations in turn feed nearly the entire food chain.



***Rhizophora*** *mucronata*

***"Loop-root Mangrove"***

# Habitat Restoration

## Nurseries

The project relies on direct planting wherever possible — placing propagules directly into the lagoon bed rather than germinating them in nurseries first. This approach is cheaper, results in higher long-term survival rates, and avoids the plastic waste associated with traditional polythene nursery bags. When nurseries are needed, they are sited only in high-water areas and use reusable bags.

Each hectare is planted at a density of 4,500 saplings, spaced roughly two feet by two feet — denser than the originally-targeted 3,500 per hectare, to compensate for losses from grazing animals, monofilament nets, and weather events affecting mangroves in parts of the project area.



# Habitat Restoration

## Flora

The project's planting approach is structured in phases, designed to mimic how a mangrove ecosystem would establish itself naturally. Phase one focuses on dominant pioneer species, which stabilize sediment and define the boundaries of the planting area. As the forest matures, following phases introduce several less-dominant species to create a biodiverse ecosystem.



Tape Seagrass,  
*Enhalus acoroides*

When the trees mature, their propagules will be collected and used for the next planting phase, forming a closed loop. In fact, propagules for the current cycle were gathered from a mangrove forest that TCP planted back in 2005 through a UN development program. This strategy ensures genetic continuity with the surrounding forest.



The project plants mangroves during low tide at a density of 4,500 plants per hectare.

# Habitat Restoration

## Fauna

Mangroves are often referred to as “coastal rainforests,” and for very good reason. They are rich biodiversity hubs, providing habitat to a diverse range of animal species. Reforestation efforts contribute to the revival of these ecosystems, promoting species recovery and creating a more resilient natural environment.

Mangroves are critical to the livelihoods of local communities that rely on the region’s stock of natural resources. Mangroves indirectly bolster fish and shellfish populations, sustaining these renewable resources for future generations.

The healthy mangrove ecosystem brings another benefit: tourism. Restored forests create ideal settings for ecotourism, attracting nature enthusiasts and travelers interested in sustainable experiences. Unique bird species, including nesting sites, and the presence of other species like the green sea turtle, draw attention from high-end ecotourism ventures that bring revenue to the local economy.



**Blue Swimmer Crab,**  
*Portunus pelagicus*



**A handful of Yellow-Foot Clams,**  
*Marcia opima*



**Lesser Crested Tern,**  
*Thalasseus bengalensis*

# The Case for Carbon Finance

Mangrove forests in this region are under acute pressure. Shrimp aquaculture, coastal development, and continued harvesting for fuelwood have all eroded the historical mangrove cover, particularly in the lagoon systems where the project operates. The communities that face these consequences lack the capital, technical capacity, and long-time-horizon labor force needed to undertake restoration at this scale on their own.

Carbon finance is what makes the math work: it pays for the planting, the maintenance, the research, the community programs, and the long-term protection arrangement with the Sri Lankan government. Without carbon, all of this would be out of reach. That's textbook additionality.



# A Catalytic Opportunity

In Q4 2026, the project receives its first credit issuance of 20,000 tonnes. While the project has been enormously successful in accomplishing its mission on the ground, it has faced delays in issuance because of the ever-changing carbon market landscape.

During the same window in which they planted these 13.6 million trees, Verra depreciated this project's original methodology and mandated a transition to VM0033. This was an essential upgrade for the science, but an expensive one for TCP to implement. Delays in issuance mean delays in revenue. Without income from carbon, TCP and VNV have been funding the workers' direct payments out of pocket. As funds dry up, community maintenance payments have dropped to a fraction of their planting-phase rate. **Some workers we met worried they were being forgotten.**

The first issuance will end that pause. It restores community payments, resumes research and monitoring, and proves that the project's economic model works. Together, this opens the door to the next decade of restoration.

Buying these tonnes isn't paying for what's already been done. **It's catalyzing everything that comes next.**





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