Inclusion Story

Cultivating local organic solutions in Fiji

Steven Hay of Baywater Engineering (kneeling white shirt) with members of Naivurevure Farmer Association at the OrganicPlus filling station

Agriculture is vital for Fiji's economy, employing over 83 per cent of the rural population. However, the sector's sustainability and competitiveness are affected by limited access to quality agricultural inputs like organic fertiliser and soil conditioners.

Finding local solutions to support a more sustainable, circular economy has the potential to make Fiji's agriculture industry more resilient and competitive.

Fijian company Baywater Engineering has developed an innovative solution called 'OrganicPlus'—a liquid compost made from discarded organic material. MDF is supporting the company to promote and market its soil conditioner, increasing farmer access to local organic solutions to support their livelihoods and potentially reduce Fiji's dependence on imported chemical fertiliser.

A lack of access to quality agricultural inputs affects farmers across Fiji. In the stunning provincial highlands of Naitasiri, Fiji, growing ginger is a way of life for many farmers in Naivurevure village.

In 2017, Paula Nokamaivuna, a 48-year-old father of three, resigned from his job and returned home to Naivurevure village with his family to start farming.

"We plant ginger, dalo and vegetables for our livelihood. Ginger is the main crop for many farmers here," he explained.

Paula is a member of the Naivurevure Ginger Farmers Association, along with 14 other farmers from the village. They typically plant between two square chains (40 square metres) to one acre of ginger. Baby ginger takes around four months to be harvested, while mature ginger can take from nine months to a year. Vegetables are also grown to supplement incomes, but fluctuating prices have made it challenging for farmers to earn a steady income.

"We planted ginger and were not satisfied with the price. The price kept going down in 2015 and 2016 so we tried to form a group so we can get a more stable market throughout the year," Paula said.

Farmers in Naivurevure currently supply ginger to three buyers. Mature ginger grown using synthetic fertiliser like NPK (nitrogen, phosphorus, and potassium) is currently bought at around FJD1.60 (AUD1.09) per kg, while organic ginger fetches a 25 per cent price premium on the local market.

"We get a better price for organic ginger. Before, we planted organic ginger without using any fertiliser.

We would clear virgin land and try to produce organic ginger there. But then we noticed the size of ginger is not good after a while because we don't use fertiliser. We had to clear a new piece of virgin land each time we planted organic ginger. So, we looked for an organic fertiliser to improve the ginger yield," said Paula.

OrganicPlus: Transforming farming practices

After hearing about Baywater Engineering, the association contacted the company to learn more about their OrganicPlus product. OrganicPlus is a liquid compost made from discarded organic material, containing one billion microbes per millilitre. Soil microbes break down organic crop residue and slowly release nutrients into the soil, which plants absorb as food. Baywater Engineering visited the farmers and assessed soil quality and set up a filling station in the village for the liquid compost.

To cover an acre of land, farmers need to mix a 20-litre OrganicPlus solution, which contains five litres of organic liquid concentrate and 15 litres of water. This would cost FJD20 (AUD13.60) at the filling station. On the other hand, a bag of synthetic fertiliser like NPK which covers an acre of land, costs between FJD50-80 (AUD34-54). Farmers also save time and effort, as they do not have to travel up to an hour to purchase synthetic fertiliser from the nearest major town centre.

"Also, we can now replant in the same place, and it will grow well. We don't have to move again and clear more virgin land, which is hard work. Most farmers in the village now come and buy from this filling station," said Paula.

> We noticed the OrganicPlus improves soil fertility and pests and diseases are less common. Last year, we managed to get a good yield of ginger. When we plant ginger and apply the solution two to three times, we can get 2-3 kg of ginger per plant, which is very good.

Expanding through direct export links

In the past year, the association also started supplying organic ginger to a New Zealand-based company. The new, direct link with the ginger importer has resulted in farmers getting a higher price for their ginger.

"They currently buy our organic ginger at much higher price compared to selling it locally. Last year, they purchased about six tonnes of organic ginger, so from there, we noticed an increase in demand for our ginger, which we can supply because we produce enough organic ginger.

"The money we earn supports the livelihoods of many in this village and even those nearby who come and sell our ginger with us. And we're now trying to work with the company to increase business."

By embracing innovative local solutions like OrganicPlus, farmers in Naivurevure have become less dependent on imported fertilisers. The accessibility of quality local alternatives is now enhancing productivity and yields. This shift has put the farmers in a position to capitalise on lucrative opportunities and command higher prices for their produce.

OrganicPlus application demonstration for field preparation at farmer field day at Naivurevure village

Why use organic soil conditioners?

While chemical fertilisers have significant positive impacts on agricultural yields, they are energy-intensive to produce and transport to countries like Fiji. Their overuse can also reduce soil carbon levels through the breakdown of organic matter and can lead to nitrogen leaching and hazardous run-off. Using organic and sustainable soil conditioners can reduce reliance on these inputs, reducing greenhouse gas emissions created in their manufacture and transport and increasing the climate resilience of agricultural production through improved water retention, better nutrient cycling and reduced erosion of soils.