Pacific island countries

A$10.2 million
Budgeted funding

29
Bilateral and regional research projects

6
Small projects and activities

Prior to the COVID-19 pandemic, Australia's assistance program to Pacific island countries aimed to support a stable, secure and prosperous Pacific region by addressing challenges to regional development and economic growth. Investments aimed to increase global and regional trade, increase finance for business activity, deepen labour markets and create better-quality employment opportunities. The program works with Pacific countries, regional organisations and multilateral development banks to improve market access and value-chain development in the agriculture and fisheries sector; as well as improve product quality, meet biosecurity requirements and strengthen resource management.

COVID-19 is now having a profound impact on the region. Australia's COVID-19 response will focus on the Pacific and South-East Asia, with the Pacific, Timor-Leste and Indonesia as first-tier priorities. These are our closest neighbours, where we have the strongest national interests in providing support and where we can have the greatest impact. These countries are also vulnerable to the effects of the pandemic. Their recovery is critically important to Australia's own security and economic recovery.

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

Agriculture, fisheries, forestry and tourism are important sectors in the Pacific region, particularly for their contributions to the livelihoods, food security and gross domestic product (GDP). According to the Food and Agriculture Organization of the United Nations (FAO), about 67% of the Pacific region's population depends on agriculture and fisheries for livelihoods.

Fisheries resources represent a major source of food and income, and offer sustainable development options, particularly for atoll nations. Accordingly, any improvements in the output of agriculture and fisheries benefit the population by increasing its access to food and improving its ability to meet dietary needs.

Forests and trees have enormous environmental and economic implications for people in the Pacific region. They act as a buffer for the impacts of climate change and contribute to biodiversity and the protection and maintenance of ecosystem services. Unfortunately, despite their critical role, these valuable resources are under continuous threat from human activities, such as expansion of agricultural areas and unsustainable logging. Degeneration of forests due to unsustainable harvesting of timber and non-timber products is a serious concern. Loss of mangroves to aquaculture and settlement expansion in several smaller nations has increased the vulnerability of coastal zones to natural disasters.

Threats to biodiversity due to the spread of invasive tree species and pests are common to the region, such as the coconut rhinoceros beetle (Guam biotype) and Bogia coconut syndrome. Island environments have inherited limited natural resilience in the face of aggressive invasive species, and recent years have been marked with rapidly spreading outbreaks of several devastating invasive pest species. Emerging diseases of livestock (and potentially fisheries) may also be equally destructive.

Overall, the importance of agriculture and fisheries to food security and livelihoods in the region is clear. The sector makes significant contributions to economic growth; however, the uncertain impacts of climate change and the rapid increase of non-communicable diseases remain a significant challenge for the region.

Pacific leaders continue to raise concerns about the uncertain impacts of climate change as climate models suggest that, over the longer term, some Pacific islands will become drier and others wetter. In the meantime, stronger periods of drought and wet weather, associated with El Niño cycles, are expected.

While undernutrition remains a problem in rural areas of Pacific island countries, changes in diets and lifestyles related to increasing incomes and urbanisation have led to Pacific island countries having some of the highest levels of obesity within the world, together with record levels of type 2 diabetes and heart disease. Moreover, as well as taking an enormous toll in terms of human wellbeing, the rising incidence of non-communicable diseases imposes a major burden on health services as well as the economy of Pacific countries.

Regional priorities

Australia's Pacific Step-up, foreshadowed in the Australian Government's 2017 Foreign Policy White Paper, committed Australia to a deepened engagement within the Pacific region. The Pacific Step-up emphasises the importance of the ongoing and diverse ACIAR program in the region, involving all research programs. Protecting the delicate natural resource base of the Pacific islands is a closely linked priority in ensuring the resilience of agrifood systems. Australia's response to the COVID-19 pandemic is a reflection of this deeper engagement with the region.

Prior to the COVID-19 pandemic, Pacific leaders had already emphasised the need for greater resilience within Pacific food and agriculture systems to counteract vulnerabilities and to strengthen food and nutritional security. While investing in agriculture has been widely recognised as one of the most effective ways of stimulating broad-based economic growth, increasing resilience rather than focusing primarily on increasing productivity has become a statement that underpins the entire agricultural development agenda in the Pacific. This focus has become even more important given the vulnerabilities in food systems of the region exposed by the COVID-19 pandemic.

SPC emphasises integrated approaches to increasing food systems resilience, including:

- deploying a diversity of species and products in trees, crops, livestock and aquaculture, which offers a 'no regrets' approach to increasing resilience in the face of uncertainty
- growing a greater number and diversity of trees in forestry, agroforestry and horticulture systems, which contributes to more sustainable and resilient agricultural landscapes
- diversifying crops, which contributes in various ways to greater food security, nutrition and health
- better managing coastal fisheries and aquaculture, which underpins healthier nutrition and more resilient livelihoods
- strengthening market chains for greater equity and inclusion, which contributes to improved and more resilient livelihoods.

Regionally, interdisciplinary approaches are required to reduce the vulnerability of the resource base, and to form climate-smart agricultural landscapes. National policy, land-use planning and community engagement to manage water, soils, livestock, crops, forests, natural vegetation and coastal marine resources, from 'ridge to reef', in an integrated manner can increase resilience and sustainably improve livelihoods. Achieving this requires numerous and well-coordinated innovations in technology and ways of working.

Addressing climate change issues is a very high priority and includes research into climate-resilient livelihoods and climate-smart agricultural production systems. The Pacific region has also identified access to diverse crops and trees as a key resource in ensuring the resilience of food systems and livelihood in the face of climate change.

Improving human nutrition and reducing risks to human health is of overwhelming concern to our Pacific partners. Addressing the results of the triple burden of hunger, malnutrition and a high prevalence of nutrition-related diseases is emerging as a new priority for ACIAR.

Strengthening regional biosecurity trade protocols and capacity to support the expansion of export markets, increasing food security and conserving biodiversity is a priority throughout the Pacific region and for ACIAR.

Institutional capacity building remains a critical part of Australia's support to the Pacific region. However, building and sustaining research capacity is a particularly difficult challenge, with many small island states having low populations. In response to that challenge, ACIAR is delivering targeted capacity-building initiatives for the region that is focused on both individuals and institutions.

2020–21 research program

ACIAR supports 35 projects in Pacific island countries, 25 of which are specific to one or more of these countries. 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 Pacific island countries. 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

The ACIAR Agribusiness Program in the Pacific region seeks to better understand market opportunities to improve livelihoods and increase economic benefits for farmers and communities.

In Fiji and Vanuatu, a small research activity has focused on opportunities for export in the established high-value markets of coffee, ginger, cocoa and coconut. Led by Professor Jen Carter of the University of the Sunshine Coast, the study reviewed policies, policy drivers and programs to understand how government and non-government groups can best deliver public–private partnerships in extension. The project will deliver its findings in early 2021.[1]

The Pacific Agribusiness Research and Development Initiative (PARDI) has been a significant program of work, starting in 2010, to promote sustainable livelihood outcomes for Pacific islands households through research and innovation, with the regional goal of catalysing and informing a more vibrant, diverse and viable agribusiness sector. Led by Marita Manley, Research Fellow at the Sunshine Coast, phase 2 studied the benefits to community livelihoods from successful agribusiness developments and ways to make economic benefits more inclusive and sustainable. In its final year, the initiative will identify constraints and bottlenecks in value and supply chains for primary products in Pacific island countries, and ways to overcome these. PARDI has linked several ACIAR projects with other Pacific donor programs, such as the Pacific Horticultural and Agricultural Market Access program and the Market Development Facility.[2]

Crops

Oil palm is a long-term and economically important perennial crop that is grown in large plantations and on smallholder farms in South-East Asia and Pacific island countries. The industry is threatened by basal stem rot, a disease caused by the fungus *Ganoderma boninense*, the incidence of which increases with each successive planting of the crop. A seven-year trial led by Professor Ian Godwin of the University of Queensland is starting to show differences in susceptibility to the disease between lines from 81 breeding families that have been genotyped. The 2020–21 activities will try to identify the genetic basis of resistance and select candidate germplasm for resistant planting material.[3]

The Pacific Agribusiness Research and Development Initiative (PARDI) is a significant program of work, now in its second phase, promoting sustainable livelihood outcomes for Pacific islands' households through research and innovation, with the regional goal of a more vibrant, diverse and viable agribusiness sector. Photo: Conor Ashleigh. ACIAR project: AGB/2014/057.

Fisheries

Mabé pearl jewellery and shell handicraft industries provide income opportunities for both coastal communities and women's social enterprises in the western Pacific. Past project activities have increased the technical skills of communities in the production of juvenile oysters and the farming of half-pearl (mabé) shell in Fiji and Tonga, and in the production of shell-based jewellery in Papua New Guinea. In the final year of two projects led by Professor Paul Southgate of the University of the Sunshine Coast, researchers will determine the economic and socioeconomic impacts of pearl- and shell-based livelihood development in Fiji, Tonga and Papua New Guinea[4], and its potential development in Tonga and Vietnam[5]. The development of greater technical capacity and a better understanding of gendered preferences and aspirations sets the basis for a new project in Fiji, Tonga, Papua New Guinea and Samoa. Country-specific interventions are required to ensure uniform mabé pearl jewellery/shellcraft production protocols and standards, improve capacity for sector governance within partner institutions and stakeholders, develop marketing strategies and ensure optimal benefits flow to both men and women across the value chains.[6]

A four-year project working with SPC supports implementation of the 2015 strategy, 'A new song for coastal fisheries – pathways to change'. The project, led by Professor Neil Andrew of the University of Wollongong, will continue its work to bring together communities and fisheries agencies in developing culturally suitable co-management practices that support sustainable coastal fisheries, and associated food security and wellbeing. The project aims to improve institutional capacity for scaling out community-based fisheries management. It is undertaking research to support policy reform, strengthen fisheries research and management capacity of institutions, and build community capacity to manage their fisheries resources.[7]

In Pacific island countries, the paradox of apparently abundant fish, vegetables and root crops but poor public health outcomes presents a significant challenge for policymakers. Professor Neil Andrew of the University of Wollongong leads a project that is continuing its analysis of the agrifood systems in the region using newly integrated data sources that allow mapping and analysis of what food is being produced, distributed, traded and sold, at multiple levels and across regional case studies. The results of the analysis will provide a basis to strengthen policy coherence and develop diagnostic tools to improve public health and agriculture/fisheries policy interventions and reporting. Ultimately the project aims to link agriculture and nutrition in policy decision-making and associated implementation strategies, to promote healthier and more diverse diets in the region.[8]

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 to enable innovation within the coastal fisheries post-harvest sector, with a focus on income benefits for both men and women. This new approach addresses the 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 infrastructure investments.[9]

Nutrition-sensitive agriculture ensures the sustainable production of nutritious, affordable and safe foods to meet the dietary requirements of local communities. In the Pacific region, there is an opportunity to transform seaweed fisheries into nutritionally sensitive food systems comprised of short supply chains, village-based processing, sustainable use of natural resources and marketing for families. Dr Libby Swanepoel of the University of the Sunshine Coast will start a small research activity in 2021 to develop and evaluate gender-inclusive activities in Kiribati and Samoa to broaden the focus of seaweed production from an export commodity to one that provides direct benefits to the health and wellbeing of communities.[10]

Forestry

Agroforestry systems are well suited to the Pacific region, and provide food, timber, non-wood forestry products and ecosystem services. However, returns from agroforestry trees take several to many years to be realised. Since 2015, Professor Helen Wallace of Griffith University has led a project to enhance the economic, social and environmental benefits of agroforestry in Fiji, Solomon Islands, Vanuatu and Papua New Guinea. Concluding in 2021, the project will complete training and facilitation activities enabling smallholders to participate in value-adding opportunities identified by the project. These include growing short-term crops in the agroforestry systems and processing and marketing products from the system, e.g. nuts, muesli and dried fruit.[11]

Appropriately designed and managed agroforestry systems are essential to improve the productivity and sustainability of much of the land in Fiji, which is relatively steep. Dr Tyron Venn of the University of Queensland leads a team that is developing extension material and economic models that will provide information to government agencies, landholder communities and individual farmers on system design and expected financial and economic performance. This information is expected to influence the development of the policy, institutional and governance frameworks needed to encourage adoption of new systems.[12]

Agroforestry is the key element supporting the 'Decade of reforestation' initiated by the Vanuatu Government. Dr Tony Page of the University of the Sunshine Coast leads a project to support adoption by smallholders of three high-value forestry species—canarium nut (*Canarium indicum*), sandalwood (*Santalum austrocaledonicum*) and whitewood (*Endospermum medullosum*), which yield nuts, oil and timber, respectively. In addition to identifying genetically superior planting material and refining silvicultural techniques for increased productivity, in its final year the project will investigate the applicability and effectiveness of peer-mediated learning (farmer-led extension) in Vanuatu to overcome constraints to government and institutional extension services.[13]

Native sandalwood (*Santalum yasi*) is commercially valuable but the overexploitation of wild stands has resulted in fragmentation and local extinction of natural populations. Dr David Bush of CSIRO National Research Collections is producing a conservation and genetic improvement strategy and a roadmap for the sandalwood industry in Fiji and Tonga, based on improved understanding of the species gained by the project. With the establishment of conservation and seed production stands, and training of government agency staff in domestication and breeding of wild tree species, the project provides smallholder farmers and commercial investors with planting material that has improved genetic diversity and productivity.[14]

Renewal of the coconut estate is a priority for governments, development agencies and researchers throughout the Pacific. A new project in Fiji, led by Dr Rob McGavin of Queensland Department of Agriculture and Fisheries, strives to create market pull for senile coconut stems by converting them to high-value engineered wood products. A market for old palms will encourage coconut growers to remove them, reducing phytosanitary risk and incentivising new, more productive planting. The project will deliver and validate wood-processing technologies to transform coconut and other low-value forest resources into high-value products suitable for local and international markets. Project benefits will extend along the value chain, contributing to smallholder livelihoods and regional economic growth.[15]

Horticulture

Fruit industry development in the Pacific region enhances food security, rural economies and healthy eating initiatives. A four-year project in Fiji, Samoa and Tonga has worked towards these benefits by supporting the development of resilient value chains for five regionally-significant fruit crops: papaya, pineapple, mango, breadfruit and citrus. The project led by Professor Steven Underhill of the University of the Sunshine Coast concludes in 2020 with final capacity-building activities of private sector and government extension services, and increased engagement of smallholder farmers and communities in functional supply chains.[16] A new project will build on the community and school-based citrus orchards established in the first project using introduced improved planting stock. This project will develop viable and sustainable fruit value chains, enhance the local capacity to support these chains, and gain wider human health impacts by piloting school and community 'healthy eating' gardens.[17]

Vegetable production in the Pacific islands does not match local demand and vegetables are imported for high-value hospitality and food service markets. However, locally grown vegetable crops are susceptible to damage and destruction from extreme weather events, making supply to high-value markets unreliable. A project led by Professor Phil Brown of Central Queensland University will conclude its activities by evaluating and promoting the adoption of protected-cropping systems for improved productivity, climate resilience and higher quality. Value-chain analysis identifying strengths and weaknesses of different markets will be shared and training will be delivered to help farmers to successfully produce and sell into demanding markets.[18]

Sustainable intensification of fruit and vegetable crop production in the Pacific region requires integrated pest and disease management strategies. Dr Michael Furlong of the University of Queensland leads a project to address the threats posed to smallholder livelihoods and their communities by inappropriate use of pesticides, emerging pests and diseases and climate change. During 2020–21, the project will continue to assess pathways for the introduction and potential spread of insects that threaten the region, including fall armyworm, and test biological control strategies against target pests while developing integrated management approaches for selected crops. The project engages with farming communities through local plant health clinics to give growers easier access to expert advice. The project will generate new knowledge, resources and opportunities to encourage the adoption of integrated management strategies.[19]

Cocoa is an important agricultural export for more than 50,000 households in Papua New Guinea, Solomon Islands and Vanuatu. Significant domestic and potentially useful export opportunities also exist in Samoa and Fiji. A project led by Mr Yan Diczbalis of the Queensland Department of Agriculture and Fisheries is strengthening cocoa value chains in Pacific island countries, as well as in Australia. In 2020–21, the project will undertake implementation activities to deliver market-oriented strategies for the exchange and dissemination of superior cocoa genetic resources, methods for intensifying production systems to meet market opportunities and systems for improved post-harvest handling.[20]

Coconuts contribute, directly or indirectly, to the livelihoods of coastal communities throughout the Pacific islands. Coconut enterprises in Pacific island countries face economic and environmental challenges; however, diversifying the range of products made from coconuts could offer a path to more-resilient livelihoods. Much of the coconut resource in the Pacific region is ageing or already senile and unproductive. A project led by Dr Carmel Pilotti of SPC aims to support the first step in rejuvenating coconut-based livelihoods in the Pacific islands by strengthening the conservation and use of genetic diversity in coconuts, addressing threats posed by the rhinoceros beetle and Bogia coconut syndrome, and establishing and sustaining a platform for coordinating coconut research-for-development initiatives.[21]

Livestock Systems

Beekeeping offers many opportunities for smallholder farmers, based on strong domestic demand for honey and the potential to export honey and by-products. A project in Fiji and Papua New Guinea, led by Dr David Lloyd of Southern Cross University, aims to increase the productivity and profitability of beekeeping enterprises to complement smallholder incomes and promote an income-earning activity for women. During 2020–21, the project will continue to develop and test appropriate technical and business practices, improve disease control at community and government levels, and build the capacity of extension and development agencies to support beekeeping as a sustainable small enterprise.[22]

The productivity and profitability of sheep and goat production could be improved in Pacific island countries if production was better aligned with market requirements and smallholder farmers could more easily participate in value chains. Dr Frances Cowley of the University of New England leads a four-year project addressing the constraints to production efficiency for smallholder and semi-commercial production systems in Fiji and Samoa. During 2020–21, the project will continue assessments to understand farmer motivation to change practices and test methods to improve husbandry and feeding systems.[23] Supporting this project is a small research activity, led by Dr Rodd Dyer of the University of Queensland, to better understand the current policy environment and undertake cost-benefit analysis to develop recommendations for policy reform to support the Fiji and Samoan small ruminant sectors.[24]

Beekeeping offers many opportunities for smallholder farmers in the Pacific region, based on strong domestic demand for honey and the potential to export honey and by-products. Photo: Cooper Schouten. ACIAR project: LS/2014/042.

Increasing smallholder cattle productivity and income from cattle sales is a priority of the Vanuatu Government. Dr Simon Quigley of the University of Queensland leads a new project to integrate recommendations from previous and new research on cattle production and marketing. A set of best-bet climate-smart options will be formulated, from which smallholder farmers can develop their own cattle farming business plan using the Cattle Farm Planning Tool (a decision-tree framework). Local support agency staff will be trained to mentor farmers in the implementation of cattle farming plans.[25]

Globally, antimicrobial resistance is one of the most urgent emerging threats to human and animal health. It has broader impacts on animal production systems and food security. A previous study identified research, capability and capacity-development needs in Fiji to reduce antimicrobial resistance in humans, animals and the environment. As part of the One Health program (page 48), Dr Paul Debarro of CSIRO Health and Biosecurity leads a follow-on study to increase the knowledge of both antimicrobial resistance and antimicrobial use in Fiji, increase skills of laboratory staff in detecting resistance, increase awareness through project advocacy and campaigns, and make recommendations to update legislation and regulation to strengthen antimicrobial systems.[26]

There is an urgent need to consolidate existing evidence and identify gaps in global research to demonstrate the scale of reductions in greenhouse gas emissions that occur with more efficient livestock production systems. Using the expertise and capabilities of Australian and New Zealand climate science, Dr Paul (Long) Chen of the University of Melbourne will lead a new project developing methods and models that apply to livestock development projects to quantify real and potential reductions in emissions and determine the opportunities and trade-offs between productivity gain and economic returns. The results will help determine if greenhouse gas offsets can be captured and linked with nationally determined contributions of partner countries, and if there is potential for voluntary carbon-credit trading to diversify smallholders' income.[27]

Social Sciences

A climate-smart approach can guide adaptation strategies to focus on the long-term stresses and short-term shocks of climate change, which have notable impacts upon agricultural systems in Fiji and Tonga. A participatory action geographic information system will be used as a tool for multi-stakeholder engagement, local spatial knowledge sharing and enabling operational synergy at a landscape scale. With a vision of climate-smart landscapes, Dr Eleanor Bruce of the University of Sydney and Dr Bryan Boruff of the University of Western Australia will lead a project to develop a geospatial platform that will help with ongoing identification of climate impacts and appropriate adaptive responses. The project continues its work with community and high-level stakeholders, helping to improve communication between stakeholders.[28]

Family Farm Teams is a peer education model of agricultural extension, and, in previous ACIAR-supported projects, benefited the economic development of women smallholders in nine areas of Papua New Guinea. Dr Deborah Hill of the University of Canberra leads a new project to improve agricultural development opportunities for female smallholders in rural Solomon Islands. The project will investigate the adaptability of the Family Farm Teams approach in Solomon Islands, and provide comparative learning to apply it to other Pacific island countries to help communities move from semi-subsistence to planned farming in a gender-equitable way.[29]

Also testing the transferability of an extension model is a new project in Fiji, where a Landcare approach using the Livelihood Improvement through Facilitator Extension (LIFE) model of improved extension will be applied. The LIFE model was developed through research in the Philippines, and rapidly enhanced agricultural livelihoods by improving both farmer-based learning networks and community social capital. This project, led by Dr Mary Johnson of RMIT University in partnership with Filipino collaborators, will make a substantial contribution to understanding the adaptability and adoptability of the Landcare–LIFE combination under different country contexts.[30]

A new soil information system will provide farmers, farm advisers and other stakeholders with spatially explicit guidance for sustainable soil management and increasing resilience to climate change. Photo: Conor Ashleigh. ACIAR project: SMCN/2016/111.

Soil and Land Management

Agriculture in the Pacific region is generally confined to smallholder farms and household gardens. Its sustainability is threatened by nutrient imbalances, erosion, declining soil fertility and carbon, and climate change. Across five Pacific island countries, a project led by Dr Ben Macdonald of CSIRO Agriculture and Food is developing a soil information system and finding appropriate technologies for improved soil health and efficient water and nutrient use. The soil information system provides farmers, farm advisers and other stakeholders with spatially explicit guidance on how to achieve sustainable soil management and secure resilience to climate change.[31]

Water

Agricultural communities throughout the Pacific region are reliant on expensive imported fertilisers while nutrient-rich domestic wastewaters are discharged into groundwater and coastal lagoons, degrading water quality and risking human health. A small research activity, led by Dr Douglas Tait of Southern Cross University, will determine the feasibility of converting wastewater nutrients into organic fertilisers for crop production. The project will engage with communities and key stakeholders in Vanuatu and Tuvalu to determine need, appropriate scale, available waste streams, acceptability of products, challenges and the agricultural benefits of novel wastewater re-use and nutrient recovery facilities.[32]

Climate Change

ACIAR will add a new research program to its portfolio in September 2020 to focus and strengthen work towards our strategic objective that addresses climate variability and climate change.

Climate change is a major threat to Pacific island countries. Increasing vulnerabilities include food insecurity, health risks, out-migration, disaster management, political instability and economic uncertainty. Communities reliant on agriculture are particularly at risk, with increases in crop failure and pest and disease incursion, alongside shifting international trade balances and increasing reliance on imported foods. At the same time, industry and government strive to better understand greenhouse gas emissions from the agriculture sector and develop practical options for emissions reduction that could result in emissions credits.

Dr Michael Battaglia of CSIRO Agriculture and Food will bring together experts and stakeholders in a small research activity to assess current and required knowledge of long-term impacts of climate change in the Pacific region in the context of agricultural livelihoods and food security. The activity will inform a climate change adaptation R&D strategy for ACIAR, which is systemic in its intent but can be tailored to the needs of individual Pacific countries.[33]

A small research activity during 2020–21, led by Professor Tim Reeves of the University of Melbourne, will undertake a targeted assessment to explore opportunities for the implementation of conservation agriculture and sustainable intensification of smallholder farming systems as a transformational adaptation to climate change in Fiji and Samoa.[34]

Australia is a world leader in greenhouse gas mitigation research in agriculture. A new project provides the opportunity to transfer this knowledge to assist our partner countries to identify and quantify on-farm management options that reduce emissions from farming practices and help establish national greenhouse gas accounting systems to monitor, report and verify emissions reductions to the same high standard used by Australia. Led by Professor Peter Grace of Queensland University of Technology, and co-funded by New Zealand, the project team will work with government and research institutions in Fiji, Vietnam, Indonesia and Kenya to develop expertise to enable those institutions to better support their national governments in meeting current and future nationally determined emissions reduction commitments under the Paris Agreement.[35]

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See page 209 for contact details

ACIAR has added a Climate Change Research Program to its research portfolio to strengthen our work on addressing the challenges that climate variability and climate change present to food security and livelihoods. Photo: Sunayna Nandini.

Current and proposed projects

1. Policy drivers for public private partnerships in Pacific organics: improving extension policy through an evidence-based approach [Fiji, Vanuatu] (ADP/2018/131)
2. Pacific Agribusiness Research in Development Initiative—phase 2 (PARDI 2) [Fiji, Tonga, Vanuatu] (AGB/2014/057)
3. Developing a foundation for the long-term management of basal stem rot of oil palm in Papua New Guinea and Solomon Islands (CIM/2012/086)
4. Developing pearl industry-based livelihoods in the western Pacific [Fiji, Papua New Guinea, Tonga] (FIS/2014/060)
5. Half-pearl industry development in Tonga and Vietnam (FIS/2016/126)
6. Towards more profitable and sustainable pearl-industry based livelihoods in the western Pacific [Fiji, Papua New Guinea, Samoa, Tonga] (FIS/2019/122)
7. Strengthening and scaling community-based approaches to Pacific coastal fisheries management in support of the New Song [Kiribati, Solomon Islands, Vanuatu] (FIS/2016/300)
8. Agriculture and fisheries for improved nutrition: integrated agri-food system analyses for the Pacific region [Kiribati, Solomon Islands, South Pacific general, Vanuatu] (FIS/2018/155)
9. Innovating fish-based livelihoods in the community economies of Timor-Leste and Solomon Islands (FIS/2019/124)
10. Improving nutrition through women's and men's engagement across the seaweed food chain in Kiribati and Samoa (FIS/2019/125)
11. Enhancing value-added products and environmental benefits from agroforestry systems in Papua New Guinea and the Pacific [Fiji, Papua New Guinea, Solomon Islands, Vanuatu] (FST/2014/067)
12. Improving agroforestry policy for sloping land in Fiji (FST/2016/147)
13. Enhancing returns from high-value agroforestry species in Vanuatu (FST/2016/154)
14. Domestication and breeding of sandalwood in Fiji and Tonga (FST/2016/158)
15. Coconut and other non-traditional forest resources for the manufacture of engineered wood products [Fiji] (FST/2019/128)
16. Enhanced fruit production and postharvest handling systems for Fiji, Samoa and Tonga (HORT/2014/077)
17. Enhanced fruit systems for Tonga, Samoa and Fiji (phase 2): community-based citrus production (HORT/2019/165)
18. Integrating protected cropping systems into high value vegetable value chains in the Pacific and Australia [Fiji, Samoa, Tonga] (HORT/2014/080)
19. Responding to emerging pest and disease threats to horticulture in the Pacific islands [Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga] (HORT/2016/185)
20. Aligning genetic resources, production and post-harvest systems to market opportunities for Pacific island and Australian cocoa [Fiji, Samoa, Solomon Islands, Vanuatu] (HORT/2014/078)
21. Safeguarding and deploying coconut diversity for improving livelihoods in the Pacific islands [Fiji, Papua New Guinea, Samoa, Solomon Islands, Vanuatu] (HORT/2017/025)
22. Increasing the productivity and profitability of smallholder beekeeping enterprises in Papua New Guinea and Fiji (LS/2014/042)
23. Improving small ruminant production and supply in Fiji and Samoa (LS/2017/033)
24. Sectoral analysis and investment requirements for improving the Fiji and Samoa small ruminant sector (LS/2018/183)
25. Promoting business development pathways for more productive and profitable smallholder cattle systems in Vanuatu (LS/2018/185)
26. Enhancing the management of antimicrobial resistance in Fiji (One Health) (LS/2019/119)
27. Value-adding to existing livestock programs to understand and quantify the implications of greenhouse gas emissions, provide options for emissions reduction and inform in-country policy development [Cambodia, Indonesia, Kenya, Laos, Myanmar, Pakistan, South Africa, Tanzania, Timor-Leste, Vanuatu, Vietnam, Zambia] (LS/2019/159)
28. Climate-smart landscapes for promoting sustainability of Pacific island agricultural systems [Fiji, Tonga] (ASEM/2016/101)
29. Improving agricultural development opportunities for female smallholders in rural Solomon Islands (SSS/2018/136)
30. Landcare—an agricultural extension and community development model at district and national scale in Fiji (SSS/2019/140)
31. Soil management in Pacific islands: investigating nutrient cycling and development of the soils portal [Fiji, Kiribati, Samoa, Tonga, Tuvalu] (SMCN/2016/111)
32. Closing the loop between agriculture and wastewater discharge: a novel technique for turning wastewater into fertiliser in the Pacific [Kiribati, Tuvalu, Vanuatu] (WAC/2019/135)
33. Climate change and Pacific food systems: decision-making for transformational change (proof-of-concept) [Samoa, Solomon Islands] (WAC/2019/148)
34. Conservation agriculture and sustainable intensification of smallholder farming systems in Pacific countries as a pathway to transformational climate change adaptation and reducing greenhouse gas emissions [Fiji, Samoa] (CROP/2020/185)
35. Supporting greenhouse gas mitigation for sustainable farming systems in the Asia-Pacific and East Africa [Fiji, Indonesia, Kenya, Vietnam] (WAC/2019/150)