Timor-Leste

A$1.7 million
Budgeted funding

5
Bilateral and regional research projects

1
Small research activity

Before the COVID-19 pandemic, food systems in Timor-Leste were already under stress from many factors, including seasonally recurring food shortages, input supply challenges, low productivity, pests and diseases, and limited access to capital. The coincidence of the pandemic and the incursion of African swine fever in 2020 placed added challenges on Timor-Leste.

The Government of Timor-Leste effectively controlled the COVID-19 pandemic throughout 2020, but a second wave in mid-2021, with a corresponding long state of emergency, is a major threat to public health and the economy.

With 70% of the population living in rural areas, there is a heavy reliance on incomes from semi-subsistence and seasonal food cropping, mixed with small-scale animal husbandry and varying degrees of foraging for wild crops and game. Despite many recent improvements in a range of essential services, there is a high prevalence of poverty and associated illiteracy, and infant stunting rates are among the highest in the world. As a result, a fundamental problem facing most Timor-Leste rural households is their inability to generate sufficient reliable income from agriculture to improve the living conditions and livelihood opportunities of their families.

The reasons for constrained on-farm crop and animal production and productivity are complex and varied. They include highly variable weather conditions affecting crop establishment and subsequent yields, infertile soils, limited availability of and access to agricultural inputs, low capital for investment, pests and insects causing crop losses pre-harvest and post-harvest, labour constraints at critical times and limited market demand for agricultural products beyond local consumption. Lack of access to locally relevant and implementable science-based advice is also a key constraint.

Following the rapid global spread of the COVID-19 pandemic from early 2020, Australia's program of development cooperation with Timor-Leste pivoted quickly to respond to the challenges being faced, with a focus on health security, stability and (of particular importance to ACIAR) economic recovery. Specifically, in relation to the ACIAR program, Australia committed to helping combat the high rates of malnutrition in Timor-Leste through targeted support to the healthcare system, complemented by efforts in other sectors, including social protection and agriculture.

Country priorities

In response to the COVID-19 pandemic, ACIAR funded an analysis of food systems vulnerabilities, which included Timor-Leste as one of 5 focus countries. This analysis, published in November 2020, identified opportunities for future research to contribute to the greater resilience of Timor-Leste food systems. These include:

- improved social protection measures for vulnerable households
- a renewed focus on the productivity of smallholder agriculture with gradual intensification and improved feed and biosecurity regimes
- greater efforts to expand private sector market developments and increase employment
- greater focus on education and relevant technical training to increase the availability of skilled graduates.

These priorities will inform discussions with Timor-Leste in 2021–22 to identify future priorities for ACIAR-funded collaboration. Focus areas may include opportunities in coastal fisheries, agroforestry, livestock (especially cattle and poultry) and cropping systems, as well as seeking opportunities for trilateral research collaboration with Indonesia.

2021–22 research program

- **6 ACIAR-supported projects in Timor-Leste**
- **4 projects are specific to this country**
- **2 projects are part of regional projects**

The research program addresses our high-level objectives, as outlined in the ACIAR 10-Year Strategy 2018–2027, as well as specific issues and opportunities identified by ACIAR and our partner organisations. The following sections briefly describe individual ACIAR-supported projects and anticipated outputs in Timor-Leste. The projects are grouped according to research program. Each project description is referenced in a list at the end of this section, which provides the project title and code.

Crops | Soil and Land Management

Moving from food security to improved nutrition and rural incomes is a priority for the Timor-Leste Government. Expansion of the government and construction sector in recent decades has created new markets for agricultural products and new opportunities for local farmers. A project led by Professor William Erskine of the University of Western Australia has undertaken 5 years of research to intensify farming systems sustainably, so that farmers can expand from subsistence to income-generating farming. In the sixth and final year of the project, activities will focus on production and application of biochar from rice hulls, selection and multiplication of sandalwood seedlings, mungbean crops for the dry season and improved varieties of legumes.[1]

Fisheries

Globally, growing momentum for nutrition-sensitive agricultural policy and development assistance is yet to have any impact in the small-scale artisanal fishery sector. To address this, the role and contribution of fish to livelihoods and nutrition security must be supported by rigorous data and communicated at global, national and local scales. A project in Timor-Leste and the East Nusa Tenggara province of Indonesia aims to identify the livelihood and nutrition benefits of fisheries and test nutrition-sensitive co-management systems for inshore fisheries. Led by Dr David Mills of the WorldFish Center, the project will evaluate the nutritional value of fisheries to households and identify the factors enabling or limiting the consumption of fish. It will highlight the potential of fish to reduce malnutrition, particularly during early childhood. Through a south–south collaboration, lessons learned for sustainable inshore management in Indonesia will guide policy development in Timor-Leste that benefits poor households.[2]

Fish-based livelihoods play a critical role in the economies of coastal communities in Solomon Islands and Timor-Leste, and participation in catching, processing or trading of fish is an important pathway to poverty reduction. A new project led by Dr Hampus Eriksson of the University of Wollongong will identify and support community-identified opportunities for innovation within the coastal fisheries post-harvest sector, with a focus on income benefits for both women and men. This new approach addresses the historic lack of success at the community level of large state-led investments in fisheries sector infrastructure and advanced technologies. It seeks to influence policy on how fisheries institutions can support remote communities through more appropriate community-led infrastructure and skill development investments.[3]

Livestock Systems

ACIAR has supported a research-for-development program for smallholder cattle enterprises in Timor-Leste for several years. The program involves on-station testing and on-farm adaptation of small-scale cattle production and management technologies. The vast majority of cattle producers in Timor-Leste use extensive grazing systems to grow cattle and to retain and accumulate capital. However, strong and increasing demand for beef from urban areas is providing opportunities for farmers to sell fat cattle to markets. A project led by Assoc Prof Luis Prada e Silva of the University of Queensland is supporting smallholder crop-livestock farmers and market-chain operators in Timor-Leste through more efficient commercially oriented cattle production and improved access to markets.[4]

In 2014, the World Organisation for Animal Health identified clear priorities for improvement in veterinary services in Timor-Leste. A key component was to strengthen programs for disease surveillance, diagnosis, emergency preparedness and response for priority exotic and endemic diseases. Emergency and emerging infectious disease, including African swine fever, are a threat to the expansion of livestock production in Timor-Leste and the region. Dr Jenny-Ann Toribio of the University of Sydney leads a small research activity to strengthen the passive disease surveillance system in Timor-Leste. The project will focus on building capacity in the veterinary service for emergency and emerging animal disease detection. A case study for best-practice passive animal health surveillance in Timor-Leste will focus on definitive diagnoses of mortality of young pigs.[5]

Soil and Land Management

Farming systems in Timor-Leste have low levels of productivity and are constrained by soil factors, seasonal variability and limited resource access. A new project in 2022 will seek to improve farming productivity in Timor-Leste through a 2-stage process. In the first stage, Professor Andrew McWilliam of Western Sydney University will lead a research team to investigate farmer motivations and aspirations, and traditional knowledge and management of soil and land resources, including reluctance to use fertilisers. In the second stage, a series of collaborative on-farm trials will address soil-related productivity constraints to achieve the aspirations identified by the farmers.[6]

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See page 197 for contact details.

Current and proposed projects

1. Agricultural innovations for communities for intensified and sustainable farming systems in Timor-Leste (AI-Com) (CIM/2014/082)
2. Innovating fish-based livelihoods in the community economies of Timor-Leste and Solomon Islands (FIS/2019/124)
3. A nutrition-sensitive approach to coastal fisheries management and development in Timor-Leste and Nusa Tenggara Timur Province, Indonesia (FIS/2017/032)
4. Smallholder cattle enterprise development in Timor-Leste (LPS/2014/038)
5. Improved animal health surveillance in Timor-Leste (LS/2019/158)
6. Understanding tradition and fostering appropriate innovation in soil management to improve farmers productivity and livelihood in Timor-Leste (SLAM/2020/141)

Children glean the exposed reef at low tide, at Adarai on the Timor-Leste southern coast. Photo: Alex Tilley. ACIAR project FIS/2017/032