

# Waves of change: Seaweed's transformative influence in Atauro



Otniel, the seaweed farmer

Meet Otniel Mameia, a teacher from Atauro, a beautiful island 35 km from Timor-Leste's capital, Dili. Despite mobility challenges, Otniel has been farming seaweed for years. He farms Eucheuma, a type that is recognised worldwide for its use in food, beverages, agriculture and pharmaceuticals. Through his work on seaweed, Otniel has supported his family and financed his son's tertiary education in Kupang, Indonesia.

Seaweed is a relatively small export commodity for Timor-Leste, accounting for less than one per cent of non-oil exports, but it has consistently been among the country's top-10 non-oil exports in recent years. It is also a significant source of income for people on Atauro, with over 1,000 households on the island farming seaweed. Seaweed farmers such as Otniel face several challenges including low productivity, difficulty accessing markets and diseases such as 'ice-ice.' MDF supports seaweed farmers in Timor-Leste by working with [Cottonii Group](#), the country's first cooperative, established in 2008 with a membership of 600 farmers.



Otniel carrying seaweed



## Ice-ice

Ice-ice is a disease affecting seaweed during the rainy season. Changes in ocean temperature, salinity and light intensity cause stress, which produces a substance that attracts bacteria, leading to tissue whitening and hardening. When farmers first encountered ice-ice, they could not identify the disease and did not know how to treat it - they called it 'the white disease' because of how it changes the appearance of afflicted seaweed.

## Training, tactics and successes

MDF's collaboration with Cottonii focuses on three main activities: assessing seaweed farming on Atauro island, training farmers and supporting the farmers to access established markets. In 2022, Cottonii trained 53 seaweed farmers, including Otniel, on farming practices that increase seaweed production while minimising negative environmental impact. The program included selecting proper sites for growing seaweed and introducing practices that enable farmers to grow more seaweed in a smaller area, requiring fewer ropes and anchoring

poles. Farmers also received training on efficient drying methods using racks that reduce drying time from one week to just one or two days, as well as appropriate storage techniques. The farmers trained included 30 women.

In 2023, seaweed farmers reported that ice-ice attacks had occurred continuously for five to six months, affecting two, and sometimes four, growing cycles and resulting in a significant decline in production. Most farmers had not found effective methods to address the disease. Otniel

used what he learnt from the training to minimise the impact of the disease by experimenting with different planting methods and locations. Using a shorter rope, new drying methods and a planting calendar helped Otniel to farm his seaweed efficiently – reducing his workload and producing better-dried seaweed.

"I am more aware of the seasonality of seaweed production. From November to April, I need to plant farther into the sea. I should plant closer to the shore from April to August," said Otniel.

## Better market access ensures more stable income

In 2023, MDF's work with Cottonii supported Otniel and a group of farmers in Atauro to sell an additional 62 tonnes of dried seaweed; this earned them an additional USD141 (AUD218) per farmer on average, more than the monthly salary of a minimum wage earner in Timor-Leste (USD115/ AUD177).

As the head of a family of 10, the additional income from selling seaweed supplements Otniel's teacher wages. He used the income to send his son to study in Indonesia, including to cover graduation fees.

Otniel and his fellow farmers are benefitting from Cottonii establishing a direct market link with buyers in Indonesia. MDF supported the cooperative members to visit Indonesia

and introduce dried seaweed to the market. As a result, Cottonii successfully exported 25 tonnes of seaweed to Indonesia in 2023, which is a significant achievement for the company and Timor-Leste. This is Cottonii's first direct export to an Indonesian seaweed factory and enables the business to better understand the quality requirements of the factory. Cottonii can communicate these requirements to cooperative members, ensuring quality seaweed and price transparency. Currently, Cottonii is in the process of negotiating a long-term supply contract with a factory. This will provide a guaranteed market and encourage cooperative members to increase production.

"As we establish a direct link with the seaweed factory, we are confident

in our ability to consistently export more dried seaweed. This, in turn, motivates seaweed farmers to increase production and, subsequently, their income," said Isaque Tavares, Director of Cottonii Group.

The transformative influence of seaweed cultivation on Atauro is evident through the story of Otniel Mameia and the collaborative efforts of MDF and Cottonii. Seaweed, particularly Eucheuma, has emerged as a vital source of income for the local community. MDF's commitment to supporting early-stage export commodities like seaweed holds promise for economic diversification in Timor-Leste, while also promoting sustainable farming practices and resilience within local communities.



📷 A woman drying seaweed



The income generated from selling dried seaweed is crucial for meeting our basic needs. Despite the hard work involved, it is a profitable and sustainable source of income.

Otniel Mameia,  
Seaweed farmer, Atauro