Philippines

A$3.2 million
Budgeted funding

13
Bilateral and regional research projects

5
Small projects and activities

The Philippines is one of Australia's longest-standing bilateral relationships and is supported by strong people-to-people links. Australia delivers targeted advice and technical assistance that aims to have a catalytic effect on reform efforts and capacity development of the Philippine Government. Australia's Philippines program is designed to meet the key objectives of inclusive economic growth, effective governance and peace and stability. This reflects a transition from a traditional donor–recipient partnership to an economic partnership, with an emphasis on investments that are targeted and catalytic, leverage the Philippine Government's own resources and are based on the Philippines' own commitments in the Filipino Development Plan.

An overview of Australia's aid program in the Philippines is available on the DFAT website.

The Philippines has maintained good economic growth in recent years. Robust domestic consumption, low inflation, improving labour market conditions, strong remittances and ongoing public investment continue to drive the country's economy.

However, this growth has not resulted in commensurate reductions in poverty and broader social inclusion, especially for smallholder farmers and fisherfolks, who are among the poorest of the poor.

To address these economic and welfare disparities, the Philippine Development Plan 2017–2022 outlined the country's pathway to a 'more inclusive growth, high-trust and resilient society, and globally-competitive knowledge economy'. In the medium term, the targets are for the economy to grow by 6–7% annually, and for poverty to be reduced to 14% by 2022.

Central to achieving these targets is harnessing the growth potential of the agriculture sector by creating opportunities, facilitating access and ensuring inclusivity. Achievement of targets also requires sustainable intensification of production practices.

Although its contribution to GDP is modest (10%), the agriculture sector employs almost one-third of the labour force (about 11 million annually), most of whom are from the rural countryside. Agriculture is also the major supplier of raw materials for the manufacturing sector, and a food source for over 100 million people.

Despite its economic importance and food security role, the agriculture sector continues to be weighed down by low productivity and limited diversification, natural resource degradation, high incidence of poverty and vulnerability to external shocks (e.g. disaster and climate risks).

To address these constraints, the Philippine Government is working to revitalise and modernise the sector, increase productivity, ensure food security and, most importantly, improve the welfare of the millions of farmers and fisherfolk who depend on it. Moreover, there is a need to identify investment areas that will enhance the sector's competitiveness, profitability and resilience. Agricultural transformation also requires significant and sustained investments in science, technology and innovation.

In recent years, the Philippine government invested substantially in agriculture R&D with the aim of reducing production and post-harvest losses, maintaining quality and food safety, increasing the market value of agricultural and fishery products along the supply chain, building a critical mass of human resources in science and technology and improving research infrastructure.

Our main government partner, the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) identifies a future focus on the 'use of advanced and emerging technologies such as biotechnology, genomics, bioinformatics, nanotechnology, and information and community technology as tools to find science and technology solutions to agricultural, fishery and forestry problems and to develop new products with significant impact to the sector'.

Country priorities

For more than 30 years, ACIAR has been an active partner of the Philippine Government in agricultural research-for-development. Since 1984, we have invested more than A$150 million in more than 220 projects across agribusiness, crops, fisheries, forestry, horticulture, livestock, impact evaluation, social sciences, soil and land management, water and climate management.

In December 2018, ACIAR and PCAARRD signed a partnering agreement that aims to further strengthen the Australia–Philippines scientific and technical cooperation for agriculture, aquatic and natural resources. This relationship continues to grow and pursue innovations and new models of cooperation, particularly on co-investment on research and capacity building. ACIAR currently works with over 34 partners in the Philippines from government, research and academic institutions, private sector and civil society. These partnerships drive ACIAR-supported research-for-development work in the Philippines.

ACIAR support to the Philippines will continue to focus on research to enhance agricultural productivity and ensure food safety, improve the marketability and competitiveness of agricultural products, and protect rural households, especially the poor, from negative impacts of natural disasters, climate change and other external shocks. Higher-value products and market competitiveness would improve food security by enabling smallholder farmers and traders to increase their income and their access to other basic services and economic opportunities.

Our portfolio of work in the Philippines covers all aspects of agriculture, fisheries and forestry, with the common theme of improving livelihoods and opportunities for smallholder farmers. During 2020–21, ACIAR research initiatives in the Philippines will include:

- working with PCAARRD to build the skills and knowledge of Philippine researchers and agribusiness specialists to analyse and improve processes along agriculture value chains so that they better respond to industry and market needs
- supporting the development and improvement of technologies for the culture and grow-out of high-value marine species and consolidating approaches and technology for the restoration of damaged coral reefs, which has more importantly, improved fish catch and enhanced coastal biodiversity in northern Philippines
- supporting action research to develop a transferable methodology for socioeconomic and livelihood impact analysis of African swine fever to inform future investments by governments and donors in addressing this biosecurity in Australia and South-East Asia. To test and refine the approach, the Philippines and Timor-Leste will be among the pilot areas.
- supporting research to understand how agricultural development can draw on lessons from disaster risk reduction to minimise climate-related damage and build more climate-resilient farming systems.

The COVID-19 pandemic is having a major impact on Philippine food systems and the economy. ACIAR is supporting an Assessment of Food System Security, Resilience and Emerging Risks in the Indo-Pacific in the context of COVID-19 which will help identify areas of focus for our research collaboration with the Philippines that might increase food systems resilience in the face of future shocks.

Improving the performance of smallholder value chains for fruit and vegetables and building community capacity through learning alliances is the focus of a project in the southern Philippines. Photo: ACIAR. ACIAR project: AGB/2017/039.

2020–21 research program

ACIAR supports 18 projects and programs in the Philippines, 13 of which are specific to this country. The remainder are part of regional projects. The projects address our high-level objectives, as outlined in the 10-Year Strategy 2018–2027, as well as specific issues and opportunities identified by ACIAR and partner organisations.

The following sections briefly describe individual ACIAR-supported projects and anticipated outputs in the Philippines. 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.

Agribusiness

Fruit and vegetable production are important economic activities in the southern Philippines but are limited by small farm size, poor adoption of technology, low productivity and product quality, and high post-harvest losses. Improving the performance of smallholder value chains for fruit and vegetables, and building community capacity, is the focus of a project led by Dr Gomathy Palaniappan of the University of Queensland. During 2020–21, there will be ongoing facilitation of learning alliances with private sector and grower groups, and community, government and research stakeholders to improve smallholders' income, livelihoods and community wellbeing through the value-chain improvements implemented.[1]

Research in the southern Philippines shows that integrating vegetable value-chain development and community engagement leads to improved innovation, competitiveness, quality and value. However, success has occurred at very local scales and, in general, the majority of smallholder horticulture growers in the Philippines are often not able to compete in higher-value, more-demanding markets. Supporting the design of a new project, Dr Oleg Nicetic of the University of Queensland is investigating agribusiness-led development in inclusive value chains to develop a theory of change for inclusive agribusiness models for market-oriented value chains in the Philippines.[2] This will inform a project starting in 2021 to identify opportunities for inclusive agribusiness-led market development, evaluate opportunities for digital technologies to increase competitiveness and farm-to-market linkages, and evaluate models for public–private learning alliances and innovative co-investment with agribusiness firms. Led by Dr Lilly Lim-Camacho of CSIRO Agriculture and Food, the project will work with producers of high-value fruits and vegetables in the southern Philippines. This project aligns directly with two research priorities of PCAARRD.[3]

Despite persistent poverty and malnutrition in the Philippines, there is also economic growth and a growing middle class, which has a rapidly increasing demand for dairy-based products. The increase in domestic consumption presents an opportunity for significant growth in the Philippines dairy farming sector, particularly for smallholder dairy farmers, but there are many barriers to growth. The same barriers have been observed in Indonesia, Pakistan, Thailand and Bhutan. Professor Wendy Umberger of the University of Adelaide will undertake a small research activity to identify and analyse constraints along the dairy value chain. The project will identify key research priorities and potential partnerships for the development of the smallholder dairy sector in the Philippines, with an emphasis on the commercial sector.[4]

Crops

A new species of armyworm, the fall armyworm (*Spodoptera frugiperda*), has caused serious damage to rice, sugarcane, sorghum, beet, tomato, potato and cotton crops throughout the Indo-Pacific region, and individuals have been recorded in northern Australia. The species poses a serious challenge to smallholder farmers in terms of sustainable management practices. A small research activity, led by Dr Wee Tek Tay of CSIRO and co-funded with the Australian Grains Research and Development Corporation, will investigate current successful management options for the pest and determine genetic differences between populations of the pest in South-East Asia and Australia—particularly to understand existing levels of insecticide resistance. The knowledge generated will be useful for future integrated pest-management approaches and the development of a draft resistance management plan.[5]

Fisheries

Dried sea cucumbers are highly valued in China and South-East Asian markets, but overfishing throughout the Asia-Pacific region and poor fisheries management have resulted in the severe decline of sea cucumber stocks and even fishery closures. This has reduced income-generating opportunities for coastal communities. Building on previous ACIAR-supported projects, a project led by Professor Paul Southgate of the University of the Sunshine Coast will develop technical skills to improve the reliability of culture methods. This will support increased production capacity and further expansion of community-based sea cucumber farming in Vietnam and the Philippines.[6]

An innovative conservation project in the northern Luzon region of the Philippines, led by Professor Peter Harrison of the Southern Cross University, has successfully developed methods to restore coral reefs damaged by past dynamite fishing practices. Having determined requirements for survival and growth of juvenile branching and massive corals, this project finishes in 2020–21 with stakeholder training and an evaluation of the socioeconomic benefits of reef restoration to coastal communities. Formulation of policy advice on alternative reef management strategies in the Philippines, and potentially in Australia, will be finalised.[7]

The successful restoration of coral in experimental plots has led to notable increases in reef fish abundance and fish species richness, compared with control plots where coral was not restored. This project, led by Professor Harrison of the Southern Cross University, has established rigorous protocols and long-term monitoring and evaluation of the impacts on fish communities and other reef resources from coral restoration in the northern Luzon region. The project provides globally significant advances in understanding the impacts of active coral restoration on fish communities, and will enhance capacity of communities to better manage reef fish resources and reef restoration activities in the future.[8]

Building on the success of previous ACIAR project partnerships in demonstrating rapid coral population recovery, re-establishment of breeding populations and increased fish abundance from larval coral restoration interventions, Professor Peter Harrison of the Southern Cross University will lead a new five-year project to significantly increase the scale, efficiency, resilience and sustainability of restoration interventions. The project will establish coral restoration networks with communities and local government units and apply an innovative multidisciplinary strategy to rapidly reverse declining coral and fish assemblages and restore essential reef ecosystem services in four regions of the Philippines.[9]

Horticulture

About 40 species of tropical fruit flies damage horticultural crops and impede trade throughout South-East Asia. A project in Indonesia and the Philippines builds on the success of previous ACIAR projects, and links to fruit-fly work in other ACIAR partner countries and Australia. The project, led by Mr Stefano De Faveri of the Queensland Department of Agriculture and Fisheries, aims to reduce fruit-fly infestation of mango crops through area-wide management of the pest, and improve pre-harvest and post-harvest practices. The ultimate aim is to improve the yield and quality of crops in order to improve livelihoods and trade opportunities.[10]

Vegetable consumption is low in the Philippines for several reasons, including the perception of poor quality and safety of vegetables. Vegetable farmers are not well trained in the appropriate use of pesticides, resulting in pesticide residues above permissible limits in harvested crops, exposure of farm workers to pesticide poisoning and contamination of soil and water. Dr Gordon Rogers of Applied Horticultural Research leads a project to improve the capacity of selected vegetable supply chains to deliver vegetables that better meet consumer expectations in terms of quality, food safety, nutritional value and price.[11]

Mango production in the Asia-Pacific region accounts for about two-thirds of global production. Much of the crop is produced by smallholders, who achieve relatively modest yields and participate in traditional value-chain arrangements that offer producers little incentive to innovate or pursue higher quality. Some producers seek better returns by supplying higher-value export markets (such as Korea), but they have struggled to deliver fruit that meets market or regulatory standards. A project in Cambodia and the Philippines, led by Dr Cameron McConchie of the Northern Territory Department of Primary Industry and Fisheries, aims to improve the ability of selected mango supply chains to deliver fruit that better meets consumer expectations of quality and value, and provide smallholder growers with a better return on investment.[12]

Fusarium wilt (Panama disease) has become widespread throughout South-East Asia. The disease is threatening smallholder banana production in countries including Indonesia, the Philippines and, more recently, Laos. A project led by Dr Anthony Pattison of the Queensland Department of Agriculture and Fisheries aims to develop an integrated management response to the spread of the disease. The research will investigate the effects on banana production of altering the banana microbiome to suppress disease and increase plant resistance to *Fusarium* wilt.[13]

Social Sciences

Previous ACIAR investment in Mindanao highlighted how community-based extension methods can rapidly improve agricultural livelihoods. A project led by Dr Mary Johnson of RMIT University is comprehensively testing and evaluating these improved extension methods in conflict-vulnerable areas in the southern and western Philippines. The project team continues its specialist mentoring and support to PCAARRD in their research to validate the LIFE Extension Model (developed by the project), and to understand the potential for scaling up the model to the national government level.[14]

Agriculture in the Philippines is especially susceptible to the adverse effects of climate change, through increasing weather variability, higher incidence of climate-related disasters and longer-term changes. Smallholder farmers and fishers need access to evidence-based options for managing the effects of climate change. As part of a whole-of-government approach, Dr Peter Hayman of the South Australian Research and Development Institute leads a project to improve the exchange of information between the provider of climate and weather information and decision-makers involved in managing climate and weather risk of smallholder farmers. The project will consolidate its research findings during 2020 and pilot communication material and scale up the project findings to other local government units and community-based organisations.[15]

Improving livelihoods of low-income residents of rural area remains a critical issue in the Philippines, especially in the country's rural uplands. More than 24 million people rely on subsistence agriculture, most of whom are below the poverty line. In addition, deforestation and land degradation in the uplands are major national environmental and social issues. A project led by Dr John Herbohn of the University of the Sunshine Coast focuses on forest landscape restoration to enhance livelihoods. During 2020–21, assessment and data collection will continue in field trials that are testing smallholder-based tree–crop farming systems to improve food security and livelihoods. Pilot testing of changes to policy at the local and provincial levels to address social, institutional and political problems will also continue.[16]

Vidal Moreno, Mindanao, has participated in a project that is validating a community-based extension model to improve agricultural livelihoods. Photo: Jeoffrey Maitem. ACIAR project ASEM/2012/063.

Soil and Land Management

Rubber is the fourth largest crop in Agusan del Sur in the southern Philippines, but only 50% of the total rubber area planted is productive or tappable, and average yield in the province is much lower than the national average. The province is considered the poorest in the southern Philippines. By introducing improved profitable rubber intercropping systems and sustainable management regimes, a project led by Professor Chengrong Chen of Griffith University aims to boost household incomes for Indigenous smallholder farmers, who have poor access to technology and are totally dependent on subsistence farming on their small piece of land. The project is identifying economic opportunities, characterising key soil constraints and identifying the most suitable lands for rubber-based cropping systems.[17]

ACIAR is supporting a small research activity, led by Associate Professor Anik Bhaduri of Griffith University, that will bring together expertise from across Australia and internationally to develop a comprehensive framework of response assessment by which interventions and responses to degradation of land and water resources can be assessed and valued considering future climate scenarios. The project will be a fast-track and intensive synthesis, based on existing work on the social, economic and environmental costs of land, water and soil degradation. The project will contribute to the second edition of the State of the World's Land and Water Resources for Food and Agriculture, which is currently under development and led by FAO.[18]

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Current and proposed projects

1. Developing vegetable and fruit value chains and integrating them with community development in the southern Philippines (AGB/2017/039)
2. A theory of change for inclusive value chains in the Philippines (AGB/2019/100)
3. Inclusive agribusiness-led development for high-value fruit and vegetable in the southern Philippines (AGB/2018/196)
4. Philippines smallholder dairy: landscape analysis and research priorities (AGB/2020/120)
5. Characterisation of *Spodoptera frugiperda* (fall armyworm) populations in South-East Asia and northern Australia (co-funded with GRDC) [Indonesia, Vietnam, Laos, Myanmar, Cambodia, Philippines, Malaysia] (CROP/2020/144)
6. Increasing technical skills supporting community-based sea cucumber production in Vietnam and the Philippines (FIS/2016/122)
7. Restoring damaged coral reefs using mass coral larval reseeding [Philippines] (FIS/2014/063)
8. Baseline monitoring and evaluation of long-term impacts on fish stocks from coral restoration [Philippines] (FIS/2018/128)
9. Regional networks for large-scale coral and fish habitat restoration in the Philippines (FIS/2019/123)
10. Development of area-wide management approaches for fruit flies in mango for Indonesia, Philippines, Australia and the Asia-Pacific region (HORT/2015/042)
11. Developing vegetable value chains to meet evolving market expectations in the Philippines (HORT/2016/188)
12. Integrated crop management for mango in Cambodia and the Philippines to meet market quality standards (HORT/2016/190)
13. An integrated management response to the spread of fusarium wilt of banana in South-East Asia [Laos, Philippines] (HORT/2018/192)
14. Improving the methods and impacts of agricultural extension in conflict areas of Mindanao, Philippines (ASEM/2012/063)
15. Action ready climate knowledge to improve disaster risk management for smallholder farmers in the Philippines (ASEM/2014/051)
16. Enhancing livelihoods through forest and landscape restoration [Philippines] (ASEM/2016/103)
17. Land management of diverse rubber-based systems in the southern Philippines (SLAM/2017/040)
18. State of land and water assessment framework [Philippines] (SLAM/2020/138)