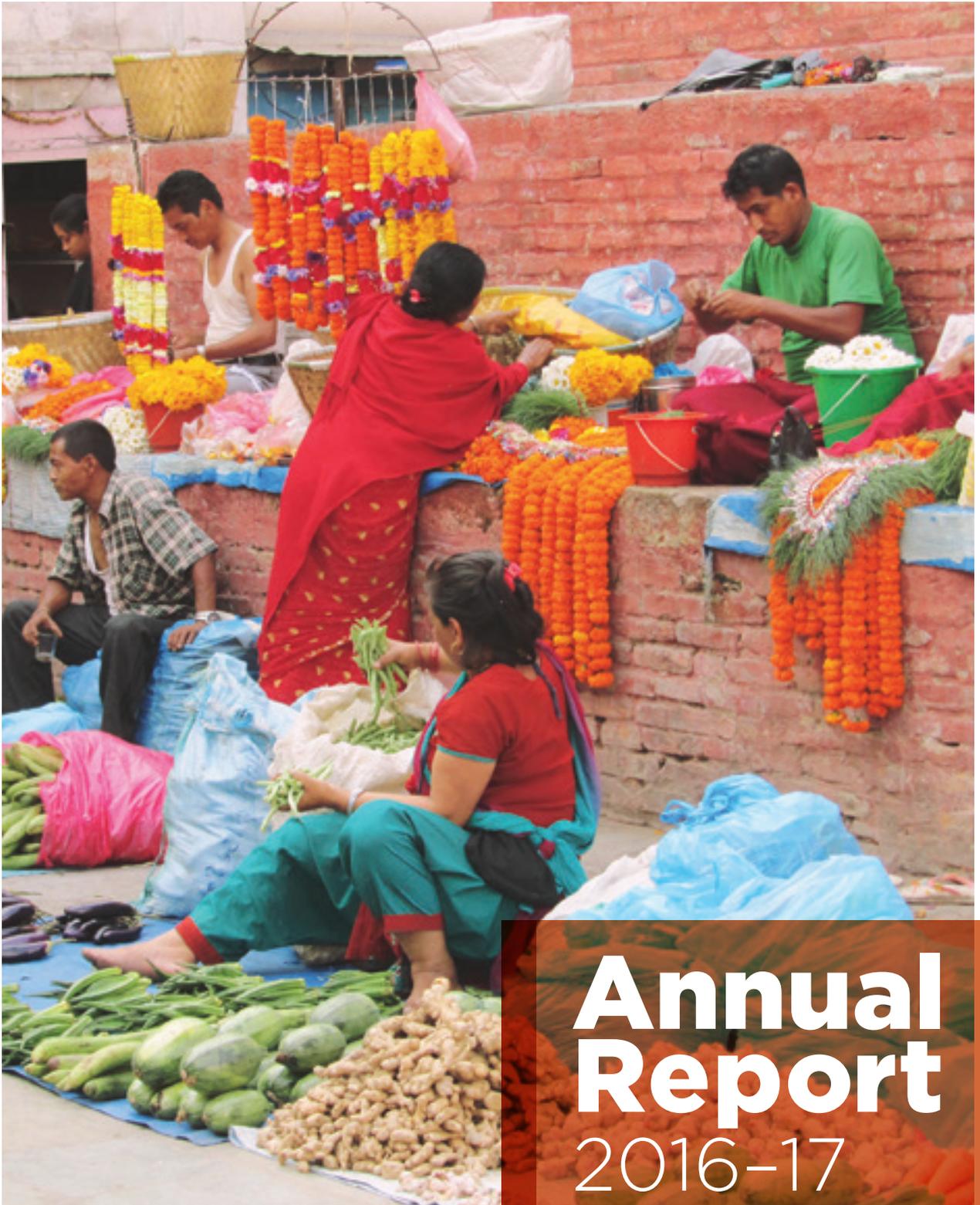




Australian Government
Australian Centre for
International Agricultural Research



Annual Report

2016-17

Letter of transmittal from the Chief Executive Officer



Australian Government
Australian Centre for
International Agricultural Research

The Hon Julie Bishop MP
Minister for Foreign Affairs

October 2017

Dear Minister

ACIAR Annual Report 2016-17

It is my pleasure as the Chief Executive Officer to present to you the Annual Report of the Australian Centre for International Agricultural Research for the year ended 30 June 2017.

The Report has been prepared in accordance with section 39 of our enabling legislation—*Australian Centre for International Agricultural Research Act 1982*, as amended.

Consistent with section 42 of the *Public Governance, Performance and Accountability Act 2013 (PGPA Act)*, I have taken steps to ensure the annual financial statements have been prepared in accordance with relevant accounting standards and other requirements prescribed by the *PGPA Rule 2014*. The Report includes the Centre's audited financial statements, certified by the Australian National Audit Office, as required by section 43 of the *PGPA Act*.

Annual performance is reported in compliance with section 39 of the *PGPA Act*.

In presenting the Annual Report, I acknowledge the important contribution to international agricultural research made by ACIAR staff and commissioned research organisations, to help achieve more productive and sustainable agricultural systems for the benefit of developing countries and Australia.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Colin Campbell'.

Colin Andrew Campbell
Chief Executive Officer



Panekhiya Devi Yadav picks ripe mungbean in Sohani village, Terai region of Nepal. Panekhiya is part of a farming group contributing to an ACIAR conservation agriculture project. Photo: Conor Ashleigh/ACIAR

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Plant grower Nico inspects young breadfruit specimens on Livai Tora's farm outside Nadi, Fiji. ACIAR is supporting an ornamental project which seeks to use local ornamental varieties which could have commercial landscaping success in Fiji. Photo: Conor Ashleigh

A close-up portrait of a woman with a warm smile. She has a red bindi on her forehead and a small gold nose ring. She is wearing a white collared shirt and a vibrant, multi-colored embroidered shawl with intricate patterns in pink, blue, yellow, and green. She is holding a black pen in her right hand. The background is softly blurred, showing what appears to be a window with light-colored curtains.

Overview

Members of the Ratu Rani Women's Agriculture Collective in Bhaluwa village sit down in Uttar Pradesh, India and demonstrate a group meeting. The group has 65 women farmers from the Indigenous (Adavasi) Choudary group who traditionally are very poor and socially marginalised. Photo: Conór Ashleigh

About ACIAR

The Australian Centre for International Agricultural Research (ACIAR) is the Australian Government's specialist agricultural research-for-development agency, within the aid program. ACIAR does not undertake research, but identifies opportunities and brokers partnerships to undertake international agricultural research and capacity building. These results contribute significantly to the aid program and achieving its goals. For 35 years, ACIAR has facilitated agricultural research partnerships, and has brought together diverse but complementary groups and individuals to achieve a range of development outcomes for partner countries in the Indo-Pacific region.

The Centre demonstrates extensive experience in the management of research partnerships combined with technical knowledge in its theme areas of: crops, livestock, fisheries, natural resources, forestry, and socioeconomics and policy. ACIAR's projects are designed to produce specific research outputs and translate them into development outcomes such as improved food security, better nutrition, improved health, and increased prosperity. Economic returns on ACIAR investment have been shown to be at least 5:1, with estimates of returns on some projects as high as 60:1.

Australia is a world leader in research on a range of arid, semi-arid, temperate and tropical agricultural systems. ACIAR, through its partnerships, provides a bridge to extend this research expertise and its benefits to partner developing countries.

ACIAR's partnerships and their achievements support Australia's national interests in many different ways. Agricultural R4D has proven to be a highly effective route to aid the goals of enhanced prosperity and reduced poverty in partner developing countries, this contributes directly to regional peace and security.

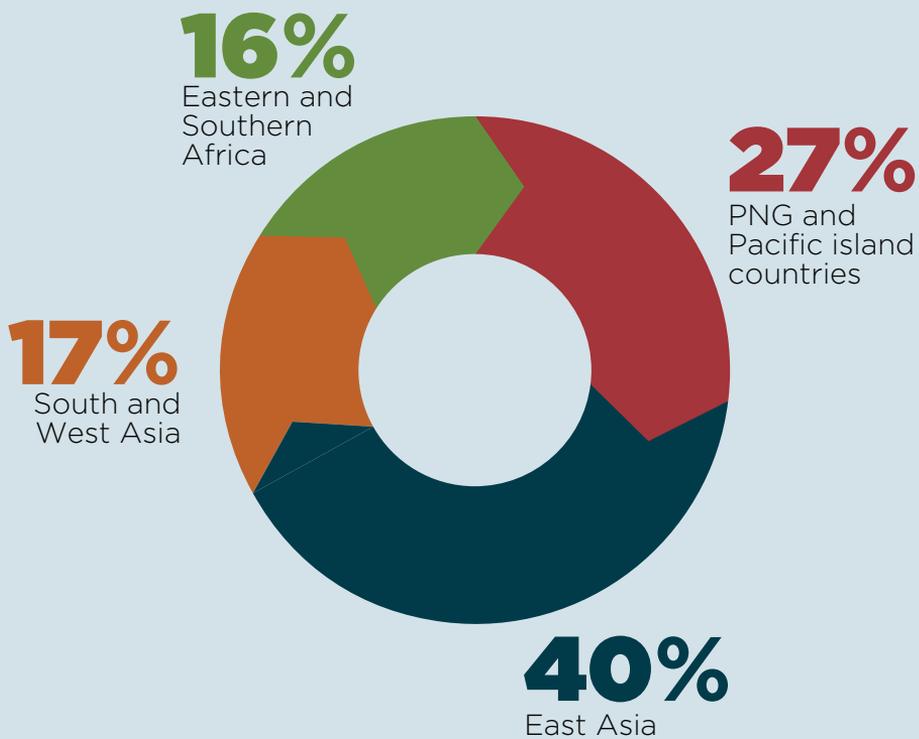
Economic prosperity in partner developing countries also has significant spill over benefits for Australia: stronger economies in the region offer new trade, investment and business opportunities for Australia.

Partnerships are built on strong people-to-people linkages, trust, transparency and mutual benefit, and are skilfully managed by a highly experienced and professional team. These partnerships have brought regional and international respect for ACIAR and for Australia, and represent an integral part of the Government's economic diplomacy strategy in the Indo-Pacific region.

Australia's contribution to the international agricultural research network, the CGIAR (formerly the Consultative Group on International Agricultural Research) is managed by ACIAR. Dedicated to addressing poverty, hunger and nutrition, and environmental degradation, the CGIAR is a global research leader and a key partner for ACIAR and Australia. Benefits from the CGIAR's research programs also flow to Australia.

Expenditure

The proportion of research expenditure by region in 2016-17 and an overview of ACIAR's administered expenditure over the last three years is shown in the following chart and table.



ACIAR Administered expenditure

	2016-17	2016-17	2015-16	2014-15
	AOP budget (\$)	actual (\$)	actual (\$)	actual (\$)
Research projects by region and country				
Pacific	20,600,000	21,514,066	16,848,971	12,501,570
Papua New Guinea	12,100,000	13,074,941	8,737,642	5,836,097
Pacific island countries	8,500,000	8,439,125	8,111,329	6,665,473
East Asia	34,600,000	31,010,857	30,456,731	34,134,677
Cambodia	3,100,000	2,858,176	2,296,832	2,853,073
China	900,000	685,844	834,194	1,111,194
Indonesia	8,200,000	6,371,288	5,777,556	6,764,013
Lao PDR	5,300,000	5,257,492	5,091,675	5,437,978
Mongolia	300,000	199,073	195,420	0
Myanmar	4,000,000	4,155,367	3,621,284	3,260,963
Philippines	5,300,000	4,860,647	4,880,502	4,824,295
Thailand	600,000	173,111	260,652	281,134
Timor-Leste	1,900,000	1,523,684	3,595,970	4,608,377
Vietnam	5,000,000	4,926,175	3,902,646	4,993,650
South and West Asia	17,400,000	13,545,229	9,744,992	13,089,669
Afghanistan	2,900,000	3,125,196	3,229,596	3,438,078
Bangladesh	3,600,000	2,117,308	1,176,557	1,838,091
Bhutan	200,000	61,718	205,861	320,448
India	5,000,000	3,197,360	2,918,395	3,947,156
Nepal	1,500,000	1,465,173	1,155,980	1,414,084
Pakistan	4,200,000	3,558,474	1,058,603	2,131,812
Sri Lanka	0	20,000	0	0
Eastern and Southern Africa	11,300,000	12,175,417	11,326,865	15,418,737
Middle East and North Africa	0	0	-65,000	933,144
Total research projects	83,900,000	78,245,569	68,312,559	76,077,797
Research projects	83,900,000	78,245,569	68,312,559	76,077,797
Multilateral program	19,240,000	19,649,306	19,812,467	19,809,849
Building research capacity	9,000,000	7,545,969	8,081,649	8,230,961
Communicating research results	585,000	1,065,370	631,879	614,659
Measuring research impacts	600,000	400,371	392,006	502,870
Program support	4,678,000	4,378,037	2,818,955	4,762,229
TOTAL	118,003,000	111,284,622	100,049,515	109,998,365

CEO's review

Positioning ACIAR for growth

This year ACIAR turned thirty-five, a testament to our track record of brokering effective and influential partnerships in international agricultural research.

During 2016-17, with endorsement and direction from the Minister for Foreign Affairs the Hon Julie Bishop MP and the Commission for International Agricultural Research, we embarked on the development of a new high-level ten-year strategic vision for ACIAR.

The intent behind this strategy is to buttress the strengths of ACIAR's partnership model, and to complement those traditional strengths with significant reform and improvement in our ability to communicate what we do, and the 'back office' business systems that underpin our work in developing countries.

Our new strategy will articulate clearly how ACIAR's research for development partnerships contribute to Australia's Official Development Assistance objectives and in turn to the Sustainable Development Goals to which Australia is committed under the United Nations Agenda 2030 initiative.

Our new strategy also sets out how we will strengthen our Capacity Building Program, and transform our public relations and stakeholder engagement activities into a new, much better resourced Outreach program. We have also started work on building on our solid platform of project-level impact assessment to improve our ability to monitor, analyse and report on impacts at thematic and portfolio levels.

To enable and support these new developments, during 2016-17 we initiated organisational changes to restructure the senior management team, elevating Outreach and Capacity Building to senior executive level and introducing a new Chief Scientist position. We also established the first of our new Associate Program Manager positions and commenced the process of consolidating our research portfolio from thirteen programs into ten.

Our research landscape

All countries in the Indo-Pacific region are grappling with the complex, intersecting challenges of how to increase food production by up to 70% by 2050, in more variable and challenging climates. Many developing countries in our region confront the 'double burden' of having significant sections of their population facing chronic hunger, malnutrition and micronutrient deficiency, while growing



populations are consuming excess calories and suffering from obesity and associated diseases such as diabetes and heart disease.

The contemporary challenge is not only to grow more food, but to feed more people with more nutritious food—using less land, water, energy and nutrients per unit of output, while reducing food loss and waste and substantially reducing greenhouse gas emissions.

ACIAR occupies a unique niche at the intersection of Australia's aid program and its innovation system, enabling us to make a distinct contribution to both our science diplomacy, internationally, and Australian science domestically. Our research programs offer wonderful career development opportunities for Australian scientists, and often deliver benefits (such as improved biosecurity, access to new germplasm or new market opportunities) back to Australian primary industries.

Examples of ACIAR's outcomes and programs against key objectives

In the 2016-17 financial year, ACIAR funded and managed 221 research projects, most of which were initiated in previous years. A few examples of our work are summarised below, framed within ACIAR's six strategic objectives.

Food security and poverty reduction

- **Cambodia's smallholder livestock farmers** have a chance to profit from the growing regional demand for animal protein, but a decreasing national large-ruminant population has contributed to significant increases in cattle prices. An ACIAR project led by



ACIAR CEO Andrew Campbell with the Minister for Foreign Affairs, the Hon Julie Bishop MP

Dr. Russell Bush from the University of Sydney has adopted a 'whole-of-village' participatory approach to improve livelihoods and undertook extension activities to demonstrate how to improve large ruminant nutrition through forage development and silage.

- ACIAR is supporting research to tackle problems in **Cambodia's mango industry**. On the production side, farmers have been trained to identify pests and diseases, and to manage and prune mangoes for high productivity. ACIAR-funded scientists from the Northern Territory Department of Primary Industry and Resources have analysed pests and diseases associated with mangoes in Cambodia, and evaluated pesticide residues.
- **China's citrus industry** has benefited from collaboration with Australian scientists for more than two decades. The researchers identified drought-hardy and disease-resistant rootstocks among Chinese varieties, and this information was put to good use in both countries. It culminated this year in the release of seven new rootstocks of Chinese origin to the Australian citrus industry.

- **Smallholder livestock owners in Indonesia** have learnt the benefits of tree legumes in their animals diet – resulting in weight gains two to three times greater than those on traditional village diets. Seed nurseries have been established to ensure a ready supply of quality seed to meet the growing demand as news of the project’s success spreads.
- **The Myanmar MYRice** project team has assessed post harvest losses from outdated practices of handling the harvested crop. They found quality deterioration from delays in threshing led to a low price for the crop. The team introduced best management practices developed by the International Rice Research Institute (IRRI).
- The ACIAR-funded **MYPulses project in Myanmar** is playing an important role in achieving a sustainable increase in crop productivity and improving farmer livelihoods in legume-based farming systems in the Central Dry Zone. Farmers participated in trials to identify their preferred varieties of groundnut (peanut), pigeon pea, chickpea and mungbean.
- **In Bangladesh**, a project sought to replace the fallow period after **rice**, with peas that could be harvested as green pods within 60 days. Farmer enthusiasm created a demand for pea seed and led to one farmer converting his demonstration field into an area for seed production, thus generating a profitable agribusiness venture.
- The on-going Sustainable Intensification of Maize–Legume Cropping Systems for Food Security in Eastern Africa (**SIMLESA**) **project**, at its conference in Arusha, **Tanzania** in June 2017, heard from the heads of research in five African partner countries, who outlined how the work led to **major yield increases of maize, legumes and forages**, benefiting more than 150,000 households, involving over 40 companies, and contributing to climate-smart agricultural science.
- A project studying integrated water, **soil and nutrient management for sustainable farming systems on Vietnam’s south-central coast** found in trials of drip irrigation for mango production, that yields increased by 29% while saving about 90% of the water needed for irrigation.
- In **Afghanistan**, a project seeks to establish **sustainable forage production systems** to reduce winter feed gaps for smallholder livestock within the water-constrained provinces of **Baghlan and Nangarhar**. The project scientists from the International Center for Agricultural Research in Arid and Dry Areas (ICARDA), The Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Murdoch University have established mother plantations of promising forage varieties at three research stations. One tonne of quality seed from 10 adapted forage species is now available to kick-start a large-scale seed multiplication and dissemination process.
- The sustainable and resilient farming systems intensification (SRFSI) project has produced field-proof of successful **conservation agriculture** practices across 40 villages in **India, Bangladesh** and **Nepal**. Uptake of conservation agriculture has boosted income, saved water, saved energy and reduced carbon emissions – and

is contributing to the Indian goal of doubling farm household incomes in 5 years.

- In the southern **Philippines**, a co-operative of smallholder farmers is reducing the impact of ***Fusarium wilt TR4 on banana*** yields by adopting disease control practices introduced through an ACIAR project.

Human health and nutrition

- A partnership between Australia and **Myanmar** led by Prof. Dennis Poppi of the University of Queensland seeks to improve the health and livelihoods of small-scale **livestock** producers in the Central Dry Zone by enhancing management, nutrition and health of small ruminants, cattle and village poultry. Already the health and productivity of village chickens has improved due to vaccination against Newcastle disease and the introduction of bamboo coops to reduce chick mortality. These interventions have led to a substantial increase in the number of birds sold by farmers.
- A Sydney University project supported by ACIAR in **Papua New Guinea** (PNG), *Developing the cocoa value chain in Bougainville*, has improved the profitability and vitality of smallholder **cocoa farming** families and communities, and through that, helped to build community health and wellbeing.
- In **Vietnam**, a project known as **PigRisk** led by Dr Deli Grace from the International Livestock Research Institute (ILRI) aims to improve the livelihoods of smallholder pig farmers in Vietnam and improve food safety in the pork value chain. It has developed models that provide quantitative risk assessment and estimate the burden of disease associated with pathogens in the pork value chain – the first time such models have been used for food safety in Vietnam.

Natural resources and climate change

- In **Laos**, the production of genetically **improved teak seedlings** through tissue culture opens a way to increase returns to farmers and provide better quality timber for wood processors. This is a significant milestone in the Lao forestry sector, where teak-based forestry systems offer smallholders opportunities for both long- and short-term income generation.
- ACIAR's contribution to **forest conservation in PNG** was acknowledged through accreditation under the Queen's Commonwealth Canopy (QCC) initiative.
- In the **Philippines**, a locally-formed People's Organisation learnt about high-quality **seedling production** and established a tree nursery program, growing seedlings to supply not only the community's reforestation, but broader rehabilitation across the Philippines. The real-life setting has provided new insights into the practicalities of successful rehabilitation, which relies on community engagement and opportunities for financial returns at different stages of growth.

- In **Timor-Leste**, an ACIAR project led by Professor William Erskine and Dr Rob Williams of University of Western Australia has studied cropping intensification to produce legumes and grain for an emerging stock and food processing industry, and non-timber tree products (tree legume fodder and sandalwood, native to Timor-Leste) to diversify farm income and act as a buffer to climate variability. It is working closely with another ACIAR project on cattle enterprise development to integrate with the research on forage production.
- A program in **Bangladesh** has focused on eradicating extreme poverty through improved productivity of food grain crops. It emphasises conservation agriculture, farm mechanisation, saline land management and adaptation to climate change, with significant effort directed to rice-wheat and rice-maize systems.
- A project in **Nepal** aims to provide diverse benefits to farmers, support livestock and agriculture, and increase the resilience of forests to climate change.



Members of the Ratu Rani Women's Agriculture Collective in Bhaluwa village walk out to a field where their group leader demonstrates how they have learnt to use a rice-transplanting machine. Photo: Conor Ashleigh

More inclusive agrifood and forestry value chains and private sector engagement

- **Cultured pearls** are the Pacific region's most valuable and highest priority aquaculture commodity. Pearl culture is compatible with traditional lifestyles and provides several opportunities for generating income. ACIAR supports pearl industries in **Fiji, PNG and Tonga**. In Fiji, the scientists have researched pearl oyster mortality and established a commercial giant clam hatchery. Both activities are helping recovery from the ravages of Cyclone Winston.
- ACIAR-funded scientists from Southern Cross University are working on post-harvest processing of **sea cucumbers** in **Fiji, Kiribati and Tonga** – to support an industry generating many millions per year in exports.
- Seaweeds are produced for food and as industrial products throughout the Pacific, and many communities rely on this income. ACIAR research is helping to diversify seaweed industries in **Fiji, Kiribati and Samoa**. Scientists from the University of the Sunshine Coast have made sound progress in determining how to add value to supply chains. They are investigating alternative methods for handling fresh product and for processing them into new products with export potential.
- **Agroforestry practice in Fiji and Vanuatu** has declined in recent decades. Australian researchers from Queensland University of Technology and The University of Queensland identified a number of constraints to further adoption, and pinpointed substantial areas of underused land where agroforestry expansion could succeed, given suitable support measures.
- **In Indonesia, an ACIAR-funded forestry project led** by Dr Daniel Mendham of CSIRO has focused on the sustainable management of Acacia and Eucalyptus plantations. A complementary project led by Professor Caroline Mohammed University of Tasmania is dealing with disease management in Acacia plantations.
- A processing factory for **galip nut** in **Kerevat in East New Britain, PNG**, now operates on a semi-commercial scale, resulting in packets of processed galip nut being sold in the supermarket in **Kokopo**.
- The Australian Department of Foreign Affairs and Trade (DFAT), ACIAR and the PNG Government supported efforts to connect producers of **high-quality cacao beans** in **Bougainville** with producers in Australia. **Chocolate manufacturers in Canberra** are now undertaking market trials and have already produced award-winning chocolate from Bougainville beans.
- A project in **Indonesia** has improved **coffee producers'** livelihoods by establishing more effective value chains between producers and the international coffee trading firms. Follow-up research is identifying key elements within a model for 'relationship coffees' that are likely to benefit both farmers and roasters.
- In the **Philippines**, an ACIAR-funded team from The University of Queensland has helped farmers change the whole culture of how they **work together, sell, plan and schedule**. The farmers learnt new skills in post harvest handling, grading, marketing, and safe vegetable production practices and accreditation to ensure they receive premium prices.
- In **Pakistan**, a trial with a group of **smallholder growers** has engaged them in directly meeting consumers' needs, and guided them

in overcoming the challenges of maintaining quality after harvest, packaging and transport. Through the channels of their own local marketing, phone and Facebook orders, the group sold their entire crop in 28 days and increased their profit by 77%.

Empowering women and girls

ACIAR projects in the Pacific focus on women to amplify the central role they play in household food gardening, producing tree crops, and the marketing of horticultural products, tree crops and fisheries products.

- Projects in **PNG** promote equity for women, emphasise **the health and welfare of women and their children**, and recognise the need to increase their opportunities in rural industries. The projects are helping women transition from subsistence farming to cash and commercial enterprises. ACIAR funded a Family Teams program, led by Professor Barbara Pamphilon at the University of Canberra, whose work showed that men, women and youth working together as a family unit leads to more gender-equitable and effective farming practices, and in turn, these result in improved family livelihoods.
- In **Vietnam**, an **agroforestry** project has introduced the Son tra tree, an indigenous fruit tree species growing around the Himalayas that is still in the early days of domestication. The trees grow in areas populated by the H'mong people in north-west Vietnam, leading to the local name 'H'mong apple'. Fruit production from this indigenous tree is going well, and the harvest is highly profitable.

H'mong women benefit from selling 'shan' tea and fruit and also from working in local factories where these products are being processed.

- A project in **Jharkhand State, India**, has trained women to adopt new **vegetable cropping** options, safe vegetable production and home gardens.
- The Agriculture Value Chain Collaborative Research Program (**AVCCR**), a co-investment strategy in **Pakistan** between ACIAR and DFAT, is improving selected **agricultural value chains**, significantly benefiting the rural poor, particularly women.
- ACIAR's projects in **Pakistan** have also led to women becoming more **involved in making household decisions**, working collaboratively with other women from the village, and increased their use and ownership of mobile phones.

Building scientific and policy capacity in our region

In 2016-17, ACIAR completed a review of our capacity building program, with a view to expanding training opportunities for scientists from developing countries. We continued to invest in building individual and institutional capacity in our region through our two flagship fellowship programs: the John Allwright Fellowship Program, which awarded 27 postgraduate (PhD and Masters) scholarships; and the John Dillon Fellowship program, which supported ten mid-career research managers in undertaking a six-week leadership development training program in Australia.



ACIAR commissioners (left to right): Professor Andrew Campbell FAICD, Ms Lucinda Corrigan, Dr Tony Gregson AM, Professor Sandra Harding, Ms Catherine Marriott, Mr Don Heatley OAM, Mr John Cook. Photo: ACIAR

Significant capacity building for individual scientists and for research organisations in developing countries also takes place within ACIAR-funded research projects, for example:

- A project in **China and Mongolia** investigated how to strengthen incentives for **herders** and encourage their more active role in how grasslands are managed. The project aimed to improve the design of national policies by ensuring that herders' voices were incorporated and by strengthening local collaborators' capacity to develop and implement policy.
- Projects in **Myanmar** targeted improvements to **productivity** in the crop, fisheries and livestock sectors through research and building capacity for individuals and institutions.
- Research in **Timor-Leste** focused on **greater productivity and market integration** of cropping systems, increasing productivity and resilience of livestock, fisheries and horticulture,

and raising individual and institutional capacity. ACIAR has improved individual and institutional R&D capacity in the Ministry of Agriculture and Fisheries, and the University of Timor Lorosa'e.

- ACIAR trained **Thai** scientists to undertake **forest health surveillance**, research, basic diagnostics and forest pest collection curation, greatly strengthening their ability to manage current and future plant pest problems.
- In **Nepal**, ACIAR helped build capacity in agricultural institutions to improve the livelihoods of the rural poor.
- ACIAR has built the capacity of researchers at the **Agricultural Research Institute of Afghanistan** (ARIA), the Afghan national agricultural research body. This has been evident in the success and quality of their field trials, in improved presentations at crop workshops, and in a more proactive approach in designing experiments.

Communicating the value of ACIAR investments

ACIAR worked hard during 2016-17, both in Australia and overseas, to improve the communication of ACIAR research and its implications. We commenced a major overhaul of our website and more than trebled our social media following. Over 100 project factsheets were produced and four editions of Partners magazine were published, including a special cookbook issue. Our first photographic competition was held and 16 new videos produced.

Measuring Impact

Measuring the impact of ACIAR investments has been a key priority since our inception. Our Impact Assessment Program assists in refining priorities, learning lessons from past and current projects and fulfilling accountability obligations to the Minister, the Parliament and the wider Australian public.

We currently commission three types of finished-project assessments. The first are primarily **economic evaluations**, published in our Impact Assessment Series (IAS). Assessments are undertaken by independent consultants with specialist expertise in measuring the impact of agricultural research by analysing economic return on investment (ROI) and assessing social and environmental impacts.

Our evaluation investment has contributed to advances in economic evaluation methodologies, for example in measuring the impact of agricultural research on poverty, and the returns from research in natural resource management and from capacity building.

The return on investment of ACIAR research is determined by the extent to which research findings are adopted, underpinning the second type of finished-project evaluations: **adoption studies**.

The third type of finished-project evaluations is **impact pathway analyses**. Using an impact pathway framework as an evaluation tool involves tracing the pathway to change from research outputs (the results or findings), to outcomes (use of this knowledge by the next and final users), to impact (the ultimate change in social, economic and/or environmental conditions that occurs with widespread adoption of new research findings).

We also work closely with international agricultural research centres, such as the International Food Policy Research Institute (IFPRI) in Washington, to develop comprehensive, consistent research impact evaluation software.

In 2016-17, ACIAR published two books as part of our Impact Assessment Series: *Knowledge systems and RAPID framework for impact assessments* (IAS92); and *Recognising the Contribution of Capacity Building in ACIAR Bilateral Projects: Case Studies from Three IAS Reports* (IAS93)

The year ahead

In 2017, we will start the implementation of ACIAR's new ten-year strategy in earnest.

This will see further consolidation of our research portfolio, continued improvement in our Outreach and Capacity Building activities, the roll-out of our new project management system ACE (ACIAR Collaborative Environment), and the finalisation of new country strategies for Eastern and Southern Africa, Bangladesh, Cambodia, India, Myanmar and Vietnam.

The detail of ACIAR's research partnerships and programs will remain in the four-year rolling Corporate Plan. We are strongly committed to the implementation of this strategy, and to further building upon our 35-year record of scientific excellence and on-ground impact through mutually beneficial research partnerships in our region.

I am continually inspired by the professionalism, expertise and commitment of ACIAR colleagues, and by the constructive, open spirit with which these changes in ACIAR are being implemented.

The Minister for Foreign Affairs, the Hon Julie Bishop MP has referred to ACIAR as both a 'national treasure' and a 'best-kept secret'. I am determined that we continue to merit the first accolade, while undermining the latter,

so that more and more Australians become aware of the wonderful work that ACIAR leads across the region in helping partner countries to meet their own food and nutrition security needs, and to do so more sustainably. This is in Australia's own long-term self-interest, as ACIAR-supported research also brings widespread benefits for Australian primary industries and for Australia's own scientific capability.

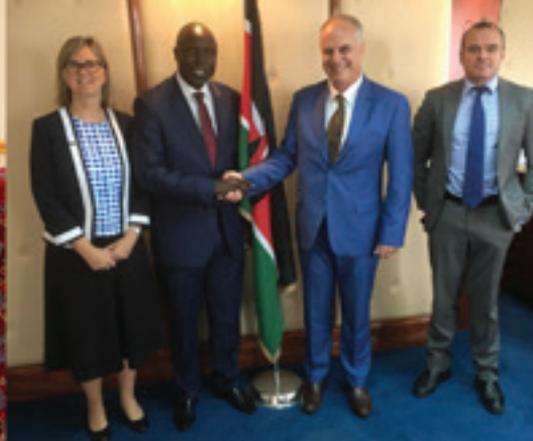
Thank you to my ACIAR colleagues - in Australia and our ten country offices - for another great year. Thanks also to Don Heatley and colleagues on the Commission for International Agricultural Research, and to Kym Anderson and members of the Policy Advisory Council, for wise counsel and strategic direction in my first year as CEO of this wonderful organisation.



ACIAR CEO and Forestry Research Program Manager meeting the Indonesian Minister for Environment and Forestry Ibu Siti Nurbaya Bakar and senior officials from Indonesia's Forestry Research Agency FOERDIA.
Photo: ACIAR

ACIAR 2016-17





A photograph of Dr. Baidya Nath Mahto, Director of Plant Pathology, wearing a white shirt and glasses, inspecting wheat samples in a greenhouse. The background shows the structure of the greenhouse and some agricultural equipment.

The year in review

—regional programs
and achievements







Pacific



Sea Cucumber fishers with their catch in Vanua Balavu, Fiji. Photo: Watisoni Lalavanua

Pacific island countries

ACIAR's program in the Pacific island countries (PICs) embraces Fiji, Kiribati, Papua New Guinea (PNG), Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. ACIAR's strategy in the region is to underpin the competitiveness and security of the agriculture, horticulture, fisheries and forestry activities that sustain many households. There is a focus on improved productivity, processing and marketing to enhance food security and self-reliance, and reduce poverty. ACIAR collaborates with regional organisations to bolster the limited research capacity of many countries. To improve sustainable change, ACIAR encourages innovative approaches that engage, empower and invest in women.

Papua New Guinea



Australian aid funding in PNG aligns with the priorities of both the PNG and Australian governments, and is increasingly assisting PNG to use its own resources to effectively deliver services and grow the economy. ACIAR's program is helping to secure improvements in food supply, food access and rural incomes for smallholders through programs that increase productivity and enhance access to markets and services. Major research topics focus on vegetables, starchy staples, export tree commodities such as timber, palm oil, coffee, cocoa and coconut products, village-based aquaculture and other fisheries. ACIAR also promotes equity for women, emphasising the health and welfare of them and their children, and recognising the need to increase their effectiveness in rural industries. A new focus is examining how to help women transition from subsistence farming to cash and commercial enterprises.

Pacific island countries

Highlights

- In Vanuatu, researchers pinpointed substantial areas of underutilised land where, with support, agroforestry could succeed
- ACIAR research has helped to diversify seaweed industries in Fiji, Kiribati and Samoa
- Research on pearl oyster mortality, and establishment of a giant clam hatchery, have helped Fiji to recover from the ravages of Cyclone Winston.

Regional overview

ACIAR's program in the Pacific island country(ies) (PICs) (embracing Fiji, Kiribati, PNG, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) is helping to transform the agricultural, fisheries and forestry sectors from a subsistence model to sustainable income-generating

activities. The program seeks to improve productivity, marketing, enhance food security and self-reliance, and reduce poverty. It has a special focus on women to amplify the central role they play in household food gardening, tree crop production, and in marketing of horticultural, tree crop and fisheries products.

Under Australia's new development policy, the aid program is supporting efforts to improve broad-based economic growth and enhance private-sector development.

ACIAR's program acknowledges the need to work with individual countries where there are marked differences in climate and soils, availability of natural resources, institutional capacity, infrastructure and potential for economic growth. At the same time there are many challenges in common that are best tracked through regional cooperation.

In agriculture, ACIAR focuses on adaptation to changes in climate, and identification and management of constraints to productivity and market engagement in both staple root and high-value crops and livestock. The program seeks to identify suitable markets and to develop new high-value horticultural crops (fruits, vegetables and ornamentals) and products derived from them for domestic, regional and international markets. Maintaining soil health as production systems are intensified is recognised across the region as a key to maintaining sustainability. The fisheries program addresses sustainable production from oceanic and inshore fisheries, development of alternatives through aquaculture, and increases economic returns through improved product quality and better links to market. The forestry program promotes the development of value-adding forest industries, whereby landowners derive benefits from both timber and non-timber forest products. ACIAR has increased its attention on the development and strengthening of integration between production systems and markets through more efficient and equitable value chains.

ACIAR works closely with other Australian agencies to develop complementary and jointly funded projects aimed at addressing national development priorities and regional issues. The ACIAR-funded Pacific Agribusiness Pacific Agribusiness Research for Development Initiative (PARDI) has a current focus on agribusiness research support to ongoing projects in the horticulture, fisheries, forestry, livestock sectors, and on identifying new markets and opportunities for long-term, pro-poor agribusiness development. New work has also started through the Australian-funded Pacific Horticultural and Agricultural Market Access Program – an initiative to assist PICs in gaining and maintaining access to key markets for selected high-value Pacific products.

ACIAR is maintaining its strong emphasis on working with Pacific regional organisations such as the South Pacific Community (SPC), the University of the South Pacific and other donor agencies to ensure that R&D efforts target agreed national and regional priorities and link closely with regional extension and community development programs.

Research achievements

A monograph focusing on the economic and social benefits of alternative agroforestry practices and the legal aspects of land-use in Fiji and Vanuatu was published and launched in Fiji and Vanuatu in 2016, arising from two projects within the Agricultural Development Policy Program. Investigations have revealed that agroforestry practice has declined in recent decades, and the researchers identified a number of constraints impeding further adoption. But they pinpointed substantial areas of underutilised land where agroforestry expansion could succeed provided suitable support measures were adopted.

Seaweed is an important commodity for aquaculture in the Pacific. Seaweeds are produced for food and industrial products throughout the Pacific, and many communities rely on this income. ACIAR research is helping to diversify seaweed industries in Fiji, Samoa and Kiribati. A National Seaweed Taskforce was established in Fiji in 2015 and project staff from Australia and Fiji are research and scientific advisors. The scientists are making sound progress in determining how to value-add to existing supply chains. They are investigating alternative methods for handling of fresh product and for processing into new products with export potential.

Cultured pearls are the Pacific region's most valuable and highest priority aquaculture commodity. Pearl culture is compatible with traditional lifestyles and provides several opportunities for generating income. ACIAR is supporting pearl industries in Fiji, Tonga and PNG. In Fiji the scientists are researching pearl oyster mortality. They are also establishing a commercial giant clam hatchery—both activities are

helping recovery from the ravages of Cyclone Winston.

Sea cucumbers are a highly valued commodity, consumed as food or medicine in Asia, and their harvest supports livelihoods in coastal communities throughout Asia and the Pacific. ACIAR is working on their post-harvest processing in Kiribati, Tonga and Fiji – in support of an industry generating many millions per year in exports.

ACIAR sponsored research to manage community-based fisheries and improving community-based aquaculture in Fiji, Kiribati, Samoa, and Vanuatu. Inshore fisheries and marine resources supply daily protein and income for villagers and coastal people in PICs. The project has been part of a strong consortium involving SPC, WorldFish, The Australian National Centre for Ocean Resources and Security, James Cook University and national agencies in the partner countries. This has resulted in a significant body of research contributing to better understanding of the role and limits of community-based fisheries management.



CASE STUDY

Helping Vanuatu's farmers turn trees into money





In the late 1990s, Mr Malakai Vele began planting whitewood trees on his farm in Sara village on the east coast of Espiritu Santo island, Vanuatu. Whitewood (*Endospermum medullosum*) is a fast-growing native hardwood tree that has a degree of cyclone resistance and produces a high-quality pale timber. In the 1990s, this was processed into high-value products and exported to Japan and Malaysia.

To produce the high-quality timber, young whitewood trees need to be planted closely together, to minimise the development of large branches, then thinned out as the trees grow to concentrate the growth on to the best trees. Today there are few markets for the small-diameter culled whitewood trees in Vanuatu, so the farmers are reluctant to carry out the required thinning operations.

An ACIAR funded forestry project commissioned the Southern Cross University to help remedy the situation, and it is now encouraging investment in planted timber resources in Vanuatu through improved management and use of whitewood-based plantation and agroforestry systems. Mr Vele's 17-year-old whitewood plantation became a demonstration thinning trial. The next stop was to create a timber research facility within the Department of Forestry, which conducted research on the sawing, drying and preservation of whitewood timber to utilise the thinned trees. The project imported a semi-portable bandsaw and some winching equipment to move the heavy logs from the forest to the nearby sites for the sawing operations.

The trial enabled 120 trees from Mr Vele's whitewood plantation to be thinned and cut into timber on-site. The sawn timber was treated with various chemicals to test for resistance to the development of blue stain, which can develop within 24 hours on untreated sawn wood, reducing its value for use in appearance-grade timber products.

The trials showed that when the sawn timber is painted with commercially available preservative, blue stain does not develop for many months, enabling the timber to be transported to distant markets. Mr Vele declared that the project has given him hope that markets could be found for his timber. What's more, his sons also developed an interest in working with project staff at the mobile sawmill.

The small timber is proving suitable for logs, and the project team is now looking at further opportunities to build a market in Vanuatu. ACIAR commissioned the University of Queensland to lead a beef cattle project which could see Santo's beef cattle farmers using durable whitewood fence posts and applying rotational grazing of improved pastures.

An ACIAR forestry project was commissioned to help remedy the situation, and it is now encouraging investment in planted timber resources in Vanuatu through improved management and use of whitewood-based plantation and agroforestry systems.

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Papua New Guinea

Highlights

- ACIAR's contribution to forest conservation in PNG was acknowledged through accreditation under the Queen's Commonwealth Canopy initiative
- Bringing together individual cacao bean growers from Bougainville and boutique chocolate makers allows for bean-to-bar chocolate manufacturing
- A factory processing and packaging galip nut in Kerevat in East New Britain is now operating on a semi-commercial scale

Country overview

A stable and prosperous PNG is clearly in Australia's interest as it is our nearest neighbour. Australia's aid funding reflects this, and ACIAR's program is designed to help the country address its many challenges to agricultural development—including poorly developed infrastructure, weak market signals and services, new pest and disease threats, poor product quality, and pressure on land and renewable resources as a result of population increases and mining development.

ACIAR ensures that its research program is economically, culturally, socially and environmentally relevant to the smallholder farmers. The program has a focus on the role of women in agriculture from a variety of perspectives, for example marketing access and constraints to uptake of

new technologies. There is an emphasis on plantation crops, root and other horticultural crops, forestry and fisheries. These include exported and domestically traded commodities that generate smallholder income and underpin improved food security and economic development.

A key component of Australia's involvement with the agriculture sector in PNG is the ACIAR-DFAT economic development program, termed the Transformative Agriculture Enterprise Development Program (TADEP). It comprises five R4D projects centred on economic development opportunities. The partnership seeks ways to scale up successful ACIAR innovations, with full private sector involvement – aiming to increase employment and incomes in rural areas and enhance rural-urban supply chains.



Research achievements

ACIAR's contribution to forest conservation in PNG was acknowledged through accreditation under the QCC, a network of outstanding forest conservation initiatives throughout the 52 nations of the Commonwealth. As a result the ACIAR project *Enhancing the Implementation of Community Forestry Approaches in Papua New Guinea* was showcased at a Buckingham Palace reception on 15 November 2016. More information in the box later in this report.

Galip nut is a marketable product with strong consumer demand and acceptance in PNG. ACIAR funding is helping to expand the domestic market, with the promise of also developing an export market. Under the Transformative Agriculture and Enterprise Development Program (TADEP), a processing factory in Kerevat in East New Britain is now operating on a semi-commercial scale, resulting in packets of processed galip nut being sold in the supermarket in Kokopo.

Sweet potato is the major energy source for most people in PNG, but it has traditionally been grown as a subsistence crop. A project is investigating how to take the crop from a garden market model to a completely integrated supply chain that can service supermarkets in the big cities. The research team is helping smallholders to think more within a commercial system, where they can make money from selling sweet potato. The work includes introducing technology to enable farmers to produce seedlings free of disease. Disease-free material leads to higher yields and better looking sweet potato, which then has greater market appeal.

Smallholder farming families are the backbone of food production in PNG. Today however, these farming families need support through the transition from subsistence practices into the cash economy. ACIAR has funded a Family Teams program whose work has shown that men, women and youth working together as a family unit leads to more gender-equitable and effective farming practices, and these in turn result in improved family livelihoods. The key to success of the Family Teams' approach is the support of village community educators.

A newly commissioned project will lead to improvements in the Gulf of Papua prawn fishery by adopting an ecosystem-based fishery management approach. The research team is encouraging sustainable fishing practices that will give PNG access to international markets while increasing the potential value of the country's fishery. The project is guiding the National Fisheries Authority to obtain Turtle Excluder Device accreditation and Marine Stewardship Council accreditation for the prawn fishery, opening up potential export markets to countries such as the USA that have restrictions on countries that do not conform to bycatch reduction standards and commitments.

CASE STUDY

Better beans for quality chocolate from Bougainville

Cocoa production is an important cash crop for smallholder farmers in the Autonomous Region of Bougainville; in fact, it directly supports about two-thirds of the population. An ACIAR funded project led by Prof. David Guest from University of Sydney, “Developing the cocoa value chain in Bougainville”, aimed to improve the profitability and vitality of these smallholder cocoa farming families and communities, and through that, build community health and wellbeing.

As part of the efforts to improve quality and marketability of cocoa in Bougainville, ACIAR and the PNG Government supported a local chocolate festival in July 2016. Chocolate makers from Australia were invited as judges and potential buyers of the cacao beans, particularly of the highly distinctive Trinitario variety grown there. The rationale behind this arrangement was to connect specific

chocolate growers and chocolate buyers, as experience has shown that this leads to a better product. The growers get direct feedback on the flavour and aroma of their beans and a quality rating, leading to adjustments in their growing, drying, and storage methods.

The main messages for the farmers at the festival were to eliminate smoke, ferment properly, and dry correctly,



preferably using the sun. More careful production means the chocolate makers get a reliable source of a quality product, with an individual flavour. This process leads to a better result than just pooling all the beans from a group of farmers, and sending them off into the world – with the growers none the wiser about their destination, having had no individual feedback about their own produce.

Bringing together individual cacao bean growers and boutique chocolate makers allows for bean-to-bar chocolate manufacturing. As a result of the 2016 chocolate festival, a shipment of beans from particular farmers was sent to Australia. A number of sacks arrived

at Jasper and Myrtle Chocolates in Canberra in March 2017, and they have already commenced making these into chocolate. Special packaging has been developed to feature PNG/Bougainville, and market trials with their Bougainville chocolate bars will commence soon.

Ms Li Peng Monroe, founder of the company said: “We were delighted to finally receive these beans, in particular those from a gold medal farmer we contacted as a result of the festival. It has taken a constant effort and involved many people, including ACIAR, to make this first shipment possible, and we are very grateful to all. It is now our job to turn the beans into high-end chocolate.”

East Asia



Hardiyanto the treasurer of the cattle group in Karang Kendal Hamlet in Indonesia washes one of his cows in a small creek. Photo: Conor Ashleigh

Cambodia



Although over the past two decades Cambodia has had one of the fastest

growing economies in the world the country still faces major development challenges. ACIAR supports research to increase and secure the productivity of rice-based farming systems and associated postharvest systems. It also supports efforts to increase agricultural diversification (particularly into non-rice field and horticultural crops and ruminant livestock). A third thrust recognises the vulnerability of Cambodian agriculture, particularly rain fed cropping, to climate variability and change.

China



Agriculture is the foundation of China's food security and plays a key role in

ensuring national stability. ACIAR's program in China now focuses on strategic partnerships to improve the management of livestock, land and water resources in north-western China, and also crop-livestock systems in Tibet Autonomous Region. The need to raise farmers' incomes through increased productivity and marketability of produce is also covered in research design.

Indonesia



Agricultural research has an important role to play in addressing the main policy priorities for

the Government of Indonesia. For over 30 years, ACIAR has supported research in the country and substantial benefits have flowed to farmers and the entire agricultural sector. ACIAR now focuses largely on some of the poorest regions of the country, notably five provinces in eastern Indonesia and Aceh, but it also assists the more developed provinces of Bali, Java and Sumatra. The program seeks alternative approaches to improve livelihoods; these involve issues of food and nutritional security through enhanced productivity and food quality, as well as developing improved market links for high-value products sourced from smallholder production systems.

Lao PDR



Food security is still central to agricultural development in Laos.

The Government of Laos recently endorsed a new Agricultural Development Strategy 2025, whose priorities aim to modernise agriculture and thus lift rural development and the national economy. Thus Australia's support through ACIAR investment in agricultural research plays an increasingly important role as Laos works towards its goals in agricultural development, poverty reduction and inclusive economic growth.



Myanmar



Myanmar is undergoing a period of remarkable political, economic and social change.

ACIAR's aim in Myanmar is to work predominantly through international organisations and NGOs, including Australian-accredited organisations. The main focus for the Government in Myanmar is to secure improvements in food security, increase foreign exchange through increased exports of agricultural products, and improve rural incomes. Projects target productivity improvements in the crop, fisheries and livestock sectors through research, and capacity building for individuals and institutions.

Philippines



ACIAR's work in the Philippines aligns with that part of the Australian aid program

focused on agriculture, forestry, fisheries and water. It encompasses R4D to improve market competitiveness of products from aquaculture, horticulture and livestock enterprises. A recent additional focus aims to reduce the adverse effects of climate change on the rural poor. Underpinning these priorities is the need to develop more effective extension processes and greater responsiveness to market opportunities, while better land and water resource management is also vital. The Philippines is currently one of the largest importers of rice, and part of ACIAR's contribution to research in the Philippines involves support for the International Rice Research Institute (IRRI) to help maintain rice productivity.

Thailand



Thailand holds an important position in the Mekong region. As the country's economic

and research capacities have increased, so has ACIAR increased co-investment in Thailand. ACIAR now partners with Thailand to support other countries in the region, with the focus on the poorest farming communities. There is ongoing effort to implement the results of earlier projects; these include regional biosecurity systems implementation and management of Mekong fisheries in a partnership across the region with Laos, Cambodia and Vietnam.

Timor-Leste



ACIAR's engagement with its partners in Timor-Leste is now aligned with

the Farming for Prosperity Program in Timor-Leste (TOMAK) initiative, a new agricultural livelihood program by DFAT. This is building from the foundation established by the Seeds of Life program, and ACIAR is now deploying the assets, procedures and human resources from SoL to assist in managing its own and other allied projects. Research is focusing on greater productivity and market integration of cropping systems, increasing productivity and resilience of livestock, fisheries and horticulture, and raising individual and institutional capacity.

Vietnam



Australia currently has an agreement in place with Vietnam to engage in agriculture, and ACIAR research is pertinent to three of its four key objectives. The ACIAR program comprises technical, agribusiness and enables policy research to enhance smallholder incomes from

selected areas of high-value agriculture, aquaculture and forestry. It focuses on three geographic regions, the Mekong Delta, the south-central coast and north western highlands. These are areas where poverty persists and where there are threats to sustaining the agricultural natural resource base.

Cambodia

Highlights

- Diversification projects will help farmers grow higher value crops such as oilseeds or vegetables after the rice crop
- Mango industry to benefit from new techniques in production and marketing
- Whole of village approach will improve livelihoods through learning to raise more productive livestock

Country overview

During the past two decades, Cambodia has had one of the fastest growing economies in the world, but this growth has come from a very low base. Agriculture is a significant part of the Cambodian economy, with about 80% of Cambodia's population relying on it for their livelihoods. The predominance of rice-based farming systems on infertile, poorly structured soils means that Cambodia has rather low agricultural productivity on both a labour and a land area basis.

ACIAR's portfolio of projects in Cambodia is based on Australia's current Aid Investment Plan 2105-2018. It has three thrusts, all of which are in line with both the agricultural and water priorities under the Cambodia's National Strategic Development Plan 2014-18. First it supports research to increase and secure the productivity of rice-based farming systems and associated postharvest

systems. The second thrust supports applied research and development that underpins agricultural diversification, particularly in non-rice field and horticultural crops, and ruminant livestock. A third thrust recognises the vulnerability of Cambodian agriculture, particularly rain fed cropping, to climate variability and change.

Research achievements

Cambodia is one of the world's leading exporters of rice, a common but low value crop, but farmers need to diversify and grow more profitable foods. ACIAR started a five-year project led by the University of Sydney to improve productivity and livelihood security for farmers in Cambodia's north-western provinces of Banteay Meanchey, Battambang and Pursat, which together produce 27% of the country's wet season rice. The project seeks to introduce techniques to grow crops such as oil

seeds or vegetables after the rice crop. These higher-value crops will help lift farming families out of poverty and lay the foundation for other industries such as poultry and fish culture.

The Cambodian mango industry is rapidly expanding, and there are opportunities for further growth through domestic and export markets. ACIAR is supporting research to address identified constraints in order to expand into a large-scale production and marketing industry. On the production side farmers are receiving training in pest and disease identification, management and pruning for high productivity. The scientists are compiling lists of pests and diseases associated with mangoes in Cambodia and evaluating pesticide residues present in the fruits. On the marketing side, interviews have taken place with wholesalers to gain a better understanding of the changes needed to ensure proper handling and transport of the mangoes after harvest.

Cambodia has a chance to profit from the growing regional demand for animal protein. But at the same time, a declining cattle and buffalo populations has contributed to significant increases in cattle prices. Research underway aims to address these issues. A project has adopted a 'whole-of-village' participatory approach to improve livelihoods, using leader farmer groups. The groups are undertaking extension activities to learn how to improve large ruminant nutrition through forage development and silage. Forage seeds have been procured and are now growing in forage plots. The groups are also learning about biosecurity, with demonstrations that enable them to 'see' productivity gains made by livestock through improved body condition, and also to allow them to learn how to avoid lost productivity through infectious diseases and internal parasites.



China

Highlights

- Policy study on climate change receives commendation from senior Chinese official
- Chinese citrus rootstock released to the Australian industry – the culmination of many years collaboration

Country overview

The ACIAR program in China targets strategic partners to work with improving the sustainability of agricultural production. In view of the substantial human and financial resources now available within the Chinese national agricultural research system, and the strong mutual benefits to Australia, all ACIAR activities now require significant co-investment by the Chinese partners.

Research focuses on policy and technical issues associated with better management of livestock, land and water resources in north-western China and crop-livestock systems in the TAR. To reach those most affected by poverty and land degradation, the program has increasingly targeted rain fed crop-livestock systems, with emphasis on working with its Chinese partners to engage in joint regional- and national-level research initiatives.

Research achievements

While climate change has attracted a substantial amount of funding to study the science and the physical mechanisms involved, less attention has been given to farmer choices in response to climate change and to related public policy responses. An ACIAR project has added these social science dimensions to the study of climate change, targeting farmers in China and Vietnam. The project has raised farmer awareness about climate change in the survey sites and led to consideration by provincial policymakers of a policy brief produced by the project. There is further potential for collaboration and exchanges with local agencies. In China, Lanying Wang, the Director of the State Office of Comprehensive Agricultural Development within the Ministry of Finance, remarked on the importance of this study. She had gained a lot of scientific information on the impacts of climate change on water resources and food security and received several new policy recommendations. She would now like the project to make more detailed recommendations for the program she leads on irrigated agriculture.

China and Mongolia's vast inter-connected grasslands support the livelihoods of more than five million low-income pastoral households, and provide ecosystem services from improving air and water quality to acting as a carbon sink. These grasslands and herders' livelihoods have deteriorated over time and are now a major issue. An ACIAR project is investigating how to strengthen incentives for herders and encourage them to take a more active role in grassland management. The project aims to improve the design of national policies by ensuring that the voices of herders are incorporated and the capacity of local collaborators to develop and implement policy is strengthened.

China has benefited from the collaboration with Australian citrus scientists for more than two decades. The researchers identified drought-hardy and disease-resistant rootstocks among Chinese varieties, and this information has been put to good use in both countries. It culminated this year in the release of rootstocks of Chinese origin for the Australian citrus industry.



China has benefited from the collaboration with Australian citrus scientists for more than two decades.

ACIAR RPM Werner Stur with Dr Jia Jingdun, Director-General, China Rural Technology Development Centre, Ministry of Science and Technology at the China Rural Technology Development Centre in March. Dr Jia is also the ACIAR PAC member for China.



Indonesia

Highlights

- The Indonesian Coffee and Cocoa Research Institute adopts a model for 'relationship coffees' developed in a project
- Major disease issues identified for fin fish hatchery and grow-out sub-sectors are changing the way the two subsectors are managed
- A clean seed system for onions grown in Java is leading to healthier more productive onions

Country overview

Strengthening agriculture, including the crop, livestock, forestry, marine fisheries and aquaculture subsectors, is critical for poverty reduction and equitable development across Indonesia. The geographic focus of the Indonesian program encompasses some of the poorest regions—including six provinces in eastern Indonesia—as well as the more-developed provinces of Java and Bali. The research program has the flexibility to address rural poverty through some alternate approaches. These include initiatives to address food and nutritional security through enhanced productivity and food quality, or to improve market links for high-value products sourced from smallholder production systems. In undertaking these initiatives, the program encourages better links between national and province-based research agencies.

Wherever opportunities exist, ACIAR seeks to implement its Indonesian research program as part of a whole-of-government approach, especially with DFAT, and the Department of Agriculture and Water Resources.

ACIAR's medium-term research strategy (2012-16) focuses on: improving policies to underpin agribusiness development; strengthening livestock production and biosecurity systems; underpinning

the development of competitive horticultural and field cropping systems; supporting profitable smallholder aquaculture systems; enhancing capture fisheries management; enhancing forestry products and services; and developing profitable agribusiness systems for eastern Indonesia.

Research achievements

Indonesia's large coffee production relies heavily on smallholders living in remote areas of the country. A project is improving their livelihoods by establishing more effective value chains between producers and the international coffee trading firms. Earlier ACIAR research had brokered a relationship between the Benteng Alla Cooperative in Sulawesi and international coffee roasters as part of an action research intervention. This intervention led the cooperative to improve its technical processing skills; it also gained knowledge about specialty markets and market access. Now follow-up research is identifying key elements within a model for 'relationship coffees' that are likely to result in mutual benefits for both farmers and roasters. The Indonesian Coffee and Cocoa Research Institute, in partnership with local governments across Indonesia, has adopted the relationship model for more widespread application.



In Indonesia, half of hatchery-reared fish, stocked in sea cages to grow-out, die before they reach a suitable size for harvesting. This unacceptably high mortality rate is largely due to inadequate detection and management of diseases. A project is determining the cause and extent of diseases affecting Indonesian marine finfish production, and then testing interventions within an overall framework of improved health management. Major disease issues have been identified for the hatchery and grow-out sub-sectors. These are forming the basis of changes to the way the two subsectors are managed. Indonesian scientists have received extensive training within the project, and five of these are now applying their new knowledge in centres throughout Indonesia or in postgraduate studies in Australia.

Plantation-grown wood in Indonesia is now easing the pressure on native forests, with large wood pulp producers supplied exclusively by managed plantation wood. Australian acacias have been planted extensively but these in turn have been shown to face novel pest and disease problems. In Sumatra this

led to the replacement of 80 per cent of acacia plantations with eucalyptus. Currently two ACIAR forestry projects are working with Indonesian private-sector partners. One project is focusing on the sustainable management of the transitioning plantations, the other is dealing with disease management. The work is helping to build an environment where pockets of stabilised native forest in Sumatra connected by green belts are being made possible by the productivity of plantations.

Earlier ACIAR research has demonstrated the value of adding forage tree legumes to the diet of livestock to provide high quality protein rich feed. Research has recently focused on the role of these legumes in the fattening phase of production. The researchers have confirmed the benefits of tree legumes in the diet and demonstrated how the system can be improved – resulting in gains in weight two to three times greater than those on traditional village diets. Seed nurseries are being established to ensure a ready supply of quality seed to meet the growing demand as news of the project's success spreads.





CASE STUDY

Exploring better ways to grow onions in Indonesia

Onions in Indonesia. Photo: ACIAR.

Onions are one of the most important and profitable crops that smallholders can grow in Java – but farmers risk harming themselves and their environment through excessive use of agro-chemicals. Many farmers apply as much as five times the recommended rate of fertiliser and in an attempt to control a poorly understood mix of pests and diseases, they spray their crop every couple of days, right up to harvest, with a noxious but ineffective brew of insecticides and fungicides.

Despite such problems, onions remain a key industry and source of employment in the area, and the Indonesian government has accorded a high priority to finding solutions. This has led to an ACIAR project to address the problems. Knowing that there had to be a better way, the project team is determined to help the farmers find one! They observed that the farmers use a seemingly random mix of chemicals (whatever is on offer

from the vendors), without protective clothing and without normal precautions, such as keeping food and drinks at a distance from the pesticides. Despite all the spraying, caterpillars crawl out of the harvested onions, seemingly unaffected by the chemicals. They have become resistant to these products. Meanwhile, women are exposed to unsafe levels of the pesticides, as they sit in the sun, sorting the crop.

A fundamental re-think of the system started with a gathering for discussion involving the Australian and Indonesian researchers, extension staff, and farmers. Together they have looked for solutions, starting with new research to properly diagnose the problems. An entomologist from Queensland surveyed the “army worm” caterpillars. By monitoring the adult moths with light traps and spraying only when moths reach a “threshold”, it was possible to immediately cut the number of insecticide sprays by half.

Other problems are caused by virus diseases. Farmers store their own onions to plant again next year, not realising that when they select nice small bulbs to replant, they are most likely selecting the ones stunted by viruses, thus propagating or even exacerbating

the problem. The project team used molecular testing in Australia to identify the viruses, then applied techniques to develop virus-free planting material. Onions can also be propagated from “true seed” – and if appropriate precautions are taken, this seed can be guaranteed free from diseases. Onions intended for planting material are “grown on” from true seed in the cooler highlands of Java, where diseases pose less of a problem. Healthy onion plants grown in the highlands can provide “clean planting material” for farmers in the lowlands.

Growing onions for and from seed is a complicated business. The project is providing the training needed to establish a “clean seed system” for this vital crop.



Supriani washes one of her cows in the creek in Karang Kendal hamlet. Supriani has been part of the cattle group for 7 years, and she passionately believes there are many benefits from keeping the cattle together in the one shed, “There are a lot of benefit, cleanliness/hygiene, security as well, and health too. Back then, in term of health, many were sick.” When asked about other women joining she said “I hope other women can gather as well, just like we are now. Joining cattle farming group and gathering at cowshed.” Photo: Conor Ashleigh

Lao PDR

Highlights

- Genetically improved teak seedlings produced through tissue culture open a way to lift returns to farmers and provide better quality timber for wood processors
- Smallholders' rapid adoption of mechanised drill seeding has been shown to save labour and help them adapt to more variable rainfall
- Geographic Information System (GIS) maps of the rain-fed lowland rice environment of Savannakhet and Champassak provinces provide critical information on the likelihood of drought occurrence

Country overview

Australia's support through ACIAR's program in Laos is increasingly important as Laos works towards its goals in agriculture development, poverty reduction and inclusive economic growth. ACIAR's priorities in Laos include:

- 1** efficient and sustainable forestry industries, including non-timber products with suitable climate change resilience;
- 2** innovative livestock systems that allow for intensification and land-use requirements while raising animal health and biosecurity levels;
- 3** increased fish habitat restoration and protection of fish migration routes;
- 4** more cost-effective and sustainable rice-based production systems through the application of mechanisation, diversification and intensification, together with enhanced crop quality, quarantine standards and value-adding for domestic and export markets;

5 improved natural resource management that benefits livelihoods and food security, through delivering land-use options to smallholders, with attention to both water and nutrient management with climate change adaptation; and

6 improved institutional training and communications frameworks that enable smallholders to adopt and adapt new technologies, and enhance the capacity development of researchers and educators.

Research achievements

ACIAR support has helped select and reproduce fast-growing and higher-value teak clones suitable for northern Laos. The production of genetically improved teak seedlings through tissue culture opens a way to lift returns to farmers and provide better quality timber for wood processors. This is a significant milestone in the Lao forestry sector where teak-based forestry systems offer smallholders opportunities for both long and short term income generation.

ACIAR-supported projects in Southern Laos focused on research and development for smallholders to adapt to changing climatic and socio-economic conditions. Geographic Information System (GIS) maps of the rain-fed lowland rice environment of Savannakhet and Champassak provinces were produced. The GIS maps provided critical information on the likelihood of drought occurrence in the areas, and the time when the crop could be planted and harvested.

Another project demonstrated direct seeding technology to farmers and produced with agronomic packages for maize and legumes growing in rotation with rice. The project interventions have contributed to the rapid increase in adoption of mechanised drill seeding by smallholders, which is demonstrated

to save labour and help adapt to more variable rainfall. Last wet season, the Provincial Agriculture and Forestry Office reported that mechanised drill seeding is now used on more than 17,000 hectares in Savannakhet.

ACIAR supports a suite of projects dedicated to improving water and nutrient management. One project on groundwater significantly boosted the knowledge and expertise to develop groundwater resources for irrigated agriculture and manage these resources sustainably. It has been established that using groundwater for irrigation is feasible and profitable for farmers. Under the project, farmers using groundwater for dry-season cropping earned additional incomes as high as four million LAK (\$A600) per season.

Myanmar

Highlights

- The health and productivity of village chickens are improving due to vaccination against Newcastle disease and measures to reduce chick mortality
- Farmers are rapidly adopting improved lines of legumes as they see the benefits of increased quality and production and subsequent lift in income

Country overview

Australia is providing support to activities in Myanmar that target immediate needs of the rural poor, to improve their livelihoods through better health, education and food security. The main focus of ACIAR's program is to secure improvements in food security and rural incomes for smallholders through increased production and enhanced access to markets and services.

ACIAR's aim is to continue to work predominantly through international organisations and NGOs, including

Australian-accredited organisations. Working with agencies with a longstanding presence on the ground has proved an effective and accountable means of delivering assistance. Promising results have been achieved in a multilateral ACIAR project led by the International Crops Research Institute for the Semi-Arid Tropics on improving the productivity of legumes in the Central Dry Zone (CDZ) of Myanmar. The current program is based on the achievements arising from the research in this project, together with scoping missions to identify research gaps and needs.

Research achievements

A partnership between Australia and Myanmar seeks to improve the livelihoods of small-scale producers in the CDZ by enhancing management, nutrition and health of goats, sheep, cattle and village poultry. Already the health and productivity of village chickens is improving due to vaccination against Newcastle disease and introducing bamboo coops to reduce chick mortality. These interventions have led to a substantial increase in the number of birds sold by farmers.

The ACIAR-funded MYPulses project is playing an important role in achieving a sustainable increase in crop productivity and improving farmer income and livelihoods in legume-based farming systems in the CDZ. Farmers have participated in trials to identify their preferred varieties of groundnut

(peanut), pigeon pea, chickpea and mung bean. The availability of seed from these preferred varieties was enhanced by the setting up of village seedbanks, and farmers are rapidly adopting the improved lines as they see the benefits of increased quality and production, and subsequent lift in income.

The MYRice project team has assessed postharvest losses from outdated practices of handling the harvested crop. They found quality deterioration from delays in threshing, leading to a low price for the crop. The team introduced best management practices developed by IRRI – combine harvesters to reap and thresh, drying with a flatbed dryer then storage in an air-tight IRRI Super Bag of a 1-5 tonne GrainSafe container. One rice farmer of 25 years commented: ‘Now the colour of the seed is better, the germination rate is higher and there is no insect infestation.’



ACIAR Commissioners and partners after attending ministerial meetings in the Myanmar capital, Nay Pyi Taw, for ministerial meetings, including the Myanmar Parliamentary Committee for Agriculture, Livestock and Rural Development.

Philippines

Highlights

- Smallholder farmers are learning how to reduce the impact of the highly destructive Fusarium wilt TR4 on banana yields by adopting disease control practices introduced through an ACIAR project led by Stuart Lindsay from the Queensland Department of Agriculture, Fisheries and Forestry.
- Researchers working with sandfish help to restore coastal livelihoods and ecological function based around a sandfish commercial-scale hatchery and grow-out technologies
- New thinking on community engagement in reforestation has led to restoration of a site in Biliran Province which is to be used as a national example of successful reforestation

Country overview

The mountainous nature of the Philippines means there is relatively little new land suitable for expanding rice areas, and productivity growth in existing areas in recent years has been low. In addition, the population continues to grow at more than two per cent per year. The Philippines is a net importer of rice, and while production of rice remains a dominant national priority, there is increasing pressure in the country to diversify and produce a range of other food, livestock and fisheries products, on increasingly marginal land in the uplands.

The following are the lead priorities for the Philippines under ACIAR's medium-term research strategy (2012-16), endorsed in February 2016: increasing the market competitiveness of Philippine horticultural products; competitive and sustainable fisheries and aquaculture production; land and water resource management for profitable and sustainable agriculture; improving returns from low-input animal production systems; mitigating the adverse impacts of climate change on the rural poor; improving agricultural technology uptake by poor indigenous households in the southern Philippines through understanding and remedying

adoption constraints and extension. Undertaking the program involves engagement with a wide range of local 'next user' partners (such as local government units, NGOs, commercial agribusiness companies and farmer community groups).

Research achievements

In the Davao del Norte province in the southern Philippines, a cooperative of smallholder farmers is reducing the impact of Fusarium wilt TR4 on banana yields by adopting disease control practices introduced through an ACIAR project led by the Queensland Department of Agriculture, Fisheries and Forestry. It involves farmers growing semi-resistant Cavendish cultivars developed in Taiwan that allow for some degree of banana production in the presence of TR4. By contrast, the variety normally grown in the Philippines, Grand Naine, would have succumbed to TR4 within a year. Other trials concurrently under way are exploring the possibility of suppressing the soil-dwelling TR4 fungi by altering the soil's complement of living organisms and biological activity, the idea of 'suppressive soils'. The hope is that a healthy ground cover around the

plantation will increase the growth of beneficial soil organisms and suppress the growth of the *Fusarium*.

When poor smallholder farmers act as individuals, they often lack the capacity to run a business linked to modern market chains. They can, however, overcome these deficits by acting collectively. An ACIAR funded project led by Paul Southgate from James Cook University sought to help farmers change the whole culture of how they work together, sell, plan and schedule. The team discovered that farmers were often 'selling all-in', meaning that ungraded harvest was being sold in bulk at low prices to collectors who profit from selling graded produce. This led to the team imparting new skills in postharvest handling, grading, marketing, and safe vegetable production practices and accreditation to ensure the farmers received premium prices.

Sandfish, known also as *bêche-de-mer* or sea cucumber, is a prized commodity consumed as food or medicine in China and other parts of Asia and an important income source for coastal communities in the Philippines. But through years of over harvesting the wild population has been severely depleted. Through ACIAR, researchers have identified a range of benefits possible from restoring coastal livelihoods and ecological

function, based around commercial-scale hatchery and grow-out technologies for sandfish. The project has developed new techniques for feeding the larvae, and seen hatchery output significantly increase despite the devastation wreaked by Typhoon Haiyan in November 2013.

In the late 1980's and early 1990's ACIAR funded a successful program to develop techniques of culture for giant clams. In the Philippines these coral reef icons were endangered through both overharvesting and the destruction of their environment. Revisiting the research to determine the level of impact some 20 years on the ACIAR Fisheries program manager Dr Chris Barlow was heartened to learn that the restocking program and ongoing research has continued through the work of the University of the Philippines. Young giant clams continue to be in high demand across the country, and the Marine Laboratory at Bolinao runs regular training courses so that community members and resort staff know how to care for the juveniles when they receive them from the hatchery. As well as being a tourist drawcard, community interest in restoring giant clams to their reefs is high—coastal communities attest to a healthier marine ecosystem where giant clams are living, and they are careful to protect their restocked giant clams from poachers.



CASE STUDY

Successful reforestation needs community involvement

The Philippines has been deforested over decades through logging, land clearing, and deliberate or accidental burning. This has caused severe environmental degradation and resulted in tracts of unproductive land. The Philippines Government is addressing this issue through their National Greening Program. An ACIAR funded project led by Professor Herbohn from the University of the Sunshine Coast has changed the thinking about how communities are involved in reforestation programs, engaging them as stakeholders rather than contractors in tree-planting activities. In the uplands of Barangay Kawayanon in Biliran Province – home to four past failed reforestation attempts – the community was engaged at every stage to implement a pilot rehabilitation program.

First on the agenda was to establish a People's Organisation (PO), comprising about 30 families, to define the community's needs and help implement and run the research. Professor Herbohn explained that the project team worked with the PO for about a year before there was any thought about planting a tree. PO members learnt skills in record-keeping, running meetings, and accounting to ensure the organisation was functional.

With new knowledge in plantation establishment and post-planting best practice, the PO worked with the researchers to decide what to grow and where to use a landscape approach, where different species are used in certain environments. Some areas were planted with trees for conservation and rehabilitation, while others were earmarked for timber production. Cash crops such as pineapple, cassava and sweetpotato were planted for agricultural production in designated community farms and around forested areas.

To increase their livelihoods, the PO learnt about high-quality seedling production and established a nursery program, growing seedlings to supply not only the community's reforestation but broader rehabilitation across the Philippines. The real-life setting has provided new insights into the practicalities of successful rehabilitation, which relies on community engagement and opportunities for financial returns at different stages of growth. Lessons from the Biliran pilot will now be taught more broadly, with the site used as a national example of successful reforestation.

Thailand

Highlights

- Progress made in controlling gall wasp infestations of eucalypt plantations in the region, with substantial capability to address plant biosecurity issues enhanced
- Ongoing benefits of Rhizobium inoculation reveal success of the Australian and Thai partnership over many years

Country overview

In line with the Memorandum of Understanding signed in July 2007, ACIAR continues to foster opportunities for partnering with Thailand to support other countries in the region. In this context the emphasis is placed on improving regional research programs, with particular attention to Cambodia, Laos, Myanmar and Vietnam. ACIAR's current program focuses on three issues:

- 1** implementing the results of earlier projects, with particular focus on the poorest farming communities in Laos and Myanmar;
- 2** implementing Mekong regional biosecurity systems for both plants and animals;
- 3** collaborating in a regional partnership with Laos, Cambodia and Vietnam to manage Mekong fisheries.

Australia and Thailand are active participants in a range of International Agricultural Research Centres (IARCs) and other multilateral research and assistance agencies, a number of which are located in Thailand. This will continue to provide a suitable platform to address wider regional research initiatives with both Australian and Thai involvement.

Research achievements

The gall wasp (*Leptocybe invasa*) is a serious threat to the expanding eucalypt plantation industry in the Mekong region and its control is a high priority. Classical biological control offers a relatively low cost and proven option to manage such pests in perpetuity, whilst promoting sustainable forest management. A regional effort involving institutions in Thailand, Cambodia, Laos, and Vietnam working with the University of the Sunshine Coast in Australia has mapped the distribution of gall wasps and existing parasitoids in each of



the partner countries. The scientists confirmed the presence of two species of gall wasps in the region and also determined that an Australian-origin parasitoid, *Quadrastichus mendeli*, was widespread in the region and providing variable levels of gall wasp control. The capacity of scientists in the region to undertake forest health surveillance, research, basic diagnostics and forest pest collection curation has greatly strengthened the ability to manage current and future plant pest problems.

Between 1982 and 2004 ACIAR funded research into the benefits of inoculating legumes with *Rhizobium* species of nitrogen-fixing bacteria. A recent return to examine the outcomes of that research found an overwhelming consensus amongst project scientists in Australia and its partner countries that the ACIAR projects on *Rhizobium* and legume nitrogen fixation provided substantial benefits to the individuals and institutions involved. Of particular note was the ongoing and productive interaction between Khon Kaen and Chiang Mai universities in Thailand and Murdoch University in Australia.

Timor-Leste

Highlights

- The Seeds of Life (SoL) program leads into new opportunities for cropping intensification to produce legumes and grain for an emerging stock and food processing industry
- Research on tree legume fodder put to use for a companion project in cattle enterprise development

Country overview

Australia is the largest development partner for Timor-Leste. ACIAR's research agenda supports the Timor-Leste Government's Strategic Development Plan 2011-30, through the following strategies:

- improving smallholder and community livelihoods through improved varieties of staple crops and legumes; improving productivity and resilience of livestock, fisheries and horticultural systems; and
- improving individual and institutional R&D capacity in the Ministry of Agriculture and Fisheries and University of Timor-Leste.

Opportunities for ACIAR assistance in Timor-Leste lie in the food crops sector, where yields are low by regional standards. It is critical to make available improved varieties with higher yields than local varieties. Livestock production is almost totally managed by individual households, very few of which are specialist livestock raisers. Traditional management systems and poor market access mean that farmers tend to maximise the numbers of unproductive animals.

While Timor-Leste is well endowed with marine fisheries resources, the country needs a coherent policy framework and fisheries investment strategy, as well as help to protect its fish stocks against illegal fishing by foreign fleets, and better integration of freshwater aquaculture with agriculture.



Photo shows farmers harvest legumes as fodder for cattle. In West Timor, Indonesia, maize is a major component of the traditional food resource. But yields are poor due to inadequate crop nutrition and crop husbandry, and variable climate. This project will evaluate forage legumes for integration into maize cropping and assess their potential as dry season fodder to lift animal production. Photo: Paul Jones

ACIAR engages with its partners in Timor-Leste to align its project investments as much as possible with TOMAK, a recent agricultural livelihood investment by DFAT.

Research achievements

SoL has established a national seed system, and disseminated higher yielding varieties that more than 40,000 farmers have adopted. The SoL management team identified opportunities for generating income and research needed to develop these areas. An ACIAR funded project led by William Erskine from the University of Western Australia now under way is studying cropping intensification to produce legumes and grain for an emerging stock and food processing industry, and non-timber tree products (tree legume fodder and sandalwood, native to Timor-Leste) to

diversify farm income and act as a buffer to climate variability. It is working closely with another ACIAR funded project led by Dr Geoffry Fordyce from University of Queensland on cattle enterprise development to integrate with the research on forage production.

Fisheries and aquaculture in Timor-Leste fall well short of their potential to improve livelihoods and food security. Timor-Leste makes limited use of its living marine resources, in stark contrast to neighbouring nations and small island states globally. Promotion of sustainable marine resource use could significantly improve food security. An ACIAR funded project led by WorldFish found that fishing communities at five sites were concerned by declining reef resources and increasing competition for resources, while rising costs of inputs relative to reducing catch rates was also perceived as a major problem.

Vietnam

Highlights

- Benefits of the agroforestry project in north western Vietnam include higher income from the produce, more fodder for livestock and better management resulting in less soil erosion
- Trials of drip irrigation for mango production on the south-central coast saw yields increased by 29% with a saving of about 90% of the water needed for irrigation
- Project team discovers that the rice-farming system in the Mekong Delta already has high nitrogen concentrations and adequate phosphorus and thus needs no fertiliser

Country overview

ACIAR's program in Vietnam supports technical and agribusiness research to enhance smallholder incomes from selected areas of high-value agriculture, aquaculture and forestry. In recent years the program has focused on three geographic regions—the Mekong

Delta, the south-central coast and north-western highlands—where poverty has persisted and where there are threats to sustaining the agricultural natural resource base. These are also opportunities to employ Australian agricultural technical skills to assist in development.



ACIAR's projects link with programs of DFAT and other donors working in these regions. These projects are increasingly multidisciplinary, and there is a growing focus on linking central research institutes with provincially based research and extension departments. ACIAR acknowledges the following key areas as medium-term research priorities:

- 1** optimisation of resource management for profitable and sustainable agricultural production in south-central coastal Vietnam;
- 2** poverty reduction through market engagement for smallholder farmers in the north-western highlands;
- 3** development of high-value aquaculture industries;
- 4** technical and policy support for higher-value plantation forestry products; and
- 5** advice on climate-related impact and adaptation policy for future agriculture.

Research achievements

An ACIAR funded project for the World Agroforestry Centre, Vietnam led by Dr La Nguyen from CGIAR aimed at improving livelihoods of smallholder farmers in north-west Vietnam with agroforestry has gained substantial impacts in a relatively short period. One farmer collaborator from Yen Bai established an agroforestry trial involving late-fruited longan, fodder grass and maize; after just three years he is already earning more from the agroforestry system than from mono-cropping of maize and he has noted that the soil erosion has decreased significantly.

Increased availability of fodder means that he now has three cattle where he could only manage one. The grafted longan fruited in their third year and he expects that the next year he will gain significant income from the sale of fruit.

The agroforestry project has also introduced the Son tra tree, an indigenous fruit tree species growing around the Himalayas that is still in the early days of domestication. The trees grow in areas populated by the H'mong people in Northwest Vietnam, leading to the local name "H'mong apple". Fruit production from this indigenous tree is going well and the harvest is highly profitable. H'mong women benefit from selling 'shan' tea and fruit and also from employment in local factories where these products are being processed.

A five-year ACIAR funded project led by the International Livestock Research Institute (ILRI) aims to improve the livelihoods of smallholder pig farmers in Vietnam and improve food safety in the pork value chain. It has a two-pronged approach, one group looking at food safety and health risk assessment, the other concentrating on economic assessment and pig health. So far the project, known as PigRisk, has produced maps and drawn up a descriptive analysis of the pork value chain, undertaken an assessment of economic and production constraints for pig farmers, and defined the chemical and biological risk assessment along the pork value chain. The project has also developed models that provide quantitative risk assessment and estimates the burden of disease associated with pathogens in the pork value chain, the first time such models have been used for food safety in Vietnam.

A project studying Integrated water, soil and nutrient management for sustainable farming systems on Vietnam's south-central coast found in trials of drip irrigation for mango production, that yields increased by 29% with a saving of about 90% of the water needed for irrigation. This is the first research on

drip irrigation in this region and, based on the promising results, the Agricultural Science Institute for Southern Central Coastal Vietnam is seeking Department of Agriculture and Rural Development endorsement to begin promoting the technology to farmers.



A five-year project led by the International Livestock Research Institute (ILRI) aims to improve the livelihoods of smallholder pig farmers in Vietnam and improve food safety in the pork value chain

Pigs are a vitally important part of Vietnam's economic and cultural life. Photo: Ian McLeod



CASE STUDY

Sustaining rice-shrimp farming systems in the Mekong Delta

Rice-shrimp farming has been traditionally practiced in Vietnam's Mekong Delta. The farmers crop rice during the wet season when the river runs high with fresh water, and grow shrimp when saline waters flow in from the sea during the dry season. But these practices have become increasingly difficult in parts of the Mekong due to increasing soil and water salinity.

An ACIAR research project led by University of New South Wales has aimed to improve the sustainability of these rice-shrimp farming systems. The scientists have investigated risk factors for rice-shrimp farming, described pond and rice field processes, and generated much needed environmental and farm management data. They have used stable isotope analysis to describe nutrient pathways, and thus better understand the individual contributions of rice and shrimp to the production system.

The team discovered that the rice-farming system in the Mekong Delta already has high nitrogen concentrations and adequate phosphorus. Thus the

system does not require fertiliser, meaning that farmers can increase their profitability by reducing or eliminating fertiliser, a challenge not commonly faced by other developing countries in the region.

The project is now looking to disseminate information and training programs on better farming practices to government extension staff and policy makers, and to engage lead farmers and farming groups. These steps will ensure adoption of better management strategies, leading to improved productivity and sustainability of rice-shrimp farming systems and opening opportunities for farmers to increase their incomes and food security.

South and West Asia



Members of the Ratu Rani Women's Agriculture Collective in Bhaluwa village in Uttar Pradesh, India watch on as the group's leader demonstrates how they have learnt to use a rice-transplanting machine. The group has 65 women farmers who are all from the Indigenous (Adivasi) Choudary group who traditionally are very poor and socially marginalised. Photo: Conor Ashleigh

Afghanistan



ACIAR's collaboration with Afghanistan is through support for the work of the International

Center for Agricultural Research in the Dry Areas (ICARDA), International Crops Research Institute for the Semi-Arid Tropics and the International Maize and Wheat Improvement Center (CIMMYT) to increase wheat and maize production, diversify cropping systems, increase water use efficiency and develop best practice for forage production in small-scale livestock systems. It works through established programs in agricultural extension and community development to encourage adoption of the research results.

Bangladesh



ACIAR's program in Bangladesh focuses on eradicating extreme poverty

through improved productivity of food grain crops. It has strong emphases on conservation agriculture, farm mechanisation, saline land management and adaptation to climate change, with significant effort directed to rice-wheat and rice-maize systems. A second focus is on 'Rabi' (winter season) crops such as pulses.

Bhutan



In Bhutan, ACIAR has already contributed to develop Newcastle disease vaccines for

village chickens, and other projects have helped manage fruit fly damage and footrot in ruminants. A major initiative to improve citrus production through pest and disease management is now underway.

India



Collaboration with India includes projects on better water management to

improve livelihoods in the more marginal rain-fed areas of central India, and also to develop policy to assist India with the implications of its transition from a highly regulated economy to a more open market economy. ACIAR has adopted a regional approach to its work with India that now involves neighbouring countries with shared issues and opportunities.

Nepal



The focus of ACIAR's collaboration with Nepal is to address poor farm productivity and help

build capacity in agricultural institutions to improve the livelihoods of the rural poor. In doing so ACIAR recognises the different challenges presented in the lowland Terai rice-wheat farming systems compared with the mixed crop-livestock-tree farming systems of the hill and mountain areas.

Pakistan



ACIAR's long-term focus in Pakistan is to help increase livelihoods for the poor in rural areas

by enhancing agricultural productivity and expanding their revenue streams. It seeks to do this through improving water management practices, adding value to raw agricultural products and opening up access to markets for those goods.

Afghanistan

Highlights

- More than 600,000 farmers have benefited from the introduction of new improved wheat and maize varieties
- One tonne of quality seed produced from ten adapted forage species, in readiness for a large-scale seed multiplication and dissemination process

Country overview

ACIAR's collaboration with Afghanistan started in 2002 and mainly focuses support on wheat and maize production. Activity in Afghanistan is funded through the DFAT R4D program and is implemented through collaboration with CIMMYT and ICARDA. The operating environment is complex as a result of poor security and political uncertainty, which limits access by Australian scientists and hinders donor capacity for long-term planning. But strong efforts are underway to collaborate and coordinate with other implementing partners, including government and non-government organisations, grower and industry groups, and donor organisations.

Principal objectives have been to import seed from suitable cultivars, establish on farm participatory testing of imported germplasm for the identification of better adapted cultivars, and then undertake local multiplication and distribution of selected cultivars. Particular attention has been paid to capacity building, improving rust resistance in wheat and promoting improved crop management, together with provision of improved cultivars of both wheat and maize.

The country program has a new focus on crop and livestock intensification and better water management. The researchers are fostering linkages between the improvement

of wheat varieties and agronomy, the development of forages for small ruminants, and community-based watershed management.

Research achievements

The ACIAR funded CIMMYT led wheat and maize project is moving from genetics research to community seed production, with a strong focus on supply. In addition to war inhibitors, farmers struggle with the quality, quantity and availability of state-produced seed. Four new wheat varieties have been released this year. Over 600,000 farmers have benefited from the introduction of the new seeds of improved varieties. The project has established hubs in four provinces in the east, north, west and centre of Afghanistan to train farmers and extension workers. The hubs also organise technology demonstrations on farmer fields. The project also sponsors Afghan researchers for training abroad and organises in-country trainings for identified needs, in wheat and maize breeding, genetics and agronomy. The Agricultural Research Institute of Afghanistan (ARIA), established in 1982, is an Afghani national body, and one key achievement of the past year is the enhanced capacity of ARIA researchers. This has been evident in the success from experiments, in improved presentations in crop workshops and in a more proactive approach in designing experiments.

Another project seeks to establish sustainable forage production systems to reduce winter feed gaps for smallholder livestock within the water constrained provinces of Baghlan and Nangarhar. The project has obtained 18 perennial shrub species from both Australia and ICARDA and the scientists from ICARDA, CSIRO and Murdoch University have

trained national researchers in evaluating their adaptive capability. Together they have established mother plantations of promising varieties at three research stations. One tonne of quality seed from ten adapted forage species is now available to kick-start a large-scale seed multiplication and dissemination process.

Bangladesh

Highlights

- A study that found farmers affected by water scarcity or salinity were seeking to supplement their income with off-farm activities, leading to recommendations for investment in accessible fisheries enterprises
- Farmers enthused to grow legume crops in the interval between the rice harvests, based on successful trials of lentil and pea tailored for regional situations

Country overview

ACIAR's focus in Bangladesh has been on food grain crops, and its strategy addresses one of the country's key development challenges, which is food availability within the context of increasing climate-change vulnerability. Research activities are strongly related to agricultural food production. Bangladesh also faces the problem of inadequate nutrition, which is just not limited to food availability. It is derived from multiple factors, for example gendered consumption practices, international market variations and effectiveness of government structures.

With re-emerging concerns about Bangladesh's ability to maintain food security in the light of its high vulnerability to the impacts of climate change, ACIAR's emphasis is shifting towards a farming systems' approach that supports broader improved food security. The program includes research on conservation agriculture, farm mechanisation, saline land

management and adaptation to climate change, particularly in the rice-wheat and rice-maize systems.

Working with ACIAR provides Bangladesh with the opportunity to engage in a range of mutual interests with other countries in South Asia. For instance, low-lying areas and rain fed cropping systems in Bangladesh are particularly negatively impacted by the effects of seasonal climate variability and change. Bangladesh is, consequently, one of four partner countries involved in ACIAR's climate-change adaptation initiative.

Research achievements

Water scarcity induced by climate change along with high-salinity related challenges threatens the livelihoods of millions of farmers in Bangladesh. An agricultural development policy project funded by ACIAR and led by Dr Ram Ranjan from Macquarie University investigated the extent to which farming communities seek

out non-farm enterprises when their farms are affected by water or salinity challenges. The project found that a higher level of salinity did increase the chances for vulnerable households to seek opportunities beyond the farm. Although saline water fisheries provided lucrative business, marginal and landless farmers were excluded from participation due to lack of resources. The project recommended investment in infrastructure that creates better supply-chain opportunities for shrimp and crab farming to enable landless and marginal farmers to become involved in the marketing and production phases.

The development of shallow water pumps to access groundwater in Bangladesh late last century spurred enthusiasm for growing two rice crops per annum, but at the expense of growing protein-rich pulses. An ACIAR funded project led by Professor William Erskine of University of Western Australia has developed a technique of relay cropping whereby lentil seeds are planted into the monsoonal rice crop just before harvest, enabling a lentil crop to mature in the fallow period between the two rice crops. While there have been challenges, the project has worked to address them, resulting in a 40 per cent increase in lentil production from trial areas and participating farms.

Another component of the project sought to replace the fallow period with peas which could be harvested as green pods within 60 days. Farmer enthusiasm created a demand for pea seed, leading to one farmer converting his demonstration field into an area for seed production, growing the crop to maturity to meet the seed demands of other farmers. His success led him to forego planting the spring rice crop and instead produce more pea seed, thus generating a profitable agribusiness venture.



Shanaton Kumar Biswas stands on a plot of land he ploughed with his two-wheel tractor. Photo Conor Ashleigh

Bhutan

Highlights

- Project scientists introduce a community-wide mobilisation to encourage control of Chinese citrus fruit fly (CCFF)

Country overview

ACIAR's strategy is to work closely with the Bhutanese Government, local industry and other donors to ensure that planned activities are appropriate, consistent with the most recent government five-year plan and complementary to the work of other donor agencies.

Citrus is Bhutan's largest horticultural export industry. A major initiative to improve citrus production through improved planting material and integrated crop management is being implemented. The work is focusing on crop irrigation management, integrated crop management of vegetables (particularly chilli) and development of contract farming crops (e.g. walnut, grapes, asparagus, and pomegranate).

The Bhutanese Government has identified crop irrigation management, integrated crop management of

horticultural crops, and dairy sector development as priorities for future collaboration.

Research achievements

CCFF infests citrus fruit causing premature ripening and subsequent fruit drop. Yield losses can be as high as 80 per cent in severely affected orchards in Bhutan. The ACIAR funded project led by Graeme Sanderson of the NSW Department of Primary Industries has initiated an area wide management program involving 230 farmers in the Tsirang district. Farmers have received training on fruit fly biology and management approaches. The main aim was to mobilise the community for a collective approach to fruit fly management. A key activity was the collection and destruction of fallen fruit to reduce the population of flies, and a complementary measure was the introduction of protein bait lures to attract and kill the fruit fly.



India

Highlights

- Conservation agriculture shown to yield big dividends in boosting income, saving water, saving energy and carbon
- The 'stay-green' trait in sorghum is now ready for developing drought-hardy lines to produce grain and fodder
- Villagers in Bihar State become engaged in participatory action research, leading to a manual for schools and a photobook to help farmers with limited literacy
- Women in Jharkhand State trained to adopt new vegetable cropping options, safe vegetable production and home gardens

Country overview

Australia and India share many of the same agricultural and natural resource management problems and research challenges. ACIAR has supported a program of collaborative agricultural research with India since 1983. The large and well-developed national agricultural research system led by the Indian Council of Agricultural Research is a cornerstone of ACIAR's program, and has great potential to underpin cooperative activities in the region.

ACIAR's research activities have been increasingly linked to the food security problems of other South Asian countries and thus have a growing regional character, including the programs delivered in conjunction with CGIAR, state agricultural universities, Non-Government Organisation's (NGO), autonomous and private-sector institutions active in the region. ACIAR will continue to work with India in a regional approach, involving neighbouring countries with shared issues and opportunities.

Research achievements

The Sustainable and Resilient Farming Systems Intensification (SRFSI) project led by the International Maize Improvement Centre, Nepal has produced field proof of successful conservation agriculture practices across 40 villages in India, Bangladesh and Nepal. Uptake of conservation agriculture is boosting income, saving water, saving energy and carbon. This is also making a contribution to the Indian goal of doubling farm household income in five years.

Plant breeders have enhanced the value of the 'stay-green' trait in sorghum which maintains both grain and stover (fodder) yields under drought stress. The scientists found that breeding for stover quality attributes and grain/stover productivity could take place concurrently. They gained proof of concept that introducing stay green genes can increase quality and productivity, giving credence to an approach using molecular markers for the complex constraint of drought, an area where successful examples are rare. The project team identified variants for critical traits which will be used in the breeding program. The prospects are excellent for developing and

releasing drought-hardy productive lines of sorghum.

Another ACIAR funded project led by Dr Richard Richards from CSIRO Plant Industry seeks to impart traits into wheat that will enable it to be sown earlier to avoid drought and high temperatures during the critical flowering period. A second desirable trait is deeper roots that can access more soil water at depth during grain filling. Trials of lines that the project has identified exhibiting one or both traits are underway in India and Australia. An ACIAR funded project led by Erik Schmidt from University of Southern Queensland seeks to improve the livelihoods for woman, marginal and tenant farmers in Bihar State has had great success in working with the community and

schools. Technical, social and economic constraints have limited the effective use of groundwater and ponds for irrigation, and large areas of land remain fallow during the dry months. Access to year-round water for irrigation would significantly promote the productivity of agriculture, improving incomes and food security. The project has focused on evaluating the water resources and sustainable utilisation for irrigation from tanks and groundwater. It has also determined what socio-economic, structural and institutional constraints hinder sustainable water use. The villagers have eagerly engaged in the participatory action research activities of the project. A manual has been developed for use in schools and the villagers themselves have produced a photobook of high quality.



CASE STUDY

Women show the way in farming new vegetables

Mrs Upasi Devi. Photo: ACIAR

Paddy rice is the main crop of the tribal Ho community in the West Singhbhum district, in Jharkhand State, India. New vegetable cropping options, safe vegetable production, and home gardens are becoming popular through an ACIAR project supporting the work of the World Vegetable Centre (AVRDC) and the NGO Pradan in 72 villages in Jharkhand.

These new enterprises are proving particularly valuable for the women who, through social isolation, were mostly unaware they could diversify their cropping with vegetables.

In 2013, Ms Jind Doraiburu was one of 25 women farmers selected by their communities to participate in the project. The AVRDC team introduced her to trellis cultivation of cucurbits during the rainy season, and she was one of only five farmers who took up the challenge in the first year of growing bottle gourd on a trellis. The experiment failed when flooding of her small plot destroyed the crop. But Ms Doraiburu realised the potential of the idea if the right field were used. She started again in 2014, this time deciding to grow trellised cucumbers in a field where she had grown maize the previous year. Ms Doraiuru said: "I had two challenges

over me with these research trials.

The first was to prove that women can take a risk in trying new things in farming, and the second was to prove that growing cucumbers on a trellis will bring in more income."

And it worked! This time she harvested about 365 kg of cucumbers for an average price of 20 rupees per kilogram. Her total income for the season was 7,300 rupees, five times more than the investment of 1,250 rupees and seven times more than what she usually got by growing maize or rice in the same plot. The income also came in from August to October, when there is normally no other money available. It helped her pay back the loan she got from her self-help group for medical treatment, and she invested the rest in pesticides for her tomato cultivation. She is now encouraging other tribal women to emulate her success.

Nepal

Highlights

- Wood from ACIAR trials helps villagers rebuild after the earthquake
- Villagers plant new species to replace the current pine monoculture with a multipurpose mixed forest

Country overview

Agriculture in Nepal faces a set of numerous interdependent challenges associated with degrading resources, underdeveloped agricultural institutions and policies, and a lack of productive technologies and mechanisation that limit the improvement of farm livelihoods. The challenges take different shapes in the lowland Terai rice-wheat farming systems as compared with the mixed crop-livestock-tree farming systems of the hill and mountain areas.

ACIAR's program in Nepal supports improved integration of soil, water, livestock and tree components of the farming systems, and seeks to increase productivity of the respective components through adoption of appropriate technologies. Given the common agricultural production challenges across the alluvial plains of Nepal, eastern India and Bangladesh, cooperative research links are being fostered with neighbouring countries, with a special focus on conservation agriculture.

Research achievements

Wood from trials conducted as part of an ACIAR funded forestry project in Nepal led by University of Adelaide has helped locals in Chaubus, Kavre Palanchok District, rebuild their houses following the devastating earthquake

that destroyed communities in 2015. The project, 'Enhancing livelihoods and food security from agroforestry and community forestry in Nepal', aims to provide diverse benefits to farmers, support livestock and agriculture, and increase the resilience of forests to climate change. The future is looking brighter for the people of Chaubus. Last summer, men and women from the village planted a range of species in the demonstration plots within the forests. They include cardamom, broom grass, shrub legumes and the ornamental Michelia. The villagers want to replace the pine monoculture with a multipurpose mixed forest to produce native high value timber, fuelwood, fodder and non-timber forest products.

Procedural, political and regulatory barriers hamper trade across India's borders with Nepal and Bangladesh, so most trade is informal. But informal trade in agricultural inputs increases prices and lowers the quality of seed and fertiliser for farmers. An ACIAR study sought to understand the informal trade situation and develop recommendations for policy changes that will 'formalise' informal trade of agricultural inputs. A better regulated system would give cheaper and easier access to the necessary inputs and better the livelihoods of farming communities across the border from India.

Pakistan

Highlights

- Economic study pinpoints the factors that most influence whether farming operations will prosper or trap their households in hardship and poverty
- Field school teaches farmers straight forward techniques to measure soil water and nutrient levels, laying the foundation for better water management and agronomic practices
- Smallholder mango growers with project guidance develop their own more profitable marketing and distribution chain

Country overview

ACIAR's strategy for Pakistan is to work closely with the Pakistan Government, Australian agencies, other donor partners, NGOs and the Pakistani private sector by providing research, development and technical capacity building, technical support and carefully targeted interventions to underpin Pakistan development programs.

Poverty reduction, linking smallholders to markets and gender equality are major issues for development programs in Pakistan, and are key considerations for the ACIAR strategy. Australia is well placed to assist Pakistan in addressing irrigation, drainage and salinity management in major cropping systems, and this is an important focus of the program. Other issues are cereal and legume productivity, crop diversification and management practices with a focus on citrus, mango and vegetables. Production of dairy and beef is another research priority.

A co-investment strategy in Pakistan between ACIAR and DFAT, termed the Agriculture Value Chain Collaborative Research Program (AVCCR), closely aligns with the previous two phases of the Australia-Pakistan Agriculture Sector Linkages Program. AVCCR is intended to focus more strongly on collaboration and research

in selected agricultural value chains. The rural poor, particularly women, will significantly and equitably benefit from improvements in these strategic value chains. AVCCR will continue to involve private sector engagement in new and innovative partnerships and collaborations, aligning with the component of the Government of Pakistan "PakistanVision 2025" related to agriculture.

Research achievements

A project that involved 40 ACIAR-funded surveyors visiting 850 small farms in a region of Pakistan has culminated in an analysis whose results point the way to help smallholders increase the earning potential of their holdings. Through a process of statistical analysis and mathematical modelling the researchers have pinpointed the factors that most influence whether farming operations will prosper or trap their households in hardship and poverty.

To increase farm productivity, many of the country's farmers need to learn better water management and agronomic practices. An ACIAR funded project led by Dr Sandra Heaney-Mustafa of the University of Canberra is developing an irrigation farmer field school approach so that farmers have hands on learning experiences using



simple implements for measuring soil moisture and nutrients. The hope is that these farmers will be convinced of the efficacy of these instruments and adopt them as standard practice, also spreading the word amongst their communities to get others to take them up as well.

ACIAR commissioned a social research project in 2010 to investigate the extent to which the innovations advanced by the dairy, mango and citrus projects had improved the lives of the villagers in the areas under study. A survey undertaken as the projects concluded found that women in particular had profited from the development of community service centres as meeting places for training and other activities. They had become more involved in household decision-making, had increased use and ownership of mobile phones, and

showed a greater willingness to work collaboratively with other women of the village.

In the ACIAR funded project led by Dr Robin Roberts of Griffith University aims to improve the value chain for Pakistan mangoes the researchers found that there was a ready market for the higher quality mangoes produced through the ACIAR-supported research but the supply chain was unable to meet that market. The value-chain team set up a trial with a group of smallholder growers to engage them in directly meeting the needs of the consumers, and guided them in overcoming the challenges of maintaining quality after harvest, packaging and transport. Through the channels of their own local marketing, phone and Facebook orders the group sold their entire crop in 28 days, gaining a 77 per cent increase in profit.



Eastern and Southern Africa



Rashid Said Mpinga, a farmer in Tanzania's Morogoro District, holds up ears of TAN 250 maize variety. Photo: John Dixon

ACIAR-supported research in Africa tackles both technological and market/policy challenges covering soil, water, crops, horticulture, livestock, trees and aquaculture. The role of decision making in production and value chains is recognised. The broad systems approach integrates production management, improved varieties and breeds, input and market chains (with agribusiness a dominant actor), and policy and capacity building at both individual and institutional levels.

Highlights

- Five main countries involved in the Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa program (SIMLESA - supported by ACIAR and led by Dr Mulugetta Mekuria at CIMMYT) claim major yield increases of maize, legumes and forages, benefitting more than 150,000 households
- Under project-developed agricultural information platforms participating farmers are reducing watering frequency, using fertilisers more efficiently and increasing yields
- Project modifies the Australian-developed Agricultural Production Systems Simulator (APSIM) crop production model to include an agroforestry model that can simulate crop and pasture production as affected by several important tree-crop interactions

Regional overview

Africa and Australia share similar environmental constraints, such as poor soils and climatic variability. Australia has also met challenges to food security, including poor livestock nutrition, weak adoption of new technologies and low levels of farmer value chain participation. As a result, Australian expertise and research are highly relevant to Africa, and for three decades a small number of ACIAR projects have delivered research outputs, impacts and capacity to the region.

Current ACIAR projects are strongly aligned with the priorities of the Comprehensive Africa Agriculture Development Programme (CAADP), the Forum for Agricultural Research in Africa, the 2014 Malabo Declaration and subregional organisations, the Association for Strengthening Agricultural Research in Eastern and Central Africa, the Centre for Coordination of Agricultural Research and Development for Southern

Africa and the Common Market for Eastern and Southern Africa. A higher proportion of ACIAR projects in Eastern and Southern Africa are regional (i.e. operate in more than one country) than in South and West Asia, or East Asia. Its focus countries are Botswana, Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

Research achievements

The ongoing SIMLESA project is supported by ACIAR and managed by the International Maize and Wheat Improvement Centre (CIMMYT) in collaboration with the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) and the NARS of Ethiopia, Kenya, Malawi, Mozambique and Tanzania. In June 2017 they held a conference in Arusha Tanzania to assess major breakthroughs on conservation agriculture for sustainable intensification across eight participating countries of eastern and

southern Africa. Of significance were the reports from heads of research in five main countries, who outlined major yield increases of maize, legumes and forages, benefits to more than 150,000 households, engagements with 40+ companies, contributions to climate smart agricultural science and innovations in scaling out results.

The first phase of the ACIAR funded *Trees for Food Security* project led by Professor Catherine Muthuri of the World Agroforestry Centre (ICRAF) concluded in December 2016. The project saw substantial gains, developing locally appropriate agroforestry systems and extension approaches that over the four years reached 30,000 farmers in Ethiopia, Rwanda, Uganda and Burundi. This project also contributed ground-breaking modelling outputs by adapting CSIRO's crop model APSIM to include tree components in the farming systems.

A farming systems project funded by ACIAR and led by Dr Jamie Pittock of the Australian National University worked with existing farmer organisations in Mozambique, South Africa, Tanzania and Zimbabwe to establish agricultural innovation platforms (AIPs). These comprise farmers, political representatives and players across the market value chain. Researchers helped participants to identify obstacles and stimulated opportunities for

change. Learning workshops held in all countries confirmed the project is having considerable beneficial impacts, with participating farmers reducing watering frequency, using fertilisers more efficiently and increasing yields. They have also realised savings in labour time which they invest back into agricultural and other income-generating activities. They report more leisure time and an increase in social harmony.

Methods developed through ACIAR-sponsored research on culture pearl oysters in the Pacific are now being deployed in assessing prospects of supporting pearl culture for coastal communities in Tanzania. The ACIAR funded project, which was led by Professor Paul Southgate of the James Cook University, has developed economic models for both community-based spat-collection farms and half pearl farms in Tanzania. Outputs include establishment and operational costs, and potential profitability estimates, for different sizes of spat collection farms and half-pearl farms. The information generated is of considerable use to donor and support agencies potentially involved in further pearl industry development work in Tanzania, and in project extension work. Extension materials relating to oyster collection, oyster culture, half-pearl production and potential profitability of these activities have been developed and translated into Swahili.

Berina Vhurande shows off her lush maize crops that she grows in the Mashoko Irrigation Scheme in Bikita district, Masvingo province, Zimbabwe. Photo:Chenai Tsorayi



CASE STUDY

Crop modelling framework enhanced by incorporating agroforestry trees

Left: Mrs Mukarugwiza Clemence from Nkomane village in Nyabihu District with RPM Tony Bartlett. Mrs Clemence is a Trees for Food Security champion farmer. She and her husband have a 40 acre farm on which they grow climbing beans and potatoes.

Right: Bank account and health insurance books in hand, Mrs Clemence said that in the first year after she established the tree tomatoes she sold about 100 kg of tamarillos. This brought in income of RWF 80,000 (\$125) and enabled her to establish a bank account and for the first time ever to take out health insurance for her family. Photos: Tony Bartlett

Until now, global models of crop production have ignored trees, despite significant tree cover on much of the world's agricultural land. This is now changing thanks to a new tree-crop modelling initiative undertaken by Professor Catherine Muthuri of the International Centre for Research in Agroforestry (ICRAF) and partners in the ACIAR-funded project "Trees-for-food security" project led by the World Agroforestry Centre, Kenya. They have developed a revised version of the Australian-developed Australian Production System Simulator (APISM) to include an agroforestry model that can simulate crop and pasture production as affected by several important tree-crop interactions.

Model development has drawn heavily on datasets developed by ICRAF over the past few decades, principally involving measurements of *Grevillea* and *Gliricidia* intercropped with maize at the Machakos experimental station in Kenya. This represents significant value-addition to earlier research. These datasets, supplemented by Australian experience and modelling expertise, have allowed the researchers to model the interactions including long-term effects of nitrogen

fixation by trees and herbaceous legumes in the soil; effects of above-ground tree litter inputs for carbon and nitrogen cycling; rain and light shading effects of trees; and root competition for water and nitrogen. They can also model the reduced population density of crops near *Grevillea* and *Gliricidia*, and their net outcome on crop yields in particular settings – though net outcomes vary depending on soils and climate, as well as tree and crop genetics and the management of the trees, crops and soil.

The advances are globally significant, not just for African farmers. The project is now refining one or more active models for trees, like those currently available for crops, that will enable more dynamic modelling of tree-crop interactions as both the trees and crops grow. Already, models of wheat, maize, and potatoes are available, and a teff model is also being developed for Ethiopia. These models will become freely available to anyone accessing APSIM, and the suite of crop, pasture and tree models is expected to expand significantly during the next few years.



ACIAR's full complement of ten country offices met in Lombok, Indonesia in May. More than 200 ACIAR front line, together they represent a great network with much to contribute strategically and corporately. These meetings are crucial in strengthening that network.

In the national interest

Research that also benefits Australia

Overview

ACIAR's primary role and mission are to help developing countries to reduce poverty and achieve sustainable development, through international agriculture research partnerships. Projects funded by the Centre address problems of interest and benefit to developing countries and Australia, through fields in which Australia, or international agricultural research centres, have comparative advantage. ACIAR has from the outset focused on supporting collaborative research where scientists from Australian and their developing-country counterparts work together on mutual problems in agriculture, forestry and fisheries. The intersection of mutual problems and Australia's comparative advantage does result in some projects delivering benefits to both partner countries and Australia. Many of these benefits relate to capacity building, creating opportunities for Australian scientists.

Independent analyses have shown that, as well as returns to partner countries from the research being very high, Australia's benefit from the research is also substantial.

Research achievements

The exchange and experience of working with an ACIAR project is fostering innovation in the Australian cocoa industry. Project scientists have initiated trials of cocoa grown on trellises. Their results point the way to higher productivity, open the possibility of mechanised harvesting, and promise reduced vulnerability to cyclone damage.

Superior performing mungbeans grown across much of northern Australia derive from the AVRDC's breeding program. In 2016 ACIAR launched a newsletter *Mung Central* and funded the establishment of the International Mungbean Improvement Network (IMIN). It focuses on this vital, yet under-recognised legume crop. Funded by ACIAR, the IMIN is a collaboration between the World Vegetable Centre (formally AVRDC) and scientists and stakeholders from Bangladesh, Myanmar, India and Australia. A strong current focus is on finding sources of resistance to mungbean yellow mosaic virus.



Australian pig producers are returning to the practice of rearing their animals in free-range conditions. This has led to a change in types and prevalence of disease. ACIAR research in the Philippines is well aligned to helping free-range producers in Australia whose disease problems now resemble those of a smallholder Filipino farmer. The Queensland reference laboratory has been instrumental in testing for disease and recommending vaccination schedules.

For the last thirty years ACIAR has collaborated with Australian state agricultural departments, industry peak bodies, and our Asian partner countries to select superior citrus varieties, protect against diseases and improve orchard management.

Much of the Australian benefit derives from evaluating new varieties to exploit new market opportunities, at home and overseas, and new rootstocks to address production issues. The best citrus Chinese rootstock selections from ACIAR trials were formally released to industry at the New South Wales Parliament House, Sydney, on 10 May 2017.

Recent outbreaks of the devastating panama disease of bananas on north Queensland plantations highlight the importance of more than a decade of research that ACIAR has sponsored in Indonesia and the Philippines. The advances made there have helped diagnose the disease outbreaks and also guide ways to contain the spread of the disease.



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Independent analyses have shown that, as well as returns to partner countries from the research being very high, Australia’s benefit from the research is also substantial.

Forestry scientist Dr Nghiem Quyen Chi carrying out cutting-edge research on polyploidy in tropical acacias in Vietnam. Photo: Sally Ingleton



ACIAR RPM, Tony Bartlett met Her Majesty, Queen Elizabeth II at Buckingham Palace for the Queen's Canopy Commonwealth Initiative reception Source: British Ceremonial Arts



CASE STUDY

Australia's forestry research acclaimed under the Queen's Commonwealth Canopy Initiative

Her Majesty Queen Elizabeth II has formally acknowledged the contribution of ACIAR to forest conservation in PNG. ACIAR's project *Enhancing the Implementation of Community Forestry Approaches in Papua New Guinea* was showcased at a Buckingham Palace reception on 15 November 2016 in conjunction with the award of accreditation under the QCC. Forestry Research Program Manager Mr Tony Bartlett attended the reception to receive the Award on ACIAR's behalf.

The QCC is a network of outstanding forest conservation initiatives throughout the 52 nations of the Commonwealth. Being awarded QCC accreditation affirms ACIAR as a global leader in agricultural R4D and highlights the important work undertaken in sustainable community forestry. Forests cover over 60 per cent of PNG, and 97 per cent of these forests are held under customary community ownership. Through ACIAR, Australia is supporting communities to sustainably manage native forests, grow trees and enhance the Papua New Guinean forestry sector.

Community forestry is delivering economic and social benefits as well as important environmental outcomes including the reduction of greenhouse gas emissions and habitat protection. ACIAR delivers the project in cooperation with partners the University of the Sunshine Coast, Papua New Guinea Forestry Association, Papua New Guinea Forest Research Institute, Ramu Agri-Industries Limited, University of Papua New Guinea, and the Foundation for People and Community Development Incorporated.

Global program

ACIAR's Global Program builds and manages ACIAR's multilateral partnerships with a range of international organisations, institutes and associations engaged in agricultural research. It supports the implementation of one of ACIAR's mandated roles of 'funding and supporting the International Agricultural Research Centres (IARCs)'. Most of the support is to CGIAR, which comprises 15 international research centres which work in close collaboration with hundreds of partner organisations, including national and regional research institutes, civil society organisations, academia and the private sector.

In addition the Global Program engages with and supports other international

multilateral institutes and associations, including the Asia-Pacific Association of Agricultural Research Institutions (APAARI), the Association of Southeast Asian Nations (ASEAN), the Centre for Agriculture and Bioscience International, the Food and Agriculture Organization (FAO), the Pacific Community (SPC), the Australia Africa Universities Network and the World Vegetable Center (formally AVRDC).

ACIAR's Global Program also manages new modalities of procurement, primarily through co-investment alliances. Under co-investment alliances, the design and management of the research is shared between donors.

Highlights

- The 2016 World Food Prize was awarded to four CGIAR scientists from the IFPRI HarvestPlus program. The World Food Prize is the foremost international award recognising the achievements of individuals who have advanced human development by improving the quality, quantity or availability of food in the world
- With ACIAR support, the CGIAR completed a major governance and science reform and allocated funding to an ambitious six year, \$1 billion/year research program that by 2030 will result in 150 million fewer hungry people, 100 million fewer poor people – at least 50% are women, and 190 million hectares less degraded land
- Cultivate Africa's Future (CultiAF), a co-funded partnership of ACIAR and Canada's International Development Research Centre (IDRC), launched an ambitious second ten-year phase with \$25 million pledged for the first five years
- ACIAR and CIMMYT collaborate to combat wheat blast in crops in Bangladesh
- WorldFish work affirms the importance of fisheries and mariculture as a source of food, income and livelihoods for coastal communities



Dr Dindo Campilan, Chair of the CIAT Board, Geoff Hawtin, CEO CIAT, Dr Ruben Echeverria, ACIAR PAC member Dr Nguyen Van Bo and ACIAR CEO Andrew Campbell celebrate CIAT's 50th anniversary in Hanoi, Vietnam in April 2017

Overview

International agricultural research for development will be critical for meeting the global food security challenges of the next decade, which include population growth and urbanisation, income and poverty dynamics, malnutrition, gender inequality and the growing pressure on natural resources and climate change. ACIAR's funding of the IARCs will ensure appropriate priorities for applying science and technology are developed and applied and that the IARCs' unique role of delivering global public goods such as data and knowledge sharing will be actively addressing these challenges.

ACIAR funds the CGIAR system by providing unrestricted funds through the CGIAR Trust Fund managed by the World Bank. This unrestricted funding is also complemented by ACIAR project-specific funding, whereby direct research partnerships with individual CGIAR Centres are developed. Other Australian organisations, including the Australian Government Department of Foreign Affairs and Trade (DFAT) and the Grains Research and Development Corporation (GRDC), also periodically provide funding to CGIAR.

Achievements

ACIAR currently supports 26 active projects with CGIAR Centres being the Commissioned Organisation and another three active projects with non-CGIAR IARCs. The contributions of the IARCs (including the non-CGIAR Centres, such as the AVRDC) to ACIAR projects are documented throughout the country reports. The CGIAR presence in countries such as Afghanistan and Myanmar has overcome the hurdles of inaccessibility and provided ACIAR with an avenue to commission research to reach the poor in those countries. Below are some other reports from CGIAR-related projects.

One in three people in the world suffer from hidden hunger, caused by a lack of vitamin and minerals, such as vitamin A, zinc, and iron, in the diet. These nutrients are essential, not just for adults, but for children to grow, learn, and build healthy immune systems. The IFPRI program, HarvestPlus which is supported by ACIAR, leads a global effort to make familiar staple foods that people eat every day more nutritious and available to those suffering from hidden hunger. The process of biofortification is used to breed higher amounts of vitamins and minerals directly into affordable staple foods. These include bean, cassava, orange sweet potato, rice, maize, pearl millet, and wheat. HarvestPlus' strategy is targeted to rural areas in regions where hidden hunger is most pervasive: sub-Saharan Africa and South Asia. Most rural households in these regions grow their own food or buy it locally and once the nutrients have been bred into the crops, they are fixed. Poor farmers can thus save the nutrient-rich seed to grow and eat, year after year, or share these with their neighbours. By the end of 2016, biofortified staple crops were being consumed regularly by 20 million farm households – with targets of 100 million people in poor farm households



growing and consuming these crops by 2020 and one billion people by 2030. Three Harvest Plus scientists were awarded the 2016 World Food Prize for advancing human development by improving the quality, quantity or availability of food in the world.

Wheat blast disease broke in epidemic proportions in South America in 1985, but has otherwise remained local until February 2016 when it appeared in Bangladesh. By March 2016 the Bangladesh government officially acknowledged the problem and within days DNA samples were sent from Bangladesh to laboratories in England, Europe and Brazil. The disease is psychologically devastating, as entire fields go white in the last few weeks prior to harvest. The visual and economic impact can leave a smallholder farming family in ruin. Given its relatively passive history, not much had been done to address the disease, but an ACIAR project 'Wheat blast in Bangladesh' was commissioned. In July 2016 ACIAR funded CIMMYT to organise a conference to tackle *Wheat Blast* at science and policy levels. In February 2017 ACIAR funded the survey of thousands of hectares of wheat, training farmers to understand and recognise the disease. Thankfully subdued weather conditions have avoided a wider outbreak in 2017 but the disease is now widespread. In years with untimely pre-monsoon rains in February, the risks for a widespread outbreak are real. The first treatment is to spray fungicides, plant wheat earlier, and avoid using contaminated seeds, as the virus is seed borne. The search for resistant varieties has now been initiated within the ACIAR project.

Farming systems in Vietnam are undergoing rapid change, including increased levels of commercialisation and market integration, adoption of (or desire for) labour efficient technologies, and migration of youth in response to non-farm work opportunities. These processes are not only shaping rural landscapes and communities, but challenging traditional gender roles. To examine these changing roles the International Center for Tropical Agriculture (CIAT) and ACIAR held a joint workshop in May 2017. Two of its main objectives were to expand participants' knowledge of the gender dimensions of agricultural production and marketing in Vietnam—and of their implications for agricultural research—and to identify appropriate opportunities and methods to mainstream gender into existing and planned project activities. It also sought to strengthen the links of ACIAR research teams to the development community working in agricultural development and women's empowerment in Vietnam.

An ACIAR funded project led by WorldFish is studying the place of fish in national development, undertaking contrasting case studies in the Indo-Pacific Region. The project seeks to improve the understanding and use of fish in national and regional food systems, and the role of fisheries and mariculture as a source of food, income and livelihoods for coastal communities. ACIAR, and WorldFish worked with other agencies to host a workshop on sustainable and equitable mariculture development in the Western Indian Ocean. As well the research team has carried out surveys of seasonal dietary diversity in sites in Solomon Islands and Vanuatu. In Vanuatu there was particular concern about the nutritional welfare of communities whose fishing zones had suffered during Cyclone Pam.

A four-year project co-funded between the Bill and Melinda Gates Foundation (85%) and ACIAR (15%) focusing on sorghum production in Ethiopia has revamped the breeding of sorghum from newly released varieties. The collaborating scientists involved national breeders in the advances, modernising

the entire breeding process. At the outset the scientists asked the question of smallholders: 'Of all the varieties we could produce, what do you actually want?' The Ethiopian team has the prospect of releasing new drought-resistant varieties with a range of other desirable traits within 24 months.



CASE STUDY

ACIAR co-funds initiative in eastern Africa

Touring Biosciences Eastern and Central Africa Hub (BecA Hub) at International Livestock Research Institute (ILRI) Nairobi Kenya

ACIAR, through the establishment in 2011 of the Australian International Food Security Research Centre (AIFSRC), trialled new types of partnerships with donor agencies, foundations, the private sector, youth entrepreneurs and biosecurity agencies. These trials helped to establish the partnership strategies that work well to deliver real and meaningful impact in eastern and southern Africa.

AIFSRC was a four-year initiative established as part of the Australian Government's enhanced Africa Food Security Initiative. The Centre, which wound up in 2015, committed Australian agricultural expertise to help African farmers, agencies and the private sector demonstrate how multi-sector partnerships can increase uptake leading to impact, as well as the benefits of

agencies working collaboratively in program development and funding.

A good example is the ACIAR and Canada's IDRC partnership, which collaborated to co-fund a new initiative, CultiAF in 2013. The program supports innovative, applied research solutions to improve long-term food and nutrition security in eastern and southern Africa.

Competitive research grants through the initiative are currently supporting eight projects across Kenya, Malawi, Uganda, Zambia and Zimbabwe, most of whom have strong private sector partners to improve the scaling out of technologies. CultiAF focuses on four areas critical to transforming African agriculture: reducing post-harvest losses, reducing the rates of persistent malnutrition, building climate resilient farming systems and improving sustainable water use. In the last three years 25,000 smallholder farmers (54% women) were trained in 24 innovations in key areas of nutrition, economics, insect science, gender, social

science and food science as well as 130 youth entrepreneurs trained.

Both ACIAR and IDRC have benefitted from this partnership. Each agency brings differing areas of expertise and project-development mechanisms to CultiAF, but they share similar goals and approaches to project management. The leverage of increased funds through the co-funding modality has also resulted in a more ambitious program than either agency could otherwise implement. After a successful Phase 1, ACIAR and IDRC launched Phase 2 on June 30 2017, with expanded funding and opportunities.

Wellington Ekaya, Andrew Campbell, ACIAR CEO, Mellissa Wood, ACIAR GM Global Program, BecA scientist Josephine Birungi, Head of BecA Wellington Ekaya, ILRI DG Jimmy Smith, ILRI Deputy Director General Ian Wright



Building research capacity

Overview

Building capacity in people and institutions in partner countries is a key priority for ACIAR. During the year a new General Manager, Outreach and Capacity Building position was created to lead ACIAR's capacity building programs.

ACIAR continues to deliver its two flagship programs - the John Allwright and John Dillon Fellowship programs. In the first half of 2017, ACIAR conducted an external review of its capacity building program. The review found that while ACIAR's capacity building program has a strong reputation amongst its Australian and international networks and partners, there is room for expanding its suite of products

Key recommendations of the review include:

- Adding a 'whole researcher' program for the John Allwright Fellowships cohort that complements the technical knowledge learnt through PhD and Masters study with 'soft skills' such as Executive Leadership Management and Communication that Fellows require to be effective in senior and executive positions
- Refreshing the John Dillon Fellowship program and running it twice each year
- Working more closely with The Crawford Fund to align its training programs with ACIAR's new capacity building program including partnering with them to provide a mentoring model of capacity building

- Undertaking further work to define the working objectives and structure for an ACIAR alumni network
- In future years, establishing a third fellowship program exclusively for women
- Identifying and promulgating options to develop Australian research capacity.

ACIAR is considering the review recommendations with a view to delivering an expanded program in future years. Many of these initiatives will align with ACIAR's new ten year vision and strategy. They also responded to feedback from ACIAR's partners about what we can do differently and better.

Research capacity of partner countries institutions is enhanced through targeting individuals involved in ACIAR projects. These projects are managed by individual research programs, and participants received on-the-job training.

ACIAR's capacity building program includes:

- Postgraduate study, through the John Allwright Fellowship, for postgraduate study in Australia for researchers involved with ACIAR projects
- Training in research management and leadership through the six-week John Dillon Memorial Fellowship
- Financial support to attend or run short courses that directly benefit international agricultural research

Postgraduate fellowships

John Allwright Fellowships for postgraduate training at Australian universities at the Masters or Doctoral level are awarded to partner-country scientists involved in ACIAR-supported collaborative research projects. ACIAR's research priorities are determined through regular consultation with partner countries. Alignment of postgraduate training with research ensures that the training needs of partner countries are met. Thus postgraduate studies focus on areas that add value to the theme of the ACIAR project in which the awardee is engaged, but do not directly form part of the project.

Fellows may be able to spend up to half their research project period on fieldwork in their home country. This enables them to ensure that their postgraduate research work is relevant to the project and their home country's needs. It also allows them to maintain their professional and personal networks.

During 2016-17 there were 111 active John Allwright Fellows at Australian universities.

The John Allwright Fellows Returnee Award provides grants for an activity which continues, or is related to, the research done within the ACIAR project with which the JAF was associated during postgraduate work. In 2016-17 three returnee awards were granted for Fellows from Pakistan, the Philippines and Fiji.

Research management and leadership training

The John Dillon Fellowships provide an opportunity for outstanding mid-career agricultural scientists and economists to further develop their careers. It aims to develop the leadership skills of the fellows from ACIAR partner countries in agricultural research management and policy by exposing them to a range of best practice organisations and training programs.

A group of 10 fellows from the Indo-Pacific region visited Australia for a six week period in February-March 2017. Feedback from the group was extremely positive. SBS radio profiled the fellows on various non-English radio programs using audio files supplied by ACIAR's Outreach team.

Financial support for short courses

ACIAR provides support to qualified individuals wishing to participate in a conference, seminar, workshop or field visits that align with the agricultural R4D (R4D) priorities of our partner countries. ACIAR also provides support to organisations seeking corporate sponsorship for similar events.

The aim of ACIAR events funding is to develop the skills and capacity needed to advance agricultural R4D, with a focus on people and organisations with experience in ACIAR-supported projects. Individual applicants and organisations seeking event funding must be able to demonstrate involvement in agricultural R4D and engagement in research and/or development activities within an ACIAR partner country.



In 2016–17, ACIAR provided support to a range of international training events and workshops. These included the *Laos Teak Agro-Forestry Workshop* attended by a Graduate Research Officer held in Luang Prabang, Laos. In October 2016, a Country Manager and Research Project Manager as well as partners from CGIAR's attended the *Strengthening the Gender Lens in Agricultural Production and Value-Chain Research in Vietnam* event in Hanoi.

ACIAR also supports the Crawford fund to use its network and skills base to organise annual conferences, master classes, training and outreach activities that help build capacity in agricultural research and development both overseas and in Australia. ACIAR supported attendees to participate in the five-day Master Class *Agricultural Research Leadership and Management* program held in the Penang facilities of WorldFish.



Chambu from Forest Action demonstrates to Bhinda Khanal (second from left) and others from Chaubas how to properly measure trees in the Chapani community forest. Recently 1 hectare of trees in the Chapani community forest were thinned and sold for 1 million rupees which were divided between the 90 families in Chaubas. This meant each family received roughly \$150 AUD, a significant cash injection for these rural communities. The forest has also been a crucial resource for the community when rebuilding their homes after the devastating 2015 Nepal earthquake. Photo: Conor Ashleigh

Communicating research results

Overview

ACIAR has responsibility to communicate the results of the agricultural research it undertakes to both people and institutions. In 2016-17 the position of General Manager, Outreach and Capacity Building was created to lead ACIAR's communication program. Under the General Manager, the Communication and Stakeholder Engagement Team was restructured to become the Outreach Team with a renewed focus on delivering higher profile communication activities to a broad range of audiences.

A new communication strategy was developed that focuses on three key groups:

- 1** Highly engaged audiences—researchers, project partners, in-country stakeholders, etc
- 2** Key stakeholders/decision makers and influencers—parliamentarians, peak bodies and associations, government agencies and universities
- 3** The Australian community.

A major project to redevelop ACIAR's website was initiated during the year to improve digital communication, to align with the Australian Government's GovCMS platform, and to improve our website accessibility. Using more visual imagery including photographs, video, and an interactive and searchable map, the new website will be easier to use and provide a range of levels of information from detailed research reports to short videos. The website will go live in 2017-18.

Partners Magazine continues to be a popular communication product with four issues published and distributed during the year. A special cookbook issue was developed in consultation with our ACIAR graduate research officers and received positive feedback when it was launched. A special edition on projects in Myanmar was published to coincide with the ACIAR Commission visit in March 2017.

ACIAR's social media is in a healthy state. Considerable growth has been achieved thanks to a concerted effort to foster networks, create and share quality content and prioritise resources. Facebook and Twitter play the most prominent role in our social media efforts however all content that flows through these channels is intrinsically linked to activity on our website, blogspot, youtube and Instagram channels and those of our partners and social networks. In the 12 months from July 2016 followers of our Facebook account increased from 4,149 to 11,577. Similar growth has been achieved on Twitter and our other social accounts.

ACIAR ran a photographic competition in 2016-17 with the aim of fostering an appreciation of the wonderful R4D work ACIAR supports in the developing world and Australia. The competition marked the start of a reinvigorated effort by ACIAR to tell our story in different ways, allowing ACIAR to connect with the diverse audiences to create dialogue about the value of Agricultural research as a tool for agricultural development in our region. More than 90 entries were received with 25 images being selected for exhibition. The photographs were exhibited at the Australian National

Botanic Gardens and are now being used in a range of ACIAR digital and print publications.

Video is increasingly becoming a vital communications tool for government and the R4D sector. For ACIAR it is a key tool to raise the profile of the agency in Australia and overseas. The use of video in conjunction with social media platforms is playing an increasingly important role in our communications efforts. Sixteen program focused videos were commissioned and produced by the Outreach Team in 2016-17.

A number of corporate and research publications and more than 100 factsheets were produced to facilitate ACIAR's external communications.

A number of strategic documents were also developed, including country strategies for Myanmar, Cambodia, Sri Lanka and Vietnam.

Communication training was provided to ACIAR's country office staff to build their skills in identifying and capturing the stories behind our research projects. This included training in taking photographs, writing captions and editing content for social media.

Towards the end of the financial year discussions were held with SBS Food Network about a potential new cooking program featuring ACIAR projects. Further development of the concept is underway.

The Outreach team assisted the Crawford Fund to take its 2016 journalist prize winner to visit three ACIAR projects in Nepal in June 2017. The result was a television story airing nationally on ABC's Landline program about ACIAR's research work in Nepal. The research projects visited were a community forestry project in northern Nepal, and in the Eastern Gangetic Plains a conservation agriculture project and a sustainable water use project.

Domestically, traditional media covered a number of ACIAR project related stories including the accreditation of an ACIAR forestry project from PNG under the QCC, the first shipment of Bougainville cocoa beans to Australia in more than 20 years and the 2017 cohort of the John Dillon Fellowship program.

Careful deliberation when piloting a household cattle survey in Ya Thar Village, Central Dry Zone, Myanmar
Photo: Elsa Glanville



Measuring research impacts

Overview

The Impact Assessment Program measures the difference ACIAR's investment makes to research capabilities and the economic wellbeing of our target groups in our partner countries and Australia. The results are used to support the Centre's public accountability, to improve project development and implementation and to provide valuable input into setting priorities for future activities. These activities help improve the accuracy of the information used in assessing research impacts and the effectiveness of the methodology used to quantify investment returns.

The Impact Assessment program commissions three types of assessments on finished projects:

- economic evaluations, published in ACIAR's IAS, an in-depth analysis of the adoption and impact of research outputs in our partner countries and Australia. Quantitative estimates of the investment returns are provided, as well as a qualitative assessment of social and environmental impacts
- adoption studies of finished-project evaluation usually undertaken by the Australian project leader three to four years after the project's completion. These provide ACIAR, and our partner organisations, with a greater understanding of the pathways to change, and why adoption has or has not occurred

- 'impact pathway analysis' to provide an in-depth understanding of the contextual environment, the key stakeholders, pathway linkages, the changes that have occurred, and actions that could be undertaken within the project or program to increase the likelihood of the ultimate goals being reached.

The knowledge gained is also shared through ACIAR-funded and -delivered training courses on research evaluation.

Achievements

In 2016-17 assessments from the Impact Assessment Program included the completion of a series of studies on understanding the outcomes and impacts of capacity building amongst our partners in research projects using Vietnam case studies; development of an impact assessment framework that captures science-policy linkages; and an application of this framework to Aflatoxin research in Indonesia. Three IAS reports, with another in press, and an Adoption study of ACIAR project outputs for 2016 were published (see Appendix 5).

The Impact Assessment Program measures the difference ACIAR's investment makes to research capabilities and the economic wellbeing of our target groups in our partner countries and Australia.



Impact assessments

Knowledge systems and RAPID framework for impact assessments

This report contributes towards the focus on the social and policy dimensions of impacts from research projects. It develops a framework for impact assessments which integrates two distinct literatures that link research with policy outcomes including knowledge systems and the research and policy for development (RAPID) literatures. The framework analyses how knowledge flows among different actors in development contexts and adds to ACIAR's impact assessment methodologies that can be used in parallel, or combination with more quantitative impact assessment tools.

The knowledge systems approach tracks knowledge flows and processes among actors involved in projects. It assesses the extent to which those flows support observable action in decision-making and policy changes. An important element is the existence and function of boundary organisations which are groups that bring actors together and act as a conduit of knowledge between those involved in research and those addressing specific problems.

The RAPID approach, developed by the Overseas Development Institute, provides the contextual analysis required for an impact assessment. It promotes a greater understanding of how research can contribute to poverty reduction policies and improve the use of research and evidence in development policy and practice. A RAPID approach requires researchers to ask questions regarding the factors that influence development—links, evidence, political context and external pressures. Integration of the knowledge systems and RAPID

approaches in a framework provides a way to document how scientific knowledge is absorbed and used by different actors, while acknowledging the development factors that influence change in specific contexts. Importantly, the report presents the framework, and outlines data requirements and possible stakeholder interview questions that can be applied by project teams, researchers and assessors for project or program monitoring and evaluation application or impact assessment.

Aflatoxin-reducing investments in South-East Asia

The main objective for this impact assessment was to determine how the project outputs from CP/1997/017 are being used by regulatory policymakers, research centres and the peanut industry in Indonesia and Australia, and the ultimate impact this has had on aflatoxin risk mitigation.

The ACIAR funded project led by Queensland Department of Primary Industries and Fisheries 'Reducing aflatoxin in peanuts using agronomic management and biocontrol strategies in Indonesia and Australia' (CP/1997/017) produced a range of technical outputs, including:

- an enzyme-linked immunosorbent assay (ELISA) model to identify aflatoxin development
- development of biocontrol management strategies in Australia and trialling on selected Indonesian sites
- the Peanut Whopper Cropper tool, which factors in a range of conditions, allowing producers to make decisions on their production practices
- experiments that investigated the effect of harvesting time and different seed-storage systems

- development and subsequent widespread use of the AFLOMAN tool for Australian growers to assess the risk of aflatoxin development
- a survey of Indonesian value-chain actors, to understand the nature of their knowledge about the presence of aflatoxin.

Benefits for Australia and Indonesia arose from the research investment. The major outputs from CP/1997/017 of interest for Australia were the technical tools such as AFLOMAN and the Peanut Whopper Cropper, and the biocontrol on-farm management strategies.

The impact included extensive knowledge flows, with 118 publications across different media, some of which had high numbers of readers outside the project. In Australia the ACIAR investments were made in a context where industry, research and government all had aligned interests in reducing the aflatoxin risk to consumers. Australia continues to have advanced knowledge and enforcement of aflatoxin regulation, and the CP/1997/017 on-farm and technical monitoring tools made a strong contribution to ongoing aflatoxin awareness across relevant actors. The context of Australia's peanut production, which is carried out by a small number of producers, makes managing and monitoring aflatoxin a feasible task.

The major outputs from CP/1997/017 of interest for Indonesia included the ELISA tools, the skills built by Indonesian researchers, the identification of wet markets as the major risk point in the supply chain where aflatoxin occurs, and a general overview of the extent of aflatoxin awareness from survey results. An additional major output was the creation of the Aflatoxin Forum of Indonesia (AFI), which brought together researchers and policymakers to exchange knowledge on aflatoxin.

The forum expanded to the Mycotoxin Forum of Indonesia (MFI) to diversify the focus beyond aflatoxin.

There were three kinds of impact on Indonesia from the CP/1997/017 project. The first was the high level of technical capacity built between Indonesian institutions. Interviews indicated that Indonesian research centres are now regional leaders in aflatoxin research. The increase in postgraduate students shows the ongoing capacity of senior researchers to supervise students in technical aflatoxin projects. The monitoring tools developed were technical, and Indonesian research institutes now have a strong capacity in designing and furthering their own aflatoxin research.

The second kind of impact was the establishment of links and networks. The AFI was established during the project as one of the main objectives. This forum continues and has expanded to include mycotoxins due to the diverse nature of the problem in Indonesia. The AFI has enabled researchers from different institutes to exchange the latest knowledge on aflatoxin.

The third was the long-term policy impact of the knowledge and linkages built throughout CP/1997/017 and the broader history of aflatoxin research investments. ACIAR investments ended in 2006, yet the MFI has continued. In 2009 a major regulatory policy development occurred, in which the Indonesian National Standardization Agency launched a new standard for maximum mycotoxin levels, expanding from aflatoxin-only policies. Key informants identified that ACIAR's investments contributed to this change through both the research generated and the relationships developed through the project.

Recognising the contribution of capacity building in ACIAR bilateral projects

ACIAR typically fund activities across a spectrum, including human capacity building and the development of farm ready technologies, in pursuit of economic, social and environmental benefits. Activities occurring in research projects which build up stocks of human or scientific capital, are expected to contribute to the development of technologies in later projects as well as the current project. While generally the potential of these later contributions is identified, they have not been typically revisited or valued quantitatively.

This impact assessment study reports on the outcomes from ACIAR's capacity building activities within a selection of research projects. This study uses case studies involving two research institutions in Vietnam: the Vietnam Academy of Forest Sciences and the Research Institute for Aquaculture. It considers two ACIAR funded, CSIRO led forestry projects Acacia Hybrids in Vietnam (FST/1986/030) and Improved Australian Tree Species in Vietnam (FST/1993/118 and FST/1998/096) as well as one fishery project led by NSW Department of Primary Industries, Building Bivalve Hatchery Production Capacity in Vietnam and Australia (FIS/2005/114), partly funded by ACIAR. These projects have been subject to benefit-cost analyses. Objectives of the impact assessment included:

- to revisit some of the key parameters driving the reported economic gains to confirm that these technologies were still likely to be profitable for farmers and good investments for ACIAR.
- describe the specific capacities developed in these projects and to assess the contribution of capacity

building to their outcomes relative to the contribution of the knowledge discovery processes.

- search for evidence that the set of capacities developed had been used in later research activities to develop new technologies adopted by farmers.
- develop guidelines that will assist ACIAR to more consistently identify and report on capacity building activities in its project development, reporting and impact assessment processes

Vietnamese scientists identified a set of generic research tools common to the projects covered by the three benefit-cost analyses, including: trial management, experimental design, data analysis, scientific writing, English language and presentation skills, and scientific networks.

These skills were developed to a greater or lesser degree across all projects as the needs of the project demanded and the existing capacities of team members allowed. So, for example, there was little emphasis on experimental design and data analysis in the bivalve project because at that stage a breeding program had not yet been initiated.

These generic skills were not sufficient to achieve the project objectives, and it is likely they were less necessary to achieve project outcomes than some of the technical skills required to undertake the trials that were integral to the project's success. However the Vietnamese scientists were quick to identify the contribution of ACIAR projects to the development of 'softer' skills such as scientific writing and English language and presentation skills. The pathway to changes in farm practice is more indirect for such capacities. Nevertheless, these skills will likely increase the access of Vietnamese scientists to the international scientific community and make new knowledge more accessible

sooner. The opportunity to maintain and incrementally increase capacity was an important benefit for a succession of ACIAR-funded projects. This is an appealing argument but nevertheless must be supported by evidence that there is a plausible pathway to productivity gains by farmers and/or environmental or human health gains to the people of Vietnam.

Some skills acquired during capacity building were technical in nature and closely related to the projects' research processes and the technology being developed. The potential future uses of these skills in developing technologies were relatively easy to infer. The specific skills developed in each project are enumerated in this report.

The project-specific skills developed in the Seeds of Australian Trees (SAT) and Domestication of Australian Trees (DAT) projects included: hybridisation, cutting propagation, seed technology skills (including seed extraction and

storage), and managing a seed database (documentation and characterisation of seed).

The three projects all dealt with technologies needed to manage and breed from germplasm, hence the skills developed in the acacia hybrid and oyster projects have similar elements to those listed for the SAT and DAT projects.

Scientists formed a subjective judgement about the contribution to final project outcomes of capacity building activities relative to knowledge discovery activities in the form of experimental work. Both Australian and Vietnamese scientists for the acacia hybrid project rated capacity building to knowledge discovery as 20:80. For the SAT/DAT projects and the oyster project the Vietnamese rated the two equally (50:50) whereas the Australian scientists credited capacity building activities more highly (about 70:30) in achieving final outcomes. As expected,



both the capacities developed, and the trials and experiments were necessary to achieving the projects' outcomes of more profitable varieties but neither were sufficient on their own.

In all three cases, scientists were able to demonstrate that capacities built in the initial projects were key building blocks for succeeding ACIAR projects, for other research programmes in their institutions and for their own professional development. Furthermore, increased personal capacity in individual scientists has likely 'spilled over' into 'institutional strengthening' or institutional capacity. For example, scientists interviewed remarked that formal training (through the John Dillon Fellowships in particular) improved their project management skills, and informal training through bilateral research projects gave them a greater appreciation of the gains from cross-disciplinary teamwork.

Both Australian and Vietnamese scientists commented that working on ACIAR projects gave them a greater appreciation of the benefits from working in multidisciplinary teams. Some evidence for this teamwork comes in the form of jointly authored scientific papers. Increasing international recognition of Vietnamese scientists has led to increasing international recognition of the Vietnamese Academy of Forest Sciences and the Research Institute for Aquaculture No 1 and leadership in multilateral research partnerships—all evidence of increasing institutional capacity.

A series of learnings for ACIAR to better understand and target capacity building were identified and related to providing more attention on describing capacity building at all stages of the project development and reporting processes and in impact assessment studies.

The intent is to develop a plausible impact pathway from capacity building activities that leads to future gains in economic welfare for farmers.

Adoption of ACIAR project outputs 2016–17

This report summarised the adoption results from five Australian Centre for International Agricultural Research (ACIAR) projects completed in 2011–12. The projects involved five individual partner countries: PNG, Indonesia, the Philippines, Lao People's Democratic Republic (Lao PDR) and India. The projects themselves reflected a balance of technology, policy and knowledge outputs and covered a diversity of rural enterprises including three crop-related projects—sweetpotato; rice; and mixed production of corn, cassava, rice and vegetables, a livestock-related project focusing on enhancing veterinary service systems, and a project focused on watershed development policy.

The outputs from the projects were diverse, ranging from a comprehensive evaluation of institutional arrangements to ensure success of watershed development projects (in India) to identification and release of rice varieties (in Lao PDR). Most of the projects also involved capacity building in partner countries and institutions, ranging from formal university-based training to a variety of on-the-job training activities for technical staff, research scientists and farmers.

The five adoption studies indicate medium to high levels of adoption of the project results. In each case, the adoption results provide some useful lessons and observations. Relatively high levels of adoption of outputs from some of these projects appear to have been driven by strong economic incentives, such as improved production and incomes. While relatively low levels of adoption of other outputs resulted from different factors, including lack of incentives in the marketing chain, changes in policies relating to particular products, and risk aversion.

The results from the adoption studies reported here provide a number of lessons for ACIAR-funded projects; including:

- *Benefits can come through indirect means:* the veterinary project in Indonesia was very successful because it responded directly to the expressed needs of Indonesian partner agencies. To a degree, this involved work in areas that would not be considered traditional agricultural research, particularly dealing with rabies. However, effective work in dealing with rabies on the island of Flores, and subsequently Bali, created strong incentives for the Government of Indonesia to modernise its animal disease preparedness and response systems. This, in turn, has wider benefits for agriculture, as well as benefits for Australia through improved biosecurity.
- Similarly, the PNG sweetpotato project found that participatory action research was a useful approach for identifying and addressing issues of priority to farmers, and going beyond research to generate actual impacts.
- Providing financial literacy training and linking farmers to microcredit to improve access to credit, which was identified as important by farmers rather than researchers, is another case that illustrates the benefits that can come from indirect means.
- *Traditional extension still works:* The project on Bohol Island in the Philippines clearly illustrates that traditional extension and dissemination of good farming practices remain capable of delivering benefits, and that continuing to find effective means of training farmers yields benefits.
- *Dynamics of adoption are important:* the rice project in Lao PDR illustrated an interesting point about the dynamics of adoption. In Lao PDR, there is regular exchange of seed between farmers within the same village, but very limited seed exchange across villages. Overall adoption can be maximised by providing a small quantity of seed to a large number of villages (rather than a large amount of seed to fewer villages).
- *Research is more effective with groups of farmers:* experience in the Lao PDR project indicated that research appears to be more effective when groups of farmers are involved, rather than researchers interacting with individual farmers in isolation. Farmer-to-farmer communications in group situations produce more generally applicable outputs. This leads to much higher adoption, particularly when more complex change is required. Farmer-to-farmer interaction appears most effective in combining old and new knowledge to make a technology work in the specific local context. Indeed, the final application of the technology can look quite different from what the researcher first envisaged. This finding supports the participatory research approaches with rural communities now frequently embedded in ACIAR projects.

Capacity building in evaluation and impact assessment

Information sessions on impact assessment and impact pathways were provided to researchers and project leaders throughout the year, including sessions with current John Allwright and John Dillon Fellowship holders.

Capacity building amongst partner country researchers in impact assessment and impact pathway planning and analysis was maintained. For example in PNG, the ACIAR supported Adoption and Diffusion Outcome Prediction Tool (ADOPT) tool

was incorporated into ACIAR workshop training for National Agricultural Research Institute staff to plan for greater adoption of agricultural research outputs. The aim of this training was to provide participants with a deeper understanding of the socio-economic and environmental characteristics that influence the adoption of new practices and technologies by embedding Smallholder ADOPT in an Impact Pathway approach. The training for 14 participants occurred over five days within a participatory context and included farmer field visits and discussions. Learnings from this training will be integrated into future training for researcher partners.



Some of our Cambodian JAFs in Phnom Penh. Here with ACIAR Regional Manager Dulce, Prof Mom Seng of the Royal University of Agriculture, and JAFs (from left) San Sorn, Sonhida Sambath and Sotheary El.

Research Program Managers



Dr Andrew Alford

Dr Andrew Alford is ACIAR's Research Program Manager for our Impact Assessment program. He manages the professional evaluation of ACIAR's R&D investments and develops methods to determine their effectiveness.

Dr Alford came to ACIAR from Meat and Livestock Australia (MLA), where he evaluated on-farm R&D investments.

He holds a Bachelor of Rural Science, a Master of Economics, and a PhD in bioeconomic modelling of beef cattle systems from the University of New England. He completed his PhD, which involved optimising cattle genetics on pasture-based systems, while working with the NSW Department of Primary Industries as a dairy extension officer and as a livestock researcher.



Dr Chris Barlow

Dr Chris Barlow is Research Program Manager for the Fisheries Program. The Program focuses on

both wild harvest fisheries and aquaculture, with activities spread across production strategies and environments, aimed at solving problems constraining the productive use and sustainability of fisheries and aquatic resources.

Dr Barlow was the Chief Technical Advisor of the Fisheries Program of the Mekong River Commission (MRC), based in Vientiane, Laos. Beginning in 2001, he set strategy for research programs, brokered major R&D partnerships between countries and organisations, and managed programs. Before this he worked with the Queensland Department of Primary Industries and Fisheries from 1983 onwards.



Tony Bartlett

Tony Bartlett is Research Program Manager for Forestry, which supports the establishment, management

and sustainable use of forests and agroforestry systems.

Mr Bartlett joined ACIAR in July 2010 from the Department of Agriculture, Fisheries and Forestry where he was responsible for Australian Government forestry and resource management programs. He has 40 years of experience in forestry, having worked in Victoria, Nepal, Vanuatu, the ACT and the Commonwealth.

He was awarded a Centenary Medal in 2003 for his contribution to Australian and international forestry.

He holds a Bachelor of Forestry Science from Melbourne and a Master of Science from Oxford.



Dr Evan Christen

Dr Evan Christen is the Research Program Manager for Land and Water Resources, which focuses on increasing water productivity through technical and water policy interventions.

Evan worked for 18 years as a research scientist for ACIAR, including on projects in Pakistan, China, and Cambodia, before taking up the Research Program Manager position.

Evan was born in Kenya, but completed his Masters in soil and water engineering at Cranfield University in the UK, where he was part of a team that collaborated with CSIRO. This led to an opportunity to complete his PhD in Australia, where he studied mole drainage for the control of waterlogging and salinity in irrigated agriculture.



Dr Jayne Curnow

Dr Jayne Curnow is the Research Program Manager for Agricultural Systems Management. Jayne is a

social scientist with expertise in international development, program management and anthropology.

Before joining ACIAR, she worked at the International Water Management Institute, Sri Lanka, where she led a project mapping gender data and statistics related to water and agriculture with research teams in the Volta, Nile, Ganges and Mekong river basins.

She has also lectured in anthropology and development studies at the University of Adelaide, and worked for the World Bank in Indonesia, the Australian Department of Health and Ageing, and with several NGOs in East Timor on gender-based violence.



Dr John Dixon

John Dixon is the Principal Advisor/ Research Program Manager for the Cropping Systems

and Economics (CSE) program, which aims to improve food security through making field crop farming systems more productive and sustainable.

Dr Dixon has over 30 years' developing country experience with agricultural research and development, including cropping systems, economics and natural resource management, in Asia, Africa, Latin America and the Middle East. He has worked for the CGIAR system, the CIMMYT, and the United Nations' FAO.

He graduated from the University of New England with a PhD (agricultural economics), Masters (natural resources), Masters (economics) and Bachelor in Rural Science.



Dr Rodd Dyer

Dr Rodd Dyer is ACIAR's Research Program Manager, Agribusiness, which aims to help farmers and agribusiness produce and market agricultural outputs at higher levels of productivity and quality.

Before working at ACIAR, Rodd managed the Northern Beef Program at Meat and Livestock Australia.

Rodd holds a PhD in agricultural economics from the University of Aberdeen, undertaken in association with the International Livestock Research Institute (ILRI) in the Philippines. He also holds a Masters of Agricultural Science specialising in rangeland ecology and a Bachelor of Agricultural Science with Honours, both from the University of Queensland.



Dr Robert Edis

Dr Robert Edis is ACIAR's Research Program Manager, Soil Management and Crop Nutrition.

The program focuses on researching interventions in tillage and water management, nutrient management, and crop rotations projects, designed in the context of a systems approach to conservation agriculture.

Before joining ACIAR, Robert ran an agricultural science consulting practice, tackling nationally and internationally important issues. Robert was a Soil Scientist at the Melbourne School of Land and Environment, University of Melbourne, where he is still an Honorary Associate Professor.

Robert holds a PhD from The University of Melbourne, specialising in Soil Science, and Master and Bachelor (Hons) awards in Science (Agriculture) from the University of Sydney.



Dr Eric Huttner

Dr Eric Huttner is the Research Program Manager, Crop Improvement and Management.

A career in science and its applications, Eric graduated as an agricultural scientist in Paris (France) and went on to complete a doctor degree in plant molecular genetics in 1986, undertaking research at INRA in Versailles (France). In fulfilment of his French military service obligations, Eric worked as a post-doc in Shanghai (China) 1987-8. Eric moved to Australia to establish the Australian research arm for the French seed company Limagrain, based at the ANU in Canberra. In 2001 Eric became the founding General Manager of Diversity Arrays Technology, a Canberra start-up company delivering genetic analysis services to plant scientists and plant breeders worldwide. He left the private sector in 2012 to join ACIAR.



Dr Richard Markham

Dr Richard Markham is the Research Program Manager for Horticulture.

Dr Markham, a British national, has worked in international R4D since his graduate student days 30 years ago. Before joining ACIAR, he worked for the CGIAR centre, Bioversity International, where he led a large scientific team across several continents focusing on commodity crops as a source of livelihoods for rural communities.

His main research training and experience is in crop protection, but his research management responsibilities have covered germplasm conservation, crop protection, production, postharvest and marketing issues.

He has also worked in science writing on research, agricultural, environmental and development issues.



Dr Mike Nunn

Mike Nunn is the Research Program Manager for Animal Health. This program focuses on issues that enable smallholder

farmers to refine their livestock management towards production and income-generation, in contrast to 'keeping' livestock solely as an asset. The emphasis is on regionally significant diseases, including transboundary diseases, zoonotic diseases, diseases affecting production, and diseases affecting trade and market access.

Dr Nunn joined ACIAR in June 2012 after working for the Australian Government Department of Agriculture, Fisheries and Forestry, where he was the Principal Scientist for Animal Biosecurity.



Dr Ejaz Qureshi

Dr Ejaz Qureshi is the Research Program Manager for the Agriculture Development Policy program, which studies

how policies can influence adoption and further the outcomes of technical research.

Dr Qureshi has more than 15 years' experience dealing with natural resource management and associated policies. He has worked extensively in Australia, China, Pakistan, Indonesia and India.

He has received many CSIRO awards including the Land and Water Chief's High Impact Studies Award and the Strategic Excellence Look Out Award (2007) in recognition of his contribution to urban water economic modelling. He also received the Social and Economic Science Program Award in 2012 and the Julius Career Award in 2013.



Dr Werner Stür

Dr Werner Stür is the Research Program Manager for the Livestock Production Systems program, which focuses on enabling

equitable access to markets; optimising crop-livestock systems; and livestock production.

For much of his working life Werner has been involved in livestock R4D, with a focus on forages, feeding and livestock production in smallholder farming systems in Asia. He has worked as a researcher for the University of New England, the University of Queensland and CIAT based in Australia, Laos, the Philippines and Thailand.

He completed his undergraduate degree in Germany and PhD at the University of Queensland, Australia.



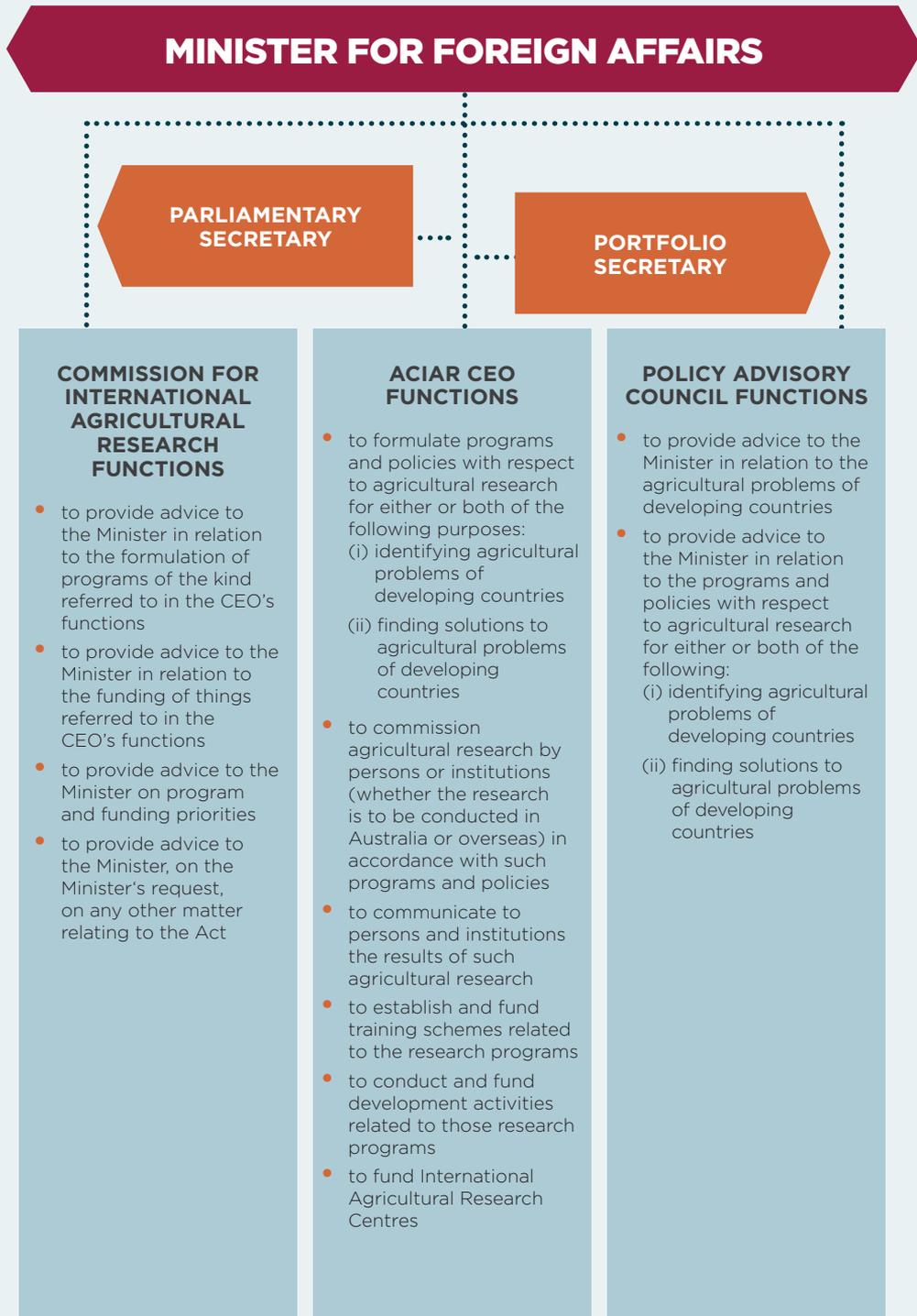




Corporate governance



ACIAR's governance framework



Chief Executive Officer

The office and role of the Chief Executive Officer (CEO) is established in Sections 4A and 5 of the *Australian Centre for International Agricultural Research Act 1982* (the Act). The CEO manages the affairs of the Centre and its staff, subject to, and in accordance with, any directions given by the Minister under Section 5. Specifically, the CEO's functions are to:

- a. formulate programs and policies with respect to agricultural research for either or both of the following purposes:
 - i. identifying agricultural problems of developing countries
 - ii. finding solutions to agricultural problems of developing countries
- b. commission agricultural research by persons or institutions (whether the research is to be conducted in Australia or overseas) in accordance with such programs and policies
- c. communicate to persons and institutions the results of such agricultural research
- d. establish and fund training schemes related to the research programs referred to above
- e. conduct and fund development activities related to those research programs
- f. fund international agricultural research centres.

The Governor-General appoints the CEO for a term of up to seven years and the appointment is subject to the determinations of the Remuneration Tribunal. The Tribunal has determined the CEO to be an officer in the

Principal Executive Officer (PEO) structure, at PEO Band C. The Minister is the identified Employing Body for remuneration purposes.

The CEO holds responsibilities as Head of Agency as set out in the *Public Governance Performance and Accountability Act 2013* and the *Public Service Act 1999*, respectively. The CEO is not subject to direction by the Commission in relation to the performance of functions or exercise of powers under these Acts.

Following the resignation of Dr Nick Austin on 30 June 2016, Mr David Shearer acted as the CEO until the appointment of a new CEO on 1 August 2016, being Professor Andrew Campbell.

ACIAR's CEO is directly responsible to the Minister for managing the affairs of ACIAR, in a way that provides proper use of the Commonwealth resources for which the CEO is responsible. The agency head is also responsible for managing the agency with direct accountability to the Australian Government.

CEO remuneration

The remuneration of the CEO is subject to the relevant determinations of the Remuneration Tribunal. These provisions enable the Minister to determine the total remuneration, superannuation salary and performance pay components of the remuneration package, within the parameters of Remuneration Tribunal Determination 2015/19.

The CEO's remuneration package at 30 June 2017 consisted of:

- base salary of \$247 681
- superannuation with an employer contribution of 15.4% of base salary
- other allowances

The Commission for International Agricultural Research

The Commission for International Agricultural Research (the Commission), is established under the Act to provide collective decision-making and expert strategic advice to the Minister on ACIAR's operations. The functions of the Commission, as set out at Section 9 of the Act, are:

- a. to provide advice to the Minister in relation to the formulation of programs
 - i. identifying agricultural problems of developing countries;
 - ii. finding solutions to agricultural problems of developing countries
- b. to provide advice to the Minister in relation to the funding to:
 - i. establish and fund training schemes related to the research programs; and
 - ii. conduct and fund development activities related to those research programs; and
 - iii. fund international agricultural research centres
- c. to provide advice to the Minister on program and funding priorities; and
- d. to provide advice to the Minister, on the Minister's request, on any other matter relating to this Act.

Commission meetings

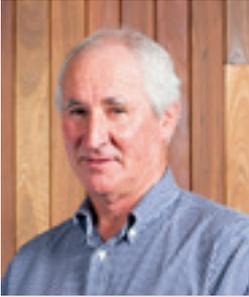
The Act requires that at least four Commission meetings are held each financial year. During the 2016-17 financial year, the Commission met four times. The dates and locations of those meetings are as follows:

Meeting	Date	Location
36th meeting	19-23 September 2016	Canberra/Regional Queensland
37th meeting	5-6 December 2016	Canberra
38th meeting	27 February - 3 March 2017	Myanmar
39th meeting	5-6 June 2017	Canberra

Commission composition

Section 8 of the Act, provides that the Commission consists of a Chair and six other Commissioners. Commissioners are appointed by the Governor-General by written instrument. A Commissioner holds office for the period specified in the instrument of appointment, not exceeding three years. At 30 June 2017, the Commission comprised:

Commissioner	Appointment dates	Meetings attended
Mr Don Heatley OAM (Chair)	18 Aug 2015 to 30 June 2017	4
Professor Andrew Campbell (CEO)	31 July 2016 to 31 July 2019	4
Mr John Cook	18 Aug 2015 to 30 June 2017	3
Ms Lucinda Corrigan	18 Aug 2015 to 30 June 2017	3
Dr Tony Gregson	18 Aug 2015 to 30 June 2017	4
Professor Sandra Harding	6 June 2016 to 5 May 2019	2
Ms Catherine Marriott	18 Aug 2015 to 30 June 2017	4



Mr Don Heatley (Chair) is a fifth generation north Queensland cattle farmer with two stations and 8,000 head of cattle on the lower Burdekin River.

The family business has fine-tuned its production systems over the time of Mr Heatley's management to produce beef for highly specialised markets in Korea, Japan and the United States, giving him a strong understanding of international agribusiness value chains. Mr Heatley is a passionate and committed advocate for both promotion of Australian agribusiness interests overseas and investing in the strengthening of domestic agribusinesses in developing countries. He has more than 30 years' experience promoting the Australian beef industry internationally, including through roles on state livestock councils, the Cattle Council of Australia and as Chair of Meat and Livestock Australia. Mr Heatley has taken a strong personal interest in provision of the research and development support to domestic beef industries throughout Southeast Asia and the Middle East. He has travelled extensively throughout these regions representing the Australian beef industry with regional governments and industry.



Professor Andrew Campbell is the CEO of the Australian Centre for International Agricultural Research (ACIAR).

Through a series of influential national roles, Professor Campbell has been at the leading edge of sustainable agriculture and natural resource management science and policy in Australia for more than 30 years. He has long been recognised for his visionary work on the relationship between people and land, firstly in developing the concept of whole farm planning, and then through Landcare, as Australia's first National Landcare Facilitator.

Professor Campbell was previously Director of the Research Institute for the Environment and Livelihoods at Charles Darwin University, CEO of Land & Water Australia, Managing Director of Triple Helix Consulting, and Senior Executive in the Australian Government environment portfolio. He is an adjunct Professorial Fellow at Charles Darwin University, a Visiting Fellow at the Australian National University's Fenner School and a Commissioner with the International Union for Conservation of Nature's World Commission on Protected Areas.



Mr John Cook has more than 20 years' experience in the food and agribusiness industries with Kellogg's, Burns Philp, Berri Limited, Australian Pork Limited and Golden Circle.

He is a Principal Project Consultant with Business for Millennium Development, an independent Australian based not-for-profit organisation that encourages and facilitates inclusive business activities that contribute to the Millennium Development Goals. He has held a variety of senior

management positions across Asia. Mr Cook has been a Member of the Agri-Food Council of Australia, a Trustee and Director of the Australian Food Foundation, an Executive Committee Member of the Grocery Manufacturers of Australia and a Councillor of the NSW Chamber of Manufacturers. He has been a Director of the Australian Food and Grocery Council and a Member of the Victorian Food Industry Consultation Group. From 2000-2003, Mr Cook undertook a three-year term as a non-executive director of the Melbourne Markets Authority, a role which led to his serving as the Executive Chairman of the food industry's e-commerce initiative Fresh Chain Limited.



Ms Lucinda Corrigan is a Director of Rennylea, a leading beef genetics business, running 3,000 head of cattle across five properties in the Murray Valley of NSW. Rennylea supplies genetic products to commercial producers across Australia and to international markets.

Ms Corrigan has skills and experience in research and development, genetics, natural resource management, communications, marketing and advocacy, and for 20 years

has served as a non-executive director on agrifood industry bodies and innovation companies. During the last decade she has been a director of four cooperative research centres (CRCs) and was Deputy Chairman of the Future Farm Industries CRC, retiring in December 2011. She is Chair of the advisory committee of the Graham Centre for Agricultural Innovation, a partnership between Charles Sturt University and the NSW Department of Primary Industries, which provides multi-disciplinary and integrated research to increase the profitability of the grain and livestock industries. In the Holbrook community, she is convenor of the local beef group's activities. She is a Fellow of the Australian Institute of Company Directors and the Australian Rural Leadership Foundation. She has also received several awards: Agribusiness Leader for Women in Australian Agribusiness; NAB Agribusiness Primary Producer of the Year and the Helen Newton Turner Medal for contribution to Animal Breeding and Genetics.



Dr Tony Gregson is a grain grower from Victoria's Wimmera region with an extensive science and corporate research management background.

He currently chairs Plant Health Australia and formerly chaired the Board of Trustees for Bioversity International, which provides scientific evidence of the role that on-farm and wild agricultural and forest biodiversity can play in a more nutritious, resilient, productive and adaptable food and agricultural system.

He is an Adjunct Professor in Environmental Management at the University of Ballarat and a Fellow of the Australian Academy of Technological Sciences and Engineering, Chairman of the University of Melbourne, School of Botany Foundation and a director of Rural Industries Skills Training based in Hamilton, Victoria. He is a former chairman of two CRCs, a former inaugural member of the CSIRO and GRDC Boards, and a former member of the CIMMYT, the Australian Nuclear Science and Technology Organisation, and the Rural Finance Corporation of Victoria Boards.



Professor Sandra Harding is the Vice Chancellor and President of James Cook University, Australia.

In this role, she is responsible for ensuring clear and effective leadership and management of the University across all operating sites, including campuses in Cairns, Singapore and Townsville. She has extensive academic and academic leadership experience. An economic sociologist by training, her areas of enduring academic interest include work, organisation and

markets and how they work. She also has a keen interest in public policy in two key areas: education policy and related areas; and; the global Tropics, northern Australia and economic development. Professor Harding has undertaken a wide variety of external roles within the business community and the higher education sector.



Ms Catherine Marriott has always worked in agriculture and is inspired by the industries potential.

She uses her Rural Science Degree to understand the technical aspects of agriculture, while improving policy, research relevance and market access through her role as the CEO for the Kimberley Pilbara Cattlemen's Association, a representative body working towards maximising the value of the northern beef industry. Throughout her career, she has developed skills in communication, project management,

stakeholder engagement, entrepreneurship, corporate governance and community development. These skills have helped Catherine build national and international relationships through on the ground project delivery. She is passionate about living and learning and sharing her knowledge and experiences with others. Catherine uses her understanding of strategy, leadership, policy direction and business to create influence, not only here in Australian agriculture, but agriculture globally. Catherine is a graduate of the Australian Rural Leadership Program, a Graduate of the Australian Institute of Company Directors and in the 2012, a RIRDC Rural Women's Award Recipient and the national runner-up.

Disclosure of interests

Commissioners are required to disclose to the Minister and to the Commission any direct or indirect pecuniary interest that may conflict with the proper performance of the Commissioners' functions. A Commissioner who has an interest in a matter being considered by the Commission must not be present during any deliberation by the Commission on the matter and must not take part in any decision of the Commission with respect to the matter. The disclosure and the nature of the interest are recorded in the Commission meeting minutes, which are available for consideration by the Centre's auditors.

Ministerial directions

Written directions may be given to the CEO by the Minister regarding the exercising of his powers or the performance of his functions. This includes directions with respect to the commissioning of particular research. In 2016-17 there were no directions given.

Commission costs

The direct cost of Commission operations during 2016-17 was \$177,271 including fees, travel and other meeting expenses. The CEO's salary and other management costs are not included. The comparative figure for 2015-16 for the Commission was \$141,146.

Fees for the Chair and Members of the Commission are set by the Remuneration Tribunal. The daily fees for the Chair and Members (other than the CEO) were \$941 and \$706 respectively as at 30 June 2017.

Policy Advisory Council

The Policy Advisory Council (the Council) is established under Section 17 of the Act and provides advice to the Minister on strategic aspects of national and regional development. The Council's functions are to provide advice to the Minister regarding:

- agricultural problems of developing countries
- programs and policies with respect to agricultural research for either or both of the following purposes:
 - identifying agricultural problems of developing countries
 - finding solutions to agricultural problems of developing countries.

The Council's role utilises partner countries' stakeholder knowledge to provide a valuable overview for advising the Minister, the Commission and the Centre on matters including:

- national and regional development constraints
- opportunities for research and development collaboration
- national and regional research priorities, particularly those of ACIAR's partner countries
- the matching of Australian expertise (Australia's competitive advantage) with these priorities
- modes of operation for ACIAR
- sources of national and international expertise.



Debbie Templeton with farmers in Ethiopia.
Photo: John Dixon

Council composition

The Council's membership is limited to 13, comprising a President, the Secretary of DFAT or her nominee, and no less than nine, nor more than 11 other members appointed by the Minister. Predominantly, members are appointed from stakeholder organisations in partner countries to bring a range of agricultural and development experience. Under the Act, the Minister is required to ensure that a substantial number of the Council members are residents of countries other than Australia, having regard for the knowledge of appointees concerning the agricultural problems of developing countries or their experience in organising or conducting agricultural research.

Council meeting

Each year the Council holds a meeting in Australia over several days to discuss areas related to its role and functions. During 2016–17 the Council met in Canberra on 19–20 September 2016, followed by site visits 21–23 September 2016.

On Monday 19 September, the Council conducted its annual meeting. On Tuesday 20 September the Council participated in a roundtable discussion with ACIAR's senior managers, followed by a joint meeting with the Commission.

During the meeting in Canberra, the Council were visited by Dr RK Malik, winner of the Crawford Fund's 2015 Derek Tribe Award Winner focusing on his work, 30 years of agricultural R4D, and improving livelihoods of farmers and their communities in India.. The program for this meeting also included meetings and field visits with the University of the Sunshine Coast, the Gatton campus of the University of Queensland, School of Agriculture and Food Science and attendance at the 6th McDonnell Academy International Symposium which included a keynote address by the ACIAR CEO, Professor Andrew Campbell on food, water and sustainability.

The overlaying theme for the 35th Council meeting was *Climate Change: emerging research needs relating to agriculture* with a focus on research:

- that helps strengthen the climate-vulnerable parts of rural livelihood systems;
- that makes the climate-resilient components of rural livelihood systems more profitable;
- on more climate-resilient agricultural systems; and,
- that directly focuses on climate change issues and increasing variability in weather patterns.



Council membership (as at 30 June 2017)

Member	Term of appointment
Professor Kym Anderson AC	President
Professor of Economics University of Adelaide Crawford School of Public Policy AUSTRALIA	Appointed President 1 October 2014 – 30 September 2017
Professor Ramesh Chand	Appointed Member
Member, Union Minister of State National Institute of Transforming India (NITI) Aayog INDIA	2 February 2017 - 1 February 2020
Sir Brown Bai KBE CSM CBE	Appointed member
Managing Director Tola Investments Limited Gordons PAPUA NEW GUINEA	7 March 2005 – 6 March 2008 15 May 2008 – 14 May 2011 22 August 2011 – 21 August 2014 22 August 2014 – 21 August 2017
Mr Xaypladeth Choulamany	Appointed member
Department of Planning and Cooperation, Ministry of Agriculture and Forestry Vientiane LAO PDR	22 August 2014 – 21 August 2017
Dr Leah Buendia	Appointed member
Director, Policy Coordination and Monitoring Division Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development Los Baños THE PHILIPPINES	22 August 2014 – 21 August 2017
Dr M Syakir	Appointed member
Director General Indonesian Agency for Agricultural Research and Development. Minister of Agriculture Jakarta INDONESIA	3 August 2015 – 2 August 2018
Dr Jia Jingdun	Appointed member
Director General China Rural Technology Development Centre Ministry of Science and Technology Beijing PEOPLE'S REPUBLIC OF CHINA	10 March 2003 – 9 March 2006 10 March 2006 – 9 March 2009 18 September 2009 – 17 September 2011 17 April 2013 – 3 August 2016 3 August 2016 – 2 August 2019
Dr Nguyen Van Bo	Appointed Member
President Vietnam Academy of Agricultural Sciences VIETNAM	3 August 2016 - 2 August 2019
Dr Lindiwe Majele Sibanda	Appointed Member
CEO Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) SOUTH AFRICA	3 August 2016 to 2 August 2019

Member	Term of appointment
Dr Colin Tukuitonga Director General Secretariat of the Pacific Community Noumea PACIFIC	Appointed Member 3 August 2015 to 2 August 2018
HE Naela Chohan High Commissioner Pakistan High Commission to Australia PAKISTAN	Appointed Member 31 March 2017 - 30 March 2020
Dr Sar Chetra Deputy Director Indonesian Agency for Agricultural Research and Development. Minister of Agriculture CAMBODIA	Appointed Member 3 August 2016 - 2 August 2019
Nominee of the Secretary, Department of Foreign Affairs and Trade AUSTRALIA	Ex-officio member

Financial accountability and compliance

ACIAR, as a statutory authority, is subject to the policy guidelines determined by government from time to time regarding accountability, reporting, review and general operations. The agency is accountable through the Minister to Parliament. It is also subject to government financial and accounting policies and procedures. Staff members are employed under the *Public Service Act 1999*. Within these constraints, the Centre has the power to do all things it considers appropriate for the performance of its statutory functions.

ACIAR's authority derives from the *Australian Centre for International Agricultural Research Act 1982* (ACIAR Act). Financial powers and duties are also drawn from the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and subordinate Rules, and from the *Public Service Act 1999* in the case of staffing.

The Centre follows accounting practices in accordance with the PGPA Act, other related legislation, and recognised accounting standards. ACIAR's financial statements are presented in accrual accounting format in the 'Financial Statements' section of this report. The financial statements have been audited by the Australian National Audit Office.

Insurances

Primary corporate insurance for the Centre is provided through Comcover as the manager of the Commonwealth's insurable risks. Comcover's coverage includes general and products liability, professional indemnity, CEO's and officers' liability, property loss and damage, personal accident and official travel. The insurance premium for 2016-17 was \$40,722 (excluding GST). The premium paid for 2015-16 was \$35,082 (excluding GST).

Liability and professional indemnity insurances were not invoked in 2016-17.

Risk management and business continuity planning

The Audit Committee is responsible for monitoring risk management and business continuity planning.

Audit Committee

ACIAR's Audit Committee is established in accordance with Section 45 of the PGPA Act.

The committee's primary role is to provide independent assurance to the CEO on ACIAR's financial and performance reporting responsibilities, risk oversight and management, and system of internal control.

Four Audit Committee meetings were held in 2016-17. Audit Committee membership and attendance during the year were as follows:

Member		Meetings eligible to attend	Meetings attended
Ms Anthea Tinney	Chair/External Member (appointed 12 September 2013)	4	4
Ms Christine Quick	External Member (appointed 30 June 2015)	4	4
Dr Eric Huttner	ACIAR, Research Program Manager (appointed 24 July 2015)	4	4
Mr Albert Blair	ACIAR, Chief Finance Officer (ex-officio, commenced 23 May, 2010)	4	4

Each committee meeting was supported by advisers from ACIAR external auditors (Australian National Audit Office), internal auditors (EY) and relevant agency staff with secretariat support provided by the ACIAR finance team.

Internal audit

Internal audit forms an important part of ACIAR's governance framework, providing an integral contribution to governance, risk management and control. In 2016-17, internal audit activity consisted of a review of ACIAR's information technology security.

All recommendations arising from this review were either satisfactorily addressed during the year or were in the process of being addressed.

Countering fraud

ACIAR's fraud prevention, investigation, reporting and data collection procedures and processes meet our specific needs and comply with Commonwealth fraud control requirements.

ACIAR's fraud control plan is focused on raising awareness among staff, through fraud prevention training, fostering an ethical and professional working environment aligned with the Australian Public Service (APS) Values and APS Code of Conduct, and maintaining strong internal control and audit processes that reduce fraud risks.

The Audit Committee is responsible for overseeing implementation of the fraud control plan. The plan is brought to the attention of new staff as part of ACIAR's induction process and is available electronically to all staff.

The CEO's Fraud Compliance Statement follows.



Australian Government
Australian Centre for
International Agricultural Research

GPO Box 1571

Canberra ACT 2601

ACIAR House, 38 Thynne Street

Bruce ACT 2617

20 September 2017

Statement by the Chief Executive Officer:

Certification of compliance with PGPA Rule – Section 10 – Preventing, detecting and dealing with Fraud

I, Colin Andrew Campbell, certify that I am satisfied that, for 2016-17, the Australian Centre for International Agricultural Research took all reasonable measures to prevent, detect and deal with fraud relating to the entity, including by:

- (a) conducting fraud risk assessments; and
- (b) having an appropriate fraud control plan to deal with identified risks; and
- (c) having an appropriate mechanism for preventing fraud, including by ensuring that: officials of the entity were made aware of what constitutes fraud; and the risk of fraud was taken into account in planning and conducting the activities of the entity; and
- (d) having an appropriate mechanism for detecting incidents of fraud or suspected fraud, including a process for officials of the entity and other persons to report suspected fraud confidentially; and
- (e) having an appropriate mechanism for investigating or otherwise dealing with incidents of fraud or suspected fraud; and
- (f) having an appropriate mechanism for recording and reporting incidents of fraud or suspected fraud.

Colin Andrew Campbell

Chief Executive Officer



Chief Finance Officer's review

ACIAR's operations are split between administered and departmental activities. Departmental activities involve the use of assets, liabilities, income and expenses controlled or incurred by ACIAR in its own right (costs of running the business). Administered activities involve the management or overseeing by ACIAR, on behalf of the Australian Government, of items controlled or incurred by the government (program delivery).

The Agency's departmental and administered activities are segregated in the financial statements.

Departmental activity

The net operating result for 2016-17 was a surplus of \$0.511 million (2015-16: surplus \$0.224 million). Excluding depreciation and amortisation and other asset adjustments including re-valuations and write-downs, the surplus was \$0.636 million (2015-16: \$0.518 million). The surplus corresponds with self-funded expenditure on improving ACIAR's business systems which was capitalised during the year.

Revenue included a direct appropriation of \$9.494 million (2015-16: \$9.657 million) supplemented by other income of \$2.049 million (2015-16: \$1.905 million). Other income was mostly fees derived from the management of research monies received under separate agreements or records of understanding with external parties.

The main components of departmental expenditure (\$11.124 million; 2015-16: \$11.338 million) were staff costs \$7.255 million, operating expenses (e.g. property expenses, travel, IT, communications, etc.) \$3.623 million, and depreciation, amortisation and other asset write-downs of \$0.246 million.

Administered activity

Total administered funds appropriated to ACIAR for 2016-17 was \$93.993 million (2015-16: \$81.629 million). The 2016-17 appropriated funds were fully utilised. ACIAR received an additional \$12.273 million (2015-16: \$12.411 million) under separate agreements or records of understanding with external parties.

Total programme expenditure for 2016-17 was \$111.284 million (2015-16: \$100.050 million). This included \$17.796 million (2015-16: \$18.579 million) expenditure of monies received under separate agreements or records of understanding with external parties (mainly DFAT).

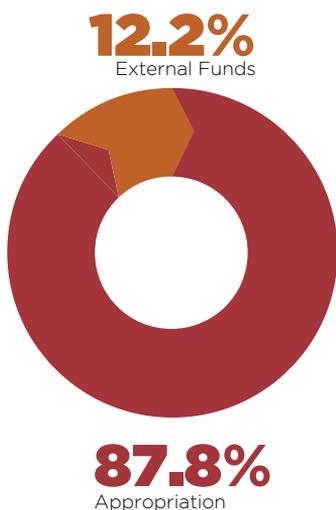
The pie charts below present a summary picture of total departmental and administered revenue and expenditure for 2016-17 compared with 2015-16. Administered revenue included in appropriation revenue is the non-lapsing portion of the total available administered appropriations as approved by government.

Accounting policies

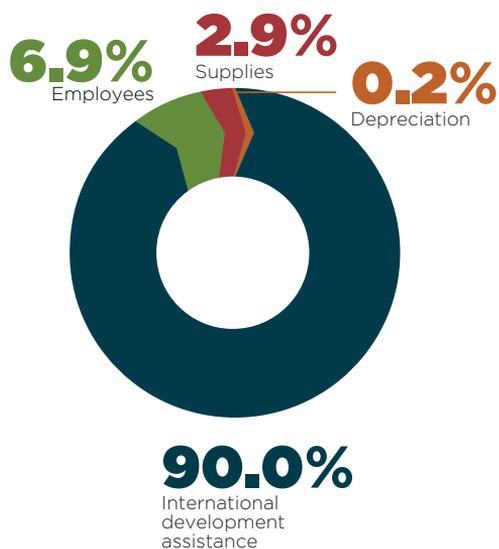
ACIAR complies with relevant accounting standards and legislative reporting requirements.

ACIAR revenue and expenditure

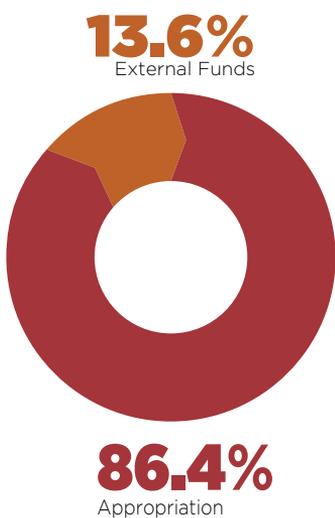
ACIAR revenue 2016-17



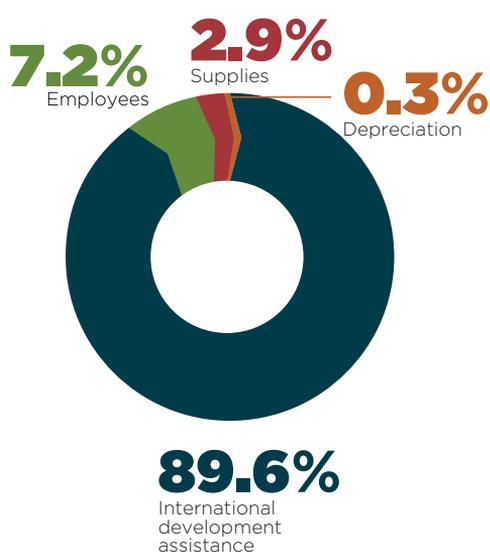
ACIAR expenditure 2016-17



ACIAR revenue 2015-16



ACIAR expenditure 2015-16



A photograph showing three women farmers in red saris working on a large concrete platform. They are spreading and drying rice husks. One woman is using a traditional wooden rake, while another is using a broom. The ground is covered with long, parallel lines of dried rice husks. The background shows a lush green field.

Financial statements



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INDEPENDENT AUDITOR'S REPORT

To the Minister for Foreign Affairs

Opinion

In my opinion, the financial statements of the Australian Centre for International Agricultural Research for the year ended 30 June 2017:

- (a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and
- (b) present fairly the financial position of the Australian Centre for International Agricultural Research as at 30 June 2017 and its financial performance and cash flows for the year then ended.

The financial statements of the Australian Centre for International Agricultural Research, which I have audited, comprise the following statements as at 30 June 2017 and for the year then ended:

- Statement by Chief Executive Officer and Chief Finance Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement;
- Administered Schedule of Comprehensive Income;
- Administered Schedule of Assets and Liabilities;
- Administered Reconciliation Schedule;
- Administered Cash Flow Statement; and
- Notes to the financial statements, comprising an Overview, Summary of Significant Accounting Policies and other explanatory information.

Basis for Opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Australian Centre for International Agricultural Research in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* to the extent that they are not in conflict with the *Auditor-General Act 1997* (the Code). I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's Responsibility for the Financial Statements

As the Accountable Authority of the Australian Centre for International Agricultural Research the Chief Executive Officer is responsible under the *Public Governance, Performance and Accountability Act 2013* for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the rules made under that Act. The Chief Executive Officer is also responsible for such internal control as the Chief Executive Officer determines is necessary to enable the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Chief Executive Officer is responsible for assessing the Australian Centre for International Agricultural Research's ability to continue as a going concern, taking into account whether the entity's operations will cease as a result of an administrative restructure or for any other reason. The Chief Executive Officer is also responsible for disclosing matters related to going concern as applicable and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

Auditor's Responsibilities for the Audit of the Financial Statements

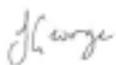
My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office



Jodi George

Acting Executive Director

Delegate of the Auditor-General

Canberra

11 September 2017

STATEMENT BY CHIEF EXECUTIVE OFFICER AND CHIEF FINANCE OFFICER

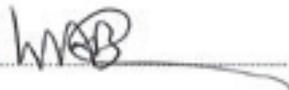
In our opinion, the attached financial statements for the year ended 30 June 2017 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Australian Centre for International Agricultural Research will be able to pay its debts as and when they fall due.

Signed 

Andrew Campbell
Chief Executive Officer

11 September 2017

Signed 

Albert Blair
Chief Finance Officer

11 September 2017

Statement of Comprehensive Income
for the period ended 30 June 2017

	Notes	2017 \$'000	2016 \$'000	Original Budget \$'000
NET COST OF SERVICES				
Expenses				
Employee benefits	1.1A	7,255	7,781	7,843
Suppliers	1.1B	3,623	3,224	3,309
Write-down and impairment of assets	1.1C	4	-	-
Depreciation and amortisation	3.2A	241	294	460
Losses from asset sales		1	39	-
Total expenses		11,124	11,338	11,612
Own-Source Income				
Own-source revenue				
Sale of goods and rendering of services	1.2A	1,991	1,875	1,627
Other revenue	1.2B	30	30	31
Total own-source revenue		2,021	1,905	1,658
Gains				
Reversal of write-downs and impairment	1.2C	28	-	-
Total gains		28	-	-
Total own-source income		2,049	1,905	1,658
Net cost of services		9,075	9,433	9,954
Revenue from Government	1.2D	9,494	9,657	9,494
Surplus after income tax on continuing operations		419	224	(460)
OTHER COMPREHENSIVE INCOME				
Items not subject to subsequent reclassification to net cost of services				
Changes in asset revaluation surplus		92	-	-
Total other comprehensive income		92	-	-
Total comprehensive income after income tax		511	224	(460)

The above statement should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Employee benefits

Reduction reflects the outcome of an internal staffing review which resulted in a number of program delivery positions being transferred to administered funding.

Depreciation and amortisation

Delay in commissioning of a new project management system saw less depreciation and amortisation being charged than budgeted.

Statement of Financial Position

as at 30 June 2017

		2017	2016	Original
	Notes	\$'000	\$'000	Budget
				\$'000
ASSETS				
Financial Assets				
Cash and cash equivalents	3.1A	125	71	84
Trade and other receivables	3.1B	3,803	3,712	3,722
Total financial assets		3,928	3,783	3,806
Non-Financial Assets				
Leasehold improvements	3.2A	1,059	1,108	1,161
Plant and equipment	3.2A	229	205	245
Intangibles	3.2A	1,404	570	668
Other non-financial assets	3.2B	247	152	96
Total non-financial assets		2,939	2,035	2,170
Total assets		6,867	5,818	5,976
LIABILITIES				
Payables				
Suppliers	3.3A	569	517	374
Other payables	3.3B	553	528	373
Total payables		1,122	1,045	747
Provisions				
Employee provisions	6.1A	2,277	2,063	2,418
Total provisions		2,277	2,063	2,418
Total liabilities		3,399	3,108	3,165
Net assets		3,468	2,710	2,811
EQUITY				
Contributed equity		2,234	1,987	2,233
Reserves		204	112	112
Retained surplus		1,030	611	466
Total equity		3,468	2,710	2,811

The above statement should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Intangibles

\$0.8m relates to a new project management system (work in progress at year end) that was capitalised. At the time the original budget was prepared ACIAR did not have sufficient information to identify the capital/non-capital split so the full anticipated cost was deemed non-capital.

Other variances

Variances not covered above are due to timing differences and the difficulty in predicting exactly when payments will be made or monies received.

Employee provision

Reduction reflects the outcome of an internal staffing review which resulted in a number of program delivery positions being transferred to administered funding.

Statement of Changes in Equity
for the period ended 30 June 2017

	Retained earnings		Asset revaluation reserve		Contributed equity/capital		Total equity	
	2017 \$'000	2016 \$'000	2017 \$'000	2016 \$'000	2017 \$'000	2016 \$'000	2017 \$'000	2016 \$'000
Opening balance								
Balance carried forward from previous period	611	387	112	112	1,987	1,578	2,710	2,077
Adjusted opening balance	611	387	112	112	1,987	1,578	2,710	2,077
Comprehensive income								
Surplus for the period	419	224	n/a	n/a	n/a	n/a	419	224
Other comprehensive income	-	-	92	-	-	-	92	-
Total comprehensive income	419	224	92	-	-	-	511	(460)
Transactions with owners								
Contributions by owners								
Departmental capital budget	-	-	-	-	247	248	247	248
Equity injection - Appropriations	-	-	-	-	-	161	-	161
Total transactions with owners	-	-	-	-	247	409	247	409
Closing balance as at 30 June	1,030	611	204	112	2,234	1,987	3,468	2,710

The above statement should be read in conjunction with the accompanying notes.

Accounting Policy

Equity Injections

Amounts appropriated which are designated as 'equity injections' for a year (less any formal reductions) and Departmental Capital Budgets (DCBs) are recognised directly in contributed equity in that year.

Budget Variances Commentary

In addition to the flow-on impact of items referred to in the Budget Variances Commentary on the Statement of Comprehensive Income and the Statement of Financial Position, a revaluation adjustment for \$91,639 was booked in 2016-17. Insufficient information was available to estimate this when the 2016-17 original budget was developed.

Cash Flow Statement
for the period ended 30 June 2017

	Notes	2017 \$'000	2016 \$'000	Original Budget \$'000
OPERATING ACTIVITIES				
Cash received				
Appropriations		9,175	9,815	9,473
Sales of goods and rendering of services		2,207	1,658	1,627
Net GST received		310	302	230
Total cash received		11,692	11,775	11,330
Cash used				
Employees		7,021	7,912	7,782
Suppliers		3,980	3,358	3,548
Total cash used		11,001	11,270	11,330
Net cash from operating activities		691	505	-
INVESTING ACTIVITIES				
Cash used				
Purchase of property, plant and equipment		884	952	247
Total cash used		884	952	247
Net cash (used by) investing activities		(884)	(952)	(247)
FINANCING ACTIVITIES				
Cash received				
Contributed equity		247	434	247
Total cash received		247	434	247
Net cash from financing activities		247	434	247
Net increase / (decrease) in cash held		54	(13)	-
Cash and cash equivalents at the beginning of the reporting period		71	84	84
Cash and cash equivalents at the end of the reporting period	3.1A	125	71	84

The above statement should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Variances result from the flow-on impact of items referred to in the Budget Variances Commentary on the Statement of Comprehensive Income and the Statement of Financial Position.

Administered Schedule of Comprehensive Income

for the period ended 30 June 2017

	Notes	2017 \$'000	2016 \$'000	Original Budget \$'000
NET COST OF SERVICES				
Expenses				
International development assistance	2.1A	<u>111,284</u>	100,050	118,003
Total expenses		<u>111,284</u>	<u>100,050</u>	<u>118,003</u>
Income				
Revenue				
Non-taxation revenue				
External funds	2.2A	<u>12,273</u>	12,411	15,539
Total non-taxation revenue		<u>12,273</u>	<u>12,411</u>	<u>15,539</u>
Total revenue		<u>12,273</u>	<u>12,411</u>	<u>15,539</u>
Net cost of services		<u>99,011</u>	87,639	102,464
(Deficit) after income tax		<u>(99,011)</u>	(87,639)	(102,464)
Total comprehensive (loss)		<u>(99,011)</u>	<u>(87,639)</u>	<u>(102,464)</u>

The above schedule should be read in conjunction with the accompanying notes.

Budget Variances Commentary

International development assistance

Less than budgeted due to a combination of delays in contracting overseas research activity, delays in external funders confirming availability of funds and the securing of less external funding than originally budgeted. ACIAR's Administered appropriation was fully expended.

External funds

The majority of ACIAR's external funds currently comes from DFAT. Due to a slowing of the growth in Australia's aid programme external funding was less than originally budgeted.

Administered Schedule of Assets and Liabilities*as at 30 June 2017*

	Notes	2017 \$'000	2016 \$'000	Original Budget \$'000
ASSETS				
Financial assets				
Cash and cash equivalents	4.1A	16,883	21,144	11,406
Taxation receivables	4.1B	1,407	538	699
Trade and other receivables	4.1C	561	-	-
Total financial assets		18,851	21,682	12,105
Total assets administered on behalf of Government		18,851	21,682	12,105
LIABILITIES				
Payables				
Suppliers	4.2A	2,354	879	2,960
Other payables	4.2B	1,365	485	638
Total payables		3,719	1,364	3,598
Provisions				
Employee provisions	6.1B	90	14	32
Total provisions		90	14	32
Total liabilities administered on behalf of Government		3,809	1,378	3,630
Net assets		15,042	20,304	8,475

The above schedule should be read in conjunction with the accompanying notes.

Budget Variances CommentaryCash and cash equivalents

Increase mainly due to a combination of delays in contracting overseas research activity and delays in external funders confirming availability of funds.

Employee provisions

Relates to a number of program delivery positions transferred to administered funding as a result of an internal staffing review not envisaged at the time the original budget was developed.

Other variances

Variances not covered above are due to timing differences and the difficulty in predicting exactly when payments will be made or monies received.

Administered Reconciliation Schedule

	2017	2016
	\$'000	\$'000
Opening assets less liabilities as at 1 July	20,304	24,925
Net (cost of)/contribution by services		
Income	12,273	12,411
Expenses	(111,284)	(100,050)
Transfers (to)/from the Official Public Account		
Appropriation transfers from Official Public Account		
Annual appropriations		
Payments to entities other than corporate Commonwealth entities	93,956	83,066
Appropriation transfers to OPA		
Transfers to OPA	(207)	(48)
Closing assets less liabilities as at 30 June	15,042	20,304

The above schedule should be read in conjunction with the accompanying notes.

Accounting Policy

Administered Cash Transfers to and from the Official Public Account

Revenue collected by ACIAR for use by the Government, rather than ACIAR, is Administered revenue. Collections are transferred to the Official Public Account (OPA) maintained by the Department of Finance. Conversely, cash is drawn from the OPA to make payments under Parliamentary appropriation on behalf of Government. These transfers to and from the OPA are adjustments to the Administered cash held by the entity on behalf of the Government and reported as such in the Schedule of Administered Cash Flows and in the Administered Reconciliation Schedule.

Administered Cash Flow Statement
for the period ended 30 June 2017

	Notes	2017 \$'000	2016 \$'000	Original Budget \$'000
OPERATING ACTIVITIES				
Cash received				
External funds		11,711	12,413	15,539
Net GST received		4,659	4,932	5,000
Total cash received		16,370	17,345	20,539
Cash used				
International development assistance		115,250	106,915	117,993
Total cash used		115,250	106,915	117,993
Net cash (used by) operating activities		(98,880)	(89,570)	(97,454)
Cash and cash equivalents at the beginning of the reporting period				
		21,144	27,852	19,877
Cash from Official Public Account				
Appropriations		99,502	87,850	93,983
		99,502	87,850	93,983
Cash to Official Public Account				
Appropriations		4,883	4,988	5,000
		4,883	4,988	5,000
Cash and cash equivalents at the end of the reporting period	4.1A	16,883	21,144	11,406

This schedule should be read in conjunction with the accompanying notes.

Budget Variances Commentary

Variances result from the flow-on impact of items referred to in the Budget Variance Commentary on the Administered Schedule of Comprehensive Income and Administered Schedule of Assets and Liabilities.

Overview

Basis of Preparation

The financial statements are general purpose financial statements and are required by section 42 of the *Public Governance, Performance and Accountability Act 2013*.

The financial statements have been prepared in accordance with :

- a) *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015* (FRR) for reporting periods ending on or after 1 July 2015; and
- b) Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and in accordance with the historical cost convention, except for certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position. The financial statements are presented in Australian dollars.

Taxation

ACIAR is exempt from all forms of taxation except Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

Reporting of Administered Activities

Administered revenues, expenses, assets, liabilities and cash flows are disclosed in the Administered Schedules and related notes.

Except where otherwise stated, Administered items are accounted for on the same basis and using the same policies as for Departmental items, including the application of Australian Accounting Standards.

Events After the Reporting Period

Departmental

There have been no events or transactions after the reporting date which could significantly affect the ongoing structure and financial activities of ACIAR.

Administered

There have been no events or transactions after the reporting date which could significantly affect the ongoing structure and financial activities of ACIAR.

Financial Performance

This section analyses the financial performance of ACIAR for the year ended 2017.

1.1: Expenses

	2017	2016
	\$'000	\$'000
1.1A: Employee Benefits		
Wages and salaries	5,476	6,165
Superannuation:		
Defined contribution plans	573	634
Defined benefit plans	323	257
Leave and other entitlements	873	702
Separation and redundancies	10	23
Total employee benefits	7,255	7,781

Accounting Policy

Accounting policies for employee related expenses are contained in the People and Relationships section.

1.1B: Suppliers

Goods and services supplied or rendered

Contractors, consultants and service providers	538	666
Travel	470	399
IT Services	521	735
Property services (excluding rent)	245	241
Workforce capability	231	172
Publications and promotion	634	113
Other	255	190
Total goods and services supplied or rendered	2,894	2,516
Goods supplied	414	332
Services rendered	2,480	2,184
Total goods and services supplied or rendered	2,894	2,516

Other suppliers

Operating lease rentals	655	623
Workers compensation expenses	74	85
Total other suppliers	729	708
Total suppliers	3,623	3,224

1.1: Expenses (con't)

	2017	2016
	\$'000	\$'000
Leasing commitments		
ACIAR, in its capacity as lessee, has in place a number of non-cancellable operating lease agreements for office accommodation in Canberra and overseas. The terms and conditions of these leases vary based on local market conditions.		
Commitments for minimum lease payments in relation to non-cancellable operating leases are payable as follows:		
Within 1 year	813	806
Between 1 to 5 years	3,410	3,067
More than 5 years	2,477	3,208
Total operating lease commitments¹	6,700	7,081

¹Commitments are GST inclusive where relevant.

Accounting Policy

Operating lease payments are expensed on a straight-line basis which is representative of the pattern of benefits derived from the leased assets.

1.1C: Write-Down and Impairment of Assets

Revaluation decrements	4	-
Total write-down and impairment of assets	4	-

1.2 Own-Source Revenue and Gains

	2017	2016
	\$'000	\$'000
Own-Source Revenue		
<u>1.2A: Sale of Goods and Rendering of Services</u>		
Sale of goods	1	7
Rendering of services	1,990	1,868
Total sale of goods and rendering of services	1,991	1,875

Accounting Policy

Revenue from the sale of goods is recognised when:

- a) the risks and rewards of ownership have been transferred to the buyer; and
- b) ACIAR retains no managerial involvement or effective control over the goods.

The stage of completion of contracts at the reporting date is determined by reference to the proportion that costs incurred to date bear to the estimated total costs of the transaction.

1.2B: Other Revenue

Resources received free of charge

Remuneration of auditors	30	30
Total other revenue	30	30

Accounting Policy

Resources Received Free of Charge

Resources received free of charge are recognised as revenue when, and only when, a fair value can be reliably determined and the services would have been purchased if they had not been donated. Use of those resources is recognised as an expense. Resources received free of charge are recorded as either revenue or gains depending on their nature.

1.2C: Reversal of write-downs

Reversal of prior year asset write-downs	28	-
Total reversals of previous asset write-downs	28	-

1.2D: Revenue from Government

Appropriations

Departmental appropriation	9,494	9,657
Total revenue from Government	9,494	9,657

Accounting Policy

Revenue from Government

Amounts appropriated for Departmental appropriations for the year (adjusted for any formal additions and reductions) are recognised as Revenue from Government when the entity gains control of the appropriation, except for certain amounts that relate to activities that are reciprocal in nature, in which case revenue is recognised only when it has been earned. Appropriations receivable are recognised at their nominal amounts.

Income and Expenses Administered on Behalf of Government

This section analyses the activities that ACIAR does not control but administers on behalf of the Government. Unless otherwise noted, the accounting policies adopted are consistent with those applied for Departmental reporting

2.1: Administered - Expenses

	2017	2016
	\$'000	\$'000
<u>2.1A: International Development Assistance</u>		
Research program	80,767	71,191
Multilateral program	21,906	19,812
Education and training	7,546	7,973
Communicating research results	1,065	1,074
Total international development assistance	111,284	100,050
International Development Assistance is made up of:		
Employee benefits	1,154	224
Supplier expenses	110,130	99,826
Total	111,284	100,050

Accounting Policy

International Development Assistance

ACIAR administers international development assistance programs and projects on behalf of the Government.

International development assistance liabilities are recognised to the extent that:

- (i) the services required to be performed by the recipient have been performed; or
- (ii) the contract eligibility criteria have been satisfied, but payments due have not been made.

2.2: Administered - Income

	2017	2016
	\$'000	\$'000
Revenue		
Non-Taxation Revenue		
<u>2.2A: External Funds</u>		
External funds	12,273	12,411
Total external funds	12,273	12,411

Accounting Policy

All Administered revenues are revenues relating to ordinary activities performed by the entity on behalf of the Australian Government. As such, Administered appropriations are not revenues of the individual entity that oversees distribution or expenditure of the funds as directed.

Financial Position

This section analyses the ACIAR's assets used to conduct its operations and the operating liabilities incurred as a result.

Employee related information is disclosed in the People and Relationships section.

3.1: Financial Assets

	2017	2016
	\$'000	\$'000
3.1A: Cash and Cash Equivalents		
Cash on hand or on deposit	125	71
Total cash and cash equivalents	125	71

Accounting Policy

Cash is recognised at its nominal amount. Cash and cash equivalents includes:

- a) cash on hand;
- b) demand deposits in bank accounts with an original maturity of 3 months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value; and
- c) cash in special accounts.

3.1B: Trade and Other Receivables

Goods and services receivables

Goods and services	-	217
Total receivables for goods and services	-	217

Appropriations receivable

Appropriation receivable	3,758	3,439
Total appropriations receivable	3,758	3,439

Other receivables

GST receivable from the Australian Taxation Office	45	56
Total other receivables	45	56
Total trade and other receivables (net)	3,803	3,712

Credit terms for goods and services were within 30 days (2016: 30 days)

Accounting Policy

Loans and Receivables

Trade receivables, loans and other receivables that have fixed or determinable payments and that are not quoted in an active market are classified as 'loans and receivables'. Loans and receivables are measured at amortised cost using the effective interest method less impairment.

Receivables for goods and services, which have 30 day terms, are recognised at the nominal amounts due less any impairment allowance account. Collectability of debts is reviewed at the end of the reporting period. Allowances are made when collectability of the debt is no longer probable.

3.2: Non-Financial Assets

3.2A: Reconciliation of the Opening and Closing Balances of Leasehold Improvements, Plant and Equipment and Intangibles

Reconciliation of the opening and closing balances of leasehold improvements, plant and equipment and intangibles for 2017	Intangibles		
	Leasehold improvements	Plant and equipment	Computer software ¹
	\$'000	\$'000	\$'000
As at 1 July 2016			Total
Gross book value	1,246	384	534
Accumulated depreciation, amortisation and impairment	(138)	(179)	(819)
Work in progress	-	-	538
Total as at 1 July 2016	1,108	205	1,883
Additions			
Purchase	60	25	850
Reversal of write-downs	-	28	-
Revaluations recognised in other comprehensive income	40	52	-
Revaluations recognised in net cost of services	-	(4)	-
Depreciation and amortisation	(149)	(76)	(16)
Disposals			
Asset cost	-	(7)	-
Accumulated depreciation	-	6	-
Total as at 30 June 2017	1,059	229	1,404
Total as at 30 June 2017 represented by			
Gross book value	1,031	229	534
Accumulated depreciation, amortisation and impairment	-	-	(518)
Work in progress	28	-	1,388
Total as at 30 June 2017	1,059	229	1,404

¹The carrying amount of computer software included \$1,388k internally generated software.

No indicators of impairments were found for leasehold improvements, plant and equipment or computer software.

No leasehold improvements, plant and equipment or computer software are expected to be sold or disposed of within the next 12 months.

3.2: Non-Financial Assets (con't)

Revaluations of non-financial assets

All revaluations were conducted in accordance with the revaluation policy stated at Note 7.4. On 30 June 2017, an independent valuer from Australian Valuation Solutions Pty Ltd conducted the revaluations.

ACIAR has a number of contractual commitments for the acquisition of plant and equipment and intangible assets	2017	2016
	\$'000	\$'000
Within 1 year	340	774
Between 1 to 5 years	-	8
Total commitments¹	340	782

¹Commitments are GST inclusive where relevant.

Accounting Policy

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

Asset Recognition Threshold

Purchases of leasehold improvements, plant and equipment and intangibles are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than \$2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total).

The initial cost of an asset includes an estimate of the cost of dismantling and removing the item and restoring the site on which it is located.

Revaluations

Following initial recognition at cost, leasehold improvements, plant and equipment assets are carried at fair value less subsequent accumulated depreciation and accumulated impairment losses. Valuations are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets.

Revaluation adjustments are made on a class basis. Any revaluation increment is credited to equity under the heading of asset revaluation reserve except to the extent that it reverses a previous revaluation decrement of the same asset class that was previously recognised in the surplus/deficit. Revaluation decrements for a class of assets are recognised directly in the surplus/deficit except to the extent that they reverse a previous revaluation increment for that class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset and the asset restated to the revalued amount.

3.2: Non-Financial Assets (con't)

Depreciation

Depreciable leasehold improvements, property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to ACIAR using, in all cases, the straight-line method of depreciation.

Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

Depreciation rates applying to each class of depreciable asset are based on the following useful lives:

	2017	2016
Leasehold improvements	Lower of useful life or lease term	Lower of useful life or lease term
Plant and equipment	3 to 10 years	3 to 10 years

Impairment

All assets are assessed for impairment annually. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if ACIAR were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of leasehold improvements or plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

Intangibles

ACIAR's intangibles comprise software for internal use. These assets are carried at cost less accumulated amortisation and accumulated impairment losses.

Software is amortised on a straight-line basis over its anticipated useful life. The useful lives of the ACIAR's software are 3 to 10 years (2016: 3 to 10 years).

All computer software assets are assessed for indications of impairment annually.

	2017	2016
	\$'000	\$'000
3.2B: Other Non-Financial Assets		
Prepayments	247	152
Total other non-financial assets	247	152

No indicators of impairment were found for other non-financial assets.

3.3: Payables

	2017	2016
	\$'000	\$'000
<u>3.3A: Suppliers</u>		
Trade creditors and accruals	569	517
Total suppliers	569	517

All supplier payables are expected to be settled within 12 months.

Settlement was usually made within 30 days.

3.3B: Other Payables

Salaries and wages	123	107
Superannuation	7	3
Rent payable	38	53
Lease incentive	317	356
Other	68	9
Total other payables	553	528

Assets and Liabilities Administered on Behalf of Government

This section analyses assets used to conduct operations and the operating liabilities incurred as a result which ACIAR does not control but administers on behalf of the Government. Unless otherwise noted, the accounting policies adopted are consistent with those applied for Departmental reporting.

4.1: Administered - Financial Assets

	2017	2016
	\$'000	\$'000
4.1A: Cash and Cash Equivalents		
Cash in special accounts	15,402	21,144
Cash on hand or on deposit	1,481	-
Total cash and cash equivalents	16,883	21,144
4.1B: Taxation Receivables		
GST receivable from Australian Taxation Office	1,407	538
Total taxation receivables (net)	1,407	538
4.1C: Trade and Other Receivables		
Goods and services receivables	561	-
Total trade and other receivables (net)	561	-

No indicators of impairment were found for trade and other receivables.

Trade and other receivables credit terms were within 30 days (2016 : 30 days).

4.2: Administered - Payables

	2017 \$'000	2016 \$'000
4.2A: Suppliers		
Trade creditors and accruals	2,354	879
Total suppliers	<u>2,354</u>	<u>879</u>

Settlement was usually made within 30 days.

4.2B: Other Payables

GST payable to OPA	1,352	482
Salaries and wages	13	3
Total other payables	<u>1,365</u>	<u>485</u>

Funding

This section identifies ACIAR's funding structure.

5.1: Appropriations

5.1A: Annual Appropriations ('Recoverable GST exclusive')

	Annual Appropriations for 2017			Appropriation applied in 2017		Variance ² \$'000
	Annual Appropriation ¹ \$'000	Section 74 Adjustments to appropriation \$'000	Total appropriation \$'000	Total appropriation \$'000	(current and prior years) \$'000	
DEPARTMENTAL						
Ordinary annual services	9,494	1,990	11,484	11,484	11,102	382
Capital Budget ³	247	-	247	247	310	(63)
Other services	-	-	-	-	-	-
Equity	-	-	-	-	-	-
Total departmental	9,741	1,990	11,731	11,731	11,412	319
ADMINISTERED						
Ordinary annual services	93,993	-	93,993	93,993	93,956	37
Administered items	93,993	-	93,993	93,993	93,956	37
Total administered	93,993	-	93,993	93,993	93,956	37

Notes:

¹In 2016-17, there were no appropriations which have been quarantined.

²In 2016-17, the variances are not considered material.

³Departmental and Administered Capital Budgets are appropriated through Appropriation Acts (No.1,3,5). They form part of ordinary annual services, and are not separately identified in the Appropriation Acts.

5.1: Appropriations (con't)

Annual Appropriations for 2016

	Annual Appropriation ¹ \$'000	Section 74 Adjustments to appropriation \$'000	Total (current and prior years) \$'000	Variance ² \$'000
DEPARTMENTAL				
Ordinary annual services	9,657	1,875	11,532	(158)
Capital Budget ³	248	-	248	(156)
Other services				
Equity	161	-	161	131
Total departmental	10,066	1,875	11,941	(183)
ADMINISTERED				
Ordinary annual services				
Administered items	81,629	-	81,629	(1,437)
Total administered	81,629	-	81,629	(1,437)

Notes:

¹In 2015-16, there were no appropriations which have been quarantined.

²In 2015-16, the variances are not considered material.

³Departmental and Administered Capital Budgets are appropriated through Appropriation Acts (No.1,3,5). They form part of ordinary annual services, and are not separately identified in the Appropriation Acts.

5.1: Appropriations (con't)

5.1B: Unspent Annual Appropriations ('Recoverable GST exclusive')

	2017	2016
Authority	\$'000	\$'000
DEPARTMENTAL		
Appropriation Act (No 1) 2015-16	-	3,246
Appropriation Act (No 1) 2015-16 Capital Budget (DCB) Non Operating	-	62
Appropriation Act (No 4) 2015-16 Non Operating - Equity Injection	131	131
Appropriation Act (No 1) 2016-17	3,627	-
Total	3,758	3,439
ADMINISTERED		
Appropriation Act (No 1) 2014-15	-	141
Appropriation Act (No 1) 2015-16	-	608
Appropriation Act (No 1) 2016-17	625	-
Total	625	749

5.2: Special Accounts

5.2: Special Accounts (Recoverable GST exclusive)

	ACIAR Special Account ¹	
	2017 \$'000	2016 \$'000
Balance brought forward from previous period	21,144	27,851
Increases		
Other receipts	14,263	14,280
Total increases	14,263	14,280
Available for payments	35,407	42,131
Decreases		
Administered		
Payments made to suppliers	(20,005)	(20,987)
Total Administered	(20,005)	(20,987)
Total decreases	(20,005)	(20,987)
Total balance carried to the next period	15,402	21,144
Balance represented by:		
Cash held in the Official Public Account	15,402	21,144
Total balance carried to the next period	15,402	21,144

¹Appropriation: *Public Governance, Performance and Accountability Act 2013* section 80
 Establishing Instrument: *Australian Centre for International Agricultural Research Act 1982* section 33
 Purpose: For crediting amounts received from time to time to cover the discharge of costs.

5.3 Net Cash Appropriation Arrangements

	2017	2016
	\$'000	\$'000
Total comprehensive income excluding depreciation / amortisation expenses previously funded through revenue appropriations	752	518
Plus: depreciation/amortisation expenses previously funded through revenue appropriation	<u>(241)</u>	<u>(294)</u>
Total comprehensive income - as per the Statement of Comprehensive Income	<u>511</u>	<u>224</u>

People and relationships

This section describes a range of employment and post employment benefits provided to our people and our relationships with other key people.

6.1 Employee Provisions

	2017	2016
	\$'000	\$'000
6.1A: Employee Provisions		
Leave	1,882	1,934
Other	395	129
Total employee provisions	2,277	2,063

6.1B: Administered - Employee Provisions

Leave	90	14
Total employee provisions	90	14

Accounting policy

Liabilities for short-term employee benefits and termination benefits expected within twelve months of the end of reporting period are measured at their nominal amounts.

Other long-term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period, minus the fair value at the end of the reporting period of plan assets (if any), out of which the obligations are to be settled directly.

Leave

The liability for employee benefits includes provision for annual leave and long service leave.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied at the time the leave is taken, including ACIAR's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The liability for long-service leave has been determined by reference to the shorthand method. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Separation and Redundancy

Provision is made for separation and redundancy benefit payments. ACIAR recognises a provision for termination when it has developed a detailed formal plan for the terminations and has informed those employees affected that it will carry out the terminations.

Superannuation

ACIAR's staff are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), or the PSS accumulation plan (PSSap), or other superannuation funds held outside the Australian Government.

The CSS and PSS are defined benefit schemes for the Australian Government. The PSSap and other superannuation funds held outside the Australian Government are defined contribution schemes.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance's Administered schedules and notes.

ACIAR makes employer contributions to the employees' defined benefit superannuation scheme at rates determined by an actuary to be sufficient to meet the current cost to the Government. ACIAR accounts for the contributions as if they were contributions to defined contribution plans.

The liability for superannuation recognised as at 30 June represents outstanding contributions.

For other superannuation funds held outside the Australian Government, as employer, ACIAR, contributes a minimum of 9.5% of superannuable salaries.

6.2 Key Management Personnel Remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of ACIAR, directly or indirectly, including any director (whether executive or otherwise) of ACIAR. ACIAR has determined the key management personnel to be the Portfolio Minister (the Minister for the Department of Foreign Affairs and Trade) and Cabinet, Chief Executive Officer, Chief Finance Officer and other Senior Management Team members. Key management personnel remuneration is reported in the table below:

	2017	2016
	\$'000	\$'000
Short-term employee benefits	1,124	998
Post-employment benefits	175	116
Other long-term employee benefits	198	111
Total senior executive remuneration expenses¹	1,497	1,225

The total number of key management personnel that are included in the above table is 6 (2016: 5).

1. The above key management personnel remuneration excludes the remuneration and other benefits of the Portfolio Minister. The Portfolio Minister's remuneration and other benefits are set by the Remuneration Tribunal and are not paid by ACIAR.

6.3 Related Party Disclosures

Related party relationships:

ACIAR is an Australian Government controlled entity. Related parties to this entity are Key Management Personnel including the Portfolio Minister (the Minister for the Department of Foreign Affairs and Trade) and Executive, and other Australian Government entities.

Transactions with related parties:

Given the breadth of Government activities, related parties may transact with the government sector in the same capacity as ordinary citizens. Such transactions include the payment or refund of taxes, receipt of a Medicare rebate or higher education loans. These transactions have not been separately disclosed in this note.

The following transactions with related parties occurred during the financial year:

- The entity transacts with other Australian Government controlled entities consistent with normal day-to-day business operations provided under normal terms and conditions, including the payment of workers compensation and insurance premiums. These are not considered individually significant to warrant separate disclosure as related party transactions.
- Refer to Note 6.1 Employee Provisions for details on superannuation arrangements with the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), and the PSS accumulation plan (PSSap).

Managing uncertainties

This section analyses how the ACIAR manages financial risks within its operating environment.

7.1A: Contingent Assets and Liabilities

Quantifiable Contingencies

At 30 June 2017, ACIAR had no quantifiable contingencies (2016: \$Nil).

Unquantifiable Contingencies

At 30 June 2017, ACIAR had no unquantifiable contingencies (2016: \$Nil).

7.1B: Administered - Contingent Assets and Liabilities

Quantifiable Contingencies

At 30 June 2017, ACIAR had no quantifiable contingencies (2016: \$Nil).

Unquantifiable Contingencies

At 30 June 2017, ACIAR had no unquantifiable contingencies (2016: \$Nil).

Accounting Policy

Contingent liabilities and contingent assets are not recognised in the Statement of Financial Position, but are reported in the notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

7.2: Financial Instruments

	2017	2016
	\$'000	\$'000
7.2A: Categories of Financial Instruments		
Financial Assets		
Loans and receivables		
Cash and cash equivalents	125	71
Trade and other receivables	-	217
Total financial assets	125	288
Financial Liabilities		
Financial liabilities measured at amortised cost		
Trade creditors	569	517
Other	355	409
Total financial liabilities	924	926

Accounting policy

Financial assets

ACIAR holds loans and receivables.

The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Financial assets are recognised and derecognised upon trade date.

Effective Interest Method

Income is recognised on an effective interest rate basis except for financial assets that are recognised at fair value through profit or loss.

Impairment of Financial Assets

Financial assets are assessed for impairment at the end of each reporting period.

Financial assets held at cost - if there is objective evidence that an impairment loss has been incurred, the amount of the impairment loss is the difference between the carrying amount of the asset and the present value of the estimated future cash flows discounted at the current market rate for similar assets.

Financial Liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities. Financial liabilities are recognised and derecognised upon 'trade date'.

Other Financial Liabilities

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective interest basis.

Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

7.3: Administered - Financial Instruments

	2017	2016
	\$'000	\$'000
7.3A: Categories of Financial Instruments		
Financial Assets		
Loans and receivables		
Cash on hand or on deposit	16,883	21,144
Trade and other receivables	561	-
Total financial assets	17,444	21,144
Financial Liabilities		
Financial liabilities measured at amortised cost		
Trade creditors	2,354	879
Total financial liabilities	2,354	879

7.4: Fair Value Measurements

Accounting policy

ACIAR engaged the service of the Australian Valuation Solutions (AVS) to conduct a revaluation of carrying amounts for all non-financial assets at 30 June 2017. An annual assessment is undertaken to determine whether the carrying amount of the assets is materially different from the fair value. Comprehensive valuations are carried out at least once every three years with the previous valuation conducted at 30 June 2014. AVS has provided written assurance to the ACIAR that the models developed are in compliance with AASB 13.

The methods utilised to determine and substantiate the unobservable inputs are derived and evaluated as follows:

Physical Depreciation and Obsolescence - Assets that do not transact with enough frequency or transparency to develop objective opinions of value from observable market evidence have been measured utilising the Depreciated Replacement Cost approach. Under the Depreciated Replacement Cost approach the estimated cost to replace the asset is calculated and then adjusted to take into physical depreciation and obsolescence. Physical depreciation and obsolescence has been determined based on professional judgement regarding physical, economic and external obsolescence factors relevant to the asset under consideration. For all Leasehold Improvement assets, the consumed economic benefit / asset obsolescence deduction is determined based on the term of the associated lease.

ACIAR's policy is to recognise transfers into and transfers out of fair value hierarchy levels as at the end of the reporting period.

	Fair value measurements at the end of the reporting period	
	2017 \$'000	2016 \$'000
Non-financial assets¹		
Leasehold improvements	1,059	1,107
Plant and equipment	59	93

¹No non-financial assets were measured at fair value on a non-recurring basis as at 30 June 2017 (2016: Nil).

ACIAR's assets are held for operational purposes and not held for the purposes of deriving a profit. The current use of all non-financial asset's is considered their highest and best use.





Aceh womens farming group (called Seeding of Hope) in the fields. In the province of Nanggroe Aceh Darussalam (NAD) in Indonesia. photo: Paul Jones Photo: Paul Jones



Annual performance statement 2016-17



Statement of preparation

I, Colin Andrew Campbell, as the accountable authority of the Australian Centre for International Agricultural Research (ACIAR), present the 2016-17 Annual Performance Statement of ACIAR, as required under paragraph 39(1)(a) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and the *Occupational Health and Safety Act 2000*, the *Freedom of Information Act 1982* and the *Public Service Act 1999*. In my opinion, this Annual Performance Statement is based on properly maintained records, accurately reflect the performance of the entity, and comply with subsection 39(2) of the PGPA Act.

Colin Andrew Campbell
Chief Executive Officer

Purpose

ACIAR's function is prescribed in the *Australian Centre for International Agricultural Research Act 1982* (ACIAR Act) and is administered by the Minister for Foreign Affairs. Our goal is to achieve more productive and sustainable agricultural systems for the benefit of developing countries and Australia through international agricultural research and training partnerships.

ACIAR has one administered program: **International agricultural research for development for more productive and sustainable agriculture**. This program is delivered through a number of initiatives aligning closely with Australian aid policy.

Men mill a truck load of logs delivered to the Chaubas sawmill. This ACIAR funded project led by the University of Adelaide community-based enterprise at the saw mill. The saw mill employs seven local men and also enables the community to value add to their timber by milling it themselves. Recently 1 hectare of trees in the Chapani community forest were thinned and sold for 1 million rupees, that was divided between the 90 families in Chaubas. This meant each family received roughly \$150 AUD, a significant cash injection for these rural communities. The forest has also been a crucial resource for the community when rebuilding their homes after the devastating 2015 Nepal earthquake. Photo: Conor Ashleigh

As outlined in the Portfolio Budget Statement 2016-17 ACIAR's purpose appears as a single outcome:

To achieve more productive and sustainable agricultural systems for the benefit of developing countries and Australia through international agricultural research and training partnerships.

It is anticipated that this purpose will remain unchanged over the next four years, although the focus on particular geographic areas may change in response to changing needs in individual countries and regions.

The Australian Centre for International Agricultural Research (ACIAR) is Australia's specialist international agricultural research for development (R4D) agency. It contributes to Australia's aid objectives for countries of the Indo-Pacific region through bilateral and multilateral research partnerships designed to improve the productivity and profitability of their agricultural systems and the capacity of their associated innovation systems. The main intended beneficiaries of these programs are farmers, rural poor, consumers, researchers and policymakers in developing countries. Australian farmers and researchers also benefit.

These programs are directly guided by the Australian Government's development policy, ACIAR's Annual Operational Plan and Corporate Plan 2016-20. At global, regional and country levels, the programs are adjusted on an annual basis in response to changing national and international priorities, issues and needs.

The following table illustrates, by means of a sample of projects, the agencies achievement against the Focus Areas in the ACIAR corporate Plan 2016-20 and the Key Performance Indicators in the Portfolio Budget Statement.

Delivery of research projects is a major indicator of our performance. In assessing the benefits of the projects, it is important to recognise that most agricultural research has long term pathways to development impact.

Along these impact pathways, project outputs (deliverables) are adopted by next and ultimately final users, leading to improvements in the social, economic and environmental conditions. Generally, farm-level impacts are realised over many years after the completion of the project, most often concentrated in the first 5-20 years.



Program Highlights

Below is a selection of highlights from across ACIAR's portfolio that illustrate some of the impacts and achievements of our initiatives.

- Research in five African partner countries by the Sustainable Intensification of Maize and Legume Cropping Systems for Improved Food Security (SIMLESA) Program is supported by ACIAR and managed by the CIMMYT in collaboration with the Association for Strengthening Agricultural Research in East and Central Africa (ASARECA) and their NARS has led to major yield increases of maize, legumes and forages, benefits to more than 235,000 households, engagement with 40+ African and Australian companies, contributions to climate smart agricultural science, and innovations in scaling out results.
- 56 innovation platforms established by SIMLESA Program in five countries to help farmer groups and partners exchange experiences, share knowledge and learn with other farmers, extension, NGOs research and local businesses.
- The ACIAR funded Trees For Food Security project led by ICRAF reached more than 30,000 farmers in Ethiopia, Rwanda, Uganda and Burundi with new agroforestry technologies.
- In Myanmar, the ACIAR funded MYPulses project led by the University of New England is playing an important role in achieving a sustainable increase in crop productivity and improving farmer income and livelihoods in legume-based farming systems in the Central Dry Zone. Farmers have participated in trials to identify their preferred varieties of groundnut (peanut), pigeon pea, chickpea and mungbean.
- The MyRice ACIAR funded project led by IRRI has introduced and tested with farmers new varieties, agronomic practices and post harvest management to increase productivity and reduce losses on rice and rice-pulse farms in Myanmar. The project has reached more than 10,000 farmers, and farmers who implemented best management practices pre- and postharvest increased their income by about 30%.
- In Indonesia, ACIAR funded projects are focusing on the sustainable management of short rotation plantations, and dealing with strategies to improve plantation productivity and disease management. The work is helping to ensure that there will be sufficient wood resources available from plantation forests to meet the production needs of the large scale pulp and paper mills which contribute significantly to the prosperity of regional economies in Sumatra.
- ACIAR funded projects in Papua New Guinea promote equity for women, emphasise the health and welfare of them and their children, and recognises the need to increase their effectiveness in rural industries. The projects are helping women transition from subsistence farming to cash and commercial enterprises. One of these projects led by the University of the Sunshine Coast, a processing factory for galip nut in Kerevat in East New Britain, Papua New Guinea, is now operating on a semi-commercial scale, resulting in packets of processed galip nut being sold in the PNG supermarkets.
- An ACIAR funded project led by Murdoch University studying integrated water, soil and nutrient management for sustainable farming systems on Vietnam's south-central coast found in trials of drip irrigation for mango production that yields increased by 29% while saving about 90% of the water needed for irrigation.

- In the Philippines, an ACIAR team has helped vegetable farmers change the whole culture of how they work together, sell, plan and schedule. The farmers have learnt new skills in post harvest handling, grading, marketing, and safe vegetable production practices and accreditation to ensure they receive premium prices.
- An ACIAR funded project in partnership with the CIMMYT on the Eastern Gangetic Plains (Bangladesh, India and Nepal), has mapped institutions of key actors who influence food, energy and water policies – at macro and

micro levels, along with identifying implementation pathways and the possible effects on rural livelihoods within the Eastern Gangetic Plains. The project also examined existing policies in sustainable agriculture in terms of resilience, risks and rural livelihoods and barriers to adoption of appropriate Conservation Agriculture based System Intensification innovations and practices. By organising foresight workshops and findings, the project assisted key decision makers in understanding connected risks in food and water policy development and implementation.



Portfolio Budget Statement 2016-17 Key Performance Indicators Corporate Plan 2016-17 Performance Focus Areas Achieved Sample Projects

<p>ACIAR will improve agricultural competitiveness and sustainability, increase value chain efficiency and effectiveness, and alleviate regulatory impediments in relation to both domestic and international markets. These performance indicators will be measured through monitoring and evaluation of project outputs, analysis of the adoption of project outcomes and through an ongoing impact assessment programme.</p>	<p>ACIAR will monitor performance through:</p> <ul style="list-style-type: none"> • continuous project management • annual project reporting • mid-term and end-of project reviews • adoption studies • impact assessments • an annual strategy refresh. 	<p>Yes</p>	<p>221 active research projects in 2016-17 Annual project reports submitted and accepted. Mid-term and end-of project reviews undertaken. Published Impact assessment studies: IAS93: Recognising the Contribution of Capacity Building in ACIAR Bilateral Projects: Case Studies from Three IAS Reports IAS92: Knowledge systems and RAPID framework for impact assessments Published adoption studies: AS013: Adoption of ACIAR project outputs 2016</p>
<p>New technologies that enhance agricultural productivity, food sufficiency, diversification and health and nutrition;</p>	<p>Productivity and profitability of agricultural systems.</p> <ul style="list-style-type: none"> • increased incomes and employment • Innovative and diversified enterprise options • Enhanced smallholder access to markets and value chains • Improved nutritional quality and diversity of diets • Increased productivity in agricultural systems • Increased quality of agricultural products. 	<p>Yes</p>	<p>CIM/2013/009: Molecular marker technologies for faster wheat breeding in India 2 CSE/2012/077: Mechanisation and value adding for diversification of lowland cropping systems in Lao PDR and Cambodia has investigated and strengthened Mechanisation value chains and increased farm incomes. FIS/2012/101: Developing technologies for giant grouper (Epinephelus lanceolatus) aquaculture in Vietnam, the Philippines and Australia FIS/2014/062: Improving technologies for inland aquaculture in Papua New Guinea HORT/2010/089: Adapting integrated crop management technologies to commercial citrus enterprises in Bhutan and Australia HORT/2012/020: Integrated crop management to enhance vegetable profitability and food security in the southern Philippines and Australia. SMCN/2011/046: "MyRice" Diversification and intensification of rice based systems in lower Myanmar</p>

New technologies that enhance agricultural productivity, food sufficiency, diversification and health and nutrition;

ASEM/2014/052: Smallholder farmer decision-making and technology adoption in southern Lao PDR: opportunities and constraints

ASEM2012/073 Improving food security in the northern uplands of Lao PDR: identifying drivers and overcoming barriers

ASEM 2012/072 Strengthening livelihoods for food security amongst cocoa and oil palm farming communities in PNG

AH/2011/054 Improving livelihoods of small-scale livestock producers in the central dry zone through research on animal production and health in Myanmar

CSE 2013/008 SIMLESA program

The Sustainable Intensification of Maize-Legume cropping systems for food security in Eastern and Southern Africa

FSC-2013-006: Increasing irrigation water productivity in Mozambique, Tanzania and Zimbabwe through on-farm monitoring, adaptive management and Agricultural Innovation Platforms

FSC/2012/014: Improving sustainable productivity in farming systems and enhanced livelihoods through adoption of evergreen agriculture in eastern Africa' shortened as 'Trees for food security' (T4FS)

Sustainability

- Improved natural resource management
- Greater resilience and diversity of production systems

Yes

LPS/2008/048: Sustainable livestock grazing systems on Chinese temperate grasslands

AGB/2016/008: Opportunities and strategies to improve biosecurity, market access and trade for selected mango markets

FST/2014/099: Enhancing Private sector-led development of the canarium industry in PNG

FST/2012/091: Biological control of galling insect pests of eucalypt plantations in the Mekong region

FST/2014/064: Maximising productivity of Eucalyptus and Acacia plantations for growers in Indonesia and Vietnam

Portfolio Budget Statement 2016-17 Key Performance Indicators
Corporate Plan 2016-17 Performance Focus Areas

Achieved Sample Projects

New knowledge that improves agricultural productivity and management systems and enhances market opportunities;

- Increased ability to adapt to and mitigate climate change
- Strengthened plant and animal biosecurity.

AH/2012/066: Improving the production and competitiveness of Australian and Philippines pig production through better health and disease control

ASEM/2012/081: Improving market engagement, postharvest management and productivity of the Cambodian and Lao PDR vegetable industries

ASEM/2014/053: Developing cassava production and marketing systems to enhance smallholder livelihoods in Cambodia and Lao PDR

CSE 2011/077 Sustainable and Resilient Intensification of Farming Systems in the Eastern Gangetic Plains has successfully adapted and demonstrated conservation agriculture based sustainable intensification which improves water use efficiency, soil management and farming systems resilience.

FIS/2010/042: Expansion and diversification of production and management systems for sea cucumbers in the Philippines, Vietnam and northern Australia

HORT/2010/069: Enabling improved plant biosecurity practices in Cambodia, Lao PDR and Thailand

HORT/2012/003: Building a resilient mango industry in Cambodia and Australia through improved production and supply chain practices

HORT/2012/095: Tropical tree fruit research and development in the Philippines and northern Australia to increase productivity, resilience and profitability

HORT/2012/113: Integrated disease management strategies for the productive, profitable and sustainable production of high quality papaya fruit in the southern Philippines and Australia

HORT/2012/011 Understanding the responses of taro and cassava to climate change

New knowledge that improves agricultural productivity and management systems and enhances market opportunities;

SMCN/2014/044: Management of nutrients for improved profitability and sustainability of crop production in Central Myanmar
SMCN/2014/088: Integrated resource management for vegetable production in Lao PDR and Cambodia
SMCN/2014/089: Improving soil health, agricultural productivity and food security on atolls, particularly on the outer islands of Kiribati and producing approaches applicable to all atoll environments in the Pacific.

Greater capability for scientific excellence, agricultural innovation and agribusiness development among researchers, research institutions, policy makers and development partners

Capability Yes

- Increased research capacity amongst partner countries at the individual and institutional level
- Improved evidence and capacity to support policy development
- Improved social inclusion and greater empowerment of women and girls
- Enhanced linkages between research partners

LPS/2010/047 Reducing disease risks and improving food safety in smallholder pig value chains in Vietnam
AGB/2016/006: Supporting access to mango research information, communication, collaboration and capacity development
CIM-2013-005 sorghum breeding in Ethiopia (co-funded by Bill and Melinda Gates Foundation and ACIAR).
FST/2015/040: Enhancing community-based commercial forestry in Indonesia
ASEM/2010/052: Examining women's business acumen in Papua New Guinea: Working with women smallholders in horticulture
ASEM/2014/054: Identifying opportunities and constraints for rural women's engagement in small-scale agricultural enterprises in Papua New Guinea
ASEM/2014/095: Improving opportunities for economic development for women smallholders in rural Papua New Guinea
CSE/2014/086: Crop-livestock systems platform for capacity building, testing practices, commercialisation and community learning has developed the capacity to manage innovation platforms for linking farmers with research, extension and value chain businesses in Laos.
HORT/2010/090 Strengthening integrated crop management research in the Pacific islands in support of sustainable intensification of high-value crop production.

**Portfolio Budget Statement
2016-17 Key Performance
Indicators**

**Corporate Plan 2016-
17 Performance Focus
Areas**

Achieved

Sample Projects

<p>Better decision-making within research and policy institutions to support agricultural innovation and agribusiness development.</p>	<p>Institutional efficiency and effectiveness</p> <ul style="list-style-type: none"> • Effective strategic planning • Improved business practices • Effective stakeholder engagement and communications • Improved knowledge management. 	<p>Yes</p>	<p>FST/2014/065: Development of durable engineered wood products in PNG and Australia</p> <p>ADP/2016/026: Improving policies and institutions for sustainable intensification of agriculture and resilient food systems in eastern Indo-Gangetic plains</p> <p>ADP/2011/039 : Assessing farmer responses to climate change — adjustment policy options</p> <p>ASEM/2011/043: Strengthening institutional capacity, extension services and rural livelihoods in the Central Dry Zone and Ayeyarwaddy Delta regions of Myanmar</p> <p>FIS/2009/059: Developing research capacity for management of Indonesia's pelagic fisheries resources</p> <p>FIS/2014/061: Improving technical and institutional capacity to support development of mariculture based livelihoods and industry in New Ireland, Papua New Guinea</p>
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Reporting against other statutory requirements

Purchasing and tendering compliance

Purchasing

ACIAR complies with the Commonwealth Procurement Rules (CPRs) and the objectives of Commonwealth procurement. Value for money is applied as the core principle in the procurement process, consistent with Section 4 (4.4) of the CPRs.

ACIAR's Accountable Authority Instructions include details on delegations, the commitment of public moneys, management of risk and dealing with public property. These instructions have been developed in accordance with the CPRs.

Purchasing activities are subject to the provisions of the Accountable Authority Instruction (AAI 3 Procurement Process) relating to procurement. In accordance with the CPRs ACIAR publishes an Annual Procurement Plan on the AusTender website tenders.gov.au.

The majority of ACIAR's procurement activity (by expenditure) is exempt from Division 2 of the CPRs, predominantly exemption 6: procurement of research and development services, but not the procurement of inputs to research and development undertaken by the agency.

Agreements executed under exemption 6 include contracts for the conduct of research projects by Australian universities and research organisations with the collaboration of other governments and international

agencies. In relation to research project activities, ACIAR:

- publishes an Annual Operational Plan that includes areas of priority for research developed in consultation with partner countries
- disseminates this to research providers, both within and outside Australia, inviting suitable experts to submit ideas and develop these in consultation with ACIAR's Research Program Managers.

ACIAR's reporting against the Senate Order of 20 June 2001 requiring departments and agencies to list contracts entered into with a value of more than \$100,000, that were still to be concluded or had been concluded during the previous 12 months, is available on the ACIAR website and is reported separately from that outlined below.

In addition to contracts in excess of \$100,000 reported under the Senate Order referred to above, ACIAR entered into an additional 178 contracts, agreements and variations to acquire services mainly related to research program support and services. These contracts totalled \$6,404,804 in 2016-17 (2015-16: \$3,119,295). All contracts over \$10,000 are reported on the AusTender website.

No contracts were let in excess of \$10,000 that were exempted from publication in AusTender due to freedom of information exemptions. All ACIAR contracts in excess of \$100,000 contained clauses permitting the Auditor-General through the Australian National Audit Office access to Contractor premises.

Competitive tendering

ACIAR conducted three approaches to market for Requests for Tender (over \$80,000) during 2016-17.

Four responses were reported on AusTender where ACIAR had engaged whole of government arrangements for travel, IT services and other services.

Small and Medium Enterprises

ACIAR supports small business participation in the Commonwealth Government procurement market. Small and Medium Enterprises (SME) and Small Enterprise participation statistics are available on the Department of Finance's website www.finance.gov.au/procurement/statistics-on-commonwealth-purchasing-contracts/.

In supporting SME ACIAR applies:

- the Commonwealth Contracting Suite for low-risk procurements valued under \$200,000;
- Australian Industry Participation plans in whole-of-government procurement, where applicable; and
- the Small Business Engagement Principles (outlined in the government's Industry Innovation and Competitiveness Agenda), such as communicating in clear, simple language and presenting information in an accessible format.

ACIAR recognises the importance of ensuring that small businesses are paid on time. The results of the Survey of Australian Government Payments to Small Business are available on the Treasury's website.

Consultants and contracts

ACIAR engages consultants where it lacks specialist expertise or when independent research, review or assessment is required. Consultants are typically engaged to investigate or diagnose a defined issue or problem; carry out defined reviews or evaluations; or provide independent advice, information or creative solutions to assist in ACIAR's decision making.

Prior to engaging consultants, ACIAR takes into account the skills and resources required for the task, the skills available internally, and the cost-effectiveness of engaging external expertise. The decision to engage a consultant is made in accordance with the PGPA Act and related Rules including the CPRs and relevant internal policies.

During 2016-17 six new consultancy contracts were entered into involving total actual expenditure of \$239,772. In addition, one ongoing consultancy contract was active during the period, involving total actual expenditure of \$231,000.

Annual reports contain information about actual expenditure on contracts for consultancies. Information on the value of contracts and consultancies is available on the AusTender website.

Discretionary grants

ACIAR did not issue any discretionary grants during 2014-15 or have any ongoing grants from previous years.

Advertising and market research

No advertisements or market research activities were conducted in 2016-17.

Management of human resources

ACIAR's Individual Development and Performance Evaluation Scheme (IDPES) is utilised to identify and measure the effectiveness of employees capability development and performance and under the IDPES links each individuals performance and skill needs to the achievement of ACIAR's goals and organisational capability needs. ACIAR acknowledges the importance of sharing knowledge through coaching and mentoring, and under the IDPES each employee makes a commitment to enhance the knowledge and skills of other ACIAR employees.

ACIAR employed 77 employees as at 30 June 2017. Of these, 55 are employed under the *Public Service Act 1999* and are located in Canberra and 22 are at overseas missions and embassies.

ACIAR has 2 SES Band 1 employees (1 male and 1 female), employed under subsection 24(1) of the *Public Service Act 1999*.

ACIAR's CEO is not included in these statistics as he is Principal Executive Officer (PEO) Band C.

Snapshot of ACIAR staff as at 30 June 2017

Staff employed under the PS Act (52.53 FTE)	55
Median length of APS service	2 years
Median age	46
Females as % of total	58%
NESB staff as % of total	21%
Part-time staff as % of total	18%
Non-ongoing staff as % of total	47%
Employee turnover for 2016-17	27%
Employees who identify as Indigenous	0%

ACIAR four-year perspective

Staff employed under the *Public Service Act 1999*

	2013-2014	2014-2015	2015-2016	2016-2017
Staff at 30 June	51	51	55	55
Staff (FTE)	48.5	49.4	53.38	52.53
Female (%)	61%	54%	56%	58%
Base salaries	\$5,772,821	\$5,584,196	\$5,927,949	\$5,950,122
Cessations	14	13	15	15
Staff turnover	27%	25%	27%	27%
Part-time	20%	16%	23%	18%
Non-ongoing	39%	41%	40%	47%
Learning and development	\$95,540	\$66,656	\$55,725	\$95,060

Overseas staff

	2013-2014	2014-2015	2015-2016	2016-2017
Staff (FTE)	18.13	17.8	23	22
Base salaries	\$707,292	\$734,355	\$830,317	\$859,767
Learning and development	\$2,113	\$1,325	\$12,889	\$5,133

Performance management

The Australian Centre for International Agricultural Research (ACIAR) IDPES encourages high achievement by improving individual performance through development, evaluation and planning to meet individual and ACIAR needs.

The scheme operates on a three-point rating scale and employees who are rated as 'meets expectations' or 'exceeds expectations' in the annual performance assessment receive an increment, providing they are not already on top of a salary range. In the cycle concluded in June 2017 there were 42 completed assessments, with 42 rated as 'meets expectations' or higher. Of these, eight were advanced one salary point.

Organisation bonuses

A bonus of \$2,000 (reduced to \$1,000 where service is less than nine months and greater than six) is granted to employees rated as 'meets expectations' or higher in the performance cycle and who were still employed by ACIAR on 30 June 2017, in recognition of ACIAR's achievements against the 2016-17 Annual Operational Plan. No bonus is paid to employees with less than six months service. Part-time employees received a pro-rata payment based on hours worked while full-time employees having served between over six months but less than nine. 42 employees received a performance bonus with payments totalling \$77,867.

APS classification received Organisational Bonus	Number of Employees by classification	Part-timer received bonus	Full-time received bonus	TOTAL Employees by classification who received bonus	Aggregate Bonus for each classification
SESBand1	2	0	1	1	2000
EL 2RPM	14	0	14	14	28000
EL2	3	0	1	1	2000
EL 1	5	0	5	5	9000
APS 6	6	1	2	3	5600
APS 5	13	2	8	10	18467
APS 4	12	6	2	8	12800

Learning and development

ACIAR spent \$95,060 on training and development for its Canberra-based employees in 2016-17. This expenditure does not include attendance of Research Program Managers at professional conferences and seminars in Australia and overseas. ACIAR also offers generous assistance for formal study and in 2016-17 two employees received study assistance.

31 December 2015. Staff received a 2% salary increase on commencement with an expected 2% salary increase twelve months from commencement and a further 2% salary increase twenty four months from commencement. Three Individual Flexibility Arrangements (IFA) were in place for 2016-2017.

Enterprise Agreement

The ACIAR Enterprise Agreement 2015-2018 came into effect on

Social inclusion strategy

The Australian Government's Social Inclusion Statement, *A Stronger, Fairer Australia*, sets out the Government's plan for achieving greater social inclusion and seeks to ensure that all Australians have the capabilities, opportunities,

responsibilities and resources to learn, work, connect with others and have a say.

ACIAR fosters an environment of inclusiveness through several program areas such as supporting workplace diversity, workplace health and safety, learning and development and adherence to mechanisms such as the Commonwealth *Disability Strategy and the Carer Recognition Act 2010*.

Carer Recognition Act compliance

ACIAR's responsibility under the *Carer Recognition Act 2010* ensures its employees have an awareness and understanding of the Statement for Australia's Carers, by providing access to information about self-identification as a carer through our staff intranet.

Human resources policies are developed having due regard to the Statement for Australia's Carers, and workplace arrangements ensure flexibility for carers. ACIAR also collects statistics on the incidence of employees who are carers. In 2016-17 no staff members were identified as formal carers.

Workplace diversity

A culture of professional behaviour is promoted by ACIAR and we encourage relationships based on respect and appreciation of each others' differences. Achieving an appropriate balance of work, family and cultural responsibilities is encouraged and supported through ACIAR's Workplace Diversity Program, as is the importance of all employees.

ACIAR continued support for and participation in APS-wide initiatives to promote workplace diversity. We promote Indigenous training and development opportunities and encourage people with disabilities to apply for ACIAR employment opportunities.

Disability Reporting Mechanism

'Since 1994, non-corporate Commonwealth entities have reported on their performance as policy adviser, purchaser, employer, regulator and provider under the Commonwealth Disability Strategy. In 2007-08, reporting on the employer role was transferred to the Australian Public Service Commission's State of the Service reports and the *APS Statistical Bulletin*. These reports are available at www.apsc.gov.au. From 2010-11, entities have no longer been required to report on these functions.

The Commonwealth Disability Strategy has been overtaken by the National Disability Strategy 2010-2020, which sets out a 10-year national policy framework to improve the lives of people with disability, promote participation and create a more inclusive society. A high-level, two-yearly report will track progress against each of the six outcome areas of the strategy and present a picture of how people with disability are faring. The first of these progress reports was published in 2014, and can be found at www.dss.gov.au.

Work health and safety

A healthy lifestyle is actively encouraged and promoted by ACIAR, through providing access to non-salary benefits such as annual health assessments, subsidies for healthy lifestyle initiatives, annual influenza injections and pre-travel assessments for overseas travellers by the Travel Doctor.

Access to an Employee Assistance Program is also provided. This program provides free professional counselling and career-planning services to ACIAR employees and their families. The service also includes well-being seminars, mediation and conflict resolution services, and assistance to line managers.

Ergonomic assessments for new employees and employees who experience discomfort at their workstation are carried out by a qualified workplace assessor. Modifications are made to work practices and work areas as required, resulting in less work-related physical ailments and increased productivity.

In 2016-17, there were no accidents or dangerous occurrences giving rise to the issue of any formal notices or directions under the *Work Health and Safety Act 2011*.

Compliance with Freedom of Information Publishing Scheme

Subject to the *Freedom of Information Act 1982* (FOI Act) ACIAR and other Australian Government agencies are required to publish information to the public as part of the Information Publication Scheme (IPS). This requirement is in Part II of the FOI Act and has replaced the former requirement to publish a section 8 statement in an annual report. A plan showing what information ACIAR publishes in accordance with the IPS requirements is available on the website at <aciar.gov.au/IPS>

Ecologically Sustainable development and environmental performance

This report comprises the Centre's report on its ecologically sustainable development and environmental performance, provided in accordance

with Section 516A of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Project related environmental impacts

ACIAR's project development guidelines include triggers to ensure that any projects developed that may result in significant environmental impacts follow the requirements under the EPBC Act. When partner organisations (proponents) are developing projects, the commissioned (lead) agency must consider all relevant obligations under the EPBC Act.

Should any potential significant environmental impacts be identified by ACIAR or project proponents, obligation rests with both ACIAR and the proponents to ensure that all relevant EPBC obligations have been appropriately considered. Reference to the EPBC Administrative Guidelines on Significance (EPBC Guidelines) is included in project development processes. If a proposal may have significant environmental impact, the Research Program Manager (RPM) and project proponent must use a risk-assessment and management-based approach to assess the potential risks and may have informal consultation with the EPBC Referrals Unit of the Department of the Environment and Energy. ACIAR requires the proponent to submit a letter indicating that it agrees with the findings of the risk assessment. Under the EPBC Guidelines, the ACIAR CEO is required to decide whether or not with the proposed risk-management approaches there is still a significant risk of environmental impact sufficient to warrant a formal referral of the matter to the Department of the Environment and Energy.

For any project for which potential significant environmental risks were identified during the project development phase, ACIAR includes a standard condition that the commissioned organisation must annually report to ACIAR on its implementation of the stated environmental risk-management procedures and/or any special conditions imposed by the relevant Minister in the event that the project had been formally referred to the Department of the Environment and Energy.

During project development, ACIAR also considers whether or not a project has any relevance to other international arrangements to which Australia is a signatory. This includes obligations under international arrangements to which Australia is a signatory, specifically for the use of biological resources, being met and properly documented. Letters of approval relating to the use of experimental animals and/or genetically modified organisms must be provided, along with five letters confirming compliance with regulations relating to germplasm transfer, quarantine requirements, biosafety etc.

How the outcomes of the organisation contribute to ecologically sustainable development (ESD)

ACIAR's governing legislation outlines the mandate and functions of the Centre under Section 5, including the formulation of policies to deliver against this mandate. Agricultural research is linked explicitly with sustainability. The link is maintained and implemented in the key planning document—the Annual Operational Plan (AOP). At the operational level project development, evaluation and monitoring deliver on this mandate.

Effect of the organisation's activities on the environment

Projects often have strong environmental benefits. These are spread throughout the Centre's mandated region of operations, in developing countries of the Indo-Pacific. ACIAR projects address problems in developing countries that may also yield results applicable to environmental management in Australia. Such benefits are either a secondary objective or are the result of research having application within Australian settings.

- Agricultural Systems Management and Development Policy—mitigation and adaptation against climate change; policy and institutional frameworks and their impacts on water management
- Crop Improvement and Management—introducing crop management practices in concert with higher-yielding varieties in farming systems, deploying alternative cropping methods; developing control and management strategies for weeds and pests threatening crop species; collection and conservation of unique crop and legume germplasm
- Fisheries—management of cross-country fisheries resources, sustainable management of marine species, including inshore fisheries; and research to develop and implement sustainable aquaculture technologies to minimise wild capture and harvest in ACIAR's mandate region
- Forestry—enhancements of breeding technologies for Australian species, such as eucalypts and acacias, widely used for forestry plantations in Australia and parts of Asia; improving disease- and pest-surveillance methodologies and management; germplasm utilisation and management

- Land and Water Resources—developing water allocation and management strategies; investigating new approaches to managing and alleviating the affects of salinity and soil acidification; assessing land suitability, crop diversification and constraints; minimising pollutants in waterways; developing and promoting new cropping systems for conservation agriculture.

Measures being taken by the organisation to minimise the impact of its activities on the environment

ACIAR’s size and resourcing has resulted in the choice to adopt an informal system for managing environmental impacts, built upon the EMS framework circulated to government departments and agencies. The framework has been used to ensure that environmental performance within ACIAR’s Canberra premises is as effective as possible.

ACIAR is the sole building tenant, responsible for the management of all infrastructure and implementation of policies to deliver sound environmental management at its Canberra premises. Like all government agencies and departments, daily operations generate waste and consume electricity, water and materials.

Mechanisms for reviewing and increasing the effectiveness of these measure

Formal reporting guidelines on environmental management and associated activities are used for an internal review of environment management processes. These include:

- Sustainable procurement guide (2013)
- Energy Use in Commonwealth Operations (annual publication)
- The Australian National Audit Office (ANAO) Green Office Procurement and Sustainable Office Management (2008).

Resource	Usage	
	2016-17	2015-16
Energy (kilowatt hours)	278 550	232 091
Water (kilolitres)	1220	1179





Appendices

Farming couple Indira Kumari Lamichhne and Bharat Prasad Lamichhne pick weeds from their rice crop at home. When interviewed Bharat mentioned that at one stage in the past, he lost 80% of his wheat crop to yellow rust. One of the aims of this ACIAR support project is to identify the host for the yellow rust pathogen so the plant can be eradicated and hopefully stop the disease. Yellow rust has plagued many wheat crops in Nepal and neighbouring countries, in some instances it has devastated as much as 90% of yields. Photo: Conor Ashleigh



Appendix 1: Basis of authority

ACIAR's governing legislation is the *Australian Centre for International Agricultural Research Act 1982* (the Act), proclaimed on 3 June 1982 as Act No. 9 of 1982. The Act was described as 'an Act to encourage research for the purpose of identifying, or finding solutions to, agricultural problems of developing countries'.

The Act was amended in 2007, coming into effect from 1 July 2007. The principal purpose of the amendments introduced in the *Australian Centre for International Agricultural Amendment Act 2007* (the Amendment Act), was to change the governance arrangements of ACIAR. This replaced the Board of Management with an executive management structure involving a CEO and a seven-member Commission. The functions of the CEO are set out at Section 5 of the legislation, below.

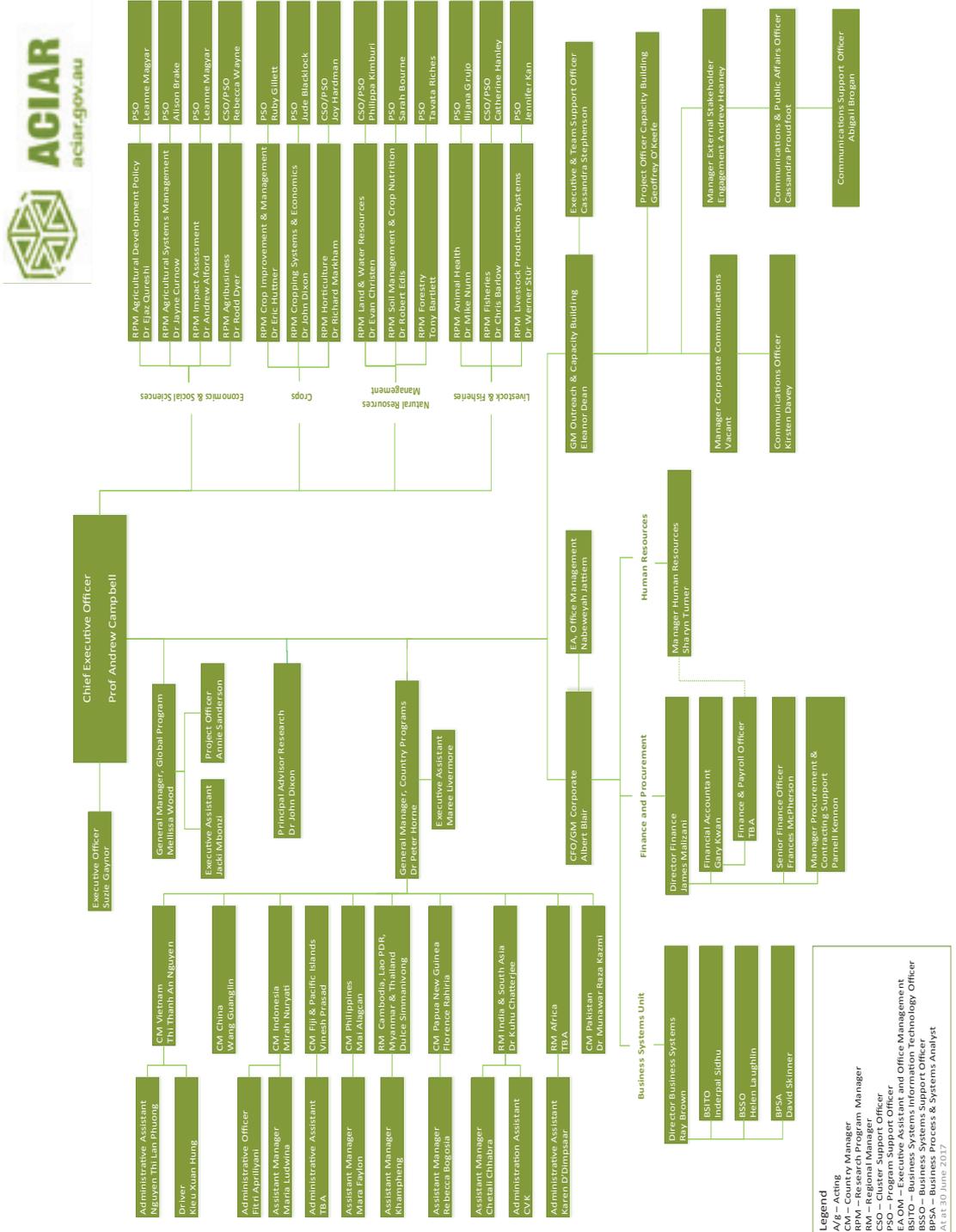
5. Functions of the CEO

1. The functions of the CEO are:
 - a. to formulate programs and policies with respect to agricultural research for either or both of the following purposes:
 - i. identifying agricultural problems of developing countries
 - ii. finding solutions to agricultural problems of developing countries
 - b. to commission agricultural research by persons or institutions (whether the research is to be conducted in Australia or overseas) in accordance with such programs and policies
 - c. to communicate to persons and institutions the results of such agricultural research
 - d. to establish and fund training schemes related to the research programs referred to in paragraph (a)
 - e. to conduct and fund development activities related to those research programs
 - f. to fund international agricultural research centres.
2. The CEO must, in performing his or her functions with respect to agricultural research, have regard to the need for persons or institutions in developing countries to share in that research.
3. Nothing in this section authorises, or permits, the CEO to carry out research on behalf of the Commonwealth.
4. The CEO must, in performing his or her functions, comply with any directions given to the CEO under section 5A.

5A Power of Minister to give directions

1. The Minister may, by writing, give directions to the CEO with respect to the performance of the CEO's functions under this Act (including in relation to the appropriate strategic direction the CEO should take in performing his or her functions).
Note: A direction under this section is included in the annual report: see section 39.
2. A direction given under subsection (1) is not a legislative instrument.

Appendix 2: Organisation structure



Appendix 3: Corporate planning and resources

Agency Resource Statement

	Actual resources available 2016-17 \$'000s	Resources utilised 2016-17 \$'000s	Remaining balance 30 June 2017 \$'000s
Departmental			
Prior year Appropriations available	3,246	3,246	-
2016-17 Appropriation	9,494	5,867	3,627
Own source income	1,991	1,991	-
Received free of charge	30	30	-
Prior year Departmental Capital Budget available	62	62	-
2016-17 Departmental Capital Budget	247	247	-
Prior year Equity Injection available	131	-	131
Administered			
Prior year Appropriations available	608	608	-
2015-16 Appropriation	93,993	93,368	625
Special Account			
Opening balance	21,144		
Receipts	14,263		
Payments		20,005	
Closing balance			15,402
Total resources	145,209	125,424	19,785

Appendix 4: Active research projects 2016–17

Bilateral research projects

Listed projects may be active in more than one country. Some projects have components in countries not formally listed as ACIAR partners in the 'Year in review' section. In these projects, results are being extended beyond partner countries to those countries that would benefit from the work through project networks.

Project Id	Title	Project Type	Status Update
ADP/2010/091	Enabling agricultural policies for benefitting smallholders in dairy, citrus and mango industries in Pakistan	Project	Concluded 30/09/2016
ADP/2011/039	Assessing farmer responses to climate change - adjustment policy options	Project	Concluded 31/12/2016
ADP/2012/107	Strengthening incentives for improved grassland management in China and Mongolia	Project	Active 31/12/2019
ADP/2014/043	Policy and institutional reforms to improve horticultural markets in Pakistan	Project	Active 15/06/2019
ADP/2014/045	Efficient participatory irrigation institutions to support productive and sustainable agriculture in south Asia	Project	Active 30/06/2019
ADP/2014/047	Improving policies for forest plantations to balance smallholder, industry and environmental needs in Lao PDR and Vietnam	Project	Active 31/12/2018
ADP/2015/032	Climatic stress, structural change and farm and non-farm enterprise uptake by farmers in India and Bangladesh	Small R&D Activity	Concluded 30/11/2016
ADP/2016/003	Linkages and impacts of cross-border informal trade in agricultural inputs in eastern south Asia	Small R&D Activity	Active 30/09/2017
ADP/2016/026	Improving policies and institutions for sustainable intensification of agriculture and resilient food systems in eastern Indo-Gangetic plains	Small R&D Activity	Active 15/08/2017
ADP/2016/028	Creating wealth in smallholders farms through efficient credit systems in Pakistan	Small R&D Activity	Active 30/06/2018
ADP/2016/043	Economic analysis of policies affecting pulses in Pakistan	Small R&D Activity	Active 31/10/2017
AGB/2009/053	Improved market engagement for counter-seasonal vegetable producers in north-western Vietnam	Project	Concluded 31/12/2016
AGB/2009/060	Improving market integration for high value fruit and vegetable production systems in Indonesia	Project	Active 31/08/2018
AGB/2010/099	Evaluating smallholder livelihoods and sustainability in Indonesian coffee and cocoa value chains	Project	Active 31/12/2019
AGB/2012/059	Towards more profitable and sustainable vegetable production systems in north-western Vietnam	Project	Active 31/08/2018

Project Id	Title	Project Type	Status Update
AGB/2012/060	Improving smallholder incomes in the north-western highlands of Vietnam by increasing access and competitiveness in regional temperate and subtropical fruit markets	Project	Active 30/06/2018
AGB/2012/078	Developing value-chain linkages to enhance the adoption of profitable and sustainable cassava production systems in Vietnam and Indonesia	Project	Active 31/12/2019
AGB/2012/099	Improving milk supply, competitiveness and livelihoods in smallholder dairy chains in Indonesia	Project	Active 31/05/2020
AGB/2012/109	Developing vegetable and fruit value chains and integrating them with community development in the southern Philippines	Project	Active 31/07/2018
AGB/2014/035	Improving livelihoods in Myanmar and Vietnam through vegetable value chains	Project	Active 28/02/2021
AGB/2014/057	Pacific Agribusiness Research in Development Initiative Phase 2 (PARDI 2)	Project	Active 31/05/2021
AGB/2015/014	Evaluation of livelihood impacts from agribusiness development opportunities in the Pacific (PARDI II)	Small R&D Activity	Active 31/12/2017
AGB/2015/015	Analysis of mango markets, trade and strategic research issues in the Asia-Pacific	Small R&D Activity	Active 31/07/2017
AGB/2015/029	A strategic approach to pro-poor consumer research in the Mekong region - extended analyses	Small R&D Activity	Active 31/07/2017
AGB/2015/030	Developing a sustainable business model for upscaling the Agribusiness master class	Small R&D Activity	Active 31/12/2017
AGB/2016/006	Supporting access to mango research information, communication, collaboration and capacity development	Small R&D Activity	Active 30/06/2019
AGB/2016/007	Challenges and opportunities for meeting requirements of China mango markets	Small R&D Activity	Active 30/06/2019
AGB/2016/008	Opportunities and strategies to improve biosecurity, market access and trade for selected mango markets	Small R&D Activity	Active 30/06/2019
AGB/2016/009	Enhancing mango fruit quality in Asian mango chains	Small R&D Activity	Active 30/06/2019
AGB/2016/031	Developing a Trade Model and information network for cattle and beef trade sector of SE Asia and China	Small R&D Activity	Active 30/09/2017
AGB/2016/033	Evaluating options for reducing agricultural transport costs and improving market access for smallholders in South East Asia	Small R&D Activity	Active 01/12/2017
AGB/2016/053	Impact assessment of cocoa interventions in Vanuatu	Small R&D Activity	Active 31/08/2017
AGB/2017/008	Integrating gender and social inclusion into agricultural value chain research in Vietnam	Small R&D Activity	Active 31/12/2018
AH/2010/046	Domestic and international market development for high-value cattle and beef in South-East Cambodia	Project	Concluded 31/08/2016
AH/2011/014	Village-based biosecurity for livestock disease risk management in Cambodia	Project	Active 31/05/2018

Project Id	Title	Project Type	Status Update
AH/2011/054	Improving livelihoods of small-scale livestock producers in the central dry zone through research on animal production and health in Myanmar	Project	Active 24/12/2017
AH/2012/066	Improving the production and competitiveness of Australian and Philippines pig production through better health and disease control	Project	Active 31/12/2018
AH/2012/067	Enhancing transboundary livestock disease risk management in Lao PDR	Project	Active 31/07/2019
AH/2012/068	Development of a market-driven biosecure beef production system in Lao PDR	Project	Active 31/07/2019
AH/2016/020	Improving dairy cattle health and production in Vietnam	Small R&D Activity	Active 30/10/2017
ASEM/2010/049	Market-focused integrated crop and livestock enterprises for north-western Cambodia	Project	Concluded 31/12/2016
ASEM/2010/050	Improving watershed rehabilitation outcomes in the Philippines using a systems approach	Project	Concluded 31/03/2017
ASEM/2010/052	Examining women's business acumen in Papua New Guinea: Working with women smallholders in horticulture	Project	Concluded 31/12/2016
ASEM/2011/043	Strengthening institutional capacity, extension services and rural livelihoods in the Central Dry Zone and Ayeyarwaddy Delta regions of Myanmar	Project	Active 30/06/2018
ASEM/2011/075	Enhancing district delivery and management of agriculture extension in Lao PDR	Project	Concluded 31/12/2016
ASEM/2012/063	Improving the methods and impacts of agricultural extension in Western Mindanao, Philippines	Project	Active 31/03/2019
ASEM/2012/072	Strengthening livelihoods for food security amongst cocoa and oil palm farming communities in Papua New Guinea	Project	Active 30/06/2018
ASEM/2012/073	Improving food security in the northern uplands of Lao PDR: identifying drivers and overcoming barriers	Project	Active 22/03/2020
ASEM/2012/081	Improving market engagement, postharvest management and productivity of the Cambodian and Lao PDR vegetable industries	Project	Active 31/03/2019
ASEM/2012/084	Promoting traditional vegetable production and consumption for improved livelihoods in Papua New Guinea and northern Australia	Project	Active 30/06/2018
ASEM/2013/003	Uptake of agricultural technologies amongst farmers in Battambang and Pailin provinces, Cambodia	Project	Active 31/12/2020
ASEM/2014/007	Lao PDR Agricultural Research Fund 3	Small Project	Active 28/02/2018
ASEM/2014/051	Action ready climate knowledge to improve disaster risk management for small holder farmers in the Philippines	Project	Active 30/06/2020
ASEM/2014/052	Smallholder farmer decision-making and technology adoption in southern Lao PDR: opportunities and constraints	Project	Active 31/12/2019

Project Id	Title	Project Type	Status Update
ASEM/2014/053	Developing cassava production and marketing systems to enhance smallholder livelihoods in Cambodia, Lao PDR and Myanmar	Project	Active 31/12/2019
ASEM/2014/054	Identifying opportunities and constraints for rural women's engagement in small-scale agricultural enterprises in Papua New Guinea	Project	Active 30/06/2020
ASEM/2014/095	Improving opportunities for economic development for women smallholders in rural Papua New Guinea	Project	Active 18/06/2018
ASEM/2014/102	Critical factors for self-sustaining farmer organisations in northern Lao PDR	Small R&D Activity	Concluded 31/08/2016
ASEM/2016/030	Using the Environmental Livelihoods Security (ELS) framework for developing climate-smart landscapes: a preliminary investigation for informing agricultural policy in the South Pacific	Small R&D Activity	Active 31/08/2017
ASEM/2016/041	Engaging agricultural communities in climate resilient food production adaptation: a Papua New Guinea highlands case study	Small R&D Activity	Active 30/09/2017
ASEM/2016/047	Agricultural extension approaches	Small R&D Activity	Active 31/12/2017
CIM/2009/038	Introduction of short duration pulses into rice-based cropping systems in western Bangladesh	Project	Concluded 30/09/2016
CIM/2009/049	Seeds of Life 3	Project	Concluded 30/09/2016
CIM/2012/086	Developing a foundation for the long-term management of basal stem rot of oil palm in Papua New Guinea and Solomon Islands	Project	Active 30/06/2021
CIM/2013/005	A targeted approach to sorghum improvement in Ethiopia	Project	Active 30/06/2018
CIM/2013/009	Molecular marker technologies for faster wheat breeding in India 2	Project	Active 31/10/2017
CIM/2013/011	Indo-Australian project on root and establishment traits for greater water use efficiency in wheat 2	Project	Active 30/06/2018
CIM/2014/076	Incorporating salt-tolerant wheat and pulses into smallholder farming systems in southern Bangladesh	Project	Active 29/02/2020
CIM/2014/081	Mitigating the effects of stripe rust on wheat production in South Asia and eastern Africa	Project	Active 30/06/2020
CIM/2014/082	Agricultural innovations for communities for intensified and sustainable farming systems in Timor-Leste (AI-Com)	Project	Active 30/09/2021
CIM/2015/009	Protecting stored grains against pests	Small R&D Activity	Concluded 30/06/2017
CIM/2015/041	Increasing productivity and profitability of pulse production in cereal based cropping systems in Pakistan	Project	Active 30/06/2021
CIM/2016/039	Insect tolerant chickpea for Bangladesh	Small R&D Activity	Active 01/10/2018
CSE/2012/077	Mechanisation and value adding for diversification of lowland cropping systems in Lao PDR and Cambodia	Project	Active 30/04/2018

Project Id	Title	Project Type	Status Update
CSE/2014/086	Crop-livestock systems platform for capacity building, testing practices, commercialisation and community learning	Project	Concluded 30/04/2017
CSE/2015/012	Using ICTs to enhance adoption of new agricultural technologies and innovations	Small R&D Activity	Concluded 15/08/2016
CSE/2015/044	Sustainable intensification and diversification in the lowland rice system in Northwest Cambodia	Project	Active 30/10/2021
CSE/2016/023	Competitiveness of Cambodian Farming Systems: characterization of farming systems to inform research and policy	Small R&D Activity	Active 15/09/2017
FIS/2009/057	Pearl industry development in the western Pacific	Project	Concluded 30/06/2017
FIS/2009/059	Developing research capacity for management of Indonesia's pelagic fisheries resources	Project	Active 31/12/2017
FIS/2010/042	Expansion and diversification of production and management systems for sea cucumbers in the Philippines, Vietnam and northern Australia	Project	Active 31/12/2017
FIS/2010/054	Mariculture development in New Ireland, Papua New Guinea	Project	Concluded 30/09/2016
FIS/2010/055	Building research and project management skills in fisheries staff in Papua New Guinea	Project	Active 31/12/2017
FIS/2010/096	Evaluating the impacts of improving postharvest processing of sea cucumbers in the western Pacific region	Project	Active 30/11/2017
FIS/2010/098	Diversification of seaweed industries in PICs	Project	Active 30/06/2018
FIS/2010/100	Enhancing bivalve production in northern Vietnam and Australia	Project	Active 31/12/2018
FIS/2010/101	Improving fish health management and production protocols in marine finfish aquaculture in Indonesia and Australia	Project	Concluded 30/06/2017
FIS/2011/013	Culture-based fisheries development in Lao PDR and Cambodia	Project	Concluded 30/06/2017
FIS/2012/076	Improving community-based aquaculture in Fiji, Kiribati, Samoa and Vanuatu	Project	Active 30/06/2018
FIS/2012/100	Improving the design of irrigation infrastructure to increase fisheries production in floodplain wetlands of the Lower Mekong and Murray-Darling Basins	Project	Active 30/09/2018
FIS/2012/101	Developing technologies for giant grouper (<i>Epinephelus lanceolatus</i>) aquaculture in Vietnam, the Philippines and Australia	Project	Active 30/09/2019
FIS/2012/102	Sustainable management of the shark resources of Papua New Guinea: socioeconomic and biological characteristics of the fishery	Project	Active 31/10/2017
FIS/2013/015	Sustainable management of sport fisheries for communities in Papua New Guinea	Medium Project	Active 30/08/2017
FIS/2014/018	Understanding pearl oyster mortality in Fiji	Small R&D Activity	Concluded 31/03/2017
FIS/2014/041	Quantifying biophysical and community impacts of improved fish passage in Lao PDR	Project	Active 31/12/2020
FIS/2014/059	Expanding spiny lobster aquaculture in Indonesia	Project	Active 30/06/2019

Project Id	Title	Project Type	Status Update
FIS/2014/060	Developing pearl industry-based livelihoods in the western Pacific	Project	Active 31/08/2020
FIS/2014/061	Improving technical and institutional capacity to support development of mariculture based livelihoods and industry in New Ireland, Papua New Guinea	Project	Active 28/02/2020
FIS/2014/062	Improving technologies for inland aquaculture in Papua New Guinea	Project	Active 30/06/2019
FIS/2014/063	Restoring damaged coral reefs using mass coral larval reseedling	Project	Active 30/06/2020
FIS/2014/103	Pearl livelihood development in Fiji	Small R&D Activity	Concluded 30/12/2016
FIS/2015/006	Application of fish passage design principles to enhance sustainability of inland fishery resources in the Southeast Asian region	Small R&D Activity	Active 30/12/2017
FIS/2015/028	Investigating the long-line nursery system for giant clam (<i>Tridacna</i> sp) farming in Savusavu Bay, Fiji	Small R&D Activity	Concluded 30/09/2016
FIS/2015/038	Improving seaweed production and processing opportunities in Indonesia	Project	Active 31/07/2020
FIS/2016/005	Pearl industry research infrastructure recovery post- cyclone Winston, Fiji	Small R&D Activity	Concluded 30/06/2017
FIS/2016/048	Developing a bilingual web-based fish identification tool for field use in Indonesia	Small R&D Activity	Active 30/06/2018
FIS/2016/049	Description and risk assessment of the bycatch communities in the Gulf of Papua prawn fishery	Small R&D Activity	Active 31/08/2018
FIS/2016/052	Developing legal value chains and alternative markets for western province fisheries in Papua New Guinea	Small R&D Activity	Active 30/06/2018
FSC/2012/023	Strengthening food and nutrition security through family poultry and crop integration in Tanzania and Zambia	Project	Active 31/01/2019
FSC/2013/006	Increasing irrigation water productivity in Mozambique, Tanzania and Zimbabwe through on-farm monitoring, adaptive management and agricultural innovation platforms	Project	Concluded 14/06/2017
FSC/2013/019	Demand led plant variety design for emerging markets in Africa	Medium Project	Active 31/03/2018
FST/2009/016	Improving the Papua New Guinea balsa value chain to enhance smallholder livelihoods	Project	Concluded 31/08/2016
FST/2010/012	Enhancing key elements of the value chains for plantation-grown wood in Lao PDR	Project	Concluded 31/12/2016
FST/2011/003	Effective implementation of payments for environmental services in Lao PDR	Project	Active 10/08/2017
FST/2011/057	Enhancing the implementation of community forestry approaches in Papua New Guinea	Project	Concluded 30/06/2017
FST/2011/076	Enhancing livelihoods and food security from agroforestry and community forestry in Nepal	Project	Active 31/03/2018
FST/2012/040	Enhancing smallholder benefits from reduced emissions from deforestation and forest degradation in Indonesia	Project	Active 30/04/2018

Project Id	Title	Project Type	Status Update
FST/2012/041	Teak-based agroforestry systems to enhance and diversify smallholder livelihoods in Luang Prabang province of Lao PDR	Project	Active 31/12/2017
FST/2012/042	Enhancing management and processing systems for value-adding in plantation-grown whitewood in Vanuatu	Project	Concluded 30/06/2017
FST/2012/043	Enhancing economic opportunities offered by community and smallholder forestry in Solomon Islands	Project	Active 13/12/2017
FST/2012/091	Biological control of galling insect pests of eucalypt plantations in the Mekong region	Project	Active 30/06/2018
FST/2012/092	Enhancing value added wood processing in Papua New Guinea	Project	Active 31/12/2018
FST/2014/064	Maximising productivity of Eucalyptus and Acacia plantations for growers in Indonesia and Vietnam	Project	Active 30/06/2019
FST/2014/065	Development of durable engineered wood products in Papua New Guinea and Australia	Project	Active 31/12/2018
FST/2014/066	Improving returns from community teak plantings in Solomon Islands	Project	Active 30/06/2019
FST/2014/067	Enhancing value added products and environmental benefits from agroforestry systems in Papua New Guinea and the Pacific	Project	Active 31/07/2019
FST/2014/068	Management strategies for Acacia plantation diseases in Indonesia and Vietnam	Project	Active 30/06/2019
FST/2014/069	Improvement and management of teak and sandalwood in Papua New Guinea and Australia	Project	Active 30/06/2019
FST/2014/099	Enhancing private sector-led development of the Canarium nut industry in Papua New Guinea	Project	Active 30/06/2018
FST/2015/040	Enhancing community-based commercial forestry in Indonesia	Project	Active 31/12/2020
FST/2016/013	Life history, identity and damage assessment of Galip weevil	Small R&D Activity	Concluded 30/06/2017
FST/2016/024	Developing sandalwood community and smallholder plantation sector in Yogyakarta	Small R&D Activity	Active 30/06/2018
FST/2016/025	Developing DNA-based Chain of Custody Systems for Legally-Sourced Teak	Small R&D Activity	Active 30/04/2018
FST/2016/054	Enhance the formation of heartwood in sandalwood in Vanuatu	Small R&D Activity	Active 31/03/2018
FST/2016/151	Advancing enhanced wood manufacturing industries in Laos and Australia	Project	Active 30/09/2021
FST/2016/154	Enhancing returns from high-value agroforestry species in Vanuatu	Project	Active 30/06/2021
GMCP/2016/004	At-Scale Evaluation of Digital Data Collection Apps (DDCAs) in ACIAR projects - Mobile Acquired Data phase 2 (MAD 2)	Small R&D Activity	Active 01/09/2017
GMCP/2016/042	Mobile Acquired Data phase 3 (MAD 3) - Evaluation of staged adoption and implementation strategy	Small R&D Activity	Active 01/09/2017
GMCP/2016/044	Mobile Acquired Data for the Transformative Agriculture and Enterprise Development Program - MAD 4 TADEP	Small R&D Activity	Active 01/09/2017

Project Id	Title	Project Type	Status Update
GMCP/2017/001	Scoping smallholder beef research priorities - Indonesia	Small R&D Activity	Concluded 30/06/2017
GP/2017/007	School Food Revolution: Evaluating opportunities for further research	Small R&D Activity	Active 31/05/2018
HORT/2007/118	Developing cleaner export pathways for Pacific agriculture commodities	Project	Concluded 30/09/2016
HORT/2010/065	Integrated crop management strategies for root and tuber crops: strengthening national and regional capacities in Papua New Guinea, Fiji, Samoa, Solomon Islands and Tonga	Project	Active 30/06/2018
HORT/2010/069	Enabling improved plant biosecurity practices in Cambodia, Lao PDR and Thailand	Project	Active 31/03/2018
HORT/2010/089	Adapting integrated crop management technologies to commercial citrus enterprises in Bhutan and Australia	Project	Active 31/12/2017
HORT/2010/090	Strengthening integrated crop management research in the Pacific islands in support of sustainable intensification of high-value crop production	Project	Active 31/12/2017
HORT/2012/003	Building a resilient mango industry in Cambodia and Australia through improved production and supply chain practices	Project	Active 31/12/2017
HORT/2012/011	Understanding the responses of taro and cassava to climate change	Project	Concluded 30/06/2017
HORT/2012/019	Research and development of integrated crop management for mango production in the southern Philippines and Australia	Project	Active 31/12/2017
HORT/2012/020	Integrated crop management to enhance vegetable profitability and food security in the southern Philippines and Australia	Project	Active 30/10/2017
HORT/2012/026	Improved management strategies for cocoa in Papua New Guinea	Project	Active 31/05/2018
HORT/2012/083	Integrated disease management of sugarcane streak mosaic in Indonesia	Project	Active 31/12/2018
HORT/2012/087	Bogia coconut syndrome in Papua New Guinea: developing biological knowledge and a risk management strategy	Medium Project	Active 31/12/2019
HORT/2012/095	Tropical tree fruit research and development in the Philippines and northern Australia to increase productivity, resilience and profitability	Project	Active 30/06/2018
HORT/2012/097	Integrated management of Fusarium wilt of bananas in the Philippines and Australia	Project	Active 31/12/2019
HORT/2012/098	Improved postharvest management of fruit and vegetables in the southern Philippines and Australia	Project	Active 30/06/2019
HORT/2012/113	Integrated disease management strategies for the productive, profitable and sustainable production of high quality papaya fruit in the southern Philippines and Australia	Project	Active 30/06/2018
HORT/2014/077	Enhanced fruit production and postharvest handling systems for Fiji, Samoa, and Tonga	Project	Active 30/12/2019
HORT/2014/078	Aligning genetic resources, production and post-harvest systems to market opportunities for Pacific island and Australian cocoa	Project	Active 31/07/2021

Project Id	Title	Project Type	Status Update
HORT/2014/080	Integrating protected cropping systems into high value vegetable value chains in the Pacific and Australia	Project	Active 31/12/2020
HORT/2014/083	Developing improved crop protection options in support of intensification of sweetpotato production in Papua New Guinea	Project	Active 31/08/2021
HORT/2014/094	Developing the cocoa value chain in Bougainville	Project	Active 31/12/2021
HORT/2014/096	Enterprise-driven transformation of family cocoa production in East Sepik, Madang, New Ireland and Chimbu Provinces of Papua New Guinea	Project	Active 28/02/2021
HORT/2014/097	Supporting commercial sweetpotato production and marketing in the Papua New Guinea highlands	Project	Active 28/02/2021
HORT/2016/056	Optimising tissue culture of coconut in support of saving the Pacific regional genebank	Small R&D Activity	Active 31/03/2018
HORT/2016/057	Exploring coffee genetic resources for the Pacific Islands	Small R&D Activity	Active 30/06/2018
HORT/2017/013	Evaluating improvements in vegetable value chains in Mozambique associated with closer market linkages	Small R&D Activity	Active 15/12/2017
HORT/2017/014	Defining the biotic constraints to fresh taro from Samoa gaining market access to Australia	Small R&D Activity	Active 30/06/2018
LPS/2005/128	High quality markets and value chains for small-scale and emerging beef cattle farmers in South Africa	Project	Active 31/12/2017
LPS/2008/048	Sustainable livestock grazing systems on Chinese temperate grasslands	Project	Concluded 30/06/2017
LPS/2012/062	Developing productive, sustainable and profitable smallholder beef enterprises in central Vietnam	Project	Active 31/01/2018
LPS/2012/064	Integrating herbaceous forage legumes into crop and livestock systems in East Nusa Tenggara, Indonesia	Project	Active 30/11/2018
LPS/2013/017	Improving nutrition during pregnancy and lactation to achieve production targets for Bali cattle	Small R&D Activity	Concluded 31/12/2016
LPS/2013/021	Profitable feeding strategies for smallholder cattle in Indonesia	Project	Active 31/12/2020
LPS/2014/022	Heifer-calf and fattening strategies - Indonesia	Small R&D Activity	Concluded 31/12/2016
LPS/2014/036	Developing profitable dairy and sheep meat production systems in central Tibet - China	Project	Active 31/03/2020
LPS/2014/037	Increasing the productivity and market options of smallholder beef cattle farmers in Vanuatu	Project	Active 30/09/2019
LPS/2014/038	Smallholder cattle enterprise development in Timor Leste	Project	Active 31/12/2020
LPS/2015/037	Intensification of beef cattle production in upland cropping systems in Northwest Vietnam	Project	Active 31/12/2021
LPS/2016/011	Improving smallholder dairy and beef profitability by enhancing farm production and value chain management in Pakistan	Project	Active 30/09/2021
LPS/2016/021	Assessment of markets and production constraints to small ruminant farming in the PICs	Small R&D Activity	Active 30/04/2018

Project Id	Title	Project Type	Status Update
LPS/2016/022	Potential of new Australian oldman saltbush varieties to fill ruminant feed gaps in arid and saline areas of Pakistan	Small R&D Activity	Active 28/02/2018
LPS/2016/027	Assessing goat production and marketing systems in Lao PDR and market linkages into Vietnam	Small R&D Activity	Active 30/09/2017
LPS/2016/096	Smallholder goat value chains in Pakistan; challenges and research opportunities	Small R&D Activity	Active 30/11/2017
LPS/2017/009	IndoBeef preparatory program activities	Small R&D Activity	Active 07/10/2017
LWR/2010/015	Improved village scale groundwater recharge and management for agriculture and livelihood development in India	Project	Concluded 30/06/2017
LWR/2010/080	Overcoming agronomic and mechanisation constraints to development and adoption of conservation agriculture in diversified rice-based cropping in Bangladesh	Project	Active 30/09/2017
LWR/2010/082	Improving livelihoods with innovative cropping systems on the East India Plateau	Project	Concluded 30/06/2017
LWR/2012/079	Improving dry season agriculture for marginal and tenant farmers in the Eastern Gangetic Plains through conjunctive use of pond and groundwater resources	Project	Active 30/06/2019
LWR/2014/072	Promoting socially inclusive and sustainable agricultural intensification in West Bengal and Bangladesh	Project	Active 29/02/2020
LWR/2014/073	Cropping system intensification in the salt-affected coastal zones of Bangladesh and West Bengal, India	Project	Active 31/10/2020
LWR/2014/074	Developing approaches to enhance farmer water management skills in Balochistan, Punjab and Sindh in Pakistan	Project	Active 30/09/2020
LWR/2014/085	A Virtual Irrigation Academy to improve Water Productivity in Malawi, Tanzania and South Africa	Project	Active 29/06/2019
LWR/2015/011	Handover and training of surface-groundwater and econometric models to end users in Pakistan	Small R&D Activity	Concluded 30/09/2016
LWR/2015/035	Low cost water salinity sensor for smallholder irrigators in developing countries	Small R&D Activity	Concluded 30/09/2016
LWR/2015/036	Improving groundwater management to enhance agriculture and farming livelihoods in Pakistan	Project	Active 30/09/2020
LWR/2016/137	Transforming smallholder irrigation into profitable and self-sustaining systems in southern Africa	Project	Active 15/06/2021
SMAR/2008/025	Improved seaweed culture and postharvest waste utilisation in South-East Asia	Project	Concluded 31/12/2016
SMCN/2009/031	Watershed evaluation for sustainable use of sloping agricultural land in the southern Philippines	Project	Concluded 30/06/2017
SMCN/2009/056	Sustainable productivity improvements in allium and solanaceous vegetable crops in Indonesia and sub-tropical Australia	Project	Active 30/06/2018
SMCN/2010/083	Improving the sustainability of rice-shrimp farming systems in the Mekong Delta, Vietnam	Project	Active 31/10/2019

Project Id	Title	Project Type	Status Update
SMCN/2011/047	Increasing productivity of legume-based farming systems in the central dry zone of Myanmar	Project	Active 30/06/2018
SMCN/2012/029	Soil and nutrient management strategies for sustainable vegetable production in southern Philippines	Project	Active 30/04/2018
SMCN/2012/069	Integrated water, soil and nutrient management for sustainable farming systems in south central coastal Vietnam and Australia	Project	Active 31/05/2018
SMCN/2012/071	Improving water and nutrient management to enable double cropping in the rice growing lowlands of Lao PDR and Cambodia	Project	Active 30/11/2018
SMCN/2012/075	Management practices for profitable crop livestock systems for Cambodia and Lao PDR	Project	Active 29/02/2020
SMCN/2012/103	Improving soil and water management and crop productivity of dryland agriculture systems of Aceh and NSW	Project	Active 30/11/2018
SMCN/2012/105	Sustaining soil fertility in support of intensification of sweetpotato cropping systems	Project	Active 31/12/2019
SMCN/2014/044	Management of nutrients for improved profitability and sustainability of crop production in Central Myanmar	Project	Active 30/06/2020
SMCN/2014/048	Optimising soil management and health in Papua New Guinea integrated cocoa farming systems	Project	Active 31/07/2020
SMCN/2014/049	Improving maize-based farming systems on sloping lands in Vietnam and Lao PDR	Project	Active 31/12/2020
SMCN/2014/075	Land resource evaluation for productive and resilient landscapes in the Central Dry Zone of Myanmar	Project	Active 31/03/2020
SMCN/2014/088	Integrated resource management for vegetable production in Lao PDR and Cambodia	Project	Active 30/06/2020
SMCN/2014/089	Improving soil health, agricultural productivity and food security on atolls	Project	Active 30/04/2019
SMCN/2016/014	Soil management in the Pacific to achieve improved crop yields and resilience to climate change	Small R&D Activity	Concluded 30/06/2017
SMCN/2016/015	Assessment of soil research needs for improving upland agriculture in Cambodia	Small R&D Activity	Concluded 15/06/2017
SMCN/2016/017	Can rubber-based cropping improve productivity and income for smallholder farmers in southern Philippines	Small R&D Activity	Concluded 20/06/2017
SMCN/2016/018	Soil based research needs for restoring peatland in Indonesia	Small R&D Activity	Concluded 15/06/2017
SMCN/2016/019	Crop diversification challenges in the changing environment of the Mekong Delta, Vietnam	Small R&D Activity	Active 30/11/2017
SMCN/2016/051	Farming system diversification and nutrient management options for pulse-based cropping in Myanmar	Small R&D Activity	Active 31/10/2017

Multilateral projects

The multilateral projects listed below have an International Agricultural Research Centre as the project leader (commissioned organisation).

International Agricultural Research Centres	
<i>Bioversity International</i>	
HORT/2014/100	Linking smallholders to markets. Scoping study on developing value chains for conserving local biodiversity and improving diets
International Center for Agricultural Research in the Dry Areas	
LWR/2008/047	Integrated catchment management and capacity building for improving livelihoods in Afghanistan
AH/2012/021	Forage options for smallholder livestock in water-scarce environments of Afghanistan
International Center for Tropical Agriculture	
AGB/2016/032	Developing an emergency response and long term management strategy for Cassava Mosaic Virus in Cambodia and Vietnam
LPS/2016/097	Update of SoFT (Selection of Forages for the Tropics)
International Crops Research Institute for the Semi Arid Tropics	
CIM/2007/120	Improving post-rainy sorghum varieties to meet the growing grain and fodder demand in India
International Livestock Research Institute	
CSE/2010/022	Integrating crops and livestock for improved food security and livelihoods in rural Zimbabwe
LPS/2010/047	Reducing disease risks and improving food safety in smallholder pig value chains in Vietnam
LPS/2015/017	Fodder markets in East Java: Identifying interventions to improve market performance and quality
LPS/2016/016	Assessing competitiveness of smallholder pig farming in the changing landscape of North West Vietnam
International Maize and Wheat Improvement Center	
CSE/2011/077	Sustainable and resilient farming systems intensification in the Eastern Gangetic Plains (SRFSI)
CIM/2011/026	Sustainable wheat and maize production in Afghanistan
FSC/2012/047	Farm mechanisation and conservation agriculture for sustainable intensification
CSE/2013/008	Sustainable intensification of maize-legume cropping systems for food security in eastern and southern Africa II (SIMLESA II)
FSC/2012/024	Identifying socioeconomic constraints to and incentives for faster technology adoption: Pathways to sustainable intensification in eastern and southern Africa
CIM/2016/034	Response to Wheat Blast in Bangladesh
CSE/2016/037	Informing policies for removing barriers to scaling conservation agriculture based sustainable intensification in the eastern gangetic plains
International Rice Research Institute	
SMCN/2011/046	Diversification and intensification of rice-based systems in lower Myanmar
CIM/2016/046	Breeding for low chalk in rice

International Agricultural Research Centres

SMCN/2016/050 Management of key coastal areas of Indonesia to improve agricultural productivity and resilience to climate change

International Water Management Institute

LWR/2010/081 Enhancing the resilience and productivity of rainfed-dominated systems in Lao PDR through sustainable groundwater use

The World Vegetable Center

FSC/2012/111 Improving income and nutrition in eastern and southern Africa by enhancing vegetable-based farming and food systems in peri-urban corridors

CIM/2014/079 Establishing the international mungbean improvement network

World Agroforestry Centre

FST/2010/034 Agroforestry for livelihoods of smallholder farmers in north-western Vietnam

FSC/2012/014 Improving sustainable productivity in farming systems and enhanced livelihoods through adoption of evergreen agriculture in eastern Africa

FST/2012/039 Development of timber and non-timber forest products' production and market strategies for improvement of smallholders' livelihoods in Indonesia

FST/2014/093 Developing value chain innovation platforms to improve food security in east and southern Africa

FST/2015/039 Developing integrated options and accelerating scaling up of agroforestry for improved food security and resilient livelihoods in Eastern Africa - Trees for Food Security - 2

FST/2016/152 Developing and promoting market-based agroforestry and forest rehabilitation options for northwest Vietnam

FST/2016/141 Developing and promoting market-based agroforestry options and integrated landscape management for smallholder forestry in Indonesia (Kanoppi2)

WorldFish Center

FIS/2010/097 Exploring options for improving livelihoods and resource management in Timor-Leste's coastal communities

FIS/2011/052 Improving research and development of Burmas' inland and coastal fisheries

FIS/2012/074 Improving community-based fisheries management in PICs

FIS/2015/031 Fish in national development: contrasting case studies in the Indo-Pacific region

FIS/2015/046 Improving fishery management in support of better governance of Myanmar's inland and delta fisheries

FIS/2017/003 The contribution of small-scale fisheries research to a food secure world

Appendix 5: Publications 2016-17

Code	Title	Authors	Year	Pages
Impact Assessment Series reports				
IAS93	Recognising the Contribution of Capacity Building in ACIAR Bilateral Projects: Case Studies from Three IAS Reports	Mullen, J.D., de Meyer, J., Gray, D. and Morris, G.	2017	86
IAS92	Knowledge systems and RAPID framework for impact assessments	Davila, F., Sloan, T. and van Kerkhoff, L.	2016	112
Co-Publication				
CoP35	The Lao Journal of Agriculture and Forestry No. 34		2017	150
CoP30	Guidelines for the Production and Management of Rice in Rice-Rice Systems: A Case in Myanmar	International Rice Research Institute	2016	62
CoP29	Guidelines for Production and Management of Green Gram and Black Gram Growth in Rice Paddy: A Case in Myanmar	International Rice Research Institute	2016	65
CoP28	Guidelines for Production and Management of Rice in Rice-Pulse Systems: A Case in Myanmar	International Rice Research Institute	2016	55
CoP27	Adding Value to the Farmers' Trees	Race D. and Wettenhall G. (Eds.).	2016	136
Monographs				
MN199	The PNG Family Farm Teams Manual	Pamphilon B., Mikhailovich K. and Gwatorisa P.	2017	86
MN198	The farmer-to-farmer adult learning manual	Pamphilon B.	2017	55
MN196	Vietnam food security policy review	Petersen E. (ed.) Uong Dinh Hoang Elizabeth Petersen Vu Hoang Yen David Vanzetti Tran Cong Thang Vu Huy Phuc Pham Lan Huong Nguyen Ngoc Que Ray Trewin	2017	128
MN195	Local feed resources for pig poultry and fish production in Papua New Guinea	Glatz P. (ed)	2017	271
MN194	Building gender equity through a Family Teams approach	Pamphilon B. and Mikhailovich K	2016	38
MN193	Nursery Manual for Citrus and Mango	Donovan N., Bally I., Cooke T., House S. (ed)	2016	166

Code	Title	Authors	Year	Pages
MN192	Maria's family raises chickens	Simoncini K., Pamphilon B. and Veal D. (illustrator)	2016	28
MN191	Promoting sustainable agriculture and agroforestry to replace unproductive land use in Fiji and Vanuatu	Harrison S. and Karim M.S. (Eds).	2016	204
MN82	A guide to manufacturing rotary veneer and products from small logs	Leggate W., McGavin R., and Bailleres H.	2017	159
Adoption Studies				
AS013?	Adoption of ACIAR project outputs 2016	Pearce D. and Alford A. (eds).	2016	55
Technical Reports				
TR90	A farming system framework for investment planning and priority setting in Ethiopia	Amede T., Auricht C., Boffa J.-M., Dixon J., Mallawaarachchi T., Rukuni M., Teklewold-Deneke T.	2017	54
Corporate publications				
	ACIAR Annual Report 2015-16	ACIAR	2016	208
	ACIAR Annual Operational Plan 2016-17	ACIAR	2016	116
	ACIAR Photography Competition - Exhibition Catalogue 2017	ACIAR	2017	32
	Partners in Research for Development magazine: Pakistan: embracing change and transformation	ACIAR	2016	32
	Partners in Research for Development magazine: Innovative partnerships: Brokering benefits through positive partnerships	ACIAR	2016	32
	Partners in Research for Development magazine: Recipe for success: Food tells the stories of ACIAR projects around the world	ACIAR	2017	32
	Partners in Research for Development magazine: Myanmar: Agriculture in transition	ACIAR	2017	32
	ACIAR Corporate Plan 2016-20	ACIAR	2017	28

Appendix 6: Staffing statistics

Employee numbers 2016-17

Public Service Act 1999 employee numbers (ongoing and non-ongoing)

	Ongoing staff	Non-ongoing staff	Total 30 June 2017
Full-time	19	26	45
Male	6	17	23
Female	13	9	32
Part-time	10	0	10
Male	0	0	0
Female	10	0	10
Total	29	26	55

Staff turnover

Retention rates were maintained in ACIAR for 2016-17. Fifteen employees ceased employment. The table below shows a comparison of employee turnover over the past four years.

	2013-2014	2014-2015	2015-2016	2016-2017
Retrenched	3	5	1	0
Promotions/transfers	2	1	4	3
End of contract	0	1	7	3
Resigned	5	5	1	3
Retired	4	1	2	2
Leave without pay	2	2	0	4
Total	16	15	15	15

Non-APS employees employed overseas

22 locally engaged staff are employed by ACIAR to provide program support locally, as detailed below.

Location	Male	Female	Full-time	Part-time	Total 30 June 2017
Vientiane	1	1	2	0	2
Beijing	1	0	1	0	1
Hanoi	1	2	3	0	3
Jakarta	0	3	3	0	3
Manila	0	2	2	0	2
New Delhi	1	2	3	0	3
Nairobi	0	1	1	0	1
Port Moresby	0	3	3	0	3
Fiji	1	0	1	0	1
Yangon	1	0	1	0	1
Islamabad	1	1	2	0	2
Total	7	15	22	0	22

Classification structure

ACIAR employees as at 30 June 2017, covered by the *ACIAR Enterprise Agreement 2015-2018* by broadband.

ACIAR broadband	APS classification	Salary Range	Employees by classification	Ongoing	Non-ongoing	Female	Male
Band 4	EL 2	\$123,155 - \$133,962	3	2	1	0	3
Band 3	EL 1	\$98,421 - \$103,522	5	4	1	2	3
Band 2	APS 6	\$77,564 - \$85,905	6	5	1	4	2
	APS 5	\$70,635 - \$73,421	13	9	4	11	2
	APS 4	\$63,855 - \$67,404	12	8	4	12	0
Band 1	APS 3	No employees at this level					
	APS 2	No employees at this level					
	APS 1	No employees at this level					

Research Program Manager Structure

ACIAR broadband	APS classification	Salary Range	Employees by classification	Ongoing	Non-ongoing	Female	Male
Band 4	EL2—RPM	\$147,075 - \$169,490	14	0	14	2	12

Appendix 7: Compliance checklist

Description	Requirement	Page No.
A copy of the letter of transmittal signed and dated by accountable authority on date final text approved, with statement that the report has been prepared in accordance with section 46 of the Act and any enabling legislation that specifies additional requirements in relation to the annual report.	Mandatory	iii
Aids to access		
Table of contents.	Mandatory	v - vi
Alphabetical index.	Mandatory	203 - 209
Glossary of abbreviations and acronyms.	Mandatory	201 - 202
List of requirements.	Mandatory	196 - 200
Details of contact officer.	Mandatory	inside cover
Entity's website address.	Mandatory	inside cover
Electronic address of report.	Mandatory	inside cover
Review by accountable authority		
A review by the accountable authority of the entity.	Mandatory	4 - 13
Overview of the entity		
A description of the role and functions of the entity.	Mandatory	70 - 71
A description of the organisational structure of the entity.	Mandatory	177
A description of the outcomes and programmes administered by the entity.	Mandatory	156
A description of the purposes of the entity as included in corporate plan.	Mandatory	156
An outline of the structure of the portfolio of the entity.	Portfolio departments - mandatory	NA
Where the outcomes and programs administered by the entity differ from any Portfolio Budget Statement, Portfolio Additional Estimates Statement or other portfolio estimates statement that was prepared for the entity for the period, include details of variation and reasons for change.	If applicable, Mandatory	NA
Report on the Performance of the entity		
Annual performance Statements		
Annual performance statement in accordance with paragraph 39(1)(b) of the Act and section 16F of the Rule.	Mandatory	160 - 172
Report on Financial Performance		
A discussion and analysis of the entity's financial performance.	Mandatory	109 - 113

Description	Requirement	Page No.
A table summarising the total resources and total payments of the entity.	Mandatory	113
If there may be significant changes in the financial results during or after the previous or current reporting period, information on those changes, including: the cause of any operating loss of the entity; how the entity has responded to the loss and the actions that have been taken in relation to the loss; and any matter or circumstances that it can reasonably be anticipated will have a significant impact on the entity's future operation or financial results.	If applicable, Mandatory.	NA
Management and Accountability		
Corporate Governance		
Information on compliance with section 10 (fraud systems)	Mandatory	111
A certification by accountable authority that fraud risk assessments and fraud control plans have been prepared.	Mandatory	111
A certification by accountable authority that appropriate mechanisms for preventing, detecting incidents of, investigating or otherwise dealing with, and recording or reporting fraud that meet the specific needs of the entity are in place.	Mandatory	111
A certification by accountable authority that all reasonable measures have been taken to deal appropriately with fraud relating to the entity.	Mandatory	111
An outline of structures and processes in place for the entity to implement principles and objectives of corporate governance.	Mandatory	100 - 110
A statement of significant issues reported to Minister under paragraph 19(1)(e) of the Act that relates to non-compliance with Finance law and action taken to remedy non-compliance.	If applicable, Mandatory	NA
External Scrutiny		
Information on the most significant developments in external scrutiny and the entity's response to the scrutiny.	Mandatory	110
Information on judicial decisions and decisions of administrative tribunals and by the Australian Information Commissioner that may have a significant effect on the operations of the entity.	If applicable, Mandatory	NA
Information on any reports on operations of the entity by the Auditor-General (other than report under section 43 of the Act), a Parliamentary Committee, or the Commonwealth Ombudsman.	If applicable, Mandatory	iii
Information on any capability reviews on the entity that were released during the period.	If applicable, Mandatory	NA
Management of Human Resources		
An assessment of the entity's effectiveness in managing and developing employees to achieve entity objectives.	Mandatory	167 - 170

Description	Requirement	Page No.
<p>Statistics on the entity's APS employees on an ongoing and non-ongoing basis; including the following:</p> <ul style="list-style-type: none"> • Statistics on staffing classification level; • Statistics on full-time employees; • Statistics on part-time employees; • Statistics on gender; • Statistics on staff location; • Statistics on employees who identify as Indigenous. 	Mandatory	167 - 168
Information on any enterprise agreements, individual flexibility arrangements, Australian workplace agreements, common law contracts and determinations under subsection 24(1) of the <i>Public Service Act 1999</i> .	Mandatory	169
Information on the number of SES and non-SES employees covered by agreements etc identified in paragraph 17AG(4)(c).	Mandatory	168
The salary ranges available for APS employees by classification level.	Mandatory	167
A description of non-salary benefits provided to employees.	Mandatory	168
Information on the number of employees at each classification level who received performance pay.	If applicable, Mandatory	168
Information on aggregate amounts of performance pay at each classification level.	If applicable, Mandatory	168
Information on the average amount of performance payment, and range of such payments, at each classification level.	If applicable, Mandatory	168
Information on aggregate amount of performance payments.	If applicable, Mandatory	168
Assets Management		
An assessment of effectiveness of assets management where asset management is a significant part of the entity's activities.	If applicable, Mandatory	112, 152
Purchasing		
An assessment of entity performance against the <i>Commonwealth Procurement Rules</i> .	Mandatory	165 - 166
Consultants		
A summary statement detailing the number of new contracts engaging consultants entered into during the period; the total actual expenditure on all new consultancy contracts entered into during the period (inclusive of GST); the number of ongoing consultancy contracts that were entered into during a previous reporting period; and the total actual expenditure in the reporting year on the ongoing consultancy contracts (inclusive of GST).	Mandatory	167 - 168
A statement that "During [reporting period], [specified number] new consultancy contracts were entered into involving total actual expenditure of \$[specified million]. In addition, [specified number] ongoing consultancy contracts were active during the period, involving total actual expenditure of \$[specified million]".	Mandatory	167 - 168

Description	Requirement	Page No.
A summary of the policies and procedures for selecting and engaging consultants and the main categories of purposes for which consultants were selected and engaged.	Mandatory	167 - 168
A statement that "Annual reports contain information about actual expenditure on contracts for consultancies. Information on the value of contracts and consultancies is available on the AusTender website."	Mandatory	167 - 168
Australian National Audit Office Access Clauses		
If an entity entered into a contract with a value of more than \$100 000 (inclusive of GST) and the contract did not provide the Auditor-General with access to the contractor's premises, the report must include the name of the contractor, purpose and value of the contract, and the reason why a clause allowing access was not included in the contract.	If applicable, Mandatory	166
Exempt contracts		
If an entity entered into a contract or there is a standing offer with a value greater than \$10 000 (inclusive of GST) which has been exempted from being published in AusTender because it would disclose exempt matters under the FOI Act, the annual report must include a statement that the contract or standing offer has been exempted, and the value of the contract or standing offer, to the extent that doing so does not disclose the exempt matters.	If applicable, Mandatory	166
Small business		
A statement that "[Name of entity] supports small business participation in the Commonwealth Government procurement market. Small and Medium Enterprises (SME) and Small Enterprise participation statistics are available on the Department of Finance's website."	Mandatory	166 - 167
An outline of the ways in which the procurement practices of the entity support small and medium enterprises.	Mandatory	166 - 167
If the entity is considered by the Department administered by the Finance Minister as material in nature—a statement that "[Name of entity] recognises the importance of ensuring that small businesses are paid on time. The results of the Survey of Australian Government Payments to Small Business are available on the Treasury's website."		166 - 167
Financial Statements		
Inclusion of the annual financial statements in accordance with subsection 43(4) of the Act.	Mandatory	116 - 152
Other Mandatory Information		
If the entity conducted advertising campaigns, a statement that "During [reporting period], the [name of entity] conducted the following advertising campaigns: [name of advertising campaigns undertaken]. Further information on those advertising campaigns is available at [address of entity's website] and in the reports on Australian Government advertising prepared by the Department of Finance. Those reports are available on the Department of Finance's website."	If applicable, Mandatory	NA
If the entity did not conduct advertising campaigns, a statement to that effect.	If applicable, Mandatory	166

Description	Requirement	Page No.
A statement that "Information on grants awarded by [name of entity] during [reporting period] is available at [address of entity's website]."	If applicable, Mandatory	NA
Outline of mechanisms of disability reporting, including reference to website for further information.	Mandatory	168 - 169
Website reference to where the entity's Information Publication Scheme statement pursuant to Part II of FOI Act can be found.	Mandatory	169
Correction of material errors in previous annual report		
Information required by other legislation	Mandatory	NA

Acronyms and abbreviations

AC	Companion of the Order of Australia
ACIAR	Australian Centre for International Agricultural Research
ACIAR Act	<i>Australian Centre for International Agricultural Research Act 1982</i>
AFI	Aflatoxin Forum of Indonesia
AIFSRC	Australian International Food Security Research Centre
ANAO	Australian National Audit Office
AOP	Annual Operational Plan (of ACIAR)
APS	Australian Public Service
APSIM	Agricultural Production System Simulator
ARIA	Agricultural Research Institute of Afghanistan
ASEAN	Association of Southeast Asian Nations
AVCCR	Agriculture Value Chain Collaborative Research Program
AVRDC	World Vegetable Centre
CCFF	Chinese citrus fruit fly
CDZ	Central Dry Zone (of Myanmar)
CEO	Chief Executive Officer
CGIAR	formerly, the Consultative Group on International Agricultural Research
CIAT	International Centre for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
Commission	The Commission for International Agricultural Research (ACIAR)
Council	The Policy Advisory Council (ACIAR)
CPR	Commonwealth Procurement Rules
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation (Australia)
CultiAF	Cultivate Africa's Future
DFAT	Department of Foreign Affairs and Trade (Australia)
DNA	deoxyribonucleic acid
ELISA	enzyme-linked immunosorbent assay
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
FAO	Food and Agriculture Organization (of the United Nations)
FOI	Freedom of Information Act 1982

FTE	full-time equivalent (staff)
GRDC	Grains Research and Development Corporation (Australia)
IAS	Impact Assessment Series (ACIAR publications)
IARCs	International Agricultural Research Centres
ICARDA	International Center for Agricultural Research in the Dry Areas
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDPES	Individual Development and Performance Evaluation Scheme (ACIAR)
IDRC	Canada's International Development Research Centre
IFPRI	International Food Policy Research Institute (USA)
ILRI	International Livestock Research Institute
IMIN	International Mungbean Improvement Network
IRRI	International Rice Research Institute (Philippines)
NESB	non-English speaking background
NGO	non-government organisation
OAM	Medal of the Order of Australia
PARDI	Pacific Agribusiness Research for Development Initiative II
PO	People's organisation
PGPA Act	<i>Public Governance, Performance and Accountability Act 2013</i>
PIC(s)	Pacific island country(ies)
PNG	Papua New Guinea
QCC	Queens Commonwealth Canopy initiative
RAPID	Research and Policy in Development Framework
R4D	research-for-development
R&D	research and development
RPM	Research Program Manager
SES	Senior Executive Service (of APS)
SIMLESA	Sustainable intensification of maize-legume cropping systems for food security in eastern and southern Africa
SMAR	Support for Market-Driven Adoptive Research
SME	small-medium enterprise
SoL	Seeds of Life (program)
SPC	Secretariat of the Pacific Community
TADEP	Transformative Agriculture Enterprise Development Program
TAR	Tibet Autonomous Region
TOMAK	Farming for Prosperity Program in Timor--Leste

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