



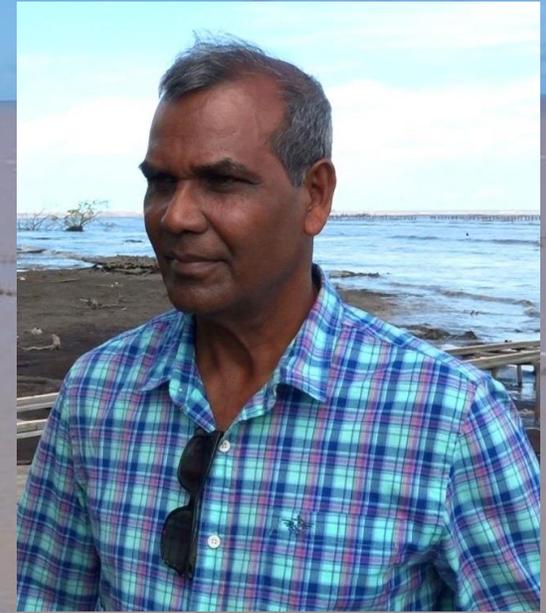
MAFOSUR

Mangrove Forum Suriname

Permeable Timber Mangrove Dam (STU – Sediment Trapping Unit)

GreenTech

A Nature-Based GreenTech Solution to address the ongoing degradation of the coast in Suriname. This technology also protects cities, like capital Paramaribo, against more flooding events.



**Prof. dr. Naipal
AdeKUS
University Suriname**



<https://www.discover-suriname.com/mangrove>



MAFOSUR
Mangrove Forum Suriname



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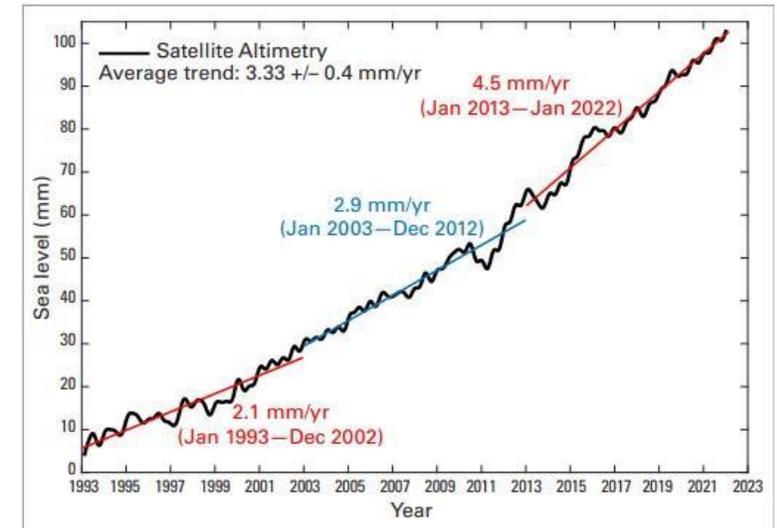
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1.1 The Problem we are Solving



- Suriname is a coastal country in South America, covered with 93% of rainforest and part of the Amazon basin, having an immense biodiversity.
- Sea levels are rising causing current wide range flooding, making land unusable and uninhabitable, endangering species. In the future it will become worse.
- Mangroves have disappeared from many parts of the coast in Suriname or are in very bad shape. Flooding events are common.
- Agricultural land, nature, reserves, species and cities, like the capital Paramaribo, are threatened by the rising Sea Level.
- With our product we can restore many mangroves in many countries in a very sustainable and natural way.
- With our product we can protect many cities, coastal areas, reserves, nature, species and habitats against flooding and rising sea levels.



Large Scale Erosion of Unprotected Coast →



1.2 Situation of the Problem



Wednesday, June 29, 2022, 3:29:04 PM

No STU in this direction.

No mangrove for protection.

Losses continues everyday.

1.3 The Problem in detail



Start

1.4 The Problem we are solving

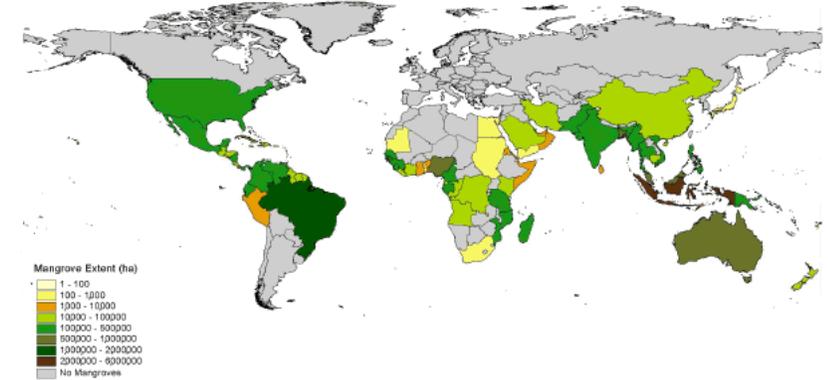


If mangroves are lost, we also loose these and others.

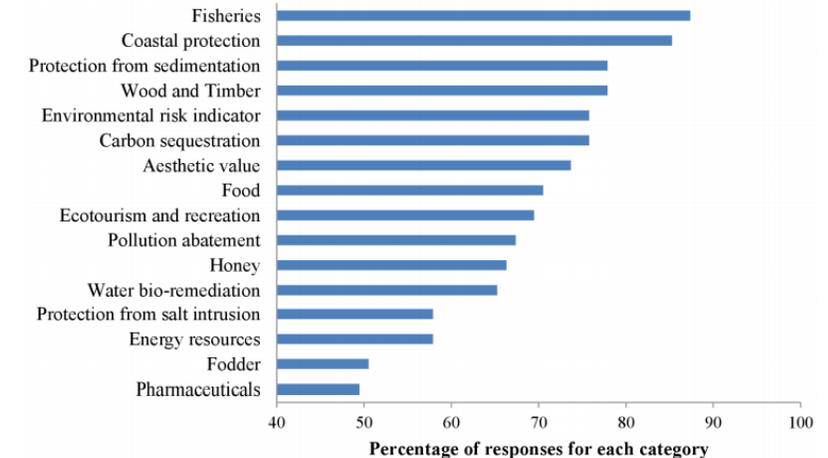
2.1 Market Size of the Opportunity



- All countries with mangrove, threatened coastal regions and flooding events benefit of our technology.
- Four countries (Indonesia, Brazil, Nigeria and Australia) account for about 41 percent of all mangroves and 60 percent of the total mangrove area is found in just ten countries.
- Suriname borders Brazil.
- This table shows topics that benefits from rehabilitation and restoring the mangrove via our product/technology.
- Our product/technology helps to restore mangrove, protect coastal regions, prevent flooding events, increase local mangrove economy. Such as agriculture, producing honey and tourism.



Positive impact of Restoring Mangrove:



2.2 Mangrove Technology Opportunity



The presence of a Permeable Timber Mangrove Dam would protect many cities, like Paramaribo, against many adverse developments. Paramaribo already has flooding events.

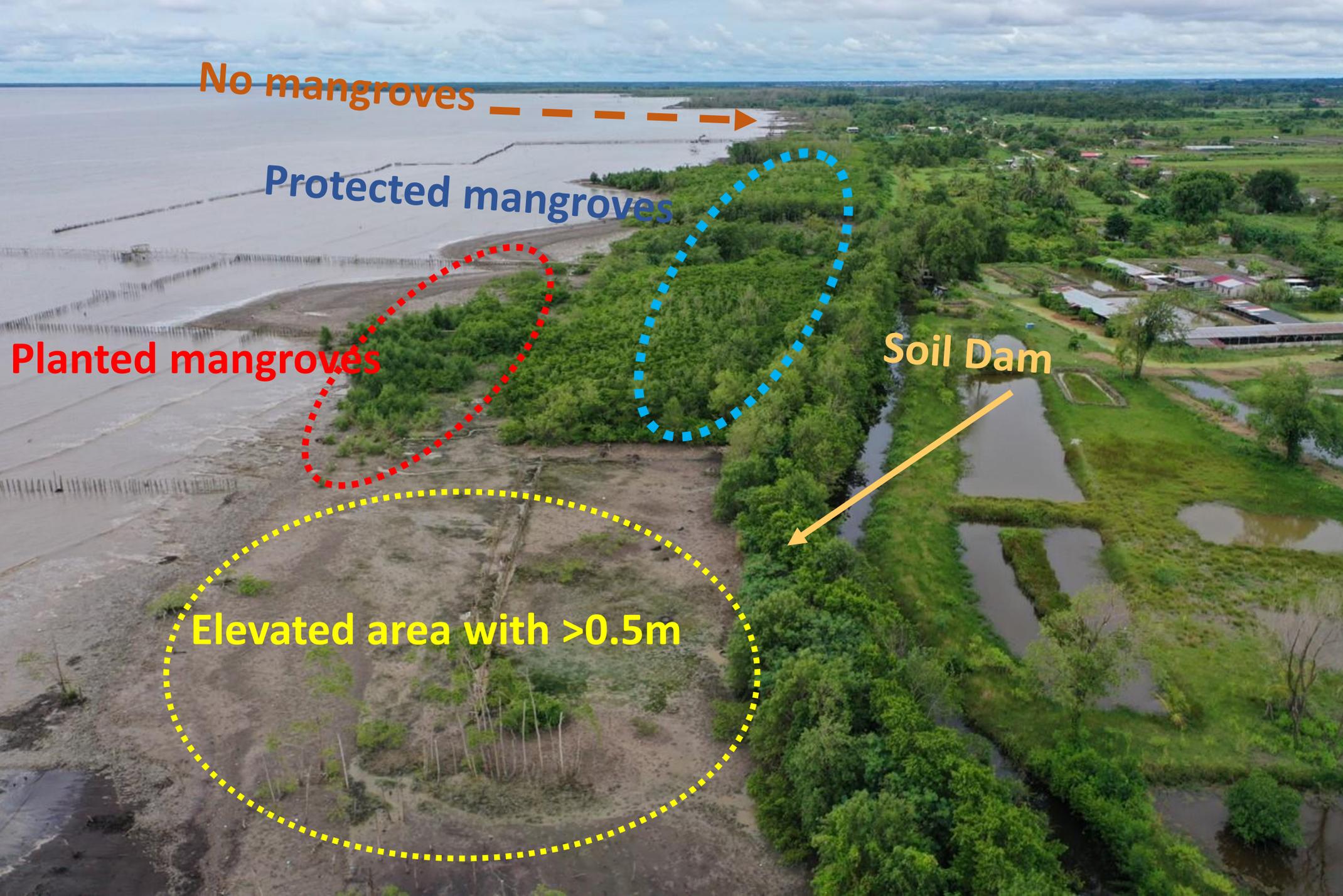


3.1 Our Technology / Product and what makes it unique?



- It is a Permeable Timber Mangrove dam.
- It is made of walabawood and bamboos (reuse).
- It is relatively cheap to construct and maintain.
- We have learned how to construct it, so it withstands sea water waves/tides, etc...
- Timber dam structures are the most sustainable and effective solution to help restore the mangrove.
- Timber dams are much more resilient than stone or concrete dams.
- The timber dam gives young mangrove trees and fishes of the marine life and nature time to grow.
- Once mangrove trees are there or is restored, biodiversity increases immensely. Flowers grow, bees are there.
- IoT/WebCam technologies for monitoring and maintenance of the dam, the mangroves and the marine life, will be added.





No mangroves

Protected mangroves

Planted mangroves

Soil Dam

Elevated area with >0.5m



Initially (2020), there was a growth and establishment seen.

But now again disappeared, due to the triple La Nina.

4. Traction and Revenue

The rehabilitation project is visited by various high-profile persons:

- Antonio Guterres, UN Secretary
- Chan Santokhi, President of Suriname
- Mark Rutte, Prime-Minister of The Netherlands
- Recognized by IADB as an important and reliable actor for mangrove restoration

Revenue:

- Direct: Various organizations have donated so the dam could be constructed, and mangrove trees could be grown and planted.
- Indirect: Various local entrepreneurs now could continue or start activities like producing honey, cultivate land for production and provide tours / tourism services.



5. Evidence our Team can Execute



Means and equipment used to construct the permeable wooden dam (the Sediment Trapping Unit (STU))



The emphasis here is that tools are required. manual labor is back breaking.

But these tools are expensive to hire / rent.



There is a need for having this permanent to ensure the sustainability of the wooden permeable dam.

Monday, September 24, 2018



Friday, December 7, 2018



Monday, May 13, 2019



Planted mangroves that could grow because of our product. See growth, development, including functioning and dead mangrove.

This process illustrates the gain and loss of mangroves and accumulated land. If the permeable wooden dam, made of walabawood and bamboos, is not monitored (IoT) and repaired, it is damaged.

Thursday, June 18, 2020



Tuesday, March 2, 2021



Saturday, April 17, 2021





October 2, 2019, 5:53:22 PM

Fluid mud trapped by the mangroves.

Note: their roots are fully covered with mud – main reason / cause for their dead.

The mangroves here are of the variety "black" mangrove with pen like roots.

When overtopped can die due to lack of oxygen.

We have here fine sediment (marine clay), and a layer of 10cm can block the exchange of gasses between the (underground and the air).

6. About MAFOSUR

The MAFOSUR association aims to:

- a) Promoting, conserving, sustainably managing, protecting, preserving, rehabilitating and expanding mangrove areas and the mangrove ecosystem.
- b) Stimulating sustainable use of the services and goods produced by the mangrove ecosystem.
- c) Awareness rising.



We are about improving resilience and long-term optimization of the natural productivity of the Surinamese mangrove ecosystem to safeguard ownership, biodiversity, healthy nature and equitable sharing of benefits.

Ask: The association is in need of funding to build more permeable timber dams and salt marshes. For Suriname we would need an additional 10 million euros the coming 10 years to completely restore the mangrove and protect the capital Paramaribo, build educational centers, publish restoration manuals, build an IoT/WebCam monitoring system and early warning system and improve dam constructions.

Secretariat MAFOSUR

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Paramaribo, Suriname

Donate to:

Association Mangrove Forum Suriname (MAFOSUR)

Account number 2002202621 (EUR)

Account number 2002202648 (USD)

Account number 2002202664 (SRD)

GODO bank, Suriname



7. Invitation to Visit the Mangroves in Suriname



- Have a tour along the mangroves
- See how mangrove trees are grown
- Plant a mangrove tree yourself
- Help build the timber dam
- Visit an educational center
- Invest in our green tech permeable timber dam

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