

Timor-Leste

 **A\$1.98** million
Budgeted funding

 **5**
Bilateral and regional
research projects

 **1**
Small projects and
activities

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. As the situation is now stabilising, ACIAR will establish a new long-term partnership with Timor-Leste to help develop the research system for the benefit for the rural poor. The partnership will be strengthened by the opening of an ACIAR Country Office in Dili, in mid-2022.

While Timor-Leste has made strong progress in recent years, some development indicators remain stubbornly entrenched. 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, with more than 50% of the population facing some level of food and food nutritional insecurity. Improving productivity, diversity and returns from agriculture, livestock and fisheries, as well as the functioning of food systems, will remain crucial to overcoming these challenges, with the aim for rural populations to generate sufficient reliable income from agriculture to improve their living conditions and livelihood opportunities.

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 (especially given a weak private sector), 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. Critically, lack of access to credible, locally relevant and implementable science-based advice is a key constraint cutting across all areas.

Country priorities

Since 2001, ACIAR has had a strong program of projects in Timor-Leste, some of which have been long-term (such as Seeds of Life). The time is now right to pivot our relationship to one based on a research partnership between the two countries, not just a series of projects. To achieve this, ACIAR has opened a country office in Dili and during 2022–23 will work with key partners in Timor-Leste to establish the basis of the new and long-term partnership, using as a starting point the analysis of food systems vulnerabilities published in November 2020. This identified opportunities for future research to contribute to the greater resilience of Timor-Leste food systems, including:

- » 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.

The opportunities for ACIAR to support these priorities will be investigated in more detail this year. Focus sectoral areas may include research in coastal fisheries, agroforestry, livestock (especially cattle and poultry) and cropping systems, as well as seeking opportunities for trilateral research collaboration with Indonesia.

2022–23 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

Many rural households in Timor-Leste do not generate sufficient reliable income from agriculture to improve the living conditions and livelihood opportunities of their families. A new project, led by Associate Professor Louise Barton of the University of Western Australia, will build on previous ACIAR-funded projects to improve productivity of agricultural systems by introducing accessible technologies and improved agronomic practices to overcome soil-related constraints and increase opportunities for diversification and intensification. At the core of the project is capacity development of in-country partners in research practice, research management and agronomic extension services, as well as the development and implementation of business models supporting biochar. The assessment of the viability of sandalwood for smallholders in Timor-Leste will continue, including making recommendations related to barriers to recognising the value of this asset.¹



The ACIAR program in Timor-Leste will identify opportunities to contribute to the resilience of food systems, such as gradual intensification and improved biosecurity of smallholder agriculture, and greater efforts to expand private sector markets.

Fisheries

Globally, growing momentum for nutrition-sensitive agricultural policy and development assistance is yet to have any impact on 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, identify the factors enabling or limiting fish consumption, and highlight the potential of fish to reduce malnutrition, particularly during early childhood. In 2022–23 activities will include data collection to understand household livelihood structures and decision-making and community training in healthy diets and child nutrition.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 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, focusing on income benefits. 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 appropriate community-led infrastructure and skill development investments. In 2022–23 activities will include monitoring fish distribution and marketing, documenting livelihood experiences and building the capacity of women in safe aquatic food handling practices.³

Livestock Systems

There is a growing body of evidence highlighting a causal linkage between foodborne illness due to enteric bacterial infections and malnutrition. Children exposed to damaging enteropathies at an early age may have little chance at realising their full development potential, despite improved diets later in life. Studies in Timor-Leste highlighted the need to better consider the role of food safety in food systems thinking, particularly in the Pacific region where increased consumption of animal-source protein is promoted to address childhood malnutrition and stunting. A new project led by Dr Samantha Colquhoun of the Australian National University, will investigate infant and child dietary practices, food safety and environmental hygiene in relation to community poultry production, with a focus on the risk of *Campylobacter* and *Salmonella* infection. The research will be supported by targeted interventions in urban and rural settings through a One Health approach.⁴

A new project will be established in Timor-Leste during 2022–23, as part of the ACIAR-IDRC Research Program on One Health. Led by the Menzies School of Health Research, the project aims to develop strategies to reduce brucellosis transmission in Timor-Leste based on One Health collaboration (page 24).⁵

Soil and Land Management

A small research activity led by Dr Leigh Vial of Charles Darwin University forms the first stage of a planned large-scale project to improve smallholder farm and livelihood productivity in Timor-Leste. The research will provide an understanding of the biophysical and socioeconomic characteristics of the prospective areas for further targeted research, including an assessment of food security and sovereignty, relevant technical assistance histories, current development status and outlook of each location. These indicators will inform the future design, development and implementation of interventions, technologies and initiatives aimed at lifting rural productivity and resilience in ways that align with expressed community interests.⁶

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See page 186 for contact details.

Current and proposed projects

1. Agricultural Innovations for Communities - Intensified and Diverse Farming Systems for Timor-Leste (AI-Comm 2) (CROP/2021/131)
2. A nutrition-sensitive approach to fisheries management and development in Timor-Leste and Nusa Tenggara Timur Province, Indonesia (FIS/2017/032)
3. Innovating fish-based livelihoods in the community economies of Timor-Leste and Solomon Islands (FIS/2019/124)
4. Bacterial enteropathy and nutrition study in poultry [Timor-Leste] (LS/2021/126)
5. Developing strategies to reduce brucellosis transmission in Timor-Leste based on One Health collaboration (ACIAR-IRDC One Health Research Program) (LS/2022/161)
6. Evaluation of livelihood zones, rural household trajectories, research and development partners and initiatives in Timor-Leste (SLAM/2021/108)