

The Climate-Smart Pacific Food Systems Programme – Papua New Guinea



The goal is to build the wellbeing and resilience of communities to the impacts of climate change through Pacific-led, climate-smart food systems.

The Bioeconomy Science Institute is partnering with Pacific government agencies, civil society and industry to implement the four-year, Climate-Smart Pacific Food Systems Programme.

- The programme began in 2024 and is operating in Papua New Guinea, Tonga, Solomon Islands, Fiji, and Samoa and is funded by the New Zealand Ministry of Foreign Affairs and Trade
- The Climate-Smart Pacific Food Systems Programme has three themes:
 - Climate-smart food production
 - Stewardship of water, land and waste
 - Sustainable, resilient food value chains
- The programme is focusing on integrating scientific innovation with community-driven solutions to build food security, reduce postharvest losses, and improve agricultural sustainability and climate resilience.

ABOUT PAPUA NEW GUINEA

- Mainland New Guinea, New Ireland, New Britain and the Autonomous Region of Bougainville, plus 600+ islands and atolls
- **Land Area:** 462,840 km²
- **Population:** 10,669,942
- **Agricultural Status:** Agriculture, forestry, and fisheries contribute about 18% of GDP; major agricultural products include staple root crops like sweet potato, taro and yams, plus banana, sago and cash crops such as cocoa and coffee



Papua New Guinea

- The Climate-Smart Pacific Food Systems Programme is focused on staple crops and the fresh produce sector in the Highlands and the Autonomous Region of Bougainville.
- Bioeconomy Science Institute's anchor partners in PNG are the Fresh Produce Development Agency (FPDA), the National Agriculture Research Institute (NARI), World Vision PNG and World Vision New Zealand
- Bioeconomy Science Institute's expertise together with the experience, networks and knowledge of these partners will co-create appropriate solutions for farming households and enable them to be scaled up
- Our Participatory Action Research (PAR) approach enabled communities and farmers to identify climate change and food systems challenges and meaningfully engage on the development of appropriate solutions
- PAR identified challenges relating to seasonal unpredictability, water and irrigation, declining soil fertility, pests and diseases and high cost of seeds and input supplies as the major food system challenges experienced by communities and farmers in PNG highlands and the Autonomous Region of Bougainville



Climate Change Challenges Identified from PAR



**Unpredictable
Seasons**



**Water &
Irrigation**



**Soil
Fertility**



**Pests &
Diseases**



**Seeds & Planting
Materials**

Year 2 Highlights

- Formalised collaboration agreement with Fresh Produce Development Agency (FPDA) to be one of our anchor partners to co-deliver with in PNG
- Strong progress on postharvest activities supporting the strawberries and head cabbage value chains from Western Highlands
- Capability strengthening of in-country partner FPDA alongside capacity building for communities and farmers in Highlands
- In Principle tripartite agreement between BSI, NARI and SPC

Next 6 months

- Expand postharvest activities to Eastern Highlands, and support strengthening of the bulb onion value chain through enhanced postharvest handling and training
- Mainstreaming Family Farm Teams in the Eastern and Western Highland Provinces communities we are working in
- Evaluating and characterising PNG accessions from SPC Centre for Pacific Crops and Trees (CePaCT) for climate resilience traits
- Continue green manure, raised bed and IPM activities in the Autonomous Region of Bougainville

- In Year 2, the team delivered at pace through the postharvest technical group. FPDA staff capability was strengthened through postharvest and food safety. Postharvest and food safety trainings were also delivered and conducted in the Highland communities
- BSI and FPDA conducted the mapping of value chain logistics for strawberries and head cabbages from the Western Highlands Province. Significant losses were observed.
- Community farmers were provided with handling and packaging trainings to reduce produce injury and loss.
- Baseline data has been collected to inform a menu of adaptation and intervention options
- To address irrigation and watering challenges, BSI and FPDA are procuring irrigation materials to be trialled at selected communities where trusted partnerships have been established
- Green manure trials have been established in ARoB. Unfortunately, Tropical Cyclone Maila damaged trials and impacted communities and our in-country partners, so progress has been delayed

What is the Bioeconomy Science Institute?

The Bioeconomy Science Institute is a New Zealand Government-owned Public Research Organisation. It brings diverse scientific expertise, including skills in land use suitability, achieving ecosystem balance, quantifying impacts and adapting to change, nutrient management, efficient water use, pest and disease management, and the reduction of postharvest losses and waste.

The organisation leverages its technical capabilities to drive its international development initiatives and has a long-standing history of working with Pacific partners to support sustainable and resilient food systems.



Applying research to support economic growth and resilience, a healthy environment and beneficial social outcomes

For more information

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