



Climate and Water

Climate change and Pacific food systems: decision-making for transformational change

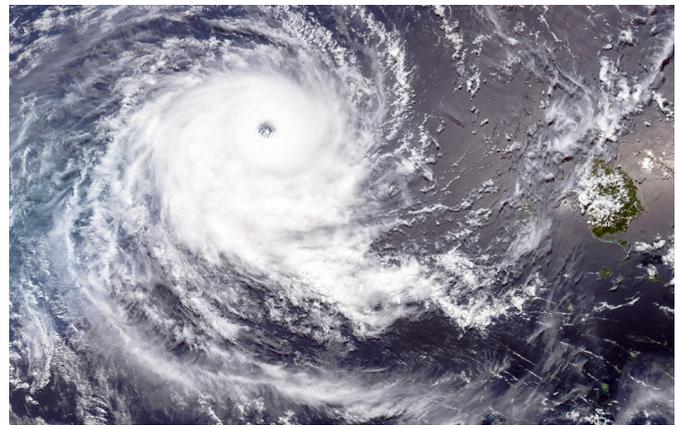
Overview

As global temperatures approach 1.5C above pre-industrial levels by 2050, and 2.0C by 2100, the impact of climate change on the Pacific region will accelerate. Local food systems – agriculture, horticulture, fisheries and aquaculture – will be drastically affected.

It is recognised that there is uncertainty about the timing and extent of these impacts, but there is no doubt that these changes are likely to render many current production systems less viable, and in some cases impossible. Consequently, planning is necessary that considers alternatives that go beyond incremental adaptation towards transformational change (see Fig. 1).

Many studies have been conducted on Pacific food crops and fisheries, their vulnerability to climate change, and resilience-building strategies. Climate projections and climate services are rapidly improving, providing better information. However, there is a lack of decision-making tools that integrate this information and enable research investors and regional planners to anticipate rapid climate change and uncertainty, and to transform food systems accordingly.

To meet this challenge, in 2019-2020 the Australian Centre for International Agricultural Research, the New Zealand's Ministry for Primary Industry and Australia's national research agency (CSIRO) are collaborating with Pacific partners to work on a proof-of-concept project. This small research activity is seeking to develop innovative decision-making tools that can map transformational options at a regional level to allow exploration and planning for future food systems. These will integrate up-to-date climate projections with scientific and local knowledge of food systems.



KEY FACTS

ACIAR Project No. WAC/2019/148

Duration: July 2019 to June 2020

Target areas: Pacific region

Budget: A\$194,000

Project Leader

Dr James Butler, CSIRO Land and Water

Key partners

- The Pacific Community
- New Zealand's Ministry for Primary Industry

ACIAR Associate Research Program Manager

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Objective

The aim of this research activity is to contribute to improving the state of knowledge of the risks (including from extreme events) and opportunities from climate change in the Pacific at a regional level.

The three main objectives are to:

- Assess current and required knowledge of long-term impacts of climate change in the Pacific in the context of agricultural livelihoods and food security.
- Map the identified impacts to broader regional risks.
- Develop a framework for designing future research investments in target regions and engage partners in climate change adaptation research and development investments.

Research questions

The project will ask a number of questions regarding the adaptation of food systems, including:

- How can a region or country know where it is placed in terms of its current adaptation profile?
- Which production should be maintained, and which will need transformational change?

- What strategies are needed to build resilience of current production, and what strategies are needed for transformational change?
- What are the costs and benefits of these strategies?
- What sequence should strategies be introduced in?
- Can adaptation pathways be mapped for food systems, and how can these be integrated into existing decision-making processes?

Expected outcomes

- Working with a study region in the Pacific, the project will map adaptation pathways for their food systems in collaboration with in-country experts and regional planners.
- These pathways will identify which commodities are likely to be resilient to future change, and those that are not.
- Key decision points will be identified that will enable either maintenance of current production systems or the need for transformational adaptation in that region.
- If regarded as useful, the proof-of-concept could be scaled out to other countries in the Pacific region. The results will also inform agriculture and fisheries investment priorities for donors.

Fig 1 Food systems may have to shift from current to more transformative production systems

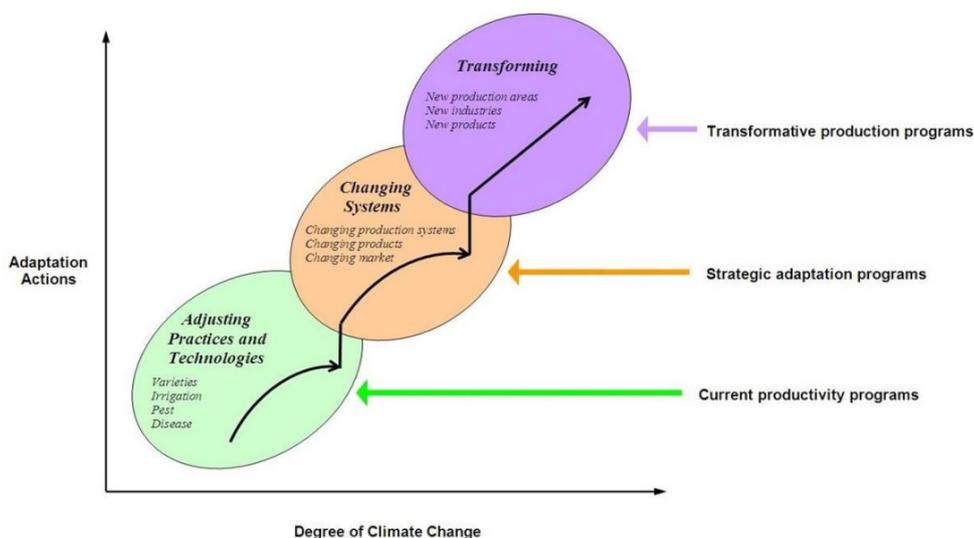


Figure from D. Ugalde, Regional Consultative Workshop on Koronivia Joint Work on Agriculture, Fiji, 2019