



Developing commercial breadfruit production in the South Pacific Islands

Pacific Agribusiness Research for Development Initiative

Established in May 2011, the four-year PARDI project, “Developing commercial breadfruit production systems for the Pacific Islands”, aims to assist small-holder farmers to move to growing breadfruit as a commercial crop. The first stage of the project will deal with commercial orchard production and post-harvest handling for fresh exports. The second stage will deal with commercial processing of breadfruit.

A more sustainable and profitable future

Breadfruit is an easily grown, hardy food tree that has been propagated by village farmers for centuries. South Pacific Island communities currently grow their breadfruit in a non-systematic way in village spaces or in food gardens. Breadfruit is a popular food crop in the Pacific with a positive carbon footprint and the capacity to contribute significantly to rural income.

Markets for breadfruit exist in Australia, New Zealand and America; however, the volume and reliability of supply by the South Pacific Islands is not sufficient to meet market demand. There is significant potential to tap into and benefit from these markets once the industry develops a consistent and quarantine approved supply of breadfruit.

Goals and activities

The PARDI breadfruit project’s overarching goal is to enhance livelihoods in the South Pacific Islands through the development of an effective and sustainable breadfruit supply chain. The following goals and activities give insight into how this goal will be achieved.

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To identify varieties that will enable year-round production and develop systems for their propagation.

- Collect and characterise available breadfruit diversity from Fiji.
- Collect information on specific collections that exist elsewhere in the Pacific.
- Expand on the diversity that exists in the Fiji gene pool.
- Identify a methodology for the mass propagation of breadfruit.

To develop best practices for the establishment and management of small-scale commercial breadfruit orchards.

- Set up trials to determine best propagation system for mass production of breadfruit seedlings.
- Establish field trials to determine best agronomic practices.
- Conduct economic analysis to support identification of best orchard practices,.
- Disseminate information that promotes best practices for commercial breadfruit production.

To establish harvesting and post-harvest systems to meet export market requirements.

- Establish harvesting and post harvest trials to determine the best practice to maximise quality and self life.

Sustainability profile

As a traditional South Pacific Islands forest tree crop, breadfruit has required no chemical inputs. It is predicted that increased breadfruit planting in the Pacific Islands will have beneficial effects on soil health and conservation. Additionally, the risk to surrounding waterways from increased farming is minimal. As a tree crop, there are significant carbon sequestration benefits. It is expected that local sustainability will be bolstered by the increased food security that breadfruit stands to provide in the face of climate change.



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Future breadfruit industry capacity

By 2014, the PARDI research team aims to have breadfruit small holders and exporters working together efficiently to meet a growing international demand for breadfruit. It is also anticipated that the project will provide the needed stimulus for the commercial processing of breadfruit.

In particular the Pacific Island farmers are likely to:

- be part of networks with access to reliable and productive plant material;
- have established orchards ranging from 50 – 100 trees to supply export markets and local processing enterprises;
- be able make informed decisions on the potential of investing in breadfruit orchards as an income generating enterprise; and,
- follow best practice post-harvest handling systems.

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Breadfruit facts

- Breadfruit (*Artocarpus altilis*) is a member of the Moraceae (fig) mulberry family. It is an important traditional staple food in the Pacific islands – where it is boiled, roasted, cooked in an earth oven, or curried.
- The tree is believed to be native to a vast area extending from New Guinea through the Indo-Malayan Archipelago to Western Micronesia. Breadfruit was spread through the Pacific by migrating Polynesians. The Hawaiians are believed to have brought breadfruit from Samoa in the 12th Century AD.
- Breadfruit is high in carbohydrates and is a good source of minerals and vitamins. It has a bland taste somewhat like bread – hence the name breadfruit. Throughout history, Islanders have used traditional preservation methods that dry or ferment the fruit to form a sour/sticky paste.
- The evergreen trees grow to heights of 15 to 21m or more and trunks can be up to 2m in diameter. Trees begin bearing in three to five years and are productive for many decades.
- Wood from the breadfruit tree has been used for many generations throughout the South Pacific as timber for structures, outrigger canoes and drums.

For further information

Livai Tora
livai@kokosiga.com



About PARDI

PARDI: 'Pacific Agribusiness Research for Development Initiative' commenced in February 2010. The project is co-ordinated by The University of Queensland and funded by the Australian Centre for International Agricultural Research (ACIAR).

PARDI seeks to create sustainable livelihood development outcomes for the South Pacific forestry, fisheries and crop-based sectors. PARDI scientists undertake supply chain and market-driven research to identify constraints that impede local economic development. Their research involves working towards tangible solutions such as new skills for locals, new technologies and product options.

PARDI is a partnership involving The University of Queensland under the Queensland Alliance for Agriculture and Food Innovation (QAAFI), the University of the South Pacific, the Secretariat of the Pacific Community, University of Adelaide, James Cook University, University of the Sunshine Coast, the Queensland Government's Department of Employment, Economic Development and Innovation (DEEDI) and Southern Cross University.