Organic fertilisers promote productivity and reduce emissions

In response to the high prices of imported fertiliser in PNG, MDF recognised an opportunity to promote the production and sale of locally produced, organic alternatives to petrochemical fertilisers. MDF worked with Caltep Holding, a domestic organic fertiliser manufacturer, to verify the micro- and macro-nutrient content of its Grow Hariap fertiliser product. The results were promising, and this product is now being distributed by Brian Bell nationally and has sold over 10,000L. Replacing petrochemical fertilisers has the potential to reduce emissions from the agriculture sector in PNG and enhance soil health.

Climate Change Story

Mapping and mitigating coffee's carbon footprint

Climate change is an increasingly important consideration for leading coffee roasters and retailers around the world who are keen to purchase sustainably produced coffee with a lower carbon footprint. These growing requirements in global coffee markets create new incentives for exporters and suppliers to invest in mapping and mitigating the crop's carbon footprint, as coffee that is sustainably produced can be sold at higher premiums that flow through the supply chain and down to the smallholder farmers that grow it. In an intervention that is the first of its kind in PNG, MDF is supporting its partner Sucafina to measure its value chain emissions so that it can invest accordingly in offsetting or reducing them.

Greenhouse gases, such as carbon dioxide and nitrous oxide, can be emitted at different points in the coffee production cycle, including during the production and application of fertiliser, when in transport, and from power generation for coffee processing. In PNG, leading coffee agribusiness Sucafina partnered with MDF to measure and minimise carbon emissions across its coffee value chain. For Sucafina, mapping emissions is a key step in its sustainability journey. This initiative is the first of its kind in PNG and the findings will be made available to all locally owned coffee aggregators working with Sucafina in PNG. To measure emissions, MDF worked with Sucafina to develop a customised data template and calculator. These measurements will quantify Sucafina's carbon footprint from farm to export.

Coffee, climate and high-value markets

The detailed mapping of Sucafina's supply chain will help determine which steps in the value chain lead to the highest carbon emissions. With MDF support, the Sucafina team in PNG has started mapping farmers' coffee gardens in Kainantu, Eastern Highlands Province, and Wau Bulolo, Morobe Province. The team covered 2,167 coffee farms, comprising a total of 150 hectares in two provinces.

> Our supply chain mapping has started in Kainantu and Wau Bulolo. After completing mapping, we will select sample coffee gardens and use a carbon calculator to measure carbon that is released from each step of the way from farmers' garden to exporters.

Delma Farokave,
Sucafina's Sustainability Manager

Sucafina will use the results to select optimum improvement measures in each step of its supply chain that can reduce the business's emissions and overall carbon footprint. With low-carbon coffee gaining recognition, the business will have the opportunity to market itself to an emerging high-value market and price premiums.

Sucafina PNG Director Alex Casserly points out an interesting trend in demand for low-carbon coffee coming out of PNG: rather than niche specialty roasters, the demand pull is largely from overseas retailers and large food and beverage conglomerates looking to capitalise on growing consumer preferences for sustainably produced foods.

The sustainable way ahead

> We hope the results will give us an idea of how much carbon is released along our supply chain, and we can work on ways to keep the emissions as low as possible. In the long run, this will help Sucafina to secure better markets to meet consumer preferences.

Delma Farokave,
Sucafina's Sustainability Manager

The results of this initiative will inform Sucafina about how it can work towards reducing carbon emissions—or offset its emissions through investments within its supply chain, such as by encouraging the planting of shade trees in smallholders' coffee gardens that would also serve as a means of carbon sequestration. If the Sucafina model is successful, it would be a viable investment for other commodity crop value chains in PNG.

This initiative benefits not only Sucafina but also the certified farmers who form the supply base. It will also demonstrate a positive business case for other agricultural exporters seeking to tap into more lucrative international markets.