

Highlights

Major features

Expanding ACIAR appropriation 2009–10 to 2012–13

The Australian Centre for International Agricultural Research's (ACIAR's) appropriation from the 2009–10 Federal Budget will increase to \$63.64 million—from \$52.33 million in 2008–09. The foreshadowed outyear increases in the Portfolio Budget Statement for ACIAR are as follows:

Appropriation estimates	\$m
2010–11	69.03
2011–12	74.16
2012–13	76.19

These additional funds will be allocated to four central program thrusts:

- safeguarding food security and climate change adaptation and mitigation in the rice-based farming systems of South Asia and South-East Asia (**Initiatives 1 and 2**)
- exploiting opportunities for developing high-value agriculture, forestry and fisheries products in Pacific island countries (**Initiative 3**)
- increasing financial support to the Consultative Group on International Agricultural Research (CGIAR) (**Initiative 4**).

In addition, ACIAR will deliver a maize-based farming systems initiative for southern and eastern Africa. Additional funding for this project over four years will be allocated during 2009–10 through the whole-of-government International Development Assistance Program's *Food Security through Rural Development* initiative.

Initiative 1: Safeguarding food security in the rice-based farming systems of South Asia and South-East Asia

Research is an important part of the solution to reduce dependence on food aid and increase production of crops and livestock in the developing world. There is also the challenge of producing more food with less impact on the environment. Based on the following two themes, both biophysical research and policy research are proposed, underpinned by capacity building and training.

Increasing the productivity of rice-based farming systems Efforts will be intensified to apply technologies to rapidly improve the productivity of key crops where there is a conducive environment for farmer uptake. As rice-

based cropping systems are the basis of staple production in many Asian countries, the focus will be on rice grown in conjunction with wheat, maize, grain legumes and a range of other components. Emphasis will be on both rainfed and irrigated rice-based systems. Targeted work on improvement of livestock production and integration with cropping systems will maximise opportunities for income generation and overall farming system productivity.

Within this approach the main strategies include:

- intensifying rice production systems by increasing the number of crops grown on the same land each year
- increasing yields through improvements in water- and nutrient-use efficiencies
- helping meet the increasing demand for animal protein through better integration of livestock.

Underpinning institutional and policy arrangements affecting rice-based farming systems In addition to the immediate strengthening of safety nets for the poorest people through food-related aid, collaboration on policy options is critical in addressing food security. Collaborative research—working directly with partner governments—is an effective tool for ensuring that policy change in response to food security problems is evidence-based.

Initiative 2: Helping South Asian and South-East Asian crop and livestock production systems respond to climate change

In 2008–09 ACIAR commenced design of a program on adaptation to climate change in rainfed agricultural regions in Lao PDR, Cambodia, Bangladesh and parts of India.

The program's particular focus will be more efficient use of water resources, but will also include seasonal climate forecasting, crop modelling and capacity development. Interventions based on field experimentation, selection of new varieties and on-farm crop modelling will help develop sustainable and productive enhanced crop rotation systems that are better matched to shifting rainfall regimes. Improving climate forecasting will be critical in enabling location-specific recommendations for development of more-resilient cropping systems. Better use of residual moisture, late-season rainfall or limited supplementary irrigation will enable growing a second crop in situations where land would otherwise be fallow for many months.

In 2009–10 this program will be **expanded geographically to irrigated rice-based systems of the Mekong Delta**

in Vietnam, which produces most of the country's rice. Vietnam, as the world's second largest rice exporter, is in the South-East Asian region, which is most at threat from rising sea levels due to climate change. It is anticipated that the program will support development of rice germplasm that is adapted to submergence and drought, as well as improved farming systems that better target fertiliser use and reduce greenhouse gas (GHG) emissions.

Subject to availability of funding, design of a more substantial initiative on climate change would commence in 2010–12, expanding the initial emphasis to mitigation of GHG emissions from agriculture. This would include reducing energy use through adoption of conservation farming systems, which have the additional benefits of enhancing sequestration of carbon in agricultural soils, reducing water use and limiting weeds.

A second focus of the proposed expanded program in 2010–12 would include **policy research**. Work on climate change impacts has been carried out in some Asian countries, but capacity for research in climate change adaptation is weaker, and capacity in GHG accounting methods is also underdeveloped.

At the smallholder level the key drivers for uptake of innovations in climate change adaptation or mitigation are improved crop and livestock productivity and lower input costs. However, disincentives such as subsidies on fertilisers and preferential subsidisation of water-intensive crops need to be addressed through sound policy analysis. Research will also be undertaken on water allocation and water policy analysis at the sub-basin or basin scale; and on how emissions trading schemes can deliver incentives for mitigation of GHG emissions in these situations.

Initiative 3: Exploiting opportunities for developing high-value agriculture, forestry and fisheries products in the Pacific nations

Despite suitable production conditions and freedom from many pests and diseases, the Pacific island countries have a range of trade challenges including distance from markets, small and inconsistent scale of production, high transport costs, eroding tariff preferences, migration of skilled labour, resource depletion and degradation, and risks from climate change. However, profitable export markets have been developed for targeted products, and there is significant domestic urban demand for high-value vegetables and aquaculture products.

This initiative will foster consistent production (quantities and timeliness) at affordable input costs and consistency of product quality for targeted products. The proposed research and development (R&D) program will adopt a demand-driven value-chain approach that:

- confirms and identifies opportunities for Pacific high-value and value-added products based on a detailed international market analysis

- identifies and develops strategies to address supply chain constraints, focusing on developing linkages between farmers, agribusiness and other players in the market
- develops capacity within R&D and agribusiness organisations within the Pacific to carry out R&D in these areas.

Initiative 4: Increasing financial support to the CGIAR

The system of International Agricultural Research Centres (IARCs) comprises the institutions financed under the umbrella of the CGIAR plus non-associated centres that also have a global mandate. Under Section 5 of its legislation, one of ACIAR's functions is 'to fund international agricultural research centres'. The IARCs have considerable research capability and a good track record of delivery of benefits, particularly in crop improvement and diversification, where very high returns on investment have been achieved.

Following a fundamental review of its operations in 2008, the CGIAR endorsed in principle an integrated reform proposal at its annual general meeting. During 2009 the operational details of the reform agenda will be finalised, with implementation from early 2010.

As part of its International Development Assistance Program's *Food Security through Rural Development* initiative, tabled in May 2009, the Australian Government decided to significantly increase its budgetary support to a reformed CGIAR from 2009–10. This increased support is as follows:

	\$m
2009–10	7.0
2010–11	10.0
2011–12	13.0
2012–13	14.0

Current ACIAR support to the CGIAR is around \$11 million annually, so these increases will result in a doubling of support over the next four years. The Australian Government's increased investment in the CGIAR will contribute to global productivity and provide opportunities to build stronger links and broader engagement with the centres in our own development work.

Overview of planned revenue and expenditure

	2007–08	2008–09	2009–10
	actual	Budget allocation	Budget estimate
\$m			
Revenue			
Appropriation	51.24	52.33	63.64
AusAID funds	14.22	13.76	17.78
Other revenue	0.57	0.07	0.05
Total	66.03	66.16	81.47
Expenditure			
Bilateral program ^a	39.21	39.63	46.75
Multilateral program ^b	10.62	10.84	17.56
Education and training ^c	6.38	5.38	6.58
Communicating research results	0.63	0.72	0.76
Total administered costs	56.84	56.57	71.65
Total departmental costs^d	9.16	9.59	9.82
Total	66.00	66.16	81.47

^aBilateral projects, program support and impact assessment

^bResearch through international centres and untied funding to international centres

^cNot including training within projects

^dIncludes Salaries, Executive, Commission, Policy Advisory Council and corporate support

Bilateral and multilateral projects by region and country

Region & Country		2009-10 Budget allocation \$m			% Project
		Appropriation	New policy proposals	AusAID	
PNG^a and PIC^b	>20%	6.52	1.02	2.48	20.4%
PNG		2.39		2.48	9.9%
Pacific island countries		4.13	1.02		10.5%
South East Asia	>45%	18.56	2.10	7.82	57.9%
Indonesia		6.94	0.50	3.76	22.8%
Vietnam		3.37	0.40		7.7%
Philippines		3.92			8.0%
East Timor		0.46		1.74	4.5%
Cambodia		1.50	0.60	2.33	9.0%
Lao PDR		1.87	0.60		5.0%
Thailand		0.35			0.7%
Burma		0.14			0.3%
South Asia	<15%	4.87	0.40	3.65	18.1%
India		2.97			6.0%
Pakistan		0.43		0.60	2.1%
Bangladesh		1.13	0.40		3.1%
Iraq				1.48	3.0%
Afghanistan		0.13		1.57	3.4%
Bhutan		0.17			0.3%
Other South Asia		0.05			0.1%
North Asia	<15%	1.39	0.00	0.00	2.8%
China		1.39			2.8%
Southern Africa	<5%	0.38	0.00	0.00	0.8%
Subtotal		31.72	3.52	13.95	100.0%
Total		49.19^c			

^a PNG=Papua New Guinea;

^b PIC=Pacific island countries

^c \$49.19m consists of bilateral project expenditure of \$40.69m and \$4.99m for multilateral projects and \$3.52m for new policy proposals

AusAID funding to ACIAR by country

	2007–08 actual	2008–09 Budget allocation	2009–10 Budget estimate
	\$m		
Papua New Guinea	1.86	2.47	2.48
Indonesia	4.90	4.47	3.76
Philippines	0.35	0.13	0.00
East Timor	2.27	1.33	1.74
Cambodia	0.00	0.00	2.33
Pakistan	1.38	1.45	0.60
Iraq	0.18	0.25	1.48
Afghanistan	0.32	0.32	1.57
Postgraduate scholarships ^a	2.92	2.90	3.50
Project development and implementation costs	0.02	0.12	0.33
Total	14.21	13.42	17.78

^aincludes \$0.5 million for scholarships for Smallholder Agribusiness Development Initiative (SADI) students

At a glance

	2005–06 actual	2006–07 actual	2007–08 actual	2008–09 estimate	2009–10 forecast
Building capacity					
Non–project-specific training courses	13	12	11	9	8
Fellowships					
John Allwright Fellows—total active in year	57	96	141	149	138
Fellowships awarded in year	15	61	60	16	16
John Dillon Fellows—total active and awarded in year	6	7	10	9	9
Staff at 30 June					
Staff—Public Service Act (FTE)	44.4	43.8	40.6	44.8	46.0
Overseas officers—locally engaged (FTE)	20.5	20.5	20.5	19.5	19.5

Program priorities for key partner countries in 2009–10

Papua New Guinea

- Addressing social, cultural and policy constraints to the adoption of agricultural technologies
- Enhancement of smallholder incomes with an emphasis on better production, quality and marketing of:
 - horticultural, root and export tree crops
 - village-based aquaculture and smallholder fisheries
 - forestry and agroforestry systems
- Sustainable management of forestry and fisheries resources
- Biosecurity and pest and disease management
- Institutional and individual capacity building
- Strong partnership with AusAID in program planning

Pacific island countries

(focus on Solomon Islands, Samoa, Tonga, Vanuatu, Fiji and Kiribati, working both with Pacific regional organisations and individual countries)

- Improvement in food and nutritional security, emphasising staple, fruit and vegetable crops
- Integrated and sustainable agriculture, community aquaculture and mariculture
- Stock assessment and planning for sustained use of inshore fisheries
- Valuation of resources and economic analysis of smallholder and commercial fisheries
- Domestication and value-added processing of multipurpose trees for forestry and agroforestry
- Significant expansion of the program to support new initiatives on:
 - research to improve profitability of plantation (tree) crop sectors predominantly in Solomon Islands, particularly in oil palm and cocoa
 - agricultural technology transfer and capacity building; enhancement of the continuing University of the South Pacific postgraduate scholarship program
 - opportunities for developing high-value agriculture, forestry and fisheries products for domestic and export markets

Indonesia

(focus on eastern Indonesia, Java and some parts of Sumatra)

- Improvements in policy options to underpin rural enterprise development
- Biosecurity and crop and livestock pest and disease management
- Development of competitive horticultural industries
- Agribusiness development for plantation crops, aquaculture and crop–livestock systems

- Sustainable management of fisheries resources (shared stocks, illegal fishing) and forestry (management policy for climate change mitigation)
- Design and planned implementation of second phase of the AusAID-funded Smallholder Agribusiness Development Initiative (SADI) in eastern Indonesia
- Shift in emphasis of technical cooperation from rehabilitation to medium-term improvements in productivity and profitability of agriculture and aquaculture in Aceh

Vietnam

(focus on south central coast, north-western mountains, Mekong Delta and north-eastern coast (fisheries))

- Securing Vietnamese market competitiveness and resilience to biosecurity challenges
- Development of higher value aquaculture industries and plantation forest products
- Soil and water resource management for profitable and sustainable agriculture in south central coastal Vietnam
- Poverty reduction through market engagement for smallholders in north-western highlands
- Research to assist adaptation to climate change to maintain productivity from rice-based cropping systems in the Mekong Delta

Philippines

(focus on southern Philippines including northern and southern Mindanao and Visayas)

- Increase in market competitiveness of fruit, vegetable and aquaculture products
- Farmer-based land and water resource management for profitable and sustainable agriculture
- Identifying and addressing policy and technical constraints to adoption of research outputs
- Identifying researchable technical and agribusiness constraints to small and medium enterprise engagement in profitable livestock enterprises

Cambodia

(focus on southern provinces (Kampot, Takeo, Kandal, Prey Veng and Kampong Cham), and selected Tonle Sap provinces (Kampong Thom and Siem Reap), and north-western provinces (Battambang and Pailin))

- Securing productivity of rice-based farming systems, including improved varieties and robust production systems for direct-seeded rice, irrigated and other lowland environments
- Better water and soil and nutrient management
- Income generation and better nutrition through agricultural diversification into non-rice field crops, horticulture and ruminant livestock

- Development of capacity for Cambodian rice-based farming systems to respond to climate change
- Management of research and extension component of AusAID-funded Cambodian Agricultural Value Chain (CAVAC) program
- Institutional and individual capacity building

Lao PDR

(focus on upland northern provinces including Vientiane, Savannakhet and Champasack)

- Development of alternatives to shifting cultivation in uplands, particularly livestock and forestry
- Agricultural diversification to improve productivity of lowland farming systems, particularly rice-based systems and riverine and pond fisheries
- Research to help develop capacity for Lao rice-based farming systems to respond to climate change
- Institutional and individual capacity building

East Timor

(focus on applied assistance targeting food security, poverty reduction and capacity building)

- Assessment and release of new crop varieties to enhance food security and nutrition
- Capacity building of agricultural researchers within National University of East Timor and Ministry of Agriculture, Forestry and Fisheries

India

(focus on policy and biotechnology cooperation with central institutes and on water management in central plateau/ Andhra Pradesh)

- Application of DNA marker-assisted selection as a tool in wheat breeding
- Agricultural water management for enhanced livelihoods in rainfed areas
- Research in policy options for trade and market reform to underpin agribusiness

Pakistan

(focus on Punjab, Sindh and North-West Frontier provinces)

- Agriculture Sector Linkages Program
 - development of more productive and competitive mango and citrus production and marketing systems
 - improvement in dairy farmer livelihoods
- Management of land and water resources to sustain productive enterprises

Bangladesh

(focus on agronomic and biotic constraints to production of broadacre crops)

- Adoption of winter-season cropping options to intensify and diversify rice-based cropping systems, with focus on sustainable food security
- Expansion of research to underpin increased productivity of cereal-based farming systems
- Climate change adaptation through better systems for prediction of crop performance in variable environments in the context of sustaining food security

China

(focus on north-western provinces and Tibet Autonomous Region)

- More sustainable agricultural production from rainfed crop–livestock systems
- Policy research on implications of Chinese trade developments for smallholders

Southern and eastern Africa

- Increase in the profitability and sustainability of crop–livestock farming systems
- Design and implementation of expanded program to address enhanced productivity for smallholder maize-based farming systems