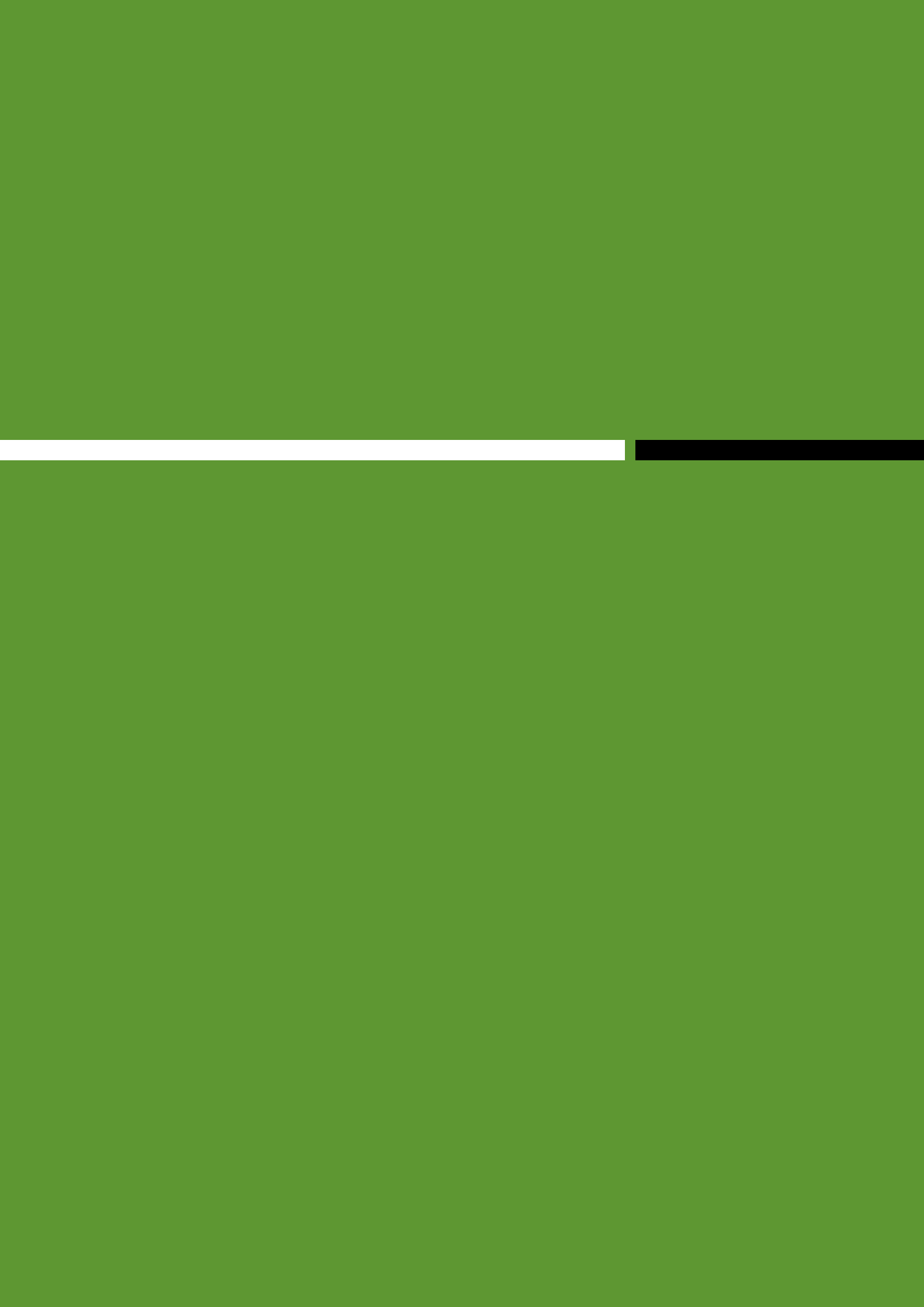




Australian Government

Independent Review of the Australian Centre for International Agricultural Research (ACIAR)







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Independent Review of the Australian Centre for International Agricultural Research (ACIAR)



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Senator the Hon. Bob Carr MP
Minister for Foreign Affairs
Parliament House
Canberra, ACT, 2600

28 February 2013

Dear Minister,

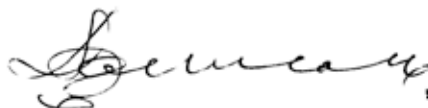
We are pleased to submit the report of the Independent Review of the Australian Centre for International Agricultural Research (ACIAR). The report has been discussed with the Commission for International Agricultural Research and has been endorsed by the Development Effectiveness Steering Committee.

ACIAR is an institution of which Australians can be proud. The report makes a number of recommendations that we hope will contribute to sound and productive operations by ACIAR.

Yours sincerely,



Bill Farmer A0



Professor Ron Duncan



Terry Enright



Dr Wendy Jarvie

Acknowledgments

The Review Panel thanks the individuals and organisations who gave the Panel the benefit of their views, in written submissions or during meetings.

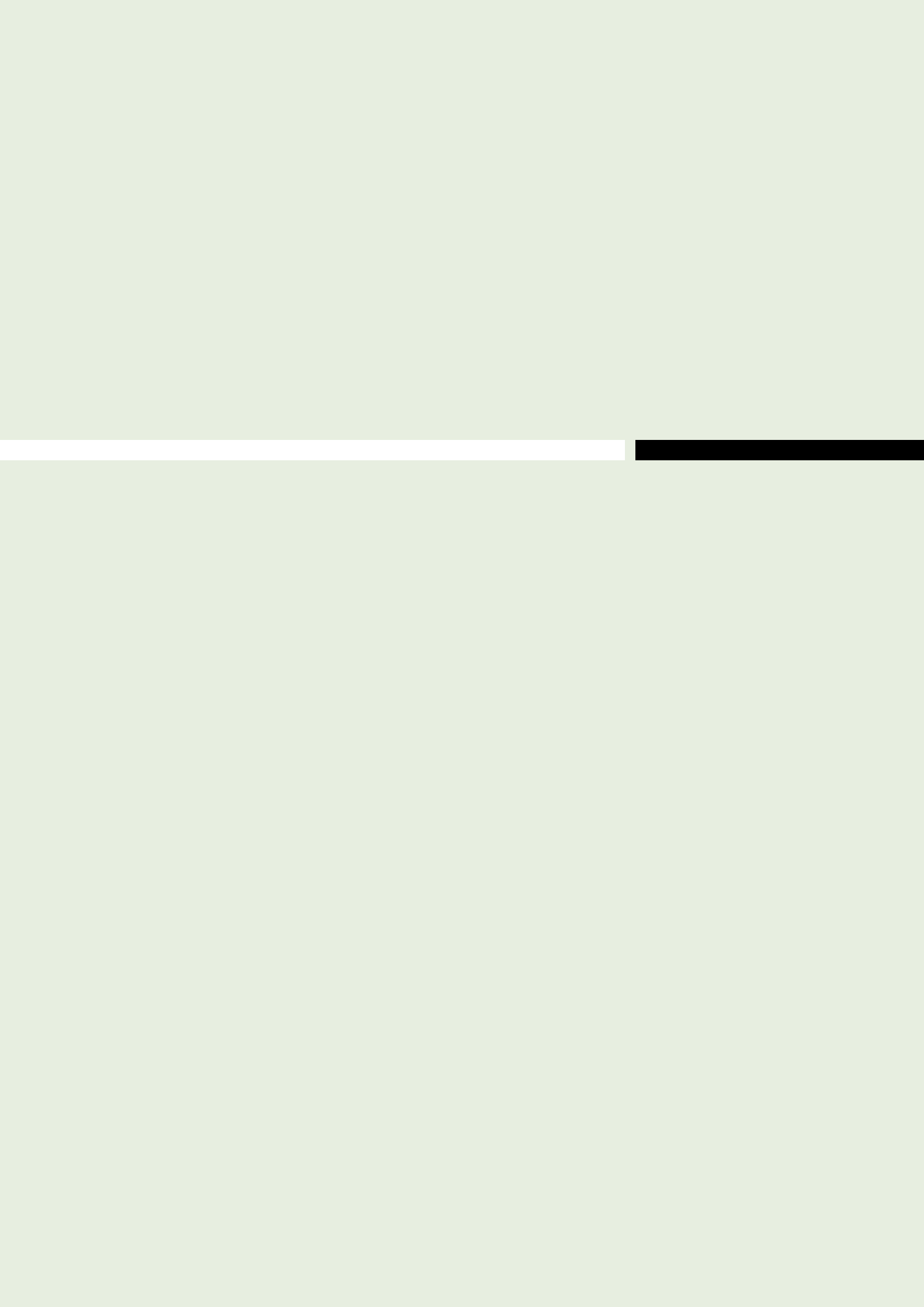
The Review Panel is particularly grateful to the members of the Commission for International Agricultural Research, the Policy Advisory Council and the Development Effectiveness Steering Committee for their views.

The Panel received every assistance from the Chief Executive Officer of ACIAR and his colleagues, in Canberra and overseas. This was invaluable in informing the Review.

A special debt is owed to the members of the Review's Secretariat: Mr David Shearer, Head of Corporate, ACIAR; Dr Gabrielle Persley, AM; Miss Judith Laffan; and Ms Nabewyah Jattiem.

Contents

EXECUTIVE SUMMARY	1
CHAPTER 1: CONTEXT OF THE INDEPENDENT REVIEW OF ACIAR	9
CHAPTER 2: WHOLE-OF-GOVERNMENT ISSUES	17
CHAPTER 3: GOVERNANCE	29
CHAPTER 4: ACIAR STRATEGIES AND APPROACHES	35
CHAPTER 5: ACIAR MANAGEMENT AND RESOURCES	49
CHAPTER 6: ACIAR'S EFFECTIVENESS	57
CHAPTER 7: COMMUNICATIONS AND STAKEHOLDER ENGAGEMENT	69
Appendix 1: Terms of Reference	73
Appendix 2: Institutions Consulted by the Review	75
Appendix 3: Submissions to the Review	78
Appendix 4: Australia in International Agricultural Research	79
Appendix 5: Acronyms	96
References and Source Material	99



EXECUTIVE SUMMARY

Background to the Review

ACIAR is an institution of which Australians can be proud. Over 30 years, it has directed a program of research which, drawing on Australian and partner country expertise, has lifted agricultural productivity and benefited many farmers in developing countries, improving food security and reducing poverty. ACIAR has a strong international reputation for the results it has achieved, its research partnership model, and its record of evaluation and assessment.

Australia is justifiably regarded as a world leader in a range of arid, semi-arid, temperate and tropical agricultural research, much of which is directly relevant to developing-country conditions and challenges. ACIAR has been instrumental in building research partnerships with a wide range of developing-country collaborators and using Australian agricultural science and related research skills to deliver research for agricultural development and natural resource management.

ACIAR is an integral part of Australia's development assistance program and a part of Australia's agricultural innovation system. ACIAR accordingly delivers aid benefits that accrue through a number of pathways. The most obvious is through direct productivity improvements from new production technologies or through new breeds and varieties. ACIAR-funded research has also led to benefits from management of pests and diseases, improved food safety, quarantine and quality enhancement, together with environmental, biodiversity and sustainability improvements. Independent assessments have shown strong returns from ACIAR projects, with a conservative estimate showing a benefit:cost ratio of 6:1 from total ACIAR expenditure since its inception. World Bank and other studies have shown that agricultural growth is especially effective in reducing poverty, and growth originating in agriculture is at least twice as effective in benefiting poorer segments of developing countries as growth generated in non-agricultural sectors. ACIAR's partnership-through-science approach can make an added Australian contribution to handling major economic, social and political challenges, including food security, climate change and resource depletion.

It is timely to review ACIAR's operations. ACIAR works in an increasingly complex environment, both domestically and internationally. At a broad international level, there has been significant concern about climate change and food security; the establishment of the Millennium Development Goals (MDGs) aimed at reducing world poverty; and the beginning of a major reform process affecting the international organisations engaged in agricultural research. With increasing concern about food security, ACIAR has an increasingly important role to play. Within Australia, the government has instituted major changes to its approach to delivering aid, with many implications for ACIAR as an agency all of whose funds come from the aid budget. That same approach has seen a doubling of ACIAR's budget in the past five years, with implications for a number of management approaches. A further development has been some decline in Australia's overall agricultural research capacity—a significant issue for ACIAR given its operating model's emphasis on harnessing Australian expertise. The last decade has also seen a major change in ACIAR's governance arrangements, with its Board replaced by the Commission for International Agricultural Research. Overall, ACIAR faces new opportunities and new risks, both flowing from increased funding, increased recognition, increased expectations and increased visibility.

The Review

The Minister for Foreign Affairs commissioned a Panel to conduct a Review of ACIAR. The Review Panel comprised members with a range of experience in the international environment, development economics, business and evaluation. The Review was asked to address issues including the following:

- The appropriateness of ACIAR's goals and strategies in supporting the fundamental purpose of Australian aid, namely, helping people overcome poverty;
- ACIAR's effectiveness in improving livelihoods through more productive and sustainable agriculture, and in achieving intermediate knowledge generation and capacity building outcomes; and
- The efficiency of ACIAR's operations and arrangements for managing research programs and building capacity, including internal capability and systems, risk management, performance oversight, and transparency.

The Review Panel had particular regard to the new approach to aid policy, which flows from the government's response to the Independent Review of Aid Effectiveness in 2011 and has been encapsulated in the Comprehensive Aid Policy Framework (CAPF). It has been reflected in significant changes in Official Development Assistance (ODA), and particularly AusAID's, arrangements, budget preparations, reporting and other requirements. Some of the new arrangements are still being bedded down. The Review Panel has reviewed how ACIAR's operations measure up against the new arrangements.

The Review Panel consulted widely within Australia and overseas, called for and received a number of submissions. Many of the views put to the Review Panel indicated widespread recognition of the professionalism and quality of ACIAR's work over the decades; keen appreciation of the ACIAR partnership model and of elements like its scholarship and fellowship programs; and respect for ACIAR's work in evaluation and impact assessment. These amounted overall to a strong endorsement of ACIAR's record in helping people overcome poverty.

The Review Panel also encountered a range of views which raised questions about ACIAR's model, management approaches, stakeholder engagement and other issues, including particularly the way in which the new whole-of-government aid arrangements are working in practice. The Review Panel shares a number of the concerns which were raised with it, including in areas such as the new aid arrangements, transparency and stakeholder engagement.

Whole-of-Government Issues

The Review Panel examined a range of issues relating to the evolving arrangements for dealing with ODA issues in a whole-of-government way. This is timely, given that some of the new arrangements (for example, the Annual Review of Aid Effectiveness and the implementation of Uniform Standards for ODA) are in their early stages. There are many positive elements in the current arrangements; for example, the way in which ACIAR manages its responsibilities for dealing with the CGIAR system. At the same time, the Review Panel concludes that there are a number of ways in which ACIAR's approaches should be developed to accord more concertedly with the new and emerging arrangements; for example, in reporting and coordination of approaches to the CGIAR system. It also concludes that the new ODA arrangements could be implemented in ways which better allow for the inclusion of agencies utilising ODA, like ACIAR, in areas such as the development of whole-of-ODA country strategies.

One of ACIAR's most important relationships is with AusAID, and the Review Panel reached conclusions about the way in which the present consultative arrangements between the two agencies at CEO level could be supplemented by other processes aimed at generating a whole-of-ODA approach to agriculture and rural development. The Review Panel also considers it important that ACIAR be reviewed regularly, at the same time as the regular reviews of the aid program agreed to by the government in 2011.

The Review Panel recommends that:

1. ACIAR and AusAID continue to work together to position ACIAR fully within the new whole-of-government ODA process.
2. The CEOs of AusAID, ACIAR, CSIRO and ABARES consider mechanisms to encourage a whole-of-government approach to agricultural and rural development ODA, including regular CEO meetings, an ODA Agricultural and Rural Development Working Group, and organic consultation processes.
3. As whole-of-government ODA procedures are further bedded down, the Development Effectiveness Steering Committee (DESC) and Development Effectiveness Working Group (DEWG) processes, including preparation of ODA country strategies, be further refined to allow full inclusion of perspectives from ODA-expendng agencies.
4. There should be regular reviews of ACIAR, conducted at the same time as, and feeding into, the regular five-year reviews of the overall aid program.
5. ACIAR lead a process for agreeing on and articulating a comprehensive Australian approach to engagement with the CGIAR system.

Governance Issues

The Review Panel examined ACIAR's governance arrangements and views about the ACIAR Act and ACIAR's functions. These included views on the benefit to Australia from ACIAR's work; that ACIAR should be wary of becoming deeply involved in development activities; and that ACIAR should be required also to use research expertise from countries other than Australia and partner developing countries. The Review Panel does not believe that the views put to it warrant consideration of amendments to the ACIAR Act. The Act is cast in terms which allow for development of approaches as thought appropriate, and the Review makes a number of recommendations in this regard.

The Review Panel observed the positive regard in which the work of ACIAR's Policy Advisory Council (PAC) is held, and noted suggestions about ways in which the Council could be employed more broadly.

The Commission for International Agricultural Research comprises a group of eminent Australians who discharge their duties responsibly and offer clear guidance and support to ACIAR. Nonetheless, there is some concern about current approaches to involving the Commission in consideration of strategic and other important issues. It is not considered appropriate to revisit the issue of the ACIAR CEO's responsibility for management under the FMA Act. However, the Review Panel sees value in instituting arrangements which would make fuller use of the Commissioners' expertise and, while preserving the CEO's management responsibilities, encourage enhanced debate with, and guidance from, the Commission.

The Review Panel recommends that:

6. ACIAR augment its planning process by formulating annual strategy settings for Commission consideration, as a precursor to development of the Annual Operational Plan.
7. The Minister for Foreign Affairs issue a direction to the CEO and the Commission requiring that submissions to the Minister from the CEO seeking approval of the Corporate Plan and the Annual Operational Plan be accompanied by a letter from the Chair of the Commission confirming that the Commission has considered the document in question and providing such further advice as the Commission considers appropriate.

ACIAR Strategies and Approaches

There are important strengths in the ACIAR operating model including flexibility, reliance on strong technical expertise, and development of valuable partnerships in Australia and overseas. There are also some grounds for adapting to significant changes in ACIAR's operating environment. These changes include major changes to the government's approach to ODA as well as significant increases in ACIAR resources. A further set of considerations flows from public sector reforms in areas like administrative transparency and provision of information to the public.

The Review Panel came to conclusions about future ACIAR approaches. In many areas there are real strengths to build on. There is also scope for developing approaches in other areas. These include the further development of a program approach in countries and sectors where partner capacity allows; a more systemic approach to involving the private sector and NGOs in ACIAR's work; disciplining its range of projects and geographic scope; and examining the scope to expand ACIAR's scholarship program.

With regard to the recently established Australian International Food Security Centre (AIFSC), the Review Panel concluded that the Centre in its initial phase has established a number of promising relationships and approaches. These have been positively received, especially in Africa. However, the initiative to establish the AIFSC within ACIAR poses significant challenges. A source of confusion is that AusAID also has significant food-security activities. Operating what is a very large program from ACIAR's perspective in Africa is also presenting challenges for ACIAR, particularly with respect to administrative issues. There is a risk that excessive expectations will be generated by the very title of the Centre, expectations that it may fall short of satisfying, not least because of its relatively modest budget. It is early days, and it would be prudent to address the issues which have arisen, and the risk of unfulfilled expectations. This could be done by emphasising its focus on research, and renaming it the Australian International Food Security Research Centre within ACIAR. This change would help to distinguish ACIAR's work in food security from the work of AusAID and other Australian Government agencies.

ACIAR has a strong model that delivers effective research partnerships that address significant agricultural problems in partner countries. It could be further strengthened.

The Review Panel recommends that:

- 8.** ACIAR continue to develop its operational approach including a move towards a more programmatic approach, regional approaches and new partnerships with emerging economies. It should maintain its core mandate of producing an excellent research product and should not move into the development area.
- 9.** ACIAR examine the scope for increasing the number of ACIAR scholarships; and liaise with the Australia Awards Scholarship program about the potential for increasing the number of its scholarships awarded for promising agricultural researchers.
- 10.** ACIAR concentrate the geographic focus of its research programs in line with the ODA priorities identified in the CAPF. Research activities undertaken outside its usual country portfolios in response to high-level government initiatives should be appropriately resourced; ACIAR should be given sufficient time within which to design effective projects/programs; a proliferation of small projects in non-traditional countries should not happen; and ACIAR should continue to develop innovative collaborations with countries such as China, India and Brazil.

11. The AIFSC become the Australian International Food Security Research Centre within ACIAR; that it continue to develop innovative partnerships; and over the longer term the orientation of the Centre be directed towards understanding the adoption process within agriculture with a view to the Centre becoming a global centre of excellence on this topic.
12. ACIAR make the improvement of adoption rates a focus of its research and facilitate this in various ways; for example, adopting a more multidisciplinary approach to projects, involving businesses and NGOs in the design of projects and the implementation of project outcomes, and partnering with CGIAR Centres.
13. ACIAR, after a process of consultation with interested stakeholders, develop a position paper on the future involvement in its work of the private sector and NGOs.

ACIAR Management and Resources

ACIAR is a lean organisation, with a low proportion of overheads. The sizeable expansion of ACIAR's administered and external funding and projects over the past five years has not been accompanied by concomitant departmental funding and staff. There are obvious strains throughout ACIAR, reflected in some unsustainable work pressures on officers; dissatisfaction by AusAID with the overall quality of ACIAR administration of some AusAID-funded projects; patchy engagement with stakeholders; and disproportionate pressures on corporate areas. There are other weaknesses, including lack of sufficient senior staff to support the CEO in networking within Australia. The latter problem is exacerbated by the fact that ACIAR has a very flat management structure, with only one SES officer and 17 direct reports to the CEO.

The current structure is no longer suitable to ACIAR's budget, scale of operations, and whole-of-government environment. There is a need for at least another senior position and more delegation of responsibility by the CEO to his current senior staff, including the Research Program Managers (RPMs), who in turn need additional support. There is a need to improve ACIAR's approach to risk management and transparency.

The Review Panel recommends that:

14. The CEO, within available resources, augment staffing resources, including by the addition of an SES officer, to enable more extensive senior-level liaison with organisations and agencies within Australia and better support for the efficient discharge of the research program.
15. ACIAR examine the role of country managers with a view to making enhanced use of their in-country knowledge and experience.
16. ACIAR maintain an active dialogue with AusAID to build on positive discussions to date and ensure that it receives adequate resourcing to discharge AusAID's requirements for reporting on and acquittal of AusAID-funded projects.
17. ACIAR take steps to improve the transparency of its project and partner selection processes, as well as perceptions of its performance in this regard.
18. ACIAR review its risk management plan.

ACIAR Effectiveness

A key feature of ACIAR throughout its 30-year history has been its concern for effectiveness. This is demonstrated by the care it has taken with the quality of its projects, ensuring they meet country needs, are undertaken by research partners with successful track records, and are embedded in a deep understanding of the research issues. It is also demonstrated by the systematic approach taken to monitoring and evaluation, in particular the quality of, and investment in, its evaluation activities.

The Review Panel examined the range of ACIAR's work in monitoring and evaluation, as well as in assessing the adoption and impact of its work on productivity and poverty. There is considerable international debate about the methodologies employed for assessing impact and the report examines these. The Review Panel was struck by the range and quality of ACIAR's work in these areas, including the production and publication of case studies of both successful and unsuccessful research projects.

Overall, the Review Panel accepts that the studies on the economic impacts of ACIAR's work, which show a very high benefit:cost ratio, are reasonable and represent a demonstrated high return for the investment of ODA funds.

ACIAR has been concerned for some time to move beyond standard economic impact assessment to gain a greater understanding of the impact on poverty. With the adoption of CAPF, with its central focus on reducing poverty, there is now increasing urgency to incorporate a poverty focus systematically into ACIAR's evaluations. There is plenty of evidence that ACIAR's projects impact on poverty but there needs to be a systematic method of capturing and reporting the poverty impact of ACIAR's activities. This type of data has not been regularly collected in ACIAR projects. ACIAR has advised that it is retrofitting current projects so that data for the headline indicators of the CAPF can be collected. Every new project will collect this data, provided it is expected to contribute to the goals in the time frame of the project. The Review Panel endorses this approach to enabling ACIAR to contribute to CAPF reporting, and recommends that the process be accelerated. At the same time, it is vital that ACIAR continue its own suite of evaluations, adoption studies and impact assessments.

ACIAR's monitoring and evaluation system is strong. To strengthen the whole-of-government reporting and ACIAR portfolio management, the Review Panel recommends that ACIAR:

19. introduce by June 2014 an integrated program management database
20. develop by the end of June 2013 a systematic approach to report on CAPF indicators and retrofit all active projects to collect data on the number of farmers accessing new agricultural technologies, and the increased crop value; and the number of farmers and other poor people with increased income
21. undertake some repeat impact assessment and adoption studies ten years after completion, to test the appropriateness of the assumptions made, especially about productivity improvement and the rate and extent of adoption
22. nominate evaluations for oversight by the IEC (Independent Evaluation Committee) during the evaluation process
23. produce an annual summary of key evaluation findings to form part of the annual reporting on the CAPF, with structure and form developed in consultation with the Office of Development Effectiveness and the IEC
24. continue its own suite of evaluations and impact assessment, including continuing to estimate the economic impact of its projects and improving its methodology for assessing environmental impacts.

Communications and Stakeholder Engagement

The Review Panel was impressed by the quality of ACIAR's publications and, in particular, by the breadth of material made available. This body of work is a substantial contribution to the task of making information available about the overall aid program. This contribution could well be enhanced in further ways, including through the incorporation of information (in line with the CAPF reporting approach) about the numbers of poor people overseas who have been helped by ACIAR programs. The Review Panel also sees scope for ACIAR to collaborate further with AusAID in the area of public communications, including, for example, by producing more "Australian aid" material featuring joined-up projects (such as the "Seeds of Life" project in Timor-Leste).

The Review Panel encountered more mixed views about the quality, depth and frequency of ACIAR's stakeholder engagement. There were positive views in developing countries about ACIAR's engagement. In other encounters, for example with representatives of some of the CGIAR Centres and others operating in the international environment, there was a clear understanding of ACIAR's work and a generally high regard for it.

There are a number of reasons for ACIAR to enhance its stakeholder engagement in Australia in a strategic and concerted way:

- ACIAR stands to benefit from raising awareness of its work in parliament and the central agencies in Canberra.
- ACIAR has a substantial interest in enhanced engagement with universities, both at the most senior levels (for example, to enhance awareness of the value which ACIAR research funding represents in the total range of funding available to universities), as well as among the research community (including those who have not previously worked with ACIAR and may represent new capacity for international agricultural research). Such engagement also serves to increase interest in agricultural research and interdisciplinary approaches to food security and food safety.
- There are other groups that already represent a significant source of co-funding for ACIAR (for example the state and territory government agencies) but are working in a changing environment which ACIAR needs to understand.
- There is a need for ACIAR to relate more intensively with the private sector and NGOs.
- Regular interactions can serve to identify and deal with issues of concern to ACIAR and partner organisations.

There should be a systematic process of engagement, with a clear agenda, a clear understanding of why it is being undertaken and with aims differentiated according to the differing stakeholder groups. This process would benefit from guidance from the Commission and would require additional resourcing at a senior level in ACIAR's management structure.

The Review Panel recommends that:

- 25.** ACIAR develop a clear high-level narrative about its work and use this to raise community awareness in Australia.
- 26.** ACIAR develop further its work with AusAID on whole-of-ODA public affairs approaches.
- 27.** ACIAR develop a strategic approach to, and systematic process of, engagement with stakeholders in Australia, including through engaging the Crawford Fund.

The Future

ACIAR is an institution which brings a solid reputation and demonstrated strengths to the period of opportunity and risk it now faces. The Review Panel has made recommendations on a range of issues which it believes need to be addressed, mostly in an incremental way, to position ACIAR for the future.

That future would ideally see ACIAR as a separate agency, well integrated into Australia's overall ODA systems, valued and respected by Australians as a whole and by its Australian and international partners.

ACIAR will need to:

- Retain its independence, while working as part of an ODA process which plans, works and reports in a whole-of-government way. This will require that ACIAR continue to become increasingly familiar with, and a part of, the global development debate and the vibrant emerging Australian approaches.
- Develop its approaches in ways which reflect considerations of what elements of agriculture will be important for Australia over coming decades; emerging linkages between agriculture and nutrition, energy and mining, and the skills requirements these might raise for ACIAR; the potential for ACIAR to become a leading centre for work on adoption processes; and the evolving implications of climate change and other major developments like stresses on production from ocean fisheries.
- Take into account shifting dynamics in the agricultural research capacities of Australia and other countries, and further consider new ways in which it can develop partnerships, regional and other approaches, including developing technical partnerships with emerging economies as countries become no longer ODA-eligible.
- Strongly develop its capacities to tell the ACIAR story in a compelling way.
- Pursue an effective pattern of engagement with stakeholders.

CHAPTER 1: CONTEXT OF THE INDEPENDENT REVIEW OF ACIAR

The Review

On 19 September 2012, the Minister for Foreign Affairs commissioned an independent Review of ACIAR. The Terms of Reference for the Review are shown in Appendix 1.

This is the first such review of ACIAR since 1998 and there have been significant changes in a number of relevant areas since then. These have included changes in legislation (the ACIAR Act); a consequential transition from the former Board to the Australian Commission for International Agricultural Research; and the development of a comprehensive whole-of-government approach to Australia's Official Development Assistance (ODA).

Internationally, there have also been significant developments in recent years which are highly relevant to ACIAR. Most notably, the 2007–08 global food price spike spurred renewed international appreciation of the fundamental importance for the world of sustainable growth in agricultural production, and the major challenges to improving global food security, particularly in the face of unsustainable natural resource use and the potential impacts from climate change. There has also been renewed appreciation of the importance of agricultural development as an effective path to economic growth and poverty reduction. This landmark change in the global mindset has helped drive moves to reform international arrangements for agricultural research.

The members of the Review Panel were:

- Mr Bill Farmer AO (Chair)
- Emeritus Professor Ronald Duncan
- Mr Terry Enright
- Dr Wendy Jarvie.

Consultations within Australia and Internationally

The Review Panel consulted widely within Australia, including with AusAID, CSIRO and other Australian Government agencies; state government agencies; universities and research institutions; non-government organisations and private sector partners; the Crawford Fund; and ACIAR Commission members and staff. Overseas, the Panel visited Indonesia, Papua New Guinea and Vietnam, and attended the second meeting of the Global Conference on Agricultural Research for Development (GCARD2) held in Punta del Este, Uruguay, in late 2012.

At GCARD2 the Review Panel met representatives of the CGIAR Consortium and Fund Council, including the Chair of the CGIAR Fund Council, the Chair of the Independent Science and Partnership Council (ISPC) and the CEO of the Consortium. The Panel also met with representatives of several of the international agricultural research centres (IFPRI, ICRAF, CIFOR, ICARDA, IWMI, CIMMYT); the Association of Independent Research and Development Centres for Agriculture (CABI, AVRDC, CATIE, ICIPE); and multilateral organisations (World Bank, IFAD, IFC).

The Review Panel convened more than 130 separate meetings, interviewing more than 300 individuals. A list of organisations consulted is given in Appendix 2. It also made a public call for submissions and received 21 written submissions. A list of submissions received is at Appendix 3.

The Panel reviewed extensive literature including legislation; previous strategic reviews and audits; ACIAR's research strategies, corporate plan, annual operational plans and publications; and publications produced by others, including by AusAID and the Chief Scientist of Australia.

The Review Panel attended meetings with its reference group, the Development Effectiveness Steering Committee (DESC), and with the Commission for International Agricultural Research, to discuss its findings.

Previous Reviews and Surveys

There have been three earlier reviews of ACIAR: in 1987; 1992 (a review by the Parliamentary Joint Standing Committee on Foreign Affairs, Defence and Trade); and in 1998. Reviews of the Australian aid program in 1996 and 2011 also discussed ACIAR.

The most recent review of ACIAR (1998) reported strong support for ACIAR and its mode of operation, particularly the partnership model, together with widespread views that ACIAR's focus on strong and high-quality science helped to ensure a high return on a small investment. The 1998 Review also found that ACIAR was at risk of complacency and resistance to change; that it needed to approach the future in a way designed to position it as a leader in research for development, with a greater effort in the area of fostering adoption of promising technologies developed through its research projects; and that it needed to be flexible and willing to re-examine its approach to issues like management of the project cycle, priority-setting mechanisms and methods of evaluating impact.

The 1998 Review made a number of recommendations, including that ACIAR should:

- explicitly demonstrate its achievements in poverty alleviation at the rural level
- continue to focus projects on the development priorities of partner countries rather than Australian interest
- make a more targeted investment in research planning, prioritisation and consultation with stakeholders in developing countries and Australia
- continually identify development opportunities and explore mechanisms to assist the institutionalisation of an adoption culture
- be open to the concept of "graduating" countries as their development needs diminish, concentrate its efforts geographically and develop clear policy arguments for retention of research support to more advanced countries
- work with AusAID to develop a mutual focus on rural development.

During 2005–07, ACIAR commissioned, and published responses to the results of, surveys of its Australian and international stakeholders.

In relation to Australian stakeholders, the survey noted that ACIAR had an outstanding reputation and that many Australian stakeholders had benefited from partnership with ACIAR. Some areas of adaptation and change were identified as requiring attention for the future. These included:

- the need for more attention to strategic dialogue with Australian stakeholders at the senior organisational level
- the desirability of more transparency in the process from project identification to project approval, and greater outreach to potential new collaborators in Australia
- a greater need to demonstrate clear local/national benefits in Australia, which is increasingly important for collaborators such as state departments

- the benefit of greater emphasis on strategic co-investment alliances rather than small, project-based collaborations
- recognition that Australian organisations that work with ACIAR have undergone or are undergoing major changes that will affect their relationship with ACIAR in the future such that the availability of staff for ACIAR projects cannot be assumed
- the need to make clearer the basis for priority-setting and resource allocation
- the desirability AusAID contributing more actively to turn ACIAR project outputs into beneficial outcomes.

The survey of overseas stakeholders reported overall views that ACIAR projects were successful both in delivering beneficial research outcomes for the rural sector, and particularly in developing the research capacity of partner organisations, including through formal and informal capacity building and training. Specific issues raised for achieving future improvements in ACIAR's partnership model and performance included:

- the need to adapt the ACIAR model to address specific capacities across countries with varied resources and skill bases, particularly smaller countries
- the need for greater attention to the project development time frame
- examination of ACIAR's ability to address "big issues" such as climate change, market development and water management
- assessment of the correct mix between research and extension funding and wider use of extension options, including use of projects specifically designed with dissemination and adoption elements
- a need to consider larger ACIAR projects.

Some of the issues raised in the 1998 Review and the stakeholder surveys have remained at the core of discussions about ACIAR. It is clear that some have been addressed directly in the intervening years. Equally, some remain live issues and are addressed in this current Review.

In 2012 the Office of Development Effectiveness released a review of Australia's rural development assistance—*From Seed to Scale-Up: Lessons Learned from Australia's Rural Development Assistance*. This identified principles for effective and efficient use of ODA and made recommendations for enhanced whole-of-government processes.

Independent Review of Aid Effectiveness 2011

The contemporary settings for the current Review flow from government actions since the Independent Review of Aid Effectiveness in 2011. The relevant documents are as follows:

- the 2011 Independent Review of Aid Effectiveness (ausaid.gov.au/publications)
- the government's response to the Independent Review (*Making a Real Difference—Delivering Real Results*)
- *Helping the World's Poor through Effective Aid: Australia's Comprehensive Aid Policy Framework to 2015–16*.

The Independent Review of Aid Effectiveness recommended specifically that there should be more aid funding for research by Australian and international institutions, particularly in agriculture and medicine. This was agreed to in principle by the government.

The Review's other recommendations included a number which sought to set the scene for all of Australia's ODA effort, including ACIAR. These recommendations touched on the following issues:

- the objective of the aid program

- the criteria for making decisions about country programs
- increasing sectoral selectivity and restricting the geographic spread of the bilateral ODA program
- a “whole-of-ODA” approach, with a strategy to be developed for the entire aid program and an organising framework to enhance the program’s strategic clarity and facilitate communication of results
- in relation to multilateral organisations, the need for Australia to seek greater influence over policy and program directions and better monitoring of effectiveness
- “whole-of-ODA” budget and reporting processes; an annual review of aid effectiveness of all ODA; and uniform standards for planning, developing, monitoring and reporting
- a Transparency Charter.

Comprehensive Aid Policy Framework

The Comprehensive Aid Policy Framework (CAPF) set out a vision and strategic goals for all of Australia’s ODA.

Among the five strategic goals for the program was one of special relevance to ACIAR:

Sustainable economic development: improving food security; improving incomes, employment and enterprise opportunities; reducing the negative impacts of climate change and other environmental factors.

The CAPF also referred to a whole-of-government approach to Australian ODA, noting that some 10 per cent of ODA is delivered by federal agencies other than AusAID, with a further 4 per cent delivered through joint partnerships with AusAID. The CAPF sets out to be a framework for the entire aid program, for example by referring to the greater accountability for results of AusAID and the agencies with which it works; to the Annual Review of Aid Effectiveness, a report to Cabinet on the performance of the whole aid program, not just AusAID; and to a commitment to transparency for the aid program. The CAPF focuses a good deal of attention on the particular expectations upon AusAID but a whole-of-government approach is evident throughout.

Strategic Framework for International Agricultural Research within Australia’s Aid Program

In October 2011 a Panel chaired by the Chief Scientist provided a report on implementing the recommendation of the Independent Review of Aid Effectiveness on increased funding for agricultural research. The report, *Strategic Framework for International Agricultural Research within Australia’s Aid Program*, is available at aciarc.gov.au/publications.

The Strategic Framework report strongly endorsed the concept of agricultural research being fundamentally important to the alleviation of poverty, by raising agricultural productivity and by increasing incomes for both rural and urban populations. It also supported the Australian Government’s moves to increase the share of agricultural and rural assistance in Australian ODA, including more ODA investment in agricultural research.

The Strategic Framework report identified five examples of steps which might be taken to improve the effectiveness and efficiency of Australian aid delivery in relation to international agricultural research:

- The need for a more cohesive approach to international agricultural research among all Australian partners; that is, a more 'Team Australia' approach
- Explore institutional innovations that bring together public and private sector parties and offer new modalities for consideration in international agricultural research
- Enable joint program design, among Australian, Asian, Pacific, African and international partners
- Increase Australian engagement with global programs, including the CGIAR Research Programs
- Increase support for evidence-based public awareness of the importance of science and technology, to build constituencies in Australia and in partner countries.

The Strategic Framework report, with its focus on the whole ODA program, informed the deliberations of the Review Panel on specific issues relating to ACIAR and the scope of the current Review.

ACIAR and Australia's Agricultural Research Base

Australia is widely recognised internationally for the generally high quality of its agricultural research, which is clearly recognised as a major contributor to the relatively good productivity performance of Australian agriculture (averaging 2.8 per cent per annum over the past two decades 1985/86–2007/08, though slowing in recent years, compared to 1.4 per cent for the economy as a whole), and for having a comparative advantage in this area of international development assistance. Many parts of the Australian agricultural expertise spectrum are involved in Australia's contributions to international agricultural research, and to international agricultural development policy and practice (see Appendix 4 for a detailed outline of Australian agricultural research participants).

Australia's capacity to contribute to international agricultural research and development (R&D) depends on the continuing strength of this domestic agricultural research base, which faces considerable challenges. There is extensive domestic debate about the appropriate level of agricultural R&D investment needed in Australia (currently totalling around A\$1.5 billion per annum), in the face of the nation's recent slowing agricultural productivity growth, and the significant ongoing growth in global food and fibre demand. Federal and state government budgetary constraints have put noticeable pressure on public sector investment, which accounts for around 75 per cent of Australia's total agricultural R&D, and particularly on state government departments of agriculture. The marked decline in the numbers of graduates and postgraduates in agricultural science and related physical sciences at Australian universities has raised concerns about the future of Australian agricultural research capacity. A shrinking and ageing population in the agriculture, fishing and forestry industries generally is another relevant issue.

Over the past three decades, ACIAR has been able to design and implement its research projects (undertaking over 1,200 projects in around 60 countries) by acting as a catalyst to draw on Australia's extensive agricultural research expertise. But the prospect of a possible long-term decline in Australia's agricultural research capacity means that ACIAR may have to consider how it might adjust its model.

The Global Context: Agricultural Research for Development (AR4D)

The World Bank concluded in a 2008 report on agriculture and development:

With the increasing scarcity of land and water, productivity gains will be the main source of growth in agriculture and the primary means to satisfy increased [global] demand for food and agricultural products.

(Agriculture for Development, World Bank, 2008)

The potential impacts of climate change will be an additional challenge to maintaining and increasing the required productivity growth in agriculture, fisheries and forestry. In addition, if global agricultural production failed to keep up with global food demand growth this would result in higher agricultural commodity and food prices, with potential adverse impacts on living standards and social stability in many countries.

It is well established that R&D is an essential driver of productivity growth in agriculture, fisheries and forestry; and that the major increase achieved in agricultural production in the second half of the twentieth century to meet food and fibre demand growth from the near doubling of the world's population was significantly attributable to improvements in agricultural productivity attained through technological change enabled by investments in agricultural R&D. The slowdown in agricultural productivity growth in much of the world over the past decade is commonly attributed in large part to declining growth in agricultural R&D investment in most countries (for example, from over 3 per cent per annum in the 1950s and 1960s down to around 1 per cent per annum in the past decade in most developed economies), and the falling share of that R&D investment allocated to basic research on agricultural productivity as opposed to other areas like nutrition and biosecurity. This fading attention to the importance of agricultural R&D investment was also reflected in the steady decline in the share of total ODA allocated by donors to agricultural assistance, falling from about 13 per cent of total OECD ODA in the mid 1970s to about 4 per cent by 2008. The 2007–08 global food price spike was a major wake-up call about the vulnerability of global food supply to shocks, and triggered a renewed focus on the outlook and challenges for global agriculture, and the measures needed to address them, not least more investment in agricultural R&D.

Australia has long understood the vital importance of agricultural development as an effective pathway to broader economic development and poverty reduction in developing countries. Giving practical effect to this understanding, Australia has been a longstanding and consistent supporter, both with funding and other contributions, of a number of key international institutions. Some of these institutions focus on the development aspects of agriculture, others on the technical and standard-setting underpinnings, and some cover both.

Australia contributes in a number of ways to the international AR4D effort:

- Australia contributes around A\$11 million per annum for its membership of the **United Nations Food and Agriculture Organization (FAO)**, as well as some further ad hoc voluntary funding for particular projects.
- Australia is also a member of the three key standard-setting bodies related to agriculture and food. The FAO provides the secretariat for each of these three bodies, and provides part of their funding from FAO basic membership funding. These are:
 - the **Codex Alimentarius Commission**, formed in 1963, which establishes international standards, guidelines, and codes of practice for food safety;

- the **International Plant Protection Convention** [1952], which aims to protect cultivated and wild plants by preventing the introduction and spread of pests;
- the **World Organisation for Animal Health**, formed in 1924, to promote transparency about global animal disease situations and trends, promote animal health and welfare and food safety, collect, analyse and disseminate veterinary scientific information, and establish health standards for international trade in animals and animal products.

In 2009 Australia agreed to provide (from its ODA funds through AusAID) a base of regular multi-year funding to the **World Food Programme (WFP)**, totalling A\$180 million over the four years 2010–2013, as well as to continue to provide additional funding for particular emergencies. The WFP, established in 1961 as the food aid arm of the United Nations, works to provide food aid to respond to short-term emergencies, help rebuild communities after emergencies, reduce chronic hunger and nutrition, and help countries improve their food security.

Australia has been a member of the **World Bank** since 1947. The World Bank has a long history of initiating and funding research, development and extension projects related to agriculture, fisheries and forestry in developing countries, in partnership with the particular country and often with other partners with specific expertise, including developed countries' ODA agencies, international organisations and institutions such as the FAO and CGIAR, and a range of NGOs. In addition, the Bank has responded to particular crises with the establishment of special funds to facilitate rapid deployment of emergency assistance, such as the *Global Food Crisis Response Program (GFRP)* set up in May 2008 to provide immediate relief to countries hard hit by food high prices, and the *Global Agriculture and Food Security Program (GAFSP)* set up in 2009 to finance country-led strategic investment plans to improve food security. In addition to its normal membership contributions, Australia also provides support to specific World Bank programs, including those related to agriculture. For example, Australia has contributed A\$50 million to the GFRP (from ODA funds through AusAID). Australia is also a financial contributor to the GAFSP program and is the current Chair of the GAFSP donor Steering Committee.

ACIAR has interacted with all these international agencies, but its most important role in the international community is as the conduit for Australian ODA to **CGIAR**. CGIAR was formed in 1971 with support from the World Bank, initially as a consortium of donors in support of four international centres aimed at maximising cooperation and synergies in basic agricultural research into key staple crops for the developing countries. By the 1990s the consortium had expanded to 19 centres through establishing or incorporating research institutions dealing with all the world's major food crops, livestock, fish, health and nutrition, climate change, soils, water, forests and biodiversity. As a result of some consolidation, by the early 2000s the consortium came to comprise its present 15 centres, with all but one (the International Food Policy Research Institute, in Washington) based in developing countries.

Australia has been an active member of CGIAR since its inception. Many Australian agricultural scientists and economists have worked at a range of CGIAR Centres, as well as participating in senior management roles with the organisation. With CGIAR's move since 2010 to reform its research strategies and funding allocation system in order to improve the effectiveness and efficiency of its collective research efforts, Australia has gradually increased its funding support to CGIAR to currently around A\$22 million per annum. Australia now includes the CGIAR in its annual assessment of the effectiveness of multilateral organisations.

The CGIAR Fund Council of donors and developing country members and the Consortium of 15 international agricultural research institutes have agreed on four areas of development outcomes, towards which CGIAR will direct its future research agenda and investments: (i) improving food security, (ii) poverty reduction and improving livelihoods, (iii) agriculture for human health and nutrition, and (iv) environment and natural resources management.

The CGIAR reform is leading to a matrix arrangement, whereby several new, cross-cutting international AR4D programs, termed the CGIAR Research Programs, intersect with the 15 international agricultural research centres. On one side of the matrix are the new CGIAR Research Programs, focused on major development issues and commissioning research that contributes towards achieving CGIAR's four system-level outcomes. The other side of the matrix comprises the 15 international agricultural research institutes, which are leaders and/or participants in one or more of the CGIAR Research Programs. The 15 research institutes have established a new legal entity, the CGIAR Consortium, under the governance of a Consortium Board. The Consortium has entered into contractual arrangements with the CGIAR Fund Council to deliver the system-level outcomes through the implementation of the 15 CGIAR Research Programs, in return for an agreed level of investment.

The Australian Government in the 2009-10 Budget announced that it would double its financial support to CGIAR over four years. The Australian contribution will be provided through the three new funding windows established within the CGIAR multi-donor Trust managed by the World Bank, as part of the CGIAR reform process.

As the Pacific countries' representative on the CGIAR Fund Council, ACIAR has been active in the reform process. Two Review Panel members attended the second GCARD conference in late 2012 in Uruguay, and observed that ACIAR and the CEO in particular are well regarded within CGIAR and the Fund Council, for both financial and intellectual input.

CHAPTER 2: WHOLE-OF-GOVERNMENT ISSUES

Introduction

ACIAR is a statutory authority with its own legislation, its own budget and a strong independent streak. It has long-established connections with overseas research institutions, Australian universities, and state and territory governments. It also has connections with a range of private-sector research organisations. These relationships and partnerships are evolving in ways discussed in Chapter 4 on ACIAR strategies, in response to developments in developing-country approaches, state/territory government financing decisions and Australian scientific research capacities.

This chapter deals with ACIAR's relationship within the Commonwealth Government.

ACIAR is a discrete agency within the Foreign Affairs and Trade portfolio, as is its much larger sister agency, AusAID. It has, by comparison with AusAID, a quite modest budget and staffing establishment. Its particular focus is on pursuing specialised areas of agricultural research work overseas, harnessing Australian, developing-country and other expertise. This focus is reflected in the very different operating models employed by ACIAR and AusAID.

Several important recent developments, taken together, have served to raise ACIAR's profile and interactions within government.

The most important of these have been developments affecting the government's overall approach to ODA. A focus on a whole-of-ODA approach is involving ACIAR in a range of new processes, including development of ODA country strategies and reporting on results.

A second area of significant development in ACIAR's environment has been the sizeable growth in its budget, from \$66m in 2007–08 to an estimated \$128m in 2012–13. This increase is the result both of general increases in the overall ODA budget and of particular decisions on issues like the Australian International Food Security Centre (AIFSC).

A third broad development has been an increasing tendency by government to include ACIAR's work in the range of instruments it employs to further its foreign policy objectives. The Department of Foreign Affairs and Trade (DFAT) told the Review that it values the opportunity to involve ACIAR in countries where there is a wish to develop a broader relationship. Examples of this include the recent development of ACIAR programs in Iraq, Afghanistan and, following the Arab Spring, Egypt. The negotiation of free trade agreements over the past decade has also seen a range of requests from partner countries for cooperation in agriculture. ACIAR has potential to contribute strongly to the government's negotiating coin; for example, through the development of beef projects in Indonesia in response to the Indonesian Government's wish to include agricultural capacity building on the agenda of negotiations on the Indonesia–Australia Closer Economic Partnership Agreement. A further high-profile decision by government was the CHOGM announcement of establishment within ACIAR of the Australian International Food Security Centre. The Review team encountered favourable opinions from Australian Heads of Mission about ACIAR's work and its actual or potential value in overall bilateral relations.

The Review Panel has concluded that there are a number of areas in which ACIAR's pattern of involvement in whole-of-government arrangements needs further development, both in ACIAR's own approaches and in some whole-of-government approaches.

ACIAR and ODA

The government has taken a series of decisions in relation to ODA which proceed from an intention to pursue a whole-of-ODA, whole-of-government or joined-up strategy. As discussed in Chapter 1, this approach is reflected in decisions, which are now being implemented, to prepare a whole-of-ODA budget; to report annually on a whole-of-ODA basis; to issue the Comprehensive Aid Policy Framework (CAPF); to prepare whole-of-ODA country strategies; and to take related steps in areas like oversight of all ODA by the Development Effectiveness Steering Committee.

These processes, which in some cases are still a work in progress, have been instituted at the same time as a wide range of initiatives and change within AusAID in response to government decisions flowing from recommendations of the Aid Effectiveness Review. There is a widespread view among those consulted by the Review Panel that these many changes will take some time to bed down fully.

Working in a whole-of-government way has been shown to produce real dividends (for example the way in which AusAID and the ADF collaborate in a number of disaster relief tasks, including following the Padang Earthquake in Indonesia in 2009). It is not, however, an easy path to follow and there can be real barriers to success in the form of differing institutional mandates, cultures, mindsets and modes of working.

Against this background, it would be surprising if change of the magnitude presented in the CAPF were introduced without some issues and disconnects. There have been some such issues in the way in which ACIAR has experienced the new arrangements.

Some of these issues flow from ACIAR's modest budget in the overall ODA scheme of things—\$128 million out of total ODA of some \$5 billion in 2012–13. Others relate to the fact that ACIAR is not represented on the DESC, nor on the Development Effectiveness Working Group.

At the same time, ACIAR is now a more visible agency than ever before. This is partly because of the growth in ACIAR's budget and the government's decision to base the AIFSC in ACIAR.

ODA Purpose and the ACIAR Mandate

The Comprehensive Aid Policy Framework defines the purpose of the Australian Aid Program in the following terms:

The fundamental purpose of Australian Aid is to help people overcome poverty. This also serves Australia's national interest by promoting stability both in our region and beyond. We focus our effort in areas where Australia can make a difference and where our resources can most efficiently and effectively be deployed.

The ACIAR Act sets out ACIAR's purpose in the following terms: "to encourage research for the purpose of identifying, or finding solutions to, agricultural problems of developing countries".

ACIAR's Corporate Plan 2011–12 sets out its Vision and Mission Statements as follows:

Our Vision

ACIAR looks to a world where poverty has been reduced and the livelihoods of many improved through more productive and sustainable agriculture emerging from collaborative international research.

Our Mission

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

A number of submissions to the Review touched on the appropriateness of ACIAR's mandate, especially the issue of benefit to Australia. There was a wide measure of support for ACIAR's goals and objectives, but marked difference of view on the issue of mutual benefit:

- The National Farmers' Federation emphasised the importance of realising benefits for both developing countries and Australian primary producers; and advocated linking ACIAR's work directly to Australian R&D priorities and outcomes. Another submission was that there was insufficient emphasis on benefit to Australia.
- The NSW Department of Primary Industries commented that the focus on delivering benefit to Australia as well as developing countries was "critical to the success of ACIAR and enables the capabilities of state-based agencies such as DPI to be made available to the Australian aid program".
- In contrast, AusAID and the Development Policy Centre at the ANU argued that the focus in ACIAR's statement of objectives should be development benefits, not mutual benefits, so as to provide full consistency with the goal of Australia's aid program.

The Review Panel took into account the following considerations:

- a. The high-level statements of purpose by some other Australian Government agencies which spend significant amounts of ODA (e.g. the ADF, the AFP and DIAC) do not contain reference to development benefits, though in practice their ODA expenditures are certified as meeting the ODA guidelines. ACIAR's position, of course, differs from that of these agencies in that all its expenditure is ODA-eligible.
- b. All ACIAR's programs involve co-investment by Australian institutions or agencies, for many of whom the issue of Australian benefit is essential.
- c. The Comprehensive Aid Policy Framework itself notes that priorities for Australian aid are determined using a number of criteria, including "national interest; proximity to Australia; Australia's security interest (including the impact of conflict and fragility); total two way merchandise trade flows with Australia; total migrant flows (excluding tourists); relevant ranking as Australia's trade partner; community interests; and memberships of groups (for instance, APEC, ASEAN, the Commonwealth and the G20)". The ACIAR approach does not seem incompatible with CAPF in this regard.

These considerations do not all pull in the same direction. The Review Panel is satisfied, in all the circumstances, that ACIAR's high-level statements of purpose are appropriate, making clear as they do that the primary purpose of ACIAR's work is to assist developing countries. The benefits to Australia of ACIAR's work—showcasing Australian capabilities (along the lines advocated in the Asian Century White Paper); creating and enhancing links between Australian and overseas researchers and institutions; and, in some cases, providing research of benefit to Australian as well as overseas farmers—do not detract from the benefits of ACIAR's work for developing countries. Indeed, the views of overseas members of ACIAR's Policy Advisory Council were that ACIAR is far more effective than most other donors in achieving its goals and objectives.

Agriculture and Rural Development in Australian ODA

Both AusAID and ACIAR can point to significant successes in their rural development efforts in developing countries. They can also point to success stories which have involved a continuum, from ACIAR research through to development work by AusAID. Such stories include:

- "Seeds of Life" program in Timor-Leste (see Box 1)
- Cambodia rice (see Box 2)
- Newcastle disease in chickens.

These are positive examples of joined-up ODA.

There are many examples, on the other hand, where agencies appear to operate separately in the rural development area. The Review Panel had first-hand experiences of cases where AusAID and ACIAR work very closely together. However, ACIAR country programs, drawn up in ways discussed later in this report, do not always reflect an understanding of AusAID rural development plans. These latter plans, in turn, do not always reflect an understanding of ACIAR programs. In some instances, this may not be an issue; for example, where ACIAR, in response to a developing-country priority, undertakes research on, and solves, a disease problem in a particular crop, in circumstances where comparatively little ODA involvement in follow-up work is required. There are some other relevant dynamics, for example in countries where ACIAR has a program and AusAID does not, and vice versa.

The Review Panel does not suggest that there can, or even should be, a link between all rural development efforts undertaken by various Australian ODA agencies. However, there appear to be opportunities for a more joined-up approach.

At present, there are a number of mechanisms for consultation between ODA agencies on rural development. These include:

- regular meetings between the DG AusAID and CEO ACIAR (as well as the DG AusAID and CEO CSIRO)
- AusAID/ACIAR/CSIRO relationship management meetings
- quarterly meetings on African food security involving AusAID, ACIAR, CSIRO and the AIFSC
- consultations on country strategies, both in-country and in Canberra.

These mechanisms are of varying utility. At one end of the spectrum, the ODA country strategy consultative process does not necessarily provide sufficient time or opportunity for ACIAR's views to be taken into account or, in some cases, for its programs to be included. At the other end of the spectrum, the regular high-level meetings between agency heads provide a basis for driving joined-up approaches. These meetings are the more important, given the two agencies' different operating models and approaches.

At a time when many new processes are being bedded down in the administration of Australia's ODA, it seems timely to address the issue of what additional measures might be useful in further promoting a whole-of-government approach to rural development ODA. There are a number of possibilities:

a. Agriculture and Rural Development CEOs Meetings

These meetings, which could involve AusAID/ACIAR/CSIRO and ABARES, would provide the basis for agreement on the desirability of (and in some cases the limits to) a joined-up approach to agriculture and rural development in Australia's ODA. Above all, they could provide an opportunity for the CEOs to send a message to their organisations about their collective expectations. These meetings would not need to consume much time of the CEOs: they would set the tone for other processes and encourage organic links at other levels.

b. An ODA Agriculture and Rural Development Working Group

This group could be modelled on other ODA working groups (e.g. on law and justice). It would need to convene, at SES level, several times per year and would be a prime opportunity for agencies to:

- identify emerging issues in the dynamic international agricultural and food security environment
- discuss arrangements for efficient sharing of information about respective programs and plans
- identify areas for pursuit of joined-up activities
- keep track of progress towards ensuring organic consultation between agencies (see next point).

From the ACIAR perspective, the relationship with AusAID is so significant that there is a strong case for designating a senior officer as having overall responsibility for managing the relationship with AusAID.

c. Organic Consultative Processes

There are some complexities caused by the different ways in which agencies approach their work, in particular the country focus of AusAID and the thematic approach of ACIAR. These are not insuperable differences. For example, ACIAR has a cross-cutting geographic matrix and the Review team saw good examples where ACIAR has positive engagement on country programs within AusAID. There are other cases where such engagement is not in such clear evidence. Discussions should become part of an organic relationship between the agriculture and rural development ODA agencies—driven from the top, monitored by the SES working group, implemented at the branch and desk level. This would aim at ensuring that, at the least, the agencies are aware of each other's plans; and, ideally, that opportunities for joined-up or incremental work are identified and pursued.

Other Whole-of-ODA Issues

ACIAR stands to gain from better linkages with other elements of the ODA program, including from being exposed to the broader developing agenda in ODA and from a system which provides organic processes for identifying opportunities for ACIAR's projects and programs to be the basis for broader work by ODA agencies. In turn, ACIAR has a lot to offer in such an environment.

In addition to the consultative processes mentioned above, the Review Panel has identified a number of issues relating to existing and developing ODA processes:

a. DESC and DEWG Processes

The DESC and DEWG processes are moving to institute whole-of-ODA approaches across the entire aid program. This is clearly a desirable trend.

The DESC and DEWG have representatives from AusAID, DFAT, PM&C, Treasury and the Department of Finance and Deregulation. It does not have representation from other agencies which are major users of ODA funds, including the Department of Defence, AFP, DIAC and ACIAR.

In these circumstances, it seems essential that appropriate arrangements, including time frames, are in place to ensure that the views of all affected agencies are reflected in documents going to the DESC. The Review team was told of some instances where very short time frames precluded ACIAR's views from being reflected in such documents; and of instances where ODA country strategies do not include reference to ACIAR programs or projects.

As noted above, the whole-of-ODA arrangements are still being bedded down. The Review Panel's view is that some refinement of the operations of DESC/DEWG is desirable to allow the DESC deliberations and the various whole-of-ODA products to have the benefit of the perspectives of all agencies expending ODA funds. This is particularly important in relation to potential changes which might affect agencies' reporting and other requirements.

Other fine-tuning in DESC arrangements may also be desirable. Minutes of DESC meetings are not circulated to ODA-expendng agencies but consideration could be given to providing regular advice to agencies of DESC decisions, emerging issues and forward timetables.

b. ODA Country Strategies

An important part of the process overseen by the DESC is the production of ODA country strategies. This is a desirable development, in line with the country focus in the new ODA environment. In practice, as noted above, the extent to which agencies are consulted and, indeed, the extent to which they contribute, vary. This is understandable, given various time and other pressures, but there are some unfortunate consequences.

For example, there is a view in AusAID that because the AusAID Papua New Guinea (PNG) country strategy, agreed between the two governments and encapsulated in the Partnership for Development, does not include a focus on rural development it is undesirable for ACIAR to be working in PNG. AusAID, rightly, has come to its views about where it should focus its efforts in PNG (that is, in health, education, law and justice, and infrastructure). ACIAR for its part has its own agreements with PNG authorities, has a long-standing involvement in PNG and, because of the importance of increased agricultural production in improving the living standards of the majority of Papua New Guineans, attaches importance to continuing its involvement in that country. A number of Commonwealth and state agencies commented on the importance they attached to ACIAR's work in PNG due to biosecurity and other concerns.

The Review Panel's view is that there is no inconsistency between decisions by AusAID to focus its efforts in particular sectors in PNG and a decision by other agencies to work in other sectors there. This issue should be capable of resolution in future as the country strategies become whole-of-ODA country strategies, able to include reference not only to the AusAID focus but also to the involvement of other agencies. This is already happening in some cases and is the way to go. Reaching agreement on what will or will not form part of an ODA country strategy should be an inclusive process which fully involves all interested agencies.

The ANAO, in its Audit Report No. 15 2009–10, made a number of comments which bear on this issue. It noted that the 2006 White Paper on the aid program recognised the need to upgrade country strategies to include "all ODA-eligible activity, including that delivered by Australian Government agencies other than AusAID, in order to strengthen the coordination and focus of Australia's aid programs". The ANAO commented that whole-of-ODA approaches would have a number of advantages, including in terms of accountability and transparency.

Inevitably, the main element in the ODA Country Strategy documents is the AusAID suite of programs. But to be whole-of-ODA country strategies, as distinct from AusAID country strategies, the documents need the following elements:

- A process which adequately engages other ODA agencies during the drafting phase
- A product which includes reference to the programs of all ODA agencies in the particular country
- Desirably, "Australian Aid" badging to emphasise that the strategies are whole-of-government strategies.

Full participation in these processes will require that ACIAR devote additional resources to the liaison function.

c. Projects Undertaken by ACIAR Using AusAID Funds

ACIAR has undertaken a number of projects with funds supplied by AusAID, using a Record of Understanding (ROU) with accompanying schedules. Areas where these arrangements have caused issues of concern to one or other of the agencies include:

- ACIAR reporting and acquittal of AusAID funds. There is dissatisfaction in some areas of AusAID with ACIAR's performance on AusAID-funded projects, including in relation to timeliness of progress reporting and provision of other information required by AusAID. From the ACIAR side, there is a view that, under the AusAID/ACIAR Record of Understanding signed in April 2006, ACIAR undertakes to manage joint activities "using its normal mode of operation including its reporting and accountability requirements". This issue is further complicated as both AusAID and ACIAR funds are employed to deliver projects. There is, at the least, a misunderstanding between some areas of the two agencies on this issue. The Review Panel notes that this is the sort of issue which could be raised in, and resolved through, the consultative mechanisms proposed above. A related issue would be whether the current AusAID/ACIAR ROU needs to be revised to reflect the new arrangements for managing ODA.

- Resources required to implement AusAID-funded projects. Some submissions to the Review suggested that AusAID funds channelled through ACIAR for projects might become part of the direct subvention from the budget to ACIAR. The Review Panel does not support this view: the funds reflect a view within AusAID about a particular need in a particular country program at a particular time, and not about an in-principle ongoing need which can be met only by ACIAR.
- Whether ACIAR is equipped to, and should, undertake work on behalf of AusAID. On the first issue, how well-equipped ACIAR is to undertake projects on behalf of AusAID, there are real strengths which ACIAR brings to such projects, but the Review Panel's view is that it is not sustainable to place more weight onto the existing ACIAR Research Program Managers (RPMs) and that ACIAR, in approaching discussions with AusAID about potential projects, needs to satisfy itself that it will receive sufficient resources to implement projects. This may involve resources and skills broader than those of the RPMs. There has been concern, now being addressed by the two agencies, about the adequacy of the funds being provided for the administration of the AusAID-funded projects. This issue is addressed in Chapter 5.
- On the issue whether ACIAR should undertake work on behalf of AusAID, the Review Panel proceeds from the view that ACIAR can evolve into a more open organisation, experiencing a broader range of opportunities, if it is well and increasingly linked into the overall ODA effort. This can inject new ideas and approaches into ACIAR and extend its skills base. All this can be a positive. However, as discussed below (Chapter 4), ACIAR is not a development agency in the sense that AusAID is, and it should not move its centre of gravity away from its core skills and mandate in research.

d. Regular Reviews of the Aid Program

In its response to the Independent Review of Aid Effectiveness, the government agreed to regular five-yearly reviews of the aid program. The Development Policy Centre of the ANU argued in its submission that there are compelling arguments for a similar approach to ACIAR's work. The Review Panel agrees. Indeed, the logic of a whole-of-ODA approach, coupled with the fact that all ACIAR's funds are ODA-eligible, points to ACIAR's work being reviewed at the same time as the regular review of the aid program, with the review of ACIAR feeding into the broader ODA review.

e. Multilateral Engagement

In response to the Independent Review of Aid Effectiveness, the government has substantially increased the amount of ODA funding it contributes to multilateral organisations and, through the Australian Multilateral Assessment, its scrutiny of multilateral organisations. This has included substantial increases to CGIAR.

ACIAR plays an important role in Australia's funding of international AR4D through its relationship with CGIAR. ACIAR is the conduit for Australian ODA funding of CGIAR and is active in the management of the CGIAR system, particularly in the ongoing reform of the system. As noted earlier, the CGIAR reform has involved the adoption of 15 CGIAR Research Programs. However, it is an ongoing process to finalise the Research Programs and Panel discussions, with some of the Centres indicating concerns as to the impact of the Research Programs on the ability of CGIAR Centres to maintain core functions.

The Review Panel heard comment from the CEO of the CGIAR Consortium that they would like a clearer vision of Australian priorities. It is noted that a number of other Australian research institutions invest directly with various CGIAR Centres. It would be desirable that ACIAR consult widely with Australian institutions to make sure its role at CGIAR reflects an Australia-wide position. ACIAR could convene an Australian forum of interested parties to assist its communication on CGIAR issues, particularly on the impact of the CGIAR Research Programs. More generally, given the commitment and capacity of CGIAR to alleviate poverty, a continuing high level of Australian engagement is warranted.

Australia benefits from CGIAR programs. This is particularly relevant in the Australian grains industry where germplasm from ICARDA, CIMMYT and ICRISAT has significantly influenced variety development. While benefit to Australia is not the driver of Australian investment in CGIAR, the fact that spillover benefits continue means there is incentive for the wider community to support Australia's financial commitment.

Some views were expressed to the Review that direct AusAID investments with some of the CGIAR Centres demonstrate that Australian priorities are not being met via the ACIAR investment. However, the ACIAR investment represents both core funding for the centres and project-specific bilateral collaborative funding where it is appropriate. AusAID investments are targeted at specific research outcomes and in that respect are no different from a range of investors who invest in CGIAR programs. ACIAR and AusAID have developed processes for consulting on CGIAR-related issues and the Review Panel encourages the further formalisation of these processes. It was noted that more recently there has been closer collaboration and AusAID has agreed to channel all funding for CGIAR through ACIAR (including funds sourced from global, regional and bilateral programs).

Other views suggested a potential conflict of interest where ACIAR competes with CGIAR's new Research Programs for personnel and research activity because ACIAR operates in the same field. ACIAR suggests it co-invests with CGIAR in research activities rather than competing. Discussions with the Center for International Forestry Research (CIFOR) showed that they viewed ACIAR as a small but critical investor in their program, which also includes AusAID.

There appears to be a case for ACIAR to examine critically the CGIAR Research Programs and determine if further investment is warranted, taking account of Australian research institutions that may already be active. ACIAR also has an important part to play in contributing advice on the effectiveness of the Research Programs to the Australian assessments of multilateral organisations. Discussions with CGIAR Centre Directors indicated that Australia through ACIAR plays a key role as a reliable investor, in securing the long-term security of the CGIAR system and contributing to program development and implementation.

The final outcome of the CGIAR reform process is not certain as there are many players involved and many issues to resolve. ACIAR should continue its involvement at the highest level possible to assist in transforming CGIAR, a system that has demonstrated high effectiveness over many years.

The Review Panel concludes that a comprehensive Australian approach to engagement with CGIAR should be developed, in consultation with other agencies and stakeholders. This could be overseen by the proposed Agricultural and Rural Development ODA Working Group. In line with the approach to other multilateral organisations, that approach should focus on ways in which increasing Australian contributions should be reflected in increasing Australian representation and influence in the CGIAR decision-making processes. Given the CGIAR reform processes and their dynamic nature, this exercise should be undertaken annually.

f. Other Implications for ACIAR of the New Whole-of-ODA Arrangements

A number of elements in the Independent Review of Aid Effectiveness have implications for ACIAR. These include:

- an emphasis on avoiding proliferation of projects
- an emphasis on reducing the numbers of countries in which Australian ODA is involved
- whole-of-ODA reporting
- increased emphasis on aid effectiveness and evaluation
- a transparency initiative.

These issues are dealt with in following chapters.

Other Whole-of-Government Issues

ACIAR can point to a range of issues on which it has participated in preparation of submissions to parliamentary inquiries, whole-of-government advice to government or other whole-of-government processes. These submissions have touched on a wide range of matters well beyond ODA, including the following:

- Submission to and appearance before the Productivity Commission into the Rural Research and Development Corporations (2010) and follow-up meetings with DAFF to assist with government responses.
- Participation in the deliberations of the Rural R&D Council development of Australia's National Strategic Rural R&D Investment Plan for the Minister for Agriculture, Fisheries and Forestry (2011).
- Submission to and appearance before the House of Representatives Standing Committee on Industry, Science and Innovation Inquiry into Australia's International Research Collaborations (2010).
- Submission to the Senate Standing Committee on Education, Employment and Workplace Relations inquiry on higher education and skills training to support future demand in agriculture and agribusiness in Australia (2011).
- Submission to and appearance before the Senate Standing Committee on Foreign Affairs, Defence and Trade Committee inquiry into the main economic and security challenges facing PNG and the island states of the Southwest Pacific (2008).
- Submission to and appearance before the Joint Standing Committee on Foreign Affairs, Defence and Trade inquiry into Australia's relationship with the countries of Africa (2010).
- Submission to and appearance before the Senate Committee on Foreign Affairs, Defence and Trade inquiry into the Indian Ocean Region (2012).
- Submission to and appearance before the Senate Committee on Foreign Affairs, Defence and Trade inquiry into Australia's overseas development programs in Afghanistan (2012).
- Contributions to the AusAID submission to the Joint Standing Committee on Foreign Affairs, Defence and Trade inquiry into the International Fund for Agricultural Development Amendment Bill (2012).

There are numerous other government initiatives on which ACIAR has provided advice and input, including the food security deliberations of AusAID and DFAT and preparations for G20 and other meetings. ACIAR has also participated as a member of the Australian Research Committee chaired by the Chief Scientist; delivered papers at the ABARE Outlook Conference (2012); Oxfam Grow (2011); Food Security Forum, Adelaide (2012) and ACIPA Food Security Conference (2012); participated in the CSIRO Climate Adaptation Flagship review panel; and participated in the DAFF Indo-Australia roundtable (2012).

Against the background of this range of activity, the Review team encountered a lack of awareness in the central agencies of important aspects of ACIAR's operations. DFAT commented that ACIAR was not widely enough recognised for the quality of its work; while in the Departments of the PM&C, Treasury, and Finance and Deregulation (all members of DESC) the Review encountered views which suggest that their interactions with ACIAR are limited.

A more structured engagement would seem to have considerable potential benefit in informing the central agencies of ACIAR performance on issues like delivering value for money, effectiveness and efficiency, evaluation and overall management of its increased budget. The Annual Report on Aid Effectiveness is another vehicle for generating enhanced awareness of ACIAR's performance in these areas.

There is awareness in the Commission and in ACIAR of the advisability of devoting more attention to work in government circles in Canberra. This seems likely to increase during 2013, though the result will be some easing in ACIAR's high-level overseas contacts. In the Review Panel's view, this rebalancing is sensible. This issue is referred to also in Chapter 5 on ACIAR's resources and management.

The Review Panel recommends that:

1. ACIAR and AusAID continue to work together to position ACIAR fully within the new whole-of-government ODA process.
2. The CEOs of AusAID, ACIAR, CSIRO and ABARES consider mechanisms to encourage a whole-of-government approach to agricultural and rural development ODA, including regular CEO meetings, an ODA Agricultural and Rural Development Working Group, and organic consultation processes.
3. As whole-of-government ODA procedures are further bedded down, the Development Effectiveness Steering Committee and Development Effectiveness Working Group processes, including preparation of ODA country strategies, be further refined to allow full inclusion of perspectives from ODA-expenditure agencies.
4. There should be regular reviews of ACIAR, conducted at the same time as, and feeding into, the regular five-year reviews of the overall aid program.
5. ACIAR lead a process for agreeing on and articulating a comprehensive Australian approach to engagement with the CGIAR system.

Box 1: Seeds of Life: ACIAR and AusAID Project in Timor-Leste

Due to the devastation to Timor-Leste from several years of conflict and upheaval, by 1999 much of the country's agriculture was laid waste, many of its farmers fled from their plots, and much of the country's farming knowledge lost. Irrigation infrastructure and agricultural research stations had been destroyed. Food was scarce, and the small amount of remaining stored seed was soon eaten; consequently some traditional crop varieties were lost.

Early in the international reconstruction efforts led by the United Nations, ACIAR became involved in reviving Timor-Leste's agriculture. In 2000 ACIAR, in conjunction with Timor-Leste's Ministry of Agriculture and Fisheries (MAF), AusAID and the University of Western Australia's Centre for Legumes in Mediterranean Agriculture (CLIMA), established the Seeds of Life (SoL) project, a targeted research, seed production and distribution program. In the initial phase, emergency seed was brought in from Indonesia through the FAO, while germplasm was imported from similar agro-ecological regions, using the networks and supplies of the CGIAR consortium. At the same time, the ACIAR team realised that much of Timor-Leste's small cropping area was compromised by unsuitable varieties and reliance on rainfed agriculture. Because of this, the ACIAR team worked with several NGOs such as World Vision International and Catholic Relief Services to yield-test prospective crop varieties, including sweetpotato, maize, cassava, peanuts and irrigated rice. This process identified higher yielding options that were better adapted to local conditions including pest, disease and drought-tolerance.

Based on this promising beginning, it was agreed to continue the project in 2005 for a further five-year period as SoL Stage 2, jointly funded by Timor-Leste's MAF, AusAID and ACIAR. The challenges were still considerable: more than half the rural population were struggling to derive a household income from just one or two hectares; and food shortages were largely attributed to poor agronomy and high crop failure rates. SoL 2 conducted numerous field trials of possible varieties before selecting nine new varieties of five staple crops—maize, sweetpotato, cassava, rice and peanuts—for distribution to about 10% of farmers across seven of Timor-Leste's thirteen districts. The project selected non-GM and non-hybrid varieties that did not require inputs like fertilisers, which Timor-Leste's poor subsistence farmers could not afford. CARE International and World Vision worked with ACIAR on distribution to about 15,000 farmers. The result was higher yields of these staple crops for participating farmers, and a high rate of adoption with replanting. A 2009 independent review of SoL 2 concluded that the program had been "directly responsible for food productivity improvements in more than a quarter of Timor-Leste's villages". In addition, the SoL sweetpotato varieties doubled yields and grew in half the time of old varieties, and generated the first ever cash sales of farm produce, surplus to subsistence requirements for a number of rural East Timorese, significantly lifting their incomes. Importantly, SoL 2 and CARE International facilitated the start of community-based seed production, storage and distribution.

Capacity building was another major part of SoL 2, through training of MAF's agricultural researchers and extension officers, including some postgraduate scholarships in Australia and Indonesia. SoL 2 also commenced rebuilding three agricultural research stations.

The third stage of the program, SoL 3, commenced in 2011, again jointly funded by Timor-Leste's MAF and Australia, with A\$25 million contributed by AusAID and ACIAR, for a five-year period 2011–2016. SoL 3 is aimed at expanding the seed scheme nationwide, involving about 1,000 local producer groups and the private sector in the seed production, storage and distribution, and aiming to reach 90% of the rural population. SoL 3 also aims to find productive varieties of a wider range of crops, including beans for higher protein, potatoes that can be grown in the uplands, wheat, barley, cowpea and pigeon pea. Agronomy improvements based on plant spacing, weed control and fertiliser use are also being researched to further improve yields. Another aspect of the program is the potential for introducing forage legumes to crop rotation to support the cattle and buffalo industry, with stronger livestock exports to Indonesia possible. A key objective is further capacity building, with the goal of enabling MAF to develop direct relationships with the CGIAR Centres and itself manage the national seed improvement program and sourcing of germplasm. At the same time, SoL 3 wants to see market-driven demand by farmers for good seeds become the main driver and foundation for a commercial seed industry.

With Timor-Leste's population projected to double from its present 1.2 million over the next three decades, improving agricultural productivity and the potential for increasing cash incomes for the rural population are key to reducing poverty and improving welfare.

Box 2: AusAID–ACIAR Collaboration in Agricultural Development— Cambodia–IRRI Australia Project (CIAP)

A striking example of effective joint efforts by AusAID and ACIAR is the Cambodia–IRRI Australia Project (CIAP), a major project undertaken over the 14 years of 1987–2001 to revive and improve Cambodian rice productivity and farming systems, and re-establish and strengthen local agricultural research, development and extension capacity.

Cambodia's traditional rice production system was the major part of its agriculture, and by the mid-1960s produced a significant surplus for export. But as a result of conflict and turmoil in the 1960s and 1970s, agriculture and rice production were devastated. By 1980 only 40 of the 400 prewar qualified agriculturalists remained in the country, and most of the agricultural research infrastructure had been destroyed. Dislocation of farmers from their accustomed ecosystems also resulted in many traditional rice varieties being lost. As a consequence, Cambodia faced annual rice shortfalls of 50,000–200,000 tonnes per annum during the 1980s.

In 1986, in response to a request from Cambodia's Ministry of Agriculture, Forestry and Fisheries (MAFF) for help from the CGIAR system's International Rice Research Institute (IRRI), the Australian Government through AusAID agreed to fund initial studies of Cambodia's agricultural research and training needs through IRRI's Indo-China program. The Cambodia–IRRI–Australia Project (CIAP) soon emerged from this pilot project. This saw several Cambodian agricultural scientists undertake rice production courses at IRRI in 1987 funded by CIAP, and an IRRI representative and small team assigned to Cambodia in 1988 to help set up a national agricultural research system. Three more phases of the CIAP followed, with the continuing goal "to increase rice production and the productivity of rice-based farm production systems".

As Cambodia's rice production and productivity gradually improved (from approximately 2.5 million tonnes of paddy rice production in 1988 to 3.5 million tonnes by 1998, and 4 million tonnes by 2001, mainly from steady yield improvement), the CIAP research agenda expanded into non-rice crops by putting more emphasis on increasing whole-farm production. This research included legume-based farming systems, varietal evaluation of soybean and mung bean, land remodelling to reduce effects of flood and drought, and ways to encourage agricultural diversity. As CIAP was succeeded after 2001 by other agricultural R&D projects, such as ACIAR projects involving Western Australia's Murdoch University and the WA Department of Agriculture, there was also more focus on improving productivity, crop diversity and farmers' incomes in upland areas.

A vital part of the CIAP work was to develop Cambodian agricultural research capacity to a point where it could lead and undertake ongoing R&D. This included training for 1,700 personnel, including PhD studies in Australia for some. As well as strengthening the research, development and extension (RDE) capacity of MAFF, the project supported the establishment of the Cambodian Agricultural Research and Development Institute (CARDI) in 1999, to carry on the CIAP work and contribute to the further development of Cambodia's agricultural sector and rural economy, including by broadening research into other crops beyond rice, and increased emphasis on crop quality, including postharvest technologies and practices. In addition to Cambodian Government funding, several international donors including the Asian Development Bank, IRRI, AusAID and ACIAR and a number of NGOs have contributed to supporting CARDI's work.

Approximately A\$24.65 million was invested in the CIAP over 1988–2001. Over this period Cambodian rice production increased by 50 per cent; and arising from CIAP's work together with ongoing CARDI RDE efforts, Cambodia has re-emerged as a major rice producer and net exporter. By 2010, Cambodia's rice production had exceeded 8 million tonnes, with around 1 million tonnes exported, earning important national income and improving the country's food security.

CHAPTER 3: GOVERNANCE

The ACIAR Act

ACIAR was established under the *Australian Centre for International Agricultural Research Act 1982*, as a statutory authority reporting directly to the Minister for Foreign Affairs. The Act was described as “an Act to encourage research for the purpose of identifying, or finding solutions to, agricultural problems in developing countries”.

Major amendments to the ACIAR Act were made following the Uhrig Review of 2007. Principal among these were provisions relating to ACIAR’s accountability under the *Financial Management and Accountability Act 1997* (FMA Act); the replacement of the former ACIAR Board with the Commission for International Agricultural Research; and the requirement that the ACIAR CEO exercise responsibility for administrative and financial management, reporting directly to the Minister. The last provision represented a significant change from the superseded provisions, which had vested a range of management responsibilities in the Board. This change was in line with a government decision that the CEOs of all statutory authorities constituted under the FMA Act should be directly responsible to their Minister and not to a Board.

A compilation of the ACIAR Act was prepared on 27 December 2011. This compilation contains the ACIAR Act No. 9 of 1982 as amended, taking into account amendments up to Act No. 46 of 2011.

The ACIAR CEO and ACIAR’s Functions

The ACIAR Act (sections 5, 5A and 6) makes the following provision about the CEO and the staff of ACAIR:

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:
 - identifying agricultural problems of developing countries;
 - finding solutions to agricultural problems of developing countries;
 - b. to commission agricultural research by person or institutions (whether the research is to be conducted in Australia or overseas) in accordance with such programs and policies; and
 - c. to communicate to persons and institutions the results of such agricultural research; and
 - d. to establish and fund training schemes related to the research programs referred to in paragraph (a); and
 - e. to conduct and fund development activities related to those research programs; and
 - 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 directions the CEO should take in performing his or her functions).

6. Functions of the staff of the Centre

The functions of the staff of the Centre referred to in section 30 are to assist the CEO perform his or her functions.

The Review Panel received a number of views which, even if not directly expressed in these terms, bear on the statement of ACIAR's functions. These included views about the benefits to Australia from ACIAR's work; that ACIAR should be wary of becoming deeply involved in development activities; and that ACIAR should be required also to use research expertise from countries other than Australia and partnering developing countries.

The Review Panel has made observations and recommendations elsewhere in this report about a number of aspects of the operations and approach of ACIAR, including those issues mentioned above. The Review Panel does not believe the views put to it warrant consideration of amendments to the ACIAR Act. The Act is cast in terms which allow for development of approaches as thought appropriate, in response to ACIAR's evolving operating environment, whole-of-government processes and other developments.

The Commission for International Agricultural Research

The functions of the Commission, according to the amended ACIAR Act (Section 9) are:

- a. to provide advice to the Minister in relation to the formulation of programs...;
- b. to provide advice to the Minister in relation to funding ...;
- 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 matters.

The Act also provides (under Section 16K) that the Minister may, by writing, give directions to the Commission with respect to the performance of the Commission's functions under the Act.

The Commission has issued its own document, "ACIAR Commission Guidelines", which contains sections on the Commission's role and the relationship between the Commission and the CEO of ACIAR.

The Commission guidelines outline the Commission's role in the following terms:

7. The Commission will fulfil its statutory obligations and deliver on its functions by providing strategic advice to the Minister, including in the following areas:
 - ACIAR's strategic directions and planning approvals with a particular emphasis on the Annual Operational Plan (AOP) and the longer-term Corporate Plan.
 - Assessments of the ACIAR funding levels and resource allocations developed in the context of the AOP to achieve a best fit of expenditures across the various partner countries and the agricultural research areas which are managed by the Centre.
 - Research strategies and prioritisation at the program level. This could include provision of advice on particular research and development themes and actions to meet specific government priorities and/or requirements in partner countries as they arise, when requested by the Minister or the Department of Foreign Affairs and Trade (DFAT).

- Country strategies, bearing in mind the necessity for ACIAR strategies to:
 - Align with the overall strategy of the broader Australian aid program in each country;
 - Accommodate the development needs and requirements of partner countries; and
 - Reflect the availability of relevant technical skills within Australian partner organisations.
 - Advice on overall program implementation and strategies to enhance future communication and adoption pathways for ACIAR projects. This includes monitoring of program performance and evaluation results and lessons learned for future directions.
 - Promotion of ACIAR and its key relationships both in Australia and overseas. Commissioners can support the Minister and CEO in maintaining key relationships and establishing new partnerships for ACIAR in Australia and overseas.
 - Providing wider advice to the Minister (and DFAT) as requested on matters related to the ACIAR Act.
8. The Commission should have access to information as required to facilitate their strategic advisory role, including information on ACIAR’s budget—proposals, priorities, formulation and performance.
 9. The Commission will be informed on the ACIAR audit work program including the strategic audit program and its outcomes and, at the first meeting of each financial year, informed on the compliance audit plans for the coming year.

The guidelines refer to the Commission/CEO relationship in the following terms:

29. The CEO is directly accountable to the Minister for the overall performance of the Centre.
30. In line with the above provision, the CEO is exclusively responsible for the administrative and financial management of ACIAR, reflecting the adoption of the executive management structure.
31. The CEO may be appointed as both the CEO and a Commissioner (including the Chair—see paragraph 4). The CEO is a member of the Commission, thereby ensuring consistency in advice to the Minister. In the interests of maintaining flexibility, the Chair of the Commission could be appointed as the CEO.
32. The Commission does not have a role in the governance of the Centre. Instead, the Commission will provide a forum for strategic high-level dialogue to ensure expert advice is provided to the Minister on program formulation, priority setting, program and financial performance, and funding. This separation of roles between the Commission and the CEO reflects the new governance and accountability arrangements.

The changing environment in which ACIAR operates—including major developments such as resource constraints and the evolution of whole-of-government approaches to ODA—means that an active and engaged Commission is highly important to ACIAR. The Chair and other Commissioners have standing, and in some cases occupy positions, which enable them to champion ACIAR’s interests in dealings both inside and outside government, in both Australia and overseas. The Review Panel was impressed by the signs it saw of the ways in which the Commission has provided leadership to ACIAR in the context of evolution in ACIAR’s operating environment, in particular in the wake of government decisions about directions for managing ODA. The Commission has been active in promoting strategic approaches and consideration of ACIAR’s future directions.

The evolution of functions, from the former Board to the current Commission, has resulted in a new dynamic in the governance of ACIAR. The Review Panel encountered views among the Commissioners that the operation of the current arrangements could be improved. The Commissioners are all senior in their fields and bring a wide range of expertise across government and private sectors, in international agricultural research and development. Some believe that there is a mismatch between the calibre/seniority of the Commissioners and what they are asked to do. A related point is that the Commissioners’ advisory role as set out in the legislation does not, in practice, seem to satisfy them that their views are fully taken into account on strategic issues and major documents. Some Commissioners commented that the current arrangements do not in practice work to ensure an appropriate level of insight into and scrutiny of ACIAR’s strategy and operations, nor a level of responsiveness they consider appropriate.

The view from the CEO of ACIAR on this issue was that, in practice, the functioning of the Commission has a number of distinct advantages, including through strategic guidance, the discipline and accountability of regular Commission meetings, as well as enhanced visibility and access for the Centre as a result of the Commission's legislated function of advising the Minister.

The Review Panel believes the current arrangements could work better. In formal terms, the Commission is discharging its responsibilities and approves the higher level documents before these are sent to the Minister. However, some Commissioners see need for the Commission to exert enhanced influence over ACIAR's strategic thinking and its higher level planning and reporting documents; and some documents (for example the Annual Operational Plan) are sent to the Minister as having been considered by the Commission, though without an indication of Commissioners' views. Overall, the arrangements do not work in a way which takes full advantage of the perspectives (and the time) of the Commissioners.

The Review Panel does not believe that it is appropriate to revisit the issue of the CEO's responsibilities for administration and management under the FMA Act. The CEO should be left to exercise these responsibilities and be accountable for that. Nor, in the light of broader government approaches to governance of statutory authorities, does the Review Panel believe that the functions of the Commission as set out in the ACIAR Act are susceptible to amendment. But some change is desirable to take fuller advantage of the Commission: to give the CEO the full benefit of strategic guidance from the Commission, and to enhance assurance to the Minister about the operations of ACIAR. Change would also be desirable in order to make clear to all the required *modus operandi*.

A potential solution is already available within the existing provisions of the Act. The Commission is empowered under Section 9 to provide advice to the Minister in relation to a number of specified matters and, at the Minister's request, in relation to any other matter. The Review Panel believes that, in relation to proposals to the Minister for approval of the higher level documents (the Corporate Plan, the Annual Operational Plan), submissions from the CEO should be accompanied by a letter from the Chair of the Commission confirming that the Commission considered the document in question. That letter could provide such further advice as the Commission might think fit. This practice could be instituted by means of a direction from the Minister to the CEO and the Commission as provided for in the Act.

To be effective, this proposed approach would require some changes to the time frames for preparation of documents for the Commission's consideration. The Review Panel was also attracted to a suggestion from the CEO that ACIAR management formulate annual strategy settings for Commission consideration, as a precursor to development of the Annual Operational Plan. These strategy settings would comprise concise, high-level narratives about program focus at a country/regional level that, once endorsed by the Commission, would guide subsequent project development. While these strategy settings would need to be consistent with the CAPF and ACIAR's Strategic Plan, they would also convey considerations pertinent to agricultural research for development and, where applicable, reflect ACIAR's country consultations.

Such an arrangement would not impinge on the CEO's FMA Act responsibilities. It would preserve the lines of communication from the CEO to the Minister. It would require that working arrangements (e.g. timing of preparation of draft strategy papers and circulation to Commissioners) be such as to facilitate informed discussion in the Commission. And, crucially, it would mean that the specified documents, unamended or not, would be sent to the Minister only when accompanied by advice from the Chair of the Commission. This arrangement overall would make for an engagement which makes fuller use of the Commissioners' expertise, preserves the CEO's management responsibilities, and encourages enhanced debate with, and guidance from, the Commission.

The Policy Advisory Council

The Policy Advisory Council is set up under the ACIAR Act to provide advice to the Minister on:

- a. Agricultural problems of developing countries; and
- b. 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.

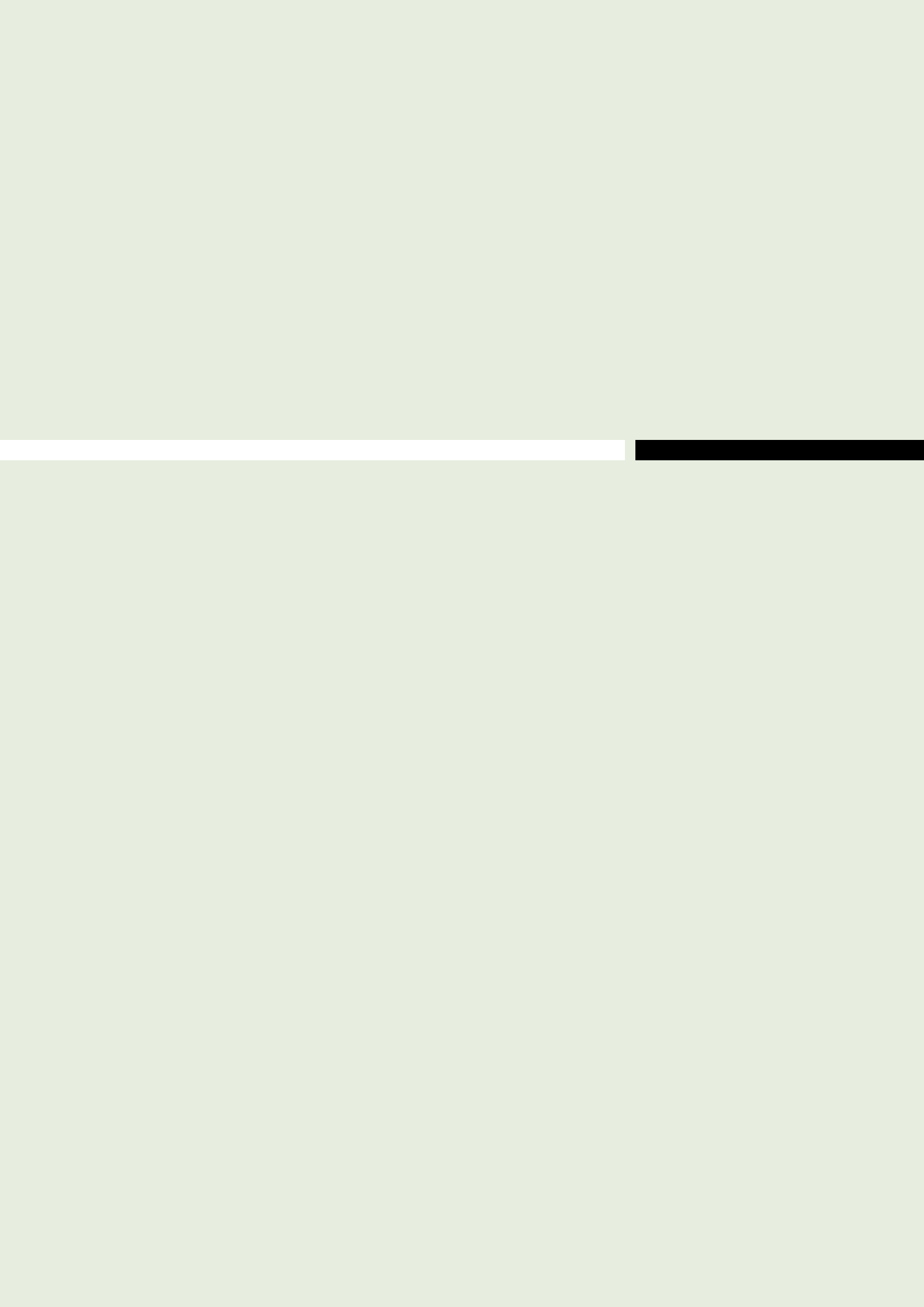
The Council has both Australian and overseas members, and the latter are, in general, senior representatives from national research institutes or government departments in countries or regions of importance to the ACIAR program. Appointments are approved by the Minister with the support of the relevant partner country governments and memberships from overseas countries have evolved as ACIAR country programs have evolved.

The Review Panel had the opportunity to meet the members of the PAC and observed in action the way in which ACIAR's developing-country partners share their views about ACIAR's in-country policies and programs, as well as about other issues like ACIAR's role in capacity building, ACIAR's place in broader international action on food security and other topics, and a range of issues relating to building effective partnerships and evaluating programs. Several members of the PAC made separate submissions to the Review. These submissions were, in general, highly supportive of ACIAR programs and approaches, including the way in which developing-country priorities are reflected in ACIAR programs. A number of PAC members emphasised the importance of training and scholarships provided by ACIAR. There was also some feeling that the PAC was "somewhat underutilised", with a suggestion that PAC members could be used more systematically in in-country consultations on future strategies and programs. The Review Panel sees merit in the last-mentioned suggestion, particularly in circumstances where ACIAR is (as it should be) involved in preparation of whole-of-ODA country strategies, and suggests ACIAR takes this into account.

PAC meetings are well attended by the overseas PAC members, who say they value the chance to engage with ACIAR at a strategic level. The Review Panel was advised by a number of officers of ACIAR that the PAC is valued, not only for the views of its members, but also because it enhances relationships with key players in priority countries and regions. The Review's observations, both in Australia and overseas, support that point of view.

The Review Panel recommends that:

6. ACIAR augment its planning processes by formulating annual strategy settings for Commission consideration, as a precursor to development of the Annual Operational Plan.
7. The Minister for Foreign Affairs issue a direction to the CEO and the Commission requiring that submissions to the Minister from the CEO seeking approval of the Corporate Plan and the Annual Operational Plan be accompanied by a letter from the Chair of the Commission confirming that the Commission has considered the document in question and providing such further advice as the Commission considers appropriate.



CHAPTER 4: ACIAR STRATEGIES AND APPROACHES

Introduction

There has been a strong element of continuity in ACIAR's approaches over the past 30 years and this is in many ways understandable, given the widespread international reputation that ACIAR's work has earned. The Review Panel has formed the view that the statements of functions set out in the ACIAR Act remain broadly appropriate, although some tuning of the senior governance arrangements is merited. The same broad generalisation holds for the ACIAR operating model, namely that there are important strengths in the model [including flexibility, reliance on strong technical expertise and development of valuable partnerships, in Australia and overseas], but also some grounds for adapting to significant changes in ACIAR's operating environment. These changes include major changes to the government's approach to ODA as well as significant increases in ACIAR's resources. A further set of considerations flows from public-sector reforms in areas like administrative transparency and provision of information to the public.

The changes to the environment in which ODA is administered are of particular importance to ACIAR. As the arrangements are further bedded down in accordance with the Comprehensive Aid Policy Framework (CAPF), there will be a continuing need for ACIAR to keep under review its approaches in areas like geographic spread and the range of projects it undertakes. This chapter deals inter alia with a number of these issues as they now stand.

Submissions and interviews were valuable in informing the Review Panel's deliberations. There was a refreshing diversity of views on many issues, including on the appropriateness of a number of ACIAR approaches. A number of comments amounted to variations on a point made in a submission from the New South Wales Department of Primary Industries:

As a long term partner with ACIAR DPI supports the view that the model delivers 'impressive results, confirmed by the independent evaluations'. Given the widely recognised effectiveness of ACIAR, DPI does not see a compelling case for radical change. DPI suggests that recommendations for change will need to be carefully framed to ensure that the effectiveness of ACIAR is not inadvertently impacted. In reviewing ACIAR's role within the aid policy framework DPI would strongly advocate the ongoing need for ACIAR – in keeping with its original charter – to work for the benefit of developing countries and Australia.

The submission from the University of Sydney made the following related comment:

While the outcomes from projects have been important in addressing what are often local as well as international challenges, ACIAR has also played a critical role in initiating new research partnerships, strengthening existing linkages, fostering lasting people-to-people and organisational relationships, building capacity in communities in the region, and sustaining capacity in Australia's education and research organisations.

ACIAR's Approach

ACIAR was established to assist developing countries by having Australian researchers undertake research to provide solutions to identified problems or otherwise improve agricultural productivity and systems and thereby help to overcome poverty. This form of development assistance was modelled on the Canadian Government's International Development Research Centre, which was begun in 1970 and funds Canadian researchers to work in any area believed to reduce poverty in developing countries. In a similar program, begun in 1979, USAID funds US Land Grant universities to undertake food and agriculture research in developing countries.

In undertaking its mandate, ACIAR has maintained the same mode of operation throughout. Following identification of an issue in a partner country, ACIAR identifies Australian and/or CGIAR researchers to lead the research in partnership with researchers and others, from developing countries and, in some cases, from third countries or international organisations. A project-approval process is then followed, leading to a decision on whether to go ahead with the project.

After completion of a project and a review of the outcomes, an extension of the project may be considered. Since around 1989 ACIAR has been carrying out impact assessments of the economic returns on its projects. As well, approximately three years after the completion of a project, the research project leader is invited to undertake a review of how well the use of technologies and other practices have been sustained and spread (an adoption review). The lessons learned from the impact assessments and the adoption reviews are intended to feed into future projects.

An integral part of ACIAR projects is the development of the capacity of researchers in the developing country. This is usually achieved through developing country researchers participating in the project, which may be as full-time collaborators or as postgraduate research students.

Key elements in ACIAR's mode of operations are the prioritisation of research projects, the identification of Australian research expertise in all disciplines likely to be of assistance to developing countries' agricultural systems—including agricultural policy—and the development of long-term research partnerships, both within Australia and within the developing countries. Attempts to improve the identification of research priorities have also led ACIAR to initiate the use of ex-ante impact assessment for the purpose of evaluating likely returns.

A critical issue for ACIAR has been selection of regions/countries for its operations. ACIAR has tended to work most in the developing countries of its neighbourhood—East and Southeast Asia and the Pacific islands, in particular the islands of the South Pacific. In selecting countries ACIAR has to take into account the problems that need to be tackled, Australia's comparative research advantage and the research being undertaken by other agencies, and the extent and depth of poverty in the country. ACIAR, and in particular many of its partner organisations in Australia, have also had regard to the likelihood of plant and animal pests and disease threatening Australia's agricultural production systems.

The ACIAR "Model"

ACIAR's research program is led by 14 experienced research program managers (RPMs), many of whom have had distinguished scientific careers and previously worked in developing countries. The 14 RPMs are currently focused on research themes of: crop improvement; cropping systems; horticulture; Pacific crops; livestock production systems; animal health; fisheries; soil management; land and water management; forestry; agribusiness; agricultural systems; agricultural policy and impact assessment.

Key roles of the RPMs are to identify problems in developing countries that are amenable to solution and identify Australian, international and partner country researchers who will be likely to provide solutions. Next, they oversee the design of the project, which will usually include scope for capacity building in the country or region and developing the involvement of local or overseas partners to assist in finding solutions and in the adoption of research outcomes. In choosing potential projects and researchers, key concerns are prioritising projects with regard to their long-term impact and the research disciplines in which Australia has a comparative advantage.

The RPMs develop Research Strategies, which discuss global concerns about the production of the commodity or the particular research area being addressed and what is happening in research at the international level. The Research Strategy papers also identify possible areas of research. These Research Strategies are linked to ACIAR's five-year Corporate Plan, which broadly allocates the Centre's funds across regions and research areas; and to the Annual Operating Plans, which provide more detailed plans of research. The Research Strategies also link to the development of Country Strategies for those developing countries that have a larger role in ACIAR's portfolio. The Country Strategies are designed following in-country consultations with developing-country governments, national agricultural research systems, AusAID and other donors, and other international agricultural research agencies.

Project identification goes through a staged process, whereby twice yearly the ACIAR CEO calls for concept notes from the RPMs. Each RPM submits concept notes, developed in the light of the process described above, which align with country priorities developed during consultations and corporate planning. The Senior Management Team (SMT) reviews the concept notes and decides which ones should be developed further into project proposals for review, through the in-house review (IHR) process as both preliminary and full proposals, which are reviewed by external experts. The review process appears to the Review Panel to be rigorously conducted and provides a number of assurances, including on the issues of scientific merit, potential results, impact and appropriateness of selection of researchers and institutions.

The Review Panel has examined a range of the Research Strategy papers. These show that the RPMs are very conscious of global trends in agriculture and natural resource management and issues of particular concern such as increasing water scarcity, loss of forest cover, the dependence of many poor upon forest products, constraints on arable land amidst increasing populations, pressures on food production from climate change, and the increasing global demand for animal protein. The Research Strategy papers also show that RPMs are aware of the importance of increases in adoption rates of new technologies and of the various kinds of constraints to more-effective impact pathways and adoption rates.

The Review received a range of opinions about the operation of the ACIAR model.

Many of these were highly positive. In interviews in Indonesia, for example, a number of international organisations spoke highly of ACIAR's record in producing results which are ready to scale up; of the coherent focus of ACIAR projects; and of the record of focusing on specific needs and producing results useful along the market chain. The predominant overall tone of comments from bilateral partner organisations was also positive about the operation of the ACIAR model.

The Review Panel heard a number of comments about the technical strengths of the RPMs, who were also widely regarded as being flexible in responding to new information during the progress of a project and prepared to alter the design of the project to adjust to new information. This flexibility was identified as a key strength, and was commented on by some interviewees as being in marked contrast to the rigidity encountered in dealing with a number of other donors. The RPMs were also widely seen as being as concerned about the enhancement of the quality of projects as about quality assurance; as being able to generate co-financing; evidence-based; and good at building partnerships while having a reputation as tough negotiators.

The Review Panel received a number of *suggestions about ways to strengthen the operation of the ACIAR model*.

One line of discussion related to the *identification of projects and the selection of research partners*. Some comments were that some projects seemed to be supply-driven; and that it was difficult for new researchers to become involved in ACIAR projects. There were some countervailing points of view: the RPMs have to be sure that researchers will deliver and this may lead to a preference towards researchers who have a proven record; many projects selected follow on from previous projects that have led to results worthy of further research and the researchers involved will understandably have priority unless there is a change in research direction; there can be a paucity of expertise in some disciplines; and as RPMs' contracts are for five years, the turnover of RPMs ensures that the net is cast widely for research expertise.

The Review Panel's view is that transparency about the selection of projects and the selection of primary and secondary research partners could be improved. This would be in accord with best management practice, and the Review makes recommendations on this matter in Chapter 5.

Another view expressed to the Review Panel was that the *project design and approval process* was too prolonged. As noted above, that process has a number of stages, which offer assurances in important ways but take time. The process can take up to two years. Some of this is beyond ACIAR's control, given in-country approval processes, but the prolonged process raises difficulties for some research organisations. For example, especially with regard to a project extension, universities can find it financially difficult to retain staff who have been funded by an ACIAR project if there is a lengthy project approval process. Concerns about such issues have been raised with ACIAR by various institutions over the years. The Review Panel also heard comments from several researchers that the process means that project designs are usually robust. This very robustness in turn was commented on by other researchers and by developing-country partners as allowing for nimbleness by RPMs and a light touch in managing projects once these get under way. The Review Panel acknowledges the inconveniences caused by the approval process, while recognising also its benefits. This should remain an issue which ACIAR management addresses, and there are some potential ways to ameliorate the problem, including more structured consultations with research institutions [discussed further in Chapter 7], moving further towards a program approach to ACIAR's work, discussed further in this chapter, and further development (and use) of methods to monitor the progress of all potential projects through the project development process.

The Review Panel heard views about the fact that ACIAR encourages *co-financing* by its local research partners and the risk that the selection of researchers may be influenced by the amount of co-financing offered and the best research option not chosen. As against this potential risk, co-financing means that additional funds are flowing into development assistance. But the more significant point is that the extensive project review process endeavours to ensure the best combination of projects and researchers is chosen.

There was some discussion in submissions to the Review of the desirability of *enhancing involvement by the private sector and by NGOs* in ACIAR's work. For example the submission from Dr Jay Cummins, of International Agriculture for Development Pty Ltd, commented as follows:

It is important that ACIAR consider further extending the opportunities of working with Australian researchers who operate in the private sector. Such professionals are equally committed to aid effectiveness and achieving impact and are passionate about making a contribution towards achieving sustainable agricultural development and food security in the developing countries. It is important that ACIAR encourages the development of such partnerships, and is able to develop research partnerships from as wide a pool of 'talented and committed professionals' as possible, many of whom operate outside Australian State Governments and universities. There is the need to further develop the full capacity of Australian researchers that actively contribute to the development of international food security through the engagement of Australian NGOs and consultants, who fully support aid effectiveness and achieving impact on the ground.

In its submission, Oxfam "commended the work that ACIAR has done to focus its scientific research and expertise on small-scale producers, and to focus some of its projects on women". Oxfam made a number of suggestions for the future, including that:

ACIAR should explore strategies to align its research to the needs of the groups most vulnerable to food insecurity, including:

- Emphasising technologies that are useful for these groups and delivering these technologies using mechanisms that are appropriate to their context (e.g. agricultural extension systems, training and resources)
- Engaging in consultation and dialogue with NGOs
- Working with local institutions that prioritise groups that are most vulnerable to food insecurity.

The Review Panel saw impressive evidence of involvement of the private sector and NGOs in some projects; for example, long-term cocoa projects in Indonesia.

A submission from Mr Noel Janetski from Mars Incorporated's Indonesian subsidiary noted that Mars has been a partner with ACIAR projects in a range of countries since 2000. The submission made the following points:

1. ACIAR plays a critical role as the largest and essentially the ONLY foreign government funded technology development agency, supporting applied research for agricultural and marine development and investing in the development of local researchers and research institutions.
2. ACIAR is currently filling a space that nobody else is filling on the development of technology side but we see signs that it is being pushed towards technology transfer, which is already a crowded space. It is critical that we preserve the technology development role of ACIAR or we risk losing this critical support altogether.
3. The contribution of ACIAR could be further leveraged by greater engagement of AusAID, USAID and the numerous other government, private sector and NGO entities as agents of "transfer technology" to take the technology developed to the field and to encourage and utilise the local research agencies being developed and empowered by ACIAR's work.
4. The absence of trust between the private sector (buyers/manufacturers), government (including government research institutes and universities), and the usually small enterprises that make up the production end of the supply chain. ACIAR could possibly do more to help bridge this gap and to help understand what the key drivers/and impediments to change might be.

Given the desirability of improving the adoption of new technologies and systems flowing from ACIAR's projects, it seems important that, where beneficial, the private sector is involved in the project, even from the design stage, to maximise its impact. NGOs could also play a useful role as project partners in helping to improve the adoption process and improve the engagement of women. There are already successful examples of this. For example, in the north-western area of Vietnam, the Vietnam Women's Union was instrumental in ensuring engagement of ethnic minority women in what proved to be a successful vegetable-growing project. The Review Panel believes that, in accordance with the emphasis in CAPF on involvement of the private sector and NGOs in Australian ODA, it would be appropriate for ACIAR to prepare a position statement on its future approaches in these areas.

A comment from a number of institutions was that it is sometimes difficult to discern the *strategic context for ACIAR's work* in particular countries—in effect, that some work seemed "idea-driven" or "relationship-driven" rather than deriving from a big-ticket strategy on, for example, biosecurity. As noted above, there is a cascade from ACIAR's higher level documents to research strategies to suites of projects but comments made to the Review Panel suggest the need for a clearer articulation of an ACIAR narrative and a concerted pattern of engagement with stakeholders to promote the narrative. This theme is pursued further in Chapter 7.

A significant issue that concerned many commentators was that the ACIAR "model" was under threat because of the *declining numbers of students enrolling in agricultural sciences and the ageing of Australian agricultural scientists*. As a result, the numbers of Australian researchers able to be involved in ACIAR projects were felt by some to be declining, a decline magnified by decisions by state and federal authorities to reduce the resources going into rural research and development.

Possible actions proposed in submissions to the Review to address this decline were to include, as primary researchers, scientists from developing countries that have rapidly increased the number and quality of agricultural researchers, such as Brazil, China and India, which now have significant, high-quality research capacity and are investing in domestic agricultural research. Australia's technical cooperation with emerging economies such as China, India and Thailand will increasingly be one of partnership, co-investment and regional cooperation, leveraging capability to address challenges in less well developed countries. As part of its efforts to develop more innovative partnerships, ACIAR has begun to build some trilateral research partnerships with certain developing countries, for example involving Indonesian researchers in Timor-Leste, and Thai researchers in projects in other Mekong countries.

A second possible approach would be to explore ways to make the discipline of agricultural science more attractive to Australian students and academic researchers. The Review Panel has noted with interest the announcement in January 2013 by the former Minister for Tertiary Education on the subject of measuring research impact as well as research excellence. This issue arose in several of the Review Panel's discussions with university researchers, who pointed out that research conducted with ACIAR tended not to count for much in academic career terms because of its applied nature. It appears to the Review Panel that a focus on research impact could improve the disposition of universities and individual researchers to contemplate working with ACIAR. In developing themes for the pattern of systematic engagement recommended by the Review Panel, ACIAR could emphasise ways in which research collaborations would be of benefit to partner institutions.

ACIAR itself is strongly focused on the issue of science capacity in Australia. The Review Panel was interested in discussions with ACIAR RPMs about possible ways of involving ACIAR proactively in supporting capacity building among young and mid-career Australian agricultural science researchers. Ideas suggested informally by the RPMs are referred to in Box 3. Many of these ideas would warrant further consideration, including consideration of funding issues. ACIAR could also examine further ways to support Australian scientists working in partner-country universities and research projects in order to expand in-country knowledge and broaden understanding of international agricultural research.

Another submission queried the appropriateness of "*tying*" *choice of researchers to Australia*. ACIAR has always had, and retains, a strong disposition to use Australian talent. This is both in accord with the Asian Century White Paper approach to showcasing Australia's capabilities overseas and has delivered a high-quality product that has served to generate a strong reputation for Australia in the area of agricultural research. These seem to the Review Panel to be important considerations. In practice, ACIAR also on occasion decides to channel funds for particular work through the CGIAR system when it judges that this represents the most effective way of proceeding. It also uses overseas researchers where Australians are not available. Nonetheless, as economies develop, ACIAR should seek to remain engaged and build on the research partnership model to support agricultural research in these economies and engage them in activities benefiting less-developed economies. Potential future development of the ACIAR model could involve new forms of partnership models with emerging economies. This may well have benefits, so long as Australian reputational interests are kept in mind.

A further concern expressed to the Review Panel was that *adoption of research outcomes* in developing countries has to be significantly improved, and this means gaining a much improved understanding of the adoption process. It is proving difficult to provide food security while the gap between research yields and on-farm yields remains as large as it is in many developing countries. While it is obvious that the RPMs are conscious of the need to understand the possible constraints to the adoption of research findings, including issues arising in the political economy of the country, the RPMs mostly come from a science background and have little expertise in economics, politics, sociology or anthropology—the disciplines with most insights into political economy issues. Given the need to improve the adoption of new technologies, it was suggested to the Review Panel that the skill set within the research programs should be expanded to cover expertise on socioeconomic issues. This touches on an important point, though it is debatable whether it is desirable to water down the scientific and technical strength of the RPM cohort. ACIAR could consider what means it might employ to buy in broader expertise. It may also be useful to extend the expertise of ACIAR's Country Managers to cover the ability to provide analysis of political economy issues.

Given the importance of improving the adoption process and reducing the huge gap between potential yields and on-farm yields in developing countries, ACIAR could well sharpen its focus on adoption issues, including in the way it designs and describes its portfolio. This can be done in various ways; for example, through adopting more multidisciplinary approaches to projects, and involving the private sector and NGOs in projects, perhaps from the concept and design stage. Given the research that ACIAR has done on the adoption of its research outcomes over many years and its recent research on the socioeconomic aspects of the adoption process, including the research it has begun on adoption in the AIFSC, ACIAR has the potential to be a world leader in this important area. The CGIAR system has a keen interest in this issue and ACIAR should partner with CGIAR Centres in developing this research.

An additional matter raised with the Review Panel by a number of interlocutors concerns the *extent to which ACIAR should move beyond its research focus* to touch on issues of extension services, development or capacity building. The Review was exposed to projects where some short-term extension activities seemed appropriately included and that seems appropriate in circumstances where the research project itself can be helped by knowledge of extension issues. Adoption can be facilitated or improved when there is early engagement with end users during the research process. The Review Panel was not inclined to the view that ACIAR should move into the development area. This is not its area of expertise and, within the total Australian ODA effort, that expertise rests with AusAID. The Review Panel recognises that development is not a linear process and that there continue to be research needs throughout the impact pathway. Research into adoption is clearly one such need.

Box 3: ACIAR and the Future of Australian Agricultural Science Capacity

1. ACIAR annual award for “Outstanding Young Australian in International Agricultural Research”

Many ACIAR projects have outstanding young Australian researchers. ACIAR could establish a competitive annual award for “Outstanding Young Australian in International Agricultural Research”. The winner could be asked to present a paper at the annual Crawford Conference and receive a cash award to be used for travel associated with their research (for example, to an international conference and/or an overseas research institution).

2. Developing a new AYAD model targeted at international agricultural research

There have been many examples of Australian Youth Ambassadors for Development (AYADs) working on ACIAR projects. However, from a research perspective, the current model has two structural shortcomings:

- placements are for 12 months maximum (insufficient for a small project in agricultural research)
- the selection process is not weighted towards attracting young people interested in international agricultural research.

ACIAR could partner with AYAD in developing a new model specifically for placements of young people interested in agricultural research into ACIAR projects for 18–24 months. ACIAR could provide the context for perhaps 10 such placements a year, with AYAD providing the funding. It may be possible to explore this more broadly across other volunteer models.

3. Enabling short-term participation of young Australian researchers in CGIAR Research Programs

Australia has a history of strong representation in the CGIAR Centres but this is waning. ACIAR might be able to support a short sabbatical program for young and mid-career Australian researchers in CGIAR Research Programs to provide them with exposure to and mentoring on research for development within this system, as well as building networks and professional collaborations that will last many years.

4. Developing longer term programs for some particular countries and research contexts

In some situations (for example, livestock research in Timor-Leste) there is a good justification for ACIAR establishing a longer term program of research and capacity building (over 10–15 years) and identifying the best Australian partner agencies for that research program. This in-principle agreement from ACIAR for such a longer term program would provide the opportunity for some discussion with the commissioned agency around co-investment in the skills sets required. This might take the form, for example, of ACIAR and a university in Australia co-investing in a young or mid-career research position over the longer term.

5. Investing in some core positions for young Australian researchers

There are some core competencies that ACIAR requires in many projects (such as value chain analysis and upgrading) and are in short supply in Australia. ACIAR might consider co-funding, through a competitive process, some positions in Australia for younger researchers in a particular skills area for a fixed period (3–4 years). This would then allow ACIAR to allocate that person's time to two or three ACIAR projects.

6. Maintaining an AYAD / Research Fellow alumni network

Maintaining an alumni network would have many benefits, including using some of the alumni to promote careers in international agricultural research to undergraduates, helping raise the profile of ACIAR within Australia.

7. Making the Graduate Researcher program permanent

ACIAR currently has a program for two young graduate researchers to spend 12 months in ACIAR learning about international agricultural research. This is a highly effective program with some very enthusiastic young graduates participating. This program is not yet a permanent part of ACIAR but it could usefully become so, and be expanded.

8. Supporting Australian students visiting ACIAR projects

Some Australian universities have actively involved undergraduates in visiting and working inside ACIAR projects overseas for a period of 2–3 months. ACIAR could support this approach with a competitive grants scheme that would cover part of the costs of such an exchange program. There could also be opportunities for co-investment from interested industry R&D funders.

9. Rotating employees of relevant Australian Government departments through ACIAR projects

Young graduates in relevant disciplines working within relevant Australian Government departments (such as AusAID, DAFF and ABARES) could be seconded to work on ACIAR projects overseas for short periods (6–12 months). This would expose them to international agricultural research for development, increase understanding of ACIAR's role within key agencies in Australia, and build useful networks both within Australia and overseas.

10. Supporting broader Australian initiatives to promote agricultural science

ACIAR could join current initiatives underway in Australia to revitalise interest in agricultural science such as the Australian Council of Deans of Agriculture's *Career Harvest* initiative.

Capacity Building and Training

Capacity building is a well-established product of ACIAR projects and was commented on very positively by Australian and overseas researchers alike. Building capacity of agricultural research institutes in partner countries is one of ACIAR's key priorities. Much is done in conjunction with individual projects through on-the-job training, as well as through specialised fellowships.

Specialised fellowships include the John Allwright Fellowships (JAF) for Masters and PhD research aimed at benefiting research capacity in partner countries, and the John Dillon Fellowships for short-term (6 weeks) leadership and management training. In addition there is discipline-specific training in conjunction with ACIAR projects, some of which is provided through the Academy of Technological Sciences and Engineering, Crawford Fund master classes and other programs (see www.crawfordfund.org). These latter are largely funded by ACIAR, are run in-country or within Australia, and appear to be quite cost-effective. Some participants in ACIAR projects also are recipients of Australia Awards Scholarships through AusAID.

In total approximately \$7m is spent per year on scholarships and training, \$3m of which is provided by AusAID. This provides for around 130 active JAF fellowships per year, of which 30 are new, and 10 John Dillon fellowships, as well as short courses on, for example, scientific writing, research management and research methodology. Women are well represented, comprising over 50 per cent of JAF scholars. There has been a reduction in the number of scholarships since 2007.

People interviewed by the Review Panel in Australia and in partner countries regularly commented positively on the value of these activities, particularly the scholarships. Capacity-building activities were often the most sustained outcome of some research projects, and there were many suggestions on the value of strengthening these aspects of ACIAR's strategies and programs. For example the University of Sydney saw the building of capacity in target countries as being of "fundamental importance", and argued that there would be considerable value in a larger ACIAR PhD program, with opportunities for two-way exchange of students. They also suggested placements for Australian undergraduate and postgraduate students to undertake fieldwork as part of ACIAR projects. A submission from Chris Beadle of the CSIRO argued that:

... being able to build functioning and lasting relationships through ... capacity building should be seen as a crucial part of the way ACIAR continues to function ... At the project level, this leads to loyalty and mutual understanding, both of which are crucial to the successful delivery of project outcomes. The JAFs mean that Australia is training the future leaders of forestry and forest research, particularly in places like Indonesia and Vietnam where there is huge pressure on wood resources.

Research partners in Indonesia, PNG and Vietnam also commented on the value of being engaged in ACIAR projects for their research skills and their academic careers. Many expressed the wish for a stronger emphasis on on-the-job capacity building in ACIAR projects, through having Australian scientists working alongside them for longer periods in-country.

Given the current small scale of scholarship and other capacity-building activities, as well as the comments, submissions and the findings from follow-up surveys (see Chapter 6), the Review Panel is convinced there would be considerable value if scholarships were given more emphasis in the agricultural research area. One option, subject to funds, would be to increase the number of ACIAR scholarships and this would be highly desirable, given the strength of the ACIAR process for selection and subsequent support in professional development. Additionally, it seemed apparent that there are more high-quality applicants for ACIAR scholarships than can be accommodated by ACIAR and it would be positive if ACIAR could make available those names for consideration for an Australia Awards Scholarship. Another option in the agricultural research area would be for more short-term research awards for ACIAR in-country research partners.

Moving to a Program Approach

As noted, ACIAR has a logical sequence to its research priority setting that flows from its five-year Corporate Plan to the Annual Operating Plans and into the Research Strategies of the RPMs. The Country Strategies follow in-country consultations with governments, national agricultural research systems, AusAID and other donors, and other international agricultural research agencies, which in turn feed into the development of the Research Strategies.

There has been a move in the broader ODA context away from proliferation of projects, and this is relevant to ACIAR, whose project numbers have decreased from 321 in 2007–08 to 234 in 2011–12. The ACIAR “model” has in practice been changing in response to various factors. In particular, there has been some movement from a project basis to a country or regional program basis; and the size of individual projects has significantly increased in recent years. The average size of projects in funding terms used to be less than \$1 million; now it is usually between \$1 million and \$5 million. But while the average size of ACIAR projects has been increasing in recent years, there are still many small projects. All projects across the size range of ACIAR’s current portfolio are subject to similar approval and monitoring procedures and thus may have similar transaction costs (though this could depend on whether a small-scale pilot project or study is the forerunner for a bigger project, in which case there could be some cost savings for the subsequent bigger project). Designing a research strategy that comprises a program of activities on a country or regional basis appears to be a positive way forward, which might include modifications to the in-house review process. RPMs are overstretched, and moving to a program basis would seem to be a means of reducing the transaction costs of priority setting, approval and management. It might also, as noted above, be of benefit to ACIAR’s interactions with research institutions concerned about the longer term viability of their engagements with ACIAR. This would to some extent depend on quality of partners. In some countries, the consultations and medium-term strategy development are thorough and partners are strong. In such situations ACIAR could consider moving to a 5–10 year program approach, with larger commitments.

Moving more to a program approach would appear to sit better with the broader ODA approach to funding development-assistance activities. It would appear to make it easier for ACIAR to report on its work program along the CAPF guidelines, rather than reporting on an individual project basis—many of which are quite small. As well, the impact of a research program may be easier to evaluate than individual projects.

Some research funding agencies in Australia and elsewhere have taken this program approach to an extent whereby they contract strategic research partners to undertake programs of research over an extended period, up to 10 years ahead. In some cases up to 80 per cent of their research funds are committed in this way. This does appear to be a step too far for ACIAR given it operates in many environments where local research capacity is low. It is promising that ACIAR is moving in the direction of a program approach in countries where it has numbers of projects dealing with related issues (coffee, horticulture, mangoes etc.). However, the Review Panel encourages ACIAR to continue to move to a program basis in its research strategy where it appears worthwhile and to keep its options open about how far it could usefully move along this path. In assembling its research portfolio, it is desirable that ACIAR has as part of its risk management strategy a diversification of risk that includes a selection of shorter term, including more risky, projects. Such projects may have a low probability of success but, if successful, could have a very high pay-off. It is also important to have within the portfolio of research investment a balance of strategic research, which may have longer time frames to impact and have less understood impact pathways, and more applied research where time to impact is shorter and pathways to impact are better known. ACIAR does allow for this in its Small Research Activity (SRA), which funds small projects with this object in mind. The Review Panel encourages ACIAR to continue developing its approaches, taking into account not only the benefits of a program approach but also the need to encourage new research partners and enhance contestability.

ACIAR's Geographical Focus

For many reasons, a critical issue for ACIAR, as for the Australian ODA program more broadly, is the selection of the regions/countries for its operations. On a strategic level, the Australian Government has decided on, and set out in CAPF, its priorities for the ODA program. This approach, which among other things attaches high priority to some regions, and in other cases (e.g. China and India) looks to phasing-out bilateral aid, logically extends to ACIAR since all its funds are ODA-eligible.

ACIAR's geographic spread is also influenced because much of Australia includes temperate, dryland environments, and much of its agricultural and forestry expertise is concerned with temperate, dryland farming. But Australia also has extensive research expertise in tropical agriculture. Therefore, Australian researchers can be usefully employed on agricultural problems in poor countries in both tropical and temperate regions. Because of this very potential for widespread application of Australian expertise, ACIAR has to be careful in its choice of countries/regions in which to undertake research.

ACIAR has limited resources, both in terms of funding and of staff, and in the view of the Review Panel faces a period of consolidation as it adjusts to the higher levels of ODA funding it has received in recent years and the emerging realities of budget constraints. It therefore appears to be desirable for ACIAR to concentrate its operations on the priority areas identified in CAPF.

Australia has a strong humanitarian, economic and national security interest in seeing that agriculture prospers in Papua New Guinea, Timor-Leste, and the Southwest Pacific islands. These latter countries, together with Indonesia, form Australia's frontline in its defence against the introduction of devastating animal and plant pests and diseases. Therefore, the benefits from Australian research on such pests and diseases generate benefits for Australia as well as for its neighbourhood.

ACIAR has undertaken a substantial amount of research in China, India and Vietnam. These countries have developed significant agricultural research capacity, in good part with assistance from Australia, including from ACIAR, and are now making significant investment in domestic research with a strong alignment to overcoming rural poverty. Vietnam remains a priority country for Australian ODA and could play a useful leadership role in regional engagement and development for improved food security. In any period leading up to the phasing-out of ODA to China and India there will still be valuable opportunities for ACIAR to continue effective research collaboration in and with China and India as well as with Brazil.

For example, a submission to the Review from Australian agricultural researchers associated with ACIAR projects in Tibet commented as follows:

ACIAR's effective, collaborative, unique and continuous program in Tibet over the last decade has generated significant long term benefits to Tibet, China more broadly, and Australia. There are however still many development challenges to address in Tibet, which will become increasingly complex with rapid growth in the rest of China. Capitalising on the benefits of previous ACIAR research in Tibet and addressing new generation challenges does however require ongoing engagement and support, and for this reason we believe that the Australian government has a stake in continuing its agricultural research program in Tibet. Continued involvement will strengthen engagement with China in many areas, including science and technology collaboration, education, people-to-people links and culture, all vital to the Asian Century for Australia.

Professor David Kemp of Charles Sturt University also commented about his experience of working with ACIAR in China:

ACIAR has provided the opportunity for Australian expertise in a range of areas to guide and mentor Chinese scientists in fields of R&D where they have no or limited experience, to address one of the major and most widespread problems in China. The work we have done demonstrates the value of supporting technical collaboration so that Australian scientists can work with Chinese groups to improve the quality of the work done and deliver gains to herders, linked to sustainable national policies. It is clearly evident from many conversations with Chinese groups that this collaboration is highly valued and they all wish to continue the connections. To maintain good relations with China work such as this should be fostered.

ACIAR could pursue other models that focus on research collaborations rather than funding.

On occasion in recent years, ACIAR has been called upon to undertake research activities outside its usual country portfolio, for broader governmental reasons, such as in Afghanistan, Egypt and Iraq. Because of Australia's research expertise, Australian researchers can be very usefully employed in such countries. Naturally, where there are high government priorities, ACIAR will be expected to deliver and this will be feasible when ACIAR is appropriately resourced and given sufficient time within which to design effective projects/programs. The Review Panel cautions, however, against a proliferation of small ACIAR involvements for foreign policy or other reasons in areas where it has not had a traditional involvement. In many countries, for example in West Africa, ACIAR does not have the networks on the ground, the local experience or the relationships which have proved so beneficial to its operations elsewhere. A proliferation of small projects in a broad range of countries is not desirable and this is exemplified by the fact that AusAID is moving to reduce the number of African countries in which it maintains bilateral programs.

Australian International Food Security Centre (AIFSC)

The establishment of the AIFSC was announced by the Prime Minister of Australia at the Commonwealth Heads of Government Meeting (CHOGM) in Perth in October 2011, to provide further support for food security, with initial emphasis on Africa. The AIFSC has an initial financial commitment of A\$33 million over 4 years. AIFSC is being established by a small group of four designated AIFSC staff within ACIAR, led by an AIFSC Director.

The ACIAR strategy focuses on the theme of "accelerating research delivery and adoption of innovations for food security". In developing its strategy, the AIFSC has positioned itself to play a role in "bridging research to delivery" so as to improve food availability, access and utilisation. Initial projects are concentrated in eastern and southern Africa. AIFSC is working with existing ACIAR programs and projects, the CGIAR Centres, and the new CGIAR Research Programs to support activities that bridge the gap between research and delivery of research results. There is provision for AIFSC to support capacity building, knowledge management and communications.

The issue for ACIAR is to ensure that the Australian Government's decision to establish AIFSC will make a valuable contribution towards food security, especially in Africa, which reflects favourably on Australia and also on ACIAR as the implementing agency. For ACIAR, this means ensuring that the AIFSC has the necessary scientific and management resources to manage a high-profile food-security program in Africa. Some of the new AIFSC program will address aspects of food security with which ACIAR is not familiar (e.g. nutrition and policy) but which complement ACIAR's emphasis on productivity.

The AIFSC goal to accelerate research delivery and uptake of innovations for food security provides an opportunity for the AIFSC to support more research on understanding the constraints to adoption of innovations. This is likely to benefit the design of ACIAR's future programs and projects.

The AIFSC can also build on ACIAR's success in project implementation, as well as exploring new modalities for the identification, selection and implementation of priority programs and projects, including competitive calls and co-financing, which will complement ACIAR's other modalities for commissioning projects.

The initiative to establish the AIFSC within ACIAR poses significant challenges. Being a centre within a centre is said to cause confusion in the minds of some external observers, though the Review Panel notes that this has not impeded its operational effectiveness to date. A further source of potential confusion is that AusAID also has significant food-security activities (and indeed finds that, because the AIFSC has only one staff member in Africa, AusAID staff are approached about issues which are in fact for the AIFSC). It also presents management issues; for example, the relationship between the AIFSC Director and the RPMs, who are presently being contracted to manage projects on behalf of AIFSC.

Operating what is a large program from ACIAR's perspective in Africa is presenting challenges for ACIAR, particularly with respect to administrative issues. The Review Panel heard from several areas within AusAID that AusAID staff are bearing the load with respect to relationships with the African governments involved. Further, operating within Africa is, by its nature, high cost and the further the program extends geographically within Africa the higher cost it will become.

One rationale for the AIFSC is to tackle the gap between the growth rate of the population and the growth in agricultural yields. This gap must be narrowed if food security is to be improved. The initial focus of the AIFSC on food security in Africa is tied to the fact that it is in the many least-developed countries of this continent that the yield gap is largest and proving to be most resistant to bridge. However, the research being undertaken through the AIFSC is largely to do with reducing the yield gap through understanding better the impact pathways for the adoption of research results. These pathways are likely to be country-specific to a large extent, so the outcomes of the research can be carried across to other countries to only a partial extent. This line of research is different from the scientific research that ACIAR has hitherto funded but it offers one way in which the Centre could develop a niche position as a centre of excellence in an environment where its funds are modest in comparison with the food-security activities of other donors in Africa.

There are other dimensions to food security, including trade, nutrition, regulation and pricing. The Review Panel's view is that the AIFSC should not have too diffuse a focus. Broader elements of the food security agenda can be addressed in ways to be agreed from time to time between it and the ACIAR CEO as opportunities and partnerships develop.

The Review Panel views the initial phase of the AIFSC's operations as having established a number of promising approaches and relationships. The Centre has quickly attracted positive attention in Africa and has a substantial new partnership with Canada through the \$15 million Australia–Canada Research Program on Agriculture and Food Security. At the same time, there is a risk that excessive expectations will be generated by the very title of the Centre, expectations that it may fall short of satisfying, not least because of its relatively modest budget. It is early days, and the Review Panel has concluded that it would be prudent to address the issues which have arisen, and the risk of unfulfilled expectations, by emphasising its focus on research, and renaming it the Australian International Food Security Research Centre. This change would help to distinguish the its research focus from the work of AusAID and other Australian Government agencies.

ACIAR has a strong model that delivers effective research partnerships that address significant agricultural problems in partner countries. It could be further strengthened.

The Review Panel recommends that:

- 8.** ACIAR continue to develop its operational approach, including a move towards a more programmatic approach, regional approaches and new partnerships with emerging economies. It should maintain its core mandate of producing an excellent research product and should not move into the development area.
- 9.** ACIAR examine the scope for increasing the number of ACIAR scholarships; and liaise with the Australia Awards Scholarships program about the potential for increasing the number of its scholarships awarded for promising agricultural researchers
- 10.** ACIAR concentrate the geographic focus of its research programs in line with the ODA priorities identified in the CAPF. Research activities undertaken outside its usual country portfolios in response to high-level government initiatives should be appropriately resourced; ACIAR should be given sufficient time within which to design effective projects/programs; a proliferation of small projects in non-traditional countries should not happen; and ACIAR should continue to develop innovative collaborations with countries such as China, India and Brazil.

11. The AIFSC become the Australian International Food Security Research Centre within ACIAR; that it continue to develop innovative partnerships; and over the longer term the orientation of the Centre be directed towards understanding the adoption process within agriculture, with a view to the Centre becoming a global centre of excellence on this topic.
12. ACIAR make the improvement of adoption rates a focus of its research and facilitate this in various ways; for example, adopting a more multidisciplinary approach to projects, involving businesses and NGOs in the design of projects and the implementation of project outcomes, and partnering with CGIAR Centres.
13. ACIAR, after a process of consultation with interested stakeholders, develop a position paper on the future involvement in its work of the private sector and NGOs.

CHAPTER 5: ACIAR MANAGEMENT AND RESOURCES

Resources

There has been a considerable increase in ACIAR's budget over the last 5 years. In 2012–13 ACIAR's budget is estimated to be \$128m, up from \$107m in 2010–11, and \$66m in 2007–08.

The increases over the last 5 years have come from three main sources:

- increase in funding from AusAID—usually where ACIAR is contracted to implement research and development projects for AusAID
- increased funding for CGIAR Centres and the new CGIAR Research Programs
- funding for the Australian International Food Security Centre (\$36.9m over 4 years in 2011–12).

In 2012–13, the majority of ACIAR's budget allocations (\$117m) will be directed to ACIAR-managed research programs and projects, including several supported by AusAID bilateral or regional programs (\$35 million); around \$20m will be provided directly to CGIAR centres and CGIAR research programs; \$7m will go to scholarships and other training; and \$11m to departmental costs (see Table 1).

Table 1 ACIAR revenue and expenditure (million Australian dollars): 2010–2013

	2010–11	2011–12	2012–13
	Actual	Actual	PAES Budget
REVENUE			
Appropriation	70.57	88.74	93.03
AusAID and other external funds	35.91*	24.41	34.57
Other revenue	0.03	0.03	0.01
Total	106.51	113.18	127.61
EXPENDITURE			
Research program ^a	59.32	74.45	89.00
Multilateral program ^b	28.99	23.03	20.08
Education and training ^c	7.96	5.07	7.02
Communicating research results	0.67	0.69	0.81
Total administered costs	96.94	103.24	116.91
Total departmental costs ^d	9.78	10.19	10.70
Total	106.72	113.43	127.61

^a Bilateral and multilateral projects, program support and impact assessment

^b Untied funding to international centres

^c Not including training within projects

^d Includes salaries, Executive, Commission, Policy Advisory Council and corporate support

* Includes \$15.4 million for IRRI for a specific purpose

With the 2012–13 research and education funding ACIAR will:

- support 260 projects (with a total commitment of around \$300m in 42 countries over 3 years)
- provide approximately 30 new scholarships (John Allwright and John Dillon) which, together with ongoing scholarship holders, means around 130 scholars will be supported in 2012–13
- support the CGIAR system—financially (Australia is one of the more significant donors) as well as through engagement in its governance and reform program
- engage with more than 1,000 research partners in Australia and internationally
- consult in priority countries to develop country and thematic strategies.

ACIAR employs 53 staff (FTE) under the *Public Service Act 1999* (including one SES position) and 19.5 locally engaged staff in country offices at posts in China, India (covering South Asia), Indonesia, Papua New Guinea, the Philippines, Vietnam and Laos (covering the other Mekong countries). There are 14 research program managers (RPMs), all but one based in Canberra. This staffing level has remained much the same as the budget has increased from \$107m in 2010–11 to \$128m in 2012–13 (with the exception of four new staff added for the AIFSC in 2012–13).

The expansion of administered and external funding and projects over the last 5 years has occurred with little additional departmental funding and staff, and there are obvious strains throughout ACIAR. The most frequent comment made to the Review Panel was that ACIAR officers, particularly the CEO and the RPMs, were stretched beyond what was reasonable in the short term, and sustainable in the long term. The ACIAR funding model discussed in Chapter 4, while it delivers successful projects with significant impact, requires under current arrangements heavy involvement of RPMs and the CEO, particularly in the project design phase. More projects mean more workload, at least under the current arrangements. In recent years, the number of countries in which ACIAR has operated has also increased, from 22 in 2007–08 to around 41 in 2012–13. New countries require significant investment from RPMs and the CEO over years—to understand the political economy, to identify research opportunities that fit Australian expertise, to identify country and regional research partners, and to create research partnerships between Australian and national research bodies. New countries also require additional administrative work; for example, the financial, property and legal aspects involved in establishing new offices.

In 2012–13 the ratio of administration to total expenditure is around 7.9 per cent, which appears quite low given the geographic spread and the roles and responsibilities of ACIAR staff. While it is difficult to find comparable organisations, the most useful are the rural RDCs and companies. It is not a perfect comparison because there are differences in the way they calculate their ratios, and the extent to which administration costs of projects are embedded in the project costs. A comparison is the GRDC, whose administrative expenditure is about 9 per cent of a total \$165 million. More broadly, a 2011 Productivity Commission report on rural research and development indicated that R&D-related administrative costs as a share of total expenditure fell broadly in the range of 10 to 20 per cent. On this basis, the ACIAR administrative budget appears lean. ACIAR officers attempt to manage their workloads without compromising program quality and outcomes, but this is proving, in some cases, to be at the expense of formal program management and liaison. Many stakeholders reported that the impact from their perspective was that liaison has suffered. In particular:

- There was significant AusAID dissatisfaction with the responsiveness of RPMs and the overall quality of ACIAR administration of some AusAID-funded projects
- Research partners commented that RPMs could be slow or unresponsive
- Other stakeholders in Australia felt engagement with ACIAR was erratic, or non-existent
- The increased pressures on the RPMs also affected the discharge of the RPMs' administrative responsibility; for example, necessitating extra pressures on ACIAR's finance and legal areas to ensure completeness of paperwork.

Within ACIAR, the lean corporate structure has led to weaknesses in a number of areas, including:

- Inadequate and outdated project management database. There is limited summary information on the status of projects e.g. there is no “traffic light” system to alert the CEO or country managers to quality and progress issues in a systematic way. This also impinges on the quality of information available for budgeting and external reports.
- Lack of formal development of project management systems (and indeed other systems, processes and procedures), resulting in excessive use of spreadsheets and reliance on key individuals for business decision-making information. While informality in operations can have positive aspects, what works for a \$66m organisation does not necessarily work as well for a \$128m organisation.
- Little staff depth—when key staff members are away, functions are not performed; there is limited time for professional development; there are single points of failure in specialist areas, especially in corporate support roles; and there is limited scope for succession planning.
- Lack of sufficient senior staff to support the CEO in networking with other Australian Government agencies, and with research organisations in Australia and partner countries (see Chapter 7).

ACIAR has had positive discussions with senior management at AusAID on the issue of the percentage of project funds which will be made available to ACIAR for administering AusAID projects. The new arrangements are aimed at producing satisfactory outcomes from the perspective of both organisations. This remains a critical issue and implementation of the senior-level understandings will need to proceed in a mutually satisfactory way.

It may also prove to be the case that further efficiencies could flow from scaling-up projects to programs, from giving more authority to country managers, or from other measures.

Organisational Structure

ACIAR's lean administration has been achieved through a very flat management structure, organised around agricultural disciplines, with a country and regional overlay:

- There are five geographic regions: Indonesia, Timor-Leste and the Philippines; PNG and the Pacific; Mekong countries and China; South and West Asia; and Africa.
- There are 14 discipline-based programs:
 - Economics and social sciences (Agricultural Development Policy, Agricultural Systems Management, Agribusiness, Impact Assessment)
 - Crops (Crop Improvement and Management, Cropping Systems and Economics, Pacific Crops, Horticulture)
 - Livestock and Fisheries (Fisheries, Livestock Production Systems, Animal Health)
 - Natural Resource Management (Land and Water Resources, Soil Management and Crop Nutrition, Forestry).
- Each discipline-based program is led by a RPM who develops monitors and evaluates projects. Four RPMs are also Principal Regional Coordinators, in addition to their disciplinary responsibilities. They work with the relevant Country Manager and other discipline-based RPMs to coordinate operations in each country.
- The Australian International Food Security Centre operates as a unit within ACIAR.
- The position of Principal Adviser Strategy and Policy combines policy responsibilities with a variety of strategy, planning, advisory and budgeting activities and oversight of the Training and Fellowships and the Impact Assessment programs.
- The seven country managers' primary roles are liaison with research partners and government and providing support to RPMs. They are generally appointed as locally engaged staff, each with different skills, conditions of employment and functions.

ACIAR's research is supported by six corporate programs, which are managed by the Director Corporate, and include Communications and Public Affairs, Finance, Governance and Parliamentary Liaison, Human Resource Management, IT Services and Facilities, and Knowledge Management.

Notably:

- The 14 RPMs, the AIFSC Director, as well as the Director Corporate, report directly to the CEO. Each RPM generally has a share of a support person.
- There is no reporting line from the RPMs to the AIFSC Director, even though some RPMs are responsible for the management of projects identified and funded by the AIFSC.
- No position is allocated specific responsibility for managing liaison with AusAID or for liaising with existing or potential partners.

With the exception of the addition of the newly established AIFSC, this structure has been in place since 2009. Prior to 2009 there was a Deputy Director, responsible for the oversight of ACIAR's research programs and the work of the RPMs, while corporate management was handled by the CEO and the corporate team.

The Review Panel believes that the current structure is no longer suitable to ACIAR's budget, scale of operations, and whole-of-government environment. There is a need for a second position at the SES level and more delegation of responsibility by the CEO to his current senior staff, including the RPMs, who in turn need additional support. Some suggestions for reshaping Canberra arrangements include:

- The creation of a senior research adviser position (or deputy director) to provide intellectual leadership for the research programs, including oversight of program and project quality at design, implementation, and monitoring and evaluation.
- Fewer direct reports would allow the CEO space, among other things, to increase his focus on Australian stakeholder management and liaison along the lines discussed in Chapter 7.
- Separation of the RPMs' disciplinary responsibilities from the regional coordinator/country strategy roles. This would not only reduce RPM workloads, but also eliminate the perceived conflict of interest for the RPMs that have both roles.
- Augment the staff support available to assist research programs with their expanded role.
- Allocate specific functions to senior officers, including ODA monitoring and reporting, AusAID strategy and liaison, and stakeholder engagement.
- Explore opportunities to have secondments from other organisations, including AusAID, Australian research institutes, universities and other partner organisations.

There is also a case for reshaping the role of **country managers**:

- In-country functions are becoming more important as AusAID and other development partners increase their emphasis on country strategies. Much of the priority setting, co-ordination and liaison between development partners now occurs in-country. Country managers could have formal responsibility supporting the development of whole-of-government development strategies for their countries
- The increased emphasis on adoption requires an understanding of the political economy and local constraints to adoption. Country managers with the right skills can be valuable here.
- Partner governments and researchers argued to the Review Panel their strong interest in knowledge exchange in-country and in regional collaborations to address common problems. Again these functions are often best supported by people on the ground.

Country managers could also take a more formal role in monitoring of risks and detecting potential fraud, identifying suitable candidates for scholarships, supporting scholarship holders and monitoring of projects, with a special emphasis on producing data for the CAPF.

The Review Panel recognises that enhancing the role of country managers would require a broader range of skills on the part of the managers. These skills might already be there in some cases. In others, it might be necessary to seek different people. There would be some related questions: one would be the potential need to recruit people at significantly higher salary levels (a substantial consideration, given ACIAR's lean management approach); another might be whether locally engaged staff could take on a significantly enhanced liaison role without suggestions that they be accredited to local governments (that is, whether they would need to be Australia-based officers, with the significantly higher costs that this would entail).

There is an additional question as to the optimal location of country managers, and the regions and countries each covers. The Review Panel did not have enough information to make recommendations on this, except to note that there seems little case for a country manager in China.

The Review Panel believes that ACIAR management should review the role of the country managers.

Risk and Transparency

Risk

A feature of the CAPF is the increased focus on transparency, accountability and management of risk. These will require strengthening of ACIAR's monitoring and reporting systems (see next chapter). They also require a more sophisticated approach to risk.

The current risk management plan (2012–14) is a comprehensive document identifying strategic and operational risks, and management strategies and actions. However, in the view of the Review Panel, it is not totally aligned with the changing environment of ACIAR—in particular it does not pick up the emerging risks to the organisation caused by:

1. working in a more whole-of-government way (noting that this creates opportunities as well as risks)
2. ACIAR's increasing reliance on funding provided for implementation of AusAID projects
3. loss of public confidence if, for example, ACIAR funding were to be used to support industries/activities that conflicted with mainstream Australian ethics and values. In this respect the Review Panel noted that there have been strong expressions of Australian values in livestock health and treatment, and in the treatment of women
4. the risks associated with ACIAR taking on the AIFSC as a high profile initiative in Africa
5. potential further reductions in overall ODA funding
6. risks which flow from increased funding to international organisations in the CGIAR system and possible irregularities which might occur within these organisations.

With regard to the risk of loss of public confidence, the Review Panel understands that ACIAR relies on the ethics processes of the Australian research partners. However, the Panel was not convinced that this is a total solution. In the words of one interviewee "if you fund it you own it". The risk management plan should be updated to address these risks, possibly using a collaborative process with partners.

Transparency

As discussed in Chapter 7 on Networking and Communication, ACIAR has a strong record of providing information to the public. A vast amount of material on research and country strategies, projects, outcomes and evaluations is available on the website and in hard copy. In short, it rates highly as a transparent organisation in this sense.

There is another sense in which the Review Panel has some reservation about the transparency of ACIAR's operation. This relates to project and research partner selection. As mentioned in Chapter 4, a number of stakeholders mentioned that it appeared difficult for newcomers to enter the field of ACIAR's research partners. In addition there was some disappointment and puzzlement about lack of feedback from ACIAR about suggestions for possible research topics and concept notes that are not approved for further development.

The Review Panel found no evidence that there is a bias against openness or transparency in ACIAR. Nevertheless, the perception is there and needs to be addressed, at least in Australia. Overseas, in partner countries, transparency does not appear to be an issue. None of the people or institutions consulted in partner countries raised transparency as an issue. Indeed, the Panel was impressed with the comprehensive consultations that occur in developing medium-term strategies in-country and in the development of thematic strategies.

The Review Panel sought clarification of ACIAR's approach to procuring research services. The Commonwealth Procurement Rules 2012, Division 1, require that agencies satisfy themselves as to value for money, efficient, effective and ethical procurement and other matters. ACIAR's in-house review mechanism is used for assessing funding applications under Division 1 of the Procurements Rules. Division 2 of the Procurements Rules includes the requirement for a competitive tender process for procurements above an \$80,000 threshold unless the procurement is subject to an exemption. Appendix A of the rules lists a number of exemptions, including "6: procurement of research and development services". Exemption 6 applies to ACIAR's R&D projects.

The majority of ACIAR Services Contracts are below the procurement threshold. Those contracts over the threshold are either exempt from tendering or a tender process is undertaken.

ACIAR has at times issued a special call for Expressions of Interest (EOI) for project funding. The Review Panel heard positive views about the way some of these processes had worked, for example in Timor-Leste. The EOI processes undertaken still relied on in-house review (IHR) mechanism for evaluation of the funding requests received. The EOI process is not part of ACIAR's normal mode of operating and those undertaken were resource-intensive.

There is some debate within ACIAR about its research procurement processes. ACIAR received an internal audit report in 2011 which identified risks in achieving value-for-money in a model that does not include fully open competition for public moneys. The report identified a number of potential options for helping manage the issue of transparency and accountability in ACIAR's procedures. These included suggestions in the areas of corporate communications; public availability of information about future research plans; regular annual timelines for encouraging submission of research concepts; enhancing practices relating to the consultants register; occasional market testing through tender or EOI processes; and documentation and reporting of decisions. ACIAR accepted audit recommendations in this regard.

ACIAR management has a responsibility to satisfy itself in terms of compliance with the Rules, has done so, and takes the view that it can justify its position. On this question, the Review Panel notes that ACIAR takes a number of steps to provide information about its programs and to invite persons and institutions to register with ACIAR their areas of interest and expertise. The Review Panel also heard of ACIAR plans to convene a workshop for RPMs on issues including means to demonstrate value-for-money. Nonetheless, as noted above, there are continuing external perceptions about the transparency of ACIAR's processes.

The Review Panel judges that there would be value in continuing examination by ACIAR of potential measures to improve both its operations in this area, and perceptions of its operations. These could include the following:

- Greater use of calls for expressions of interest. Notwithstanding the extra work involved, these could have attractions, especially in the case of potential projects in new or emerging areas or in the case of larger programs likely to extend over time. ACIAR should develop principles governing the circumstances in which it would use EOI, having regard inter alia to the tension between moving to larger-scale, longer-term programs; contestability; and broadening the pool of research partners.

- A more focused approach to drawing attention of research institutions to the Annual Operational Plans and other forward-looking documents. These documents are already widely distributed, but there is scope for a more overt outreach, focused on making clear that ACIAR has an interest in knowing where research institutions have a potential interest in particular programs or projects. This issue is discussed in more detail in Chapter 7.
- A more efficient means of responding to unsuccessful proposals for research projects. This would not only be a courtesy, but could also contribute to an informed understanding of ACIAR's decision-making processes.
- A revisiting and fresh assessment of other options, including those suggested in the audit report.

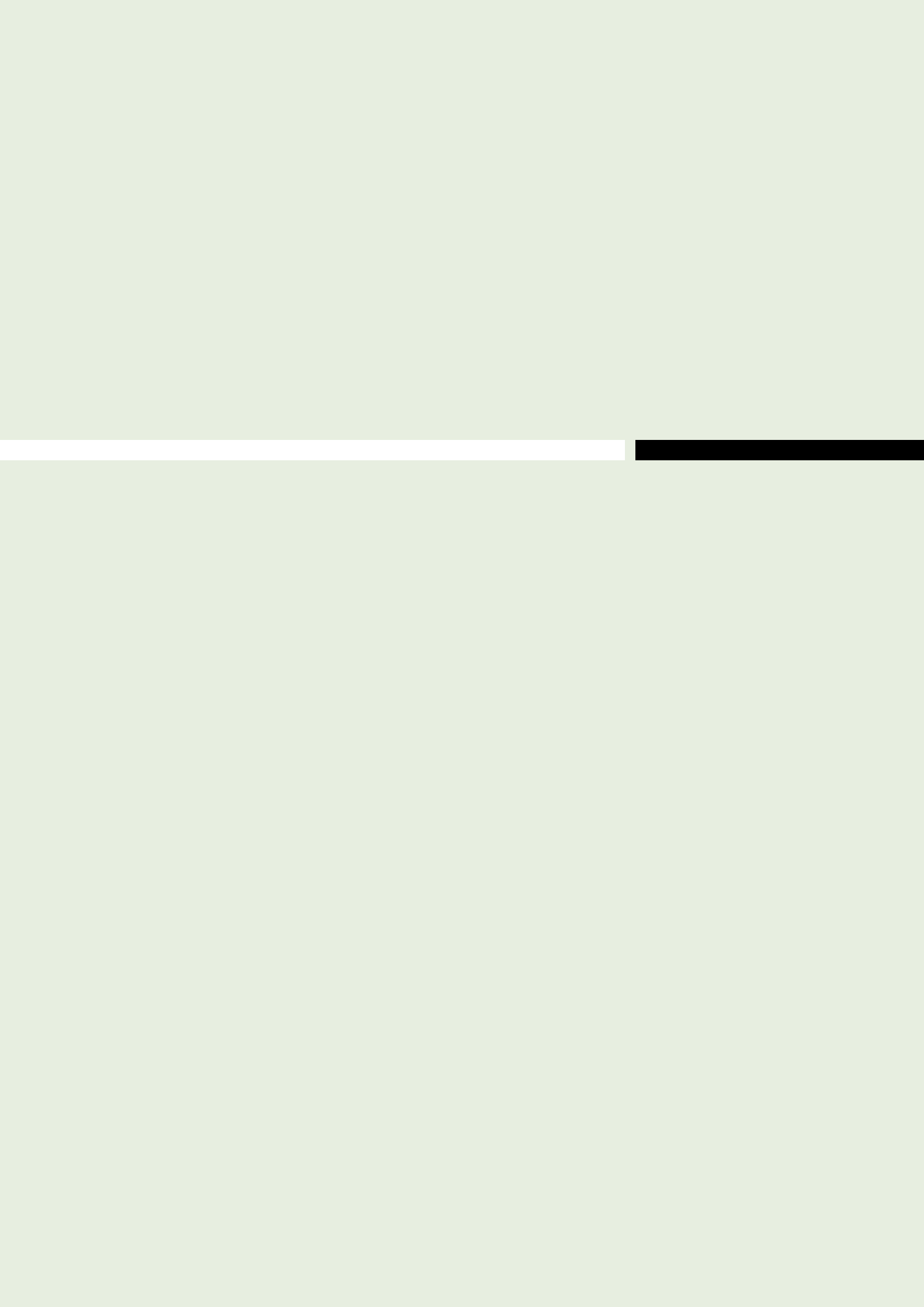
ACIAR's Contractual Procedures

As noted in Chapter 4, a number of submissions and comments to the Review Panel expressed concern about the time involved in ACIAR's coming to decisions on project approvals. A related thread of comment touched on ACIAR's administrative and contractual requirements. The submission from the University of Sydney commented that ACIAR's standard conditions and requirements were onerous and in some cases inefficient. The University made a number of suggestions for improvement.

The Review Panel has not examined this set of issues in detail. It regards the issues as typical of those which could usefully be pursued by ACIAR in the more strategic pattern of stakeholder engagement recommended in Chapter 7.

The Review Panel recommends that:

14. The CEO, within available resources, augment staffing resources, including by the addition of an SES officer, to enable more extensive senior-level liaison with organisations and agencies in Australia and better support for the efficient discharge of the research program.
15. ACIAR examine the role of country managers with a view to making enhanced use of their in-country knowledge and experience.
16. ACIAR maintain an active dialogue with AusAID to build on positive discussions to date and ensure that it receives adequate resourcing to discharge AusAID's requirements for reporting on and acquittal of AusAID-funded projects.
17. ACIAR take steps to improve the transparency of its project and partner selection processes, as well as perceptions of its performance in this regard.
18. ACIAR review its risk management plan.



CHAPTER 6: ACIAR'S EFFECTIVENESS

A key feature of ACIAR throughout its 30-year history has been its concern for effectiveness.

This is demonstrated by the care it has taken with the quality of its projects, ensuring they meet country needs, are undertaken by research partners with successful track records, and are embedded in a deep understanding of the research issues. It is also demonstrated by the systematic approach taken to monitoring and evaluation; in particular, the quality of, and investment in, its evaluation activities. The Review Panel was impressed with the strength of ACIAR's monitoring and evaluation system, and makes recommendations on ways this could be further strengthened, including through enhanced reporting on poverty impact.

Monitoring

Individual Project Monitoring

Each approved project has a standard structure. For example, each will contain one or more objectives and outputs, with milestones and activities against each objective identified over the life of the project. The milestones vary between projects in their focus, and in the amount of detail and the extent to which they are quantified. In particular, projects partly or fully funded by AusAID tend to have greater level of specificity and can include targets for, for example, numbers of farmers to be introduced to new technology, and hectares farmed using new crops, species or techniques.

The main monitoring tool is the Annual Report. This includes the milestones, outputs and activities together with commentary on expected impact (scientific, community, capacity), and any variations to project.

There are also:

- (frequently) a mid-term review undertaken by the RPM, but sometimes including independent experts depending on emerging issues and risks
- an end-of-project review, which often incorporates a final workshop of community and research partners
- an internal review of the end-of-project review to draw out lessons for future investments.

After completion of the project there may be:

- i. an adoption review, approximately 3 years after project completion
- ii. an impact assessment.

At the individual project level monitoring is relatively *light touch* both in terms of the workload it imposes on project leaders and partners, and on RPMs and ACIAR generally.

ACIAR sees no need for more detailed individual project monitoring due to the heavy investment it makes in upstream activity in research strategy development at country and thematic level, and in detailed project design, including methodology and choice of partners to ensure project quality and relevance. As described in Chapter 4, projects go through a number of review processes during their development, including a minimum of two rigorous in-house reviews, conducted by the CEO and all RPMs. During these processes projects are checked for, among other things, clarity of objectives, feasibility of research and other activities, capacity of partner organisations, and the timescale and likelihood of adoption and impact.

The relatively light-touch monitoring is seen by research partners and many stakeholders as a significant strength of ACIAR's project management system. A frequent comment was that ACIAR project monitoring is about "ensuring a project will deliver significant outcomes, and not about 'ticking boxes'". It was also regularly noted by interviewees that there is considerable flexibility within projects to vary direction and activities if the review and monitoring reveal that the line of research needs adjustment. The emphasis is thus on quality at entry, flexibility and adaptation during project life, and a reliance on experts, including the RPM and outside experts, to help with monitoring, review and adaptation.

These are real strengths in ACIAR's current approach to individual project monitoring. At the same time, there is a need for some enhancements to fit the changing environment. In particular, the Review Panel has noted that ACIAR's approach is not fully aligned with the government's CAPF reporting framework.

ACIAR projects are expected to contribute to the CAPF goals of:

- i. creating access to new agricultural technologies for 750,000 farmers resulting in increased crop value of over A\$500 million
- ii. increasing the incomes of 1.4 million poor people through market development programs.

These data are not routinely collected in all ACIAR projects. As a result ACIAR's reporting to the CAPF is understating ACIAR contributions to the two goals. RPMs have advised that they are retrofitting active projects so that these data can be collected, although noting that data quality and meaningfulness vary. All new projects will collect these data annually, provided they are expected to contribute to the goals in the time frame of the project. This activity needs to be systematised across ACIAR to ensure the reporting requirements are aligned to the CAPF through each project lifecycle. The Review Panel considers that these efforts need to be accelerated, with a target of having a systematic framework and all active projects retrofitted by the end of June 2013.

Monitoring the ACIAR Project Portfolio

Project details are contained in a number of databases and spreadsheets. Currently no single database contains details of individual projects, together with project summaries for rapid aggregation and monitoring at an ACIAR level or by theme or country. Reports can be generated on the portfolio including project summary lists of critical elements such as financial details, including partner contributions and funding source and expenditure. This system is increasingly unsuited to more complex projects with more partners, spanning more disciplines and countries, together with the whole-of-government reporting now required.

In particular, the system cannot produce easily:

- Indicators of the proportion of the portfolio that is on track, or experiencing difficulties (e.g. a 'traffic light' system)
- Critical features of the project portfolio such as total numbers of partners, the type of partners such as private sector (beyond individual farmers) or CGIAR Research Centres, or the average size of projects
- Monitoring data that can contribute to the CAPF monitoring
- Trends over time in partner numbers and types, portfolio health and project size.

Given the limited support staff resources available in ACIAR, the panel considers a priority for investment should be an integrated project database. Over the long term it would reduce RPM and other staff workloads and improve ACIAR portfolio management and monitoring.

Evaluation

The evaluation system is comprehensive and in this ACIAR is a leader in the Australian Public Service. ACIAR has been undertaking assessments of the economic impact of its research and capacity building projects since around 1989. Regular external economic assessment of completed projects was initiated in 1990 with the Centre's Economic Assessment Series. In 1998, ACIAR began publication of its Impact Assessment Series, which now numbers 82 publications. ACIAR has not only focused on ex-post impact studies, it also pioneered the use of quantitative ex-ante assessment of the potential returns to its projects.

In recent years, in line with global concerns about the impact of development assistance on such issues, it has broadened its impact assessment studies to investigate the impacts of its projects on poverty and on the environment. ACIAR has been proactive in pushing for improvements in the methodology and in extending its scope. In all of this work, ACIAR can be justly proud of being a world leader.

There are three main types of evaluations, designed to take account of the fact that adoption of technology, farming techniques, or regulatory and other reforms, and the subsequent social, economic and environmental impacts occur in the longer term, often well after the completion of a research project or program.

1. Adoption studies, which are conducted 3 to 4 years after project completion. These are undertaken by the project leader, primarily to answer the questions what worked, what didn't and why. Each year around eight adoption studies are completed. To date, nine sets of adoption studies have been undertaken covering 84 projects.
2. Economic impact assessments, which are published in ACIAR's Impact Assessment Series (IAS). Most of the assessments are undertaken by independent economists with special expertise in measuring the economic impact of agricultural research. These involve an in-depth analysis of the adoption and impact of research outputs in partner countries and Australia. They also include summary documents covering a number of evaluations, lessons learned from the adoption studies and impact assessments and key informants, and portfolio summaries such as an analysis of future directions for ACIAR's animal health program. Methodological studies are also carried out to ensure the evaluation methodologies are current and are delivering assessments in line with management and government needs. Examples include measuring R&D impacts on poverty, capacity building and natural resources. To date 82 IAS reports have been published.
3. Pathway analyses, which are also published in the IAS series. Impact pathway studies provide an in-depth analysis 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. To date one pathway analysis has been completed (IAS 80 – Oil palm pathways: an analysis of ACIAR's oil palm projects in Papua New Guinea), and another is in press (IAS 83 – Impact Pathway Analysis of ACIAR's Investment in Rodent Control in Vietnam, Lao PDR and Cambodia).

A noteworthy development was the production in 2010 of ACIAR's Impact Assessment Series Report Number 69, "Lessons learned from past ACIAR impact assessments, adoption studies and experience". This report appears well known among ACIAR staff and the broader aid community.

Despite the heavy investment in evaluation, there are critics. The Review Panel heard two main criticisms. The first is that the consultancies have favoured a single consultant. While it is true that one consulting firm has done a large proportion of the impact studies, the impact assessment studies have been carried out by a wide range of consultants, including most of the leading Australian researchers in this field.

Another criticism is that the economic benefits generated by ACIAR's projects are overstated—relying on optimistic assumptions about sustainability of adoption, market access and government policy. ACIAR has been aware of these criticisms and responded by commissioning an external report on the credibility of the estimates (Raitzer and Lindner 2005). Even with very conservative assumptions it is clear that return on investment is good (see discussion below). That said, given it is widely acknowledged that agricultural research has a long development and adoption lag—up to 30 years some would argue—and that impact assessments have been undertaken within a relatively short time after project completion when little is yet known about adoption rates, it may be useful for ACIAR to undertake some repeat studies, say 10 years after completion, to test the appropriateness of the assumptions made—especially about productivity improvement and the rate and extent of adoption. This would add to the accumulated knowledge needed to make such assumptions.

Of concern to the Review Panel is the **lack of visibility and influence of ACIAR's evaluations** within the Australian Government, and within the aid community more broadly. Most Australian Government officials interviewed for this review, whether from central agencies, or within other agencies such as AusAID, were unaware of the extent and quality of ACIAR's evaluation activity, and the findings. Even the Department of Finance and Deregulation (DOFD), which is the lead advocate for stronger evaluation planning and enhanced use of evaluation in the APS, appears to be unaware of the evaluation scope and methodological innovation in ACIAR. This lack of awareness is not unexpected, since the failure to make use of evaluations in policy and delivery is a perennial problem for governments.

Summaries appear to have greater influence than single, project-specific reports. Given this, one way that ACIAR's influence could be increased would be for ACIAR to produce an annual summary of key findings from recent evaluations. The Office of Development Effectiveness is planning to produce such a document for AusAID independent evaluations, as part of the annual public reporting on the CAPF and to assist government deliberations. An ACIAR document could play a similar role, and increase ACIAR's contribution to the CAPF reporting and government strategy. It would be helpful if such a document were developed in consultation with ODE and the Independent Evaluation Committee, so that the two documents are cognisant of each other. Other activities could include making presentations to the Canberra Evaluation Forum.

The Independent Evaluation Committee established in 2012, has a whole-of-ODA and thus whole-of-government mandate. There would be value in ACIAR nominating evaluations for oversight by the IEC during the evaluation process. This could serve the dual purpose of raising awareness of ACIAR evaluation activities and providing a measure of independent scrutiny of its evaluations.

A particular issue for future evaluations will be the performance of the AIFSC as a high-profile initiative. Lessons learned, and assessment of the impact of its activities, will be valuable input to further development of its work.

Impact Assessment

From its inception ACIAR has attached importance to the proper assessment of the impact of its research and capacity-building projects, including quantifying the returns on project investments in order to account to stakeholders, and to support improved decision-making and effective management of its funds.

The Impact Assessment system encompasses two types of finished project assessment:

1. *Economic evaluations*—undertaken by independent economists with special expertise in measuring the impact of agricultural research, with in-depth analysis of the adoption and impact of project outputs in the partner countries and Australia, and estimates of the returns on investment in the project, plus a qualitative assessment of social and environmental impacts.
2. *Adoption studies*—undertaken by the Australian project leader 3–4 years after project completion, in order to provide ACIAR with greater understanding of pathways to change, or else the reasons for suboptimal uptake.

In recent years, there has also been some focus on thematic evaluations of larger numbers of projects in similar areas, and overviews of all past impact evaluation studies and an assessment of returns to total ACIAR funding. In addition, the experience gained from these impact assessment activities and the lessons learned have been used to provide training courses for research groups so that eventual impact and adoption are an integrated part of research project design and management.

The Review Panel examined a number of impact assessments and observed their rigour (a “warts and all” approach, as advocated in the Independent Review of Aid Effectiveness). That approach is illustrated in the two case studies shown in Box 4.

Box 4: Impact Assessment Case Studies

Case Study 1: Breeding and Feeding Pigs in Vietnam

(AS2/1994/023: ‘Breeding and feeding pigs in Vietnam: assessment of capacity building and an update of impacts’, Impact Assessment Study 2008)

This project (1995–2001) aimed to enhance the productivity of the pig industry in Vietnam through improved genetics and the formulation of least-cost diets based on locally available materials, in light of low feed-conversion ratios and low lean-meat percentages in native pig breeds and the poor adaptation of introduced low-quality exotic breeds to local conditions, exacerbated by deficient diets. The Queensland Department of Primary Industries (QDPI) was commissioned to undertake the research in collaboration with James Cook University (JCU) and the Institute of Agricultural Science of South Vietnam (IAS). The project also involved significant investment in capacity building through formal training of Vietnamese researchers (including a specific genetic improvement and pig production course) and collaboration with Australian researchers. AusAID also provided follow-up funding to five artificial insemination centres in Vietnam. ACIAR contributed A\$1.4 million, while the partner research organisations contributed A\$2.14 million, and AusAID A\$0.2 million.

In ACIAR’s 2001 impact assessment of the project, the key outputs were assessed to be improved pig genetics and production systems through technology transfer and capacity building of Vietnamese researchers. Also, as a direct result of the ACIAR project, the IAS was able to attract additional funding from the Vietnamese Ministry of Agriculture and Rural Development and the governments of the Netherlands and Belgium to continue the research. In 2008, ACIAR commissioned an updated impact assessment of the project by the Centre for International Economics (CIE), which found a significant improvement in Vietnam’s pig industry productivity through reduced unit cost of pig-meat production for farmers utilising superior breeds and/or improved feed formulations. The CIE assessment concluded that approximately A\$1.1 billion of total estimated A\$2 billion benefits to Vietnam could be attributed to the R&D component of the ACIAR project, with an internal rate of return of 74% or benefit:cost ratio of 257:1, and benefits of A\$387 million attributed to ACIAR’s A\$1.4 million share of the funding. The capacity-building component was estimated by CIE to have been around 40% of the effort of the project, with an estimated return of A\$424 million, internal rate of return of 24.5% and benefit:cost ratio of 256:1. The CIE impact assessment underlined the significance of capacity building in R&D projects to maintain and multiply the benefits of the original project.

Case Study 2: Barramundi Fishery Management Plan for PNG Western Province

[FIS/1998/024: 'The biology, socioeconomics and management of the Barramundi fishery in the Fly River and adjacent coast of Papua New Guinea', Impact Assessment Study 2010]

Following the recommendations of a preliminary study, ACIAR provided funding for a project over 1999–2003 to develop a management plan to revive the much depleted barramundi fishery in the Fly River and adjacent coast of PNG's Western Province. As well as traditional artisanal fishing of barramundi, a commercial fishery had operated from the 1960s, but its annual catch had fallen from around 200–300 tonnes in the 1980s down to below 5 tonnes by the early 1990s, leading to closure of the commercial fishery. The project was led by CSIRO Marine Research in partnership with the PNG National Fisheries Authority, with collaboration from James Cook University and Ok Tedi Mining Ltd. Based on the project's research which increased knowledge of fishery biology and some relevant socioeconomic factors, and developed a bio-economic model used to analyse management options, the project delivered the draft of a Barramundi Fishery Management Plan (BFMP) which included provisions for gear restrictions, area closures and total allowable catch. The BFMP was passed into PNG law in 2003, and was regarded as a significant achievement of the project.

An independent Impact Assessment of the project by the Centre for International Economics (CIE) was commissioned by ACIAR in 2010. This assessment found that the BFMP did develop new knowledge about the barramundi fishery, and did succeed in bringing about some changes in commercial fishing practices, especially the use of appropriate net mesh sizes to protect breeding stock, and refusal by commercial processors to buy undersize fish. However, it also found that the ban on nets with larger mesh size involved a trade-off between a lower expected catch in the near term and a higher expected catch in the longer term; and that the increasing use of lures rather than gill nets still caught many females before spawning and thus may have eroded the benefits of the BFMP, meaning the BFMP's longer term benefits might not be realised despite the short-term costs, mainly incurred by the commercial processors. It was assessed that the project's total investment of A\$2.4 million produced an internal rate of return of around minus 31%, based on the loss of around \$255,000 in short-term costs, while changing circumstances meant that the longer term benefits (of lower risk of total stock collapse) were likely to be less significant than expected. Some of the factors which prevented the BFMP from providing more benefit to the community were assessed to be: inadequate enforcement of the BFMP; failure to deal with the problem of overfishing with lures; and a total allowable catch apparently set too high and probably not enforceable anyway. The 2010 assessment concluded that future such projects should note the following lessons learned from this project:

- No fisheries management plan can succeed without effective restriction of fishing effort.
- Fisheries plans need to be regularly updated as circumstances change.
- There is no point in developing regulations that cannot be enforced.
- There is a need to consider the size of markets affected by R&D projects and whether potential benefits are likely to be large enough to outweigh the cost of R&D.

Economic Impacts

All the studies of the economic impact of ACIAR's projects have indicated that overall there have been significant returns on investment. The most recent study by the Centre for International Economics 2011 aggregated the benefits and costs of 48 impact assessment studies of 130 ACIAR projects. This showed that in 2010-dollar, present-value terms the benefits attributed to ACIAR totalled \$15.9 billion from an expenditure of \$189 million, i.e. a benefit:cost ratio of 84:1. If ACIAR's total expenditure since its inception is taken into account (and assuming that all other projects had zero benefits), the benefit:cost ratio is 6:1).

These estimates are usually based on three measures: the size of the agricultural output affected; the improvement in productivity of the agricultural activity due to the new technology (or farm practice); and the rate and extent of adoption of the new technology. Estimates of all three measures can be subject to a great deal of uncertainty—especially the rate and extent of adoption, as this takes place well into the future following the impact assessment study. The size of the industry output that will be affected by the new technology and the improvement in productivity resulting from its adoption may be estimated with confidence in some circumstances (as say with sales of a new seed or piece of machinery); but in most cases there will be considerable uncertainty associated with estimating them. For this reason ACIAR has been careful to commission research to examine its assumptions and methodologies (see Box 5 for discussion). Overall the Review Panel considers at least the conservative estimates of economic impact to be credible.

Impact assessment reports on projects that were not successful are important for learning lessons about what works and what does not. For example, the need to take industry and policy conditions into account in research projects showed up in an evaluation of the poor outcome of a grain-drying project in the Philippines (Chupungco et al. 2008); while insufficient training and monitoring of farmers involved in the trial appear to have been the major causes of the poor impact in a low-chill fruits project in Thailand (Harris 2011).

Box 5: Economic Impact Methodological Issues

There have been criticisms that estimates of the economic benefits generated by ACIAR's projects have been too optimistic. ACIAR has been aware of these criticisms and responded by commissioning an external report on the credibility of the estimates (Raitzer and Lindner 2005). Their examination of impact assessment studies up to that time showed that for assessments in which the utilisation of the research output had been well documented (covering 12 projects and only 3.4 per cent of the aggregate bilateral research budget to date), ACIAR's entire bilateral investments were more than justified. The aggregate benefit:cost ratio, inclusive of estimated future benefits deflated by a conservative 5 per cent discount rate, was 1.62. If only benefits realised to that point were included, the benefit:cost ratio was 1.0. Use of a lower opportunity cost of capital, which could be well justified, would yield even higher benefit:cost ratios. Under the even more conservative assumptions about the actual and potential benefits (covering only seven projects and 3 per cent of total investment), benefits including future projections were estimated to have a benefit:cost ratio of 1.31 over total investment to date, using a discount rate of 5 per cent.

Argument can be taken with the projection of future benefits from a project, especially given that the ultimate rate and extent of adoption is highly uncertain. For instance, governments may change policies, which could lead to reductions in the incentive for farmers to take up the new practice. Also, the counterfactual (i.e. what would have happened without the new technology) that forms the basis of the size of the output affected and the productivity advance assumed will be uncertain due to the involvement of other factors affecting output and productivity (e.g. other innovations working their way through the system). It is also necessary for the assessments somehow to take onto account the "maintenance" research that may be necessary to maintain the productivity gains achieved through the project.

It must be noted, however, that ACIAR has generally been well aware of these limitations of assessments of the economic impact of research activities and has encouraged assessors to devise ways to overcome them. As noted, Raitzer and Lindner (2005) took a very conservative approach to the evaluation of the impact assessment studies. If all projects were included it is very likely that the benefit:cost ratio would be much higher. However, it is difficult if not impossible to evaluate realistically all the activities that ACIAR undertakes. For example, basic research is effectively impossible to value; and investments in farming systems, crop protection, policy, and capacity building are very difficult to value. Hence, there will always be an inherently conservative aspect to valuing its research.

Because of the difficulty of making an assumption about the counterfactual against which to assess the benefits from a project, the use of randomised control trials (RCT) has been suggested, i.e. the adoption of a “no treatment” site against which to compare the outcomes from the research intervention. However, this form of experimentation has problems. First, there is the equity issue of not giving the control site the benefit of the intervention. Then there is the problem that has shown up in the Millennium Challenge Corporation’s attempts at the use of RCT impact evaluations, which is that the trial site farmers adopt the intervention within a short time and lose their validity as a control. As well, the evaluators have to be involved in the research project from the beginning (MCC 2012).

Poverty Impacts

ACIAR has been concerned for some time to move beyond standard economic impact assessment to gain a greater understanding of the impact on poverty. Indeed, it initiated its preliminary work in 1999 (Menz et al. 1999). That paper highlighted the difficulties of assessing the poverty-reducing impacts of research. Some approaches were trialled in PNG and India, and further methodological work has shown the impact on poverty. Work in 2012 suggested the sustainable livelihoods approach may be the most useful approach (see Box 6), and ACIAR is now trialling it. It remains, though, a challenging area for estimating impact.

With the adoption of the Comprehensive Aid Policy Framework (CAPF), with its central focus on reducing poverty, there is now increasing urgency to incorporate a poverty focus systematically into ACIAR’s evaluations. The main way ACIAR reports impact—through economic cost-benefit studies—is fully in line with good international practice. However, it is not in line with the approach adopted by the CAPF, which is to give primacy to increases in incomes and reductions in numbers of poor people. As discussed previously, future project reporting will be incorporating these measures.

There is plenty of evidence that ACIAR’s projects impact on poverty, but there needs to be a systematic method of capturing the poverty impact. At the same time, it is vital that ACIAR continue its own suite of evaluations and impact assessments, discussed further below.

Box 6: Estimating Poverty Impacts

Following Menz et al. (1999), Pearce (2002) discussed the possible use by ACIAR of simulation models constructed from survey data. Bauer et al. (2003) and Corbishley and Pearce (2006) assessed the impact of poverty of ACIAR projects in Papua New Guinea and India, respectively, by a simple extension of the economic impact assessment framework using data from household surveys.

As noted in ACIAR's latest attempt to develop a framework for assessing the impacts on poverty of its activities (Carpenter and McGillivray 2012), the simulation methods suggested by Pearce (2002) would be very costly and data-intensive (a major stumbling block in countries where accurate data are rarely available).

The method used by Bauer et al. (2003) and Corbishley and Pearce (2006) is criticised by Carpenter and McGillivray (2012) on the grounds that poverty is only considered from a narrow income concept. They suggest that ACIAR should adopt a Sustainable Livelihoods approach to measuring the poverty-reducing impacts of its activities. This approach takes account of the multidimensional nature of poverty, the vulnerabilities that the poor face, the institutions, policies, and laws that constrain their behaviour, their assets, and the strategies that they adopt to improve their wellbeing. This approach is now being trialled by ACIAR and it is to be hoped that it will provide a useful means of assessing poverty impacts of rural research and development.

Capacity-Building Impacts

There are two main ways ACIAR supports capacity building:

1. Scholarships for study in Australia (or occasionally other countries)
2. Discipline-specific training in conjunction with ACIAR projects, some of which is provided in partnership with the Crawford Fund.

The main scholarship program, the John Allwright Fellowships (JAF), has been subject to three surveys—in 1998, 2004 and 2008 (Muller and Morton 2008). The program is intended to benefit research capacity in partner countries. All surveys have had an overwhelmingly positive response from fellows and institute directors regarding benefits at both individual and institute level. There has been a high rate of return of fellows to their home country following the completion of studies, and of their continuing to work in the same field. In brief:

- 74 per cent of all fellows over the life of the program continue to work in their home country.
- 93 per cent of fellows and institute directors agreed the skills and knowledge acquired were relevant to their current position.
- 81 per cent of fellows had been promoted on return. There was almost unanimous satisfaction (99 per cent) with their experience in Australia.
- 95 per cent saw the fellowship as a positive experience—with research and writing skills, increased flexibility and openness to new ideas and networks of professional contacts being the major benefits.

While comparable data are not available from AusAID or DIISRTE scholarships (see ANAO 2011), the general perception is that ACIAR JAF scholarships are highly successful. Certainly the panel met many former fellows, both JAF and John Dillon awardees, and indeed in some research institutes and government departments they make up a significant proportion of professional staff. For example, in the Forestry Science Academy of Vietnam, 20 (or around 10 per cent) of the research staff with PhDs obtained their doctorates through ACIAR. Part of the success is due to the good quality of the scholarship holders who are known to ACIAR and research partners prior to their selection, and the fact that awardees usually return to a job that utilises their new skills and learning. The impact extends beyond the acquisition of technical skills. As one interviewee in Indonesia pointed out, it wasn't just the skills they he acquired, but also a different way of thinking about research problems, and how to solve them.

There has been no similar study of the John Dillon program and Crawford Fund training, although again the Review Panel met many people who had participated and were enthusiastic about the management and leadership skills they had acquired.

All the available evidence suggests then that the scholarship element of ACIAR's activities is a major success although, as documented below, assessing the impact is difficult.

It has proved more difficult to assess the effectiveness of capacity building within projects—for example, training of farmers, and of local agricultural-extension personnel. ACIAR studies have shown that capacity building has a central role in ensuring sustainability of a project's outcomes, and thus the long-term economic benefits. There have been a number of studies on lessons learned, which include findings such as the critical role of early engagement with a community in a project and regular interaction throughout the life of the project. The field trips to Vietnam, PNG and Indonesia enabled the Review Panel to appreciate the importance of the capacity-building elements. Some of the strongest advice from interviewees in partner countries was to increase capacity building in ACIAR projects. For example, it was regularly emphasised how important it was to have Australian researchers on the ground for significant periods, to work alongside local researchers, farmers and community leaders and members.

ACIAR has made significant efforts to develop methodology to estimate the impact of capacity building (see Box 7). However, it remains a challenging area for obtaining rigorous evidence of impact.

Box 7: Methodological Issues: Capacity Building and Natural Resource Impacts

It has been long recognised that measuring the economic benefits of the capacity building and training undertaken within research activities or in aid projects more generally is inherently difficult due to the problems with attribution. Therefore, there has been little effort put into quantitative studies. However, anecdotal evidence suggests that the capacity-building outcomes from ACIAR's activities are very important and ACIAR has accordingly judged it important to advance understanding of this issue.

ACIAR began to have a serious look at assessing the impact of its capacity-building efforts with a study by Gordon and Chadwick in 2007. This study identified the areas where capacity building could contribute to a country's wellbeing through adding to the benefits that would otherwise arise from the research, as (i) where the capacity building fills a gap that enables progress to be made towards the intended outcome; (ii) where the capacity building and training activities are a component in a broader set of technical or other investments; and (iii) where the training activity adds to the stock of human resources but cannot be linked directly with changes in practice or behaviour. It concluded that attribution of the benefits accruing to capacity building and training has to be largely on the basis of subjective judgements.

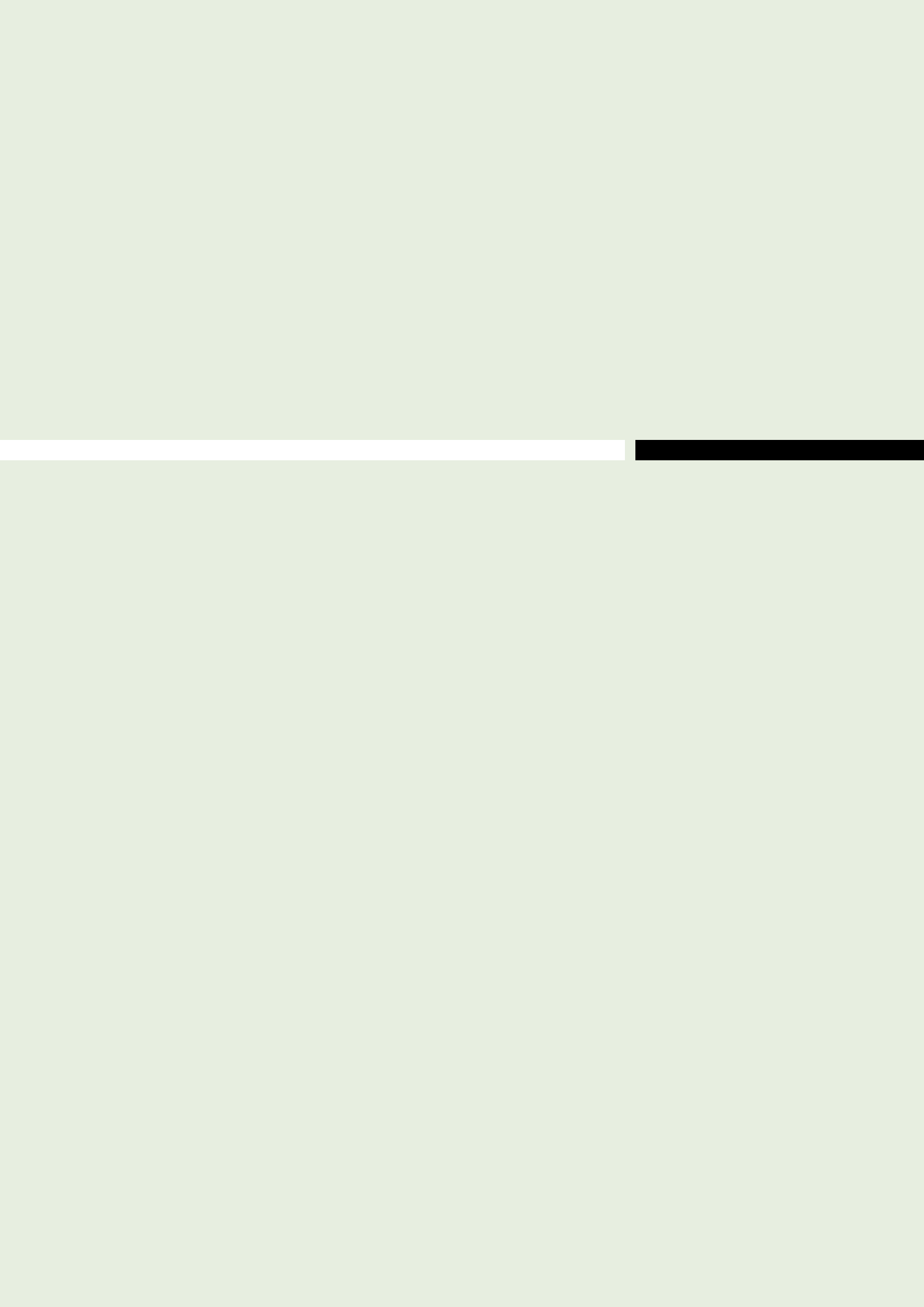
As confirmed in the two case studies in Gordon and Chadwick (2007), assessment of capacity-building impacts depended largely on expert opinion about the positive impact on adoption of the research outcomes. Later ACIAR capacity-building studies (Longmore et al. 2007; Fisher and Gordon 2008) also confirmed that judgements of the benefits of the project “with and without” the capacity-building activity are key.

Responding to international concerns about the impact of new agricultural technology on the natural resource base, ACIAR recently commissioned a study on developing a methodology for including natural resource management and environmental impacts within impact assessment studies (Pearce and White 2012). Many of the costs and benefits of environmental impacts are not measured through market transactions. Therefore, these externalities have to be measured through the so-called “willingness-to-pay” method, which gives highly subjective results. However, presently there appears to be no alternative but to do as Pearce and White suggest; that is, to include estimates of the external costs and benefits of ecosystem services within the standard cost–benefit framework in those cases where natural resource management issues are more important.

ACIAR’s monitoring and evaluation system is strong, but the whole-of-government reporting and ACIAR portfolio management could be further strengthened.

The Review Panel recommends ACIAR:

19. introduce by June 2014 an integrated program management database
20. develop by the end June 2013 a systematic approach to report on CAPF indicators and retrofit all active projects to collect data on the number of farmers accessing new agricultural technologies, and the increased crop value; and the number of farmers and other poor people with increased income
21. undertake some repeat impact assessment and adoption studies ten years after project completion, to test the appropriateness of the assumptions made, especially about productivity improvement and the rate and extent of adoption
22. nominate evaluations for oversight by the Independent Evaluation Committee (IEC) during the evaluation process
23. produce an annual summary of key evaluation findings to form part of the annual reporting on the CAPF, with structure and form developed in consultation with ODE (Office of Development Effectiveness) and the IEC
24. continue its own suite of evaluations and impact assessment, including continuing to estimate the economic impact of its projects and improving its methodology for assessing environmental impacts.



CHAPTER 7: COMMUNICATIONS AND STAKEHOLDER ENGAGEMENT

Communications

The Independent Review of Aid Effectiveness argued that transparency, scrutiny and informed debate are critical to improving effectiveness and value for money; that it is important to give Australian taxpayers and people in developing countries information about how and where aid money is being spent; and that the Australian community should have a solid basis for engaging with the program. The Review made a number of specific suggestions:

- the Australian aid program could demonstrate leadership on transparency issues
- this would entail, inter alia, public release of performance reviews and other documents and data
- the government should adopt a Transparency Charter
- to promote public debate, the aid program should fully embrace new media and other innovative technology to communicate the impact of the aid program.

The government agreed with the proposal to adopt a Transparency Charter and, in the past 18 months, AusAID has made significant steps in the matter of enhancing its transparency and its public communications.

For its part, ACIAR can point to a long history of public release of documents and information, including reviews and evaluations. Such documents have included assessments of successful and unsuccessful ACIAR projects. This is in line with ACIAR's mandated responsibility to communicate the results of its agricultural research (section 5.1.c of the ACIAR Act).

ACIAR's publications fall into three main categories:

- corporate documents (Annual Report, Annual Operational Plan, Corporate Plan)
- general information for the public about ACIAR's activities (such as Partners Magazine and summary leaflets about ACIAR and its projects)
- scientific and technical papers.

A small number of corporate fact sheets and brochures are also produced, mainly offering an entry point into ACIAR for those unfamiliar with its operations. The Fact Sheet series includes an overview of ACIAR, focusing on the benefits accrued from projects assessed under the Impact Assessment Series, while a companion fact sheet outlines the stories of the beneficiaries of this research. The aim is to link the macro-level economic benefits and aid-effectiveness arguments to the micro-level examples of individuals who have benefited from adopting project outcomes. This style is incorporated into Partners Magazine, ACIAR's principal public outreach document in Australia and overseas, targeting the research networks that are likely to implement or adopt research outcomes. Around 7,000 copies are distributed to government, university and other agency organisations.

ACIAR's main types of scientific and technical publications include:

- final reports from projects
- monographs (major reports of findings from completed projects, including how-to manuals, case studies etc.)
- records of proceedings (mainly of workshops, usually associated with a project)
- technical reports
- impact assessments
- adoption studies.

With the exception of Final Reports, most publications are printed in hard copy in varying numbers according to the topic and target audience (agricultural researchers, extension officers, farmers, policymakers etc.); but all scientific and technical publications are placed on the ACIAR website for free download. There is a standard template for Final Reports, which are placed on the website after minimal editing, and the project team is free to include as much detail as necessary, in the form of appendixes. The main audience for Final Reports is the network created by the particular project, and the agricultural science research and development community.

ACIAR has been steadily increasing the number of reports and papers it provides in the language of the partner country concerned.

Over its 30 years of operation, ACIAR has accumulated a great deal of information, data and analysis from its projects. An effective search engine on the website has been reasonably useful for accessing all this material to date; but ACIAR is looking to develop an improved public electronic storage and retrieval system, possibly through design of a form of 'knowledge bank' as a distinct part of the ACIAR website. It is ACIAR's hope that such a 'knowledge bank' might make ACIAR's work better known and used by the Australian and international agricultural research community.

The submission from the Chinese Academy of Forestry provided one of the few comments on perceived shortcomings in ACIAR's approach to publications:

We are aware that some projects in the past have submitted technical reports to ACIAR, based on findings from their funded research work, but many of these don't appear on ACIAR's website, nor are they readily accessible to others outside of the collaborating institutions. Also, some ACIAR projects reach their completion with relatively few results from research completed through the project having been published. Though project scientists often vow to publish results after a project has been completed, it seems this often does not happen or else it can take an inordinate amount of time. We would encourage ACIAR to be more pro-active in the future in ensuring all useful research results are published in accessible venues with reasonable expediency.

The Review Panel was impressed by the quality of ACIAR's publications and, in particular, by the breadth of material made available. This body of work serves to promote awareness of ACIAR's functions and results. It would also seem to be a substantial contribution to the task of making information available about the overall aid program. This contribution could well be enhanced in further ways, including through use of emerging social media; and through regular incorporation of information (in line with the CAPF reporting approach) about the numbers of poor people overseas who have been helped by ACIAR programs. The Review Panel also sees scope for ACIAR to collaborate further with AusAID in the area of public communications, including, for example, by producing more "Australian aid" material featuring joined-up projects (such as the Timor-Leste "Seeds of Life" project). The Review Panel in this regard noted positively the recently released AusAID web pages on whole-of-government issues and, in particular, the ACIAR presence on those pages. The Crawford Fund will remain an important and effective means of promoting public awareness of the work of ACIAR.

There is a particular challenge for ACIAR in developing its communications further; namely to develop a simple, coherent high-level narrative about its work. This will need to rise above the details of projects in a way which is accessible to the Australian community. Such a narrative would, inter alia, be useful to Ministers in their public references to ACIAR's work.

Stakeholder Engagement

The Review Panel encountered more mixed views about the quality, depth and frequency of ACIAR's stakeholder engagement, particularly within Australia.

As noted elsewhere in this report, ACIAR staff are heavily involved in project work, including consultations with developing countries about program priorities and related issues, and the project development, approval and implementation processes.

The Review Panel encountered positive views in developing countries about the quality and results of ACIAR's engagement. In other encounters, for example with representatives of some of the CGIAR Centres and others operating in the international environment, there was a clear understanding of ACIAR's work and a generally high regard for it.

This is to the good, but it comes at a cost in terms of the call on time of ACIAR staff, especially the CEO. In turn there has been a falling-off of stakeholder engagement in Australia following the discontinuation of the ACIAR Deputy Director position in 2009. The Commission has expressed its concerns at this situation and the CEO plans to devote more time to networking in Australia during 2013. There will be limited scope to do this unless ACIAR devotes additional resources as recommended in Chapter 5.

ACIAR has recognised that its stakeholder engagement system, particularly within Australia, has been somewhat ad hoc and fragmented. One of ACIAR's great strengths has been its agricultural scientific expertise; but the ACIAR culture, focused on delivering high-quality agricultural science research projects in developing countries, has tended to translate into an organisation somewhat removed from the mainstream of Australian government, business and community.

The Review Panel's observations bear out this observation. As noted elsewhere, there is limited awareness of ACIAR's work in the central agencies, though they appear to have a general view that ACIAR does positive work. More broadly, the Review Panel encountered observations throughout its consultations in Australia that more active engagement by ACIAR would be appreciated.

ACIAR also recognises the need for putting processes in place for a more coordinated and effective communications system. It is implementing a stakeholder mapping exercise with a focus on how ACIAR's well-developed research networks and in-country presence can be linked to a greater whole-of-government focus, and how ACIAR can raise its profile in government.

The Review Panel endorses this step, but it is only a first step. There are a number of reasons for ACIAR to enhance its stakeholder engagement in Australia in a strategic and concerted way:

- In an environment where ODA is contested, ACIAR needs to ensure that the value and importance of its activities are understood by members of parliament, the central agencies in Canberra, the media and the public.
- ACIAR has a substantial interest in enhanced engagement with universities, both at the most senior levels (for example, to enhance awareness of the value which ACIAR research funding represents in the total range of funding available to universities), as well as among the research community (including those who have not previously worked with ACIAR and may represent new capacity for international agricultural research). Such engagement also serves to increase interest in agricultural research and interdisciplinary approaches to food safety and security.

- There are other groups who already represent a significant source of co-funding for ACIAR (for example the state and territory government agencies) but are working in a changing environment which ACIAR needs to understand on a continuing basis.
- As noted above, there is a need for ACIAR to relate more intensively with the private sector and NGOs.
- Regular interactions can serve to identify and deal with issues of concern to ACIAR and partner organisations (for example, perspectives on research partner identification, time lines for project approval and ACIAR's contractual and other requirements).

The Review Panel considers that there is a compelling need for ACIAR to deepen its relationships with its stakeholders, including AusAID and its other Australian Government ODA partners, and the universities, state and territory governments, private sector and NGO organisations which are its source of research partners. It recommends that ACIAR develop a strategic approach to stakeholder engagement. This should lead to a systematic process of engagement, with a clear agenda, a clear understanding of why it is being undertaken and with aims differentiated according to the differing stakeholder groups. This process would benefit from guidance from the Commission. Stakeholder engagement will require sustained effort with dedicated resources and, as noted above, would require additional resourcing at a senior level in ACIAR's management structure. ACIAR provides some funding to the Crawford Fund and could consider engaging the Fund to design a program of stakeholder engagement and increase its advocacy about ACIAR's work. It could also make use of its strong relationship with the Crawford Fund and join in its exploration of the role of the private sector with IM4DC, the Syngenta and Doyle foundations, and the Global Change Institute at UQ.

The review panel recommends that:

- 25.** ACIAR develop a clear high-level narrative about its work and use this to raise community awareness in Australia
- 26.** ACIAR develop further its work with AusAID on whole-of-ODA public affairs approaches
- 27.** ACIAR develop a strategic approach to, and systematic process of, engagement with stakeholders in Australia, including through engaging the Crawford Fund.

Appendix 1: Terms of Reference

Background

The Australian Centre for International Agricultural Research (ACIAR) looks to a world where poverty has been reduced and the livelihoods of many improved through more-productive and sustainable agriculture emerging from collaborative international research. ACIAR forms part of Australia's aid program and contributes to the five strategic goals of the program, contributing particularly to food security and sustainable economic growth.

In line with the broader aid program, ACIAR has doubled in size over recent years, with an annual appropriation of approximately \$100 million in 2012–13. The Australian Government has committed to increasing support for ACIAR. While this decision was based on the agency's "impressive results, confirmed by independent evaluations", the Australian Government, Parliament and taxpayers need to be confident that current and further investments are targeted appropriately; are effective in helping overcoming poverty; and are used efficiently.

To this end, the Australian Government has commissioned a review of ACIAR in the second half of 2012. This will be the first independent public review of ACIAR since the Nairn Review in 1998, and comes as ACIAR enters its fourth decade of operation. The review recognises the Comprehensive Aid Policy Framework, and the significant changes occurring in Australia's aid program, and in the programs and priorities of ACIAR's partners around the world. It is anticipated that the review will make recommendations that will make a strong agency even better. The report will underpin a new Corporate Plan for ACIAR to 2015–16.

Objective

To examine the appropriateness, effectiveness and efficiency of the Australian Centre for International Agricultural Research and make recommendations for improvements.

Focus

Within the context of ACIAR's enabling legislation, the review will focus on:

1. The appropriateness of ACIAR's goals and strategies in supporting the fundamental purpose of Australian aid, namely, helping people overcome poverty;
2. ACIAR's effectiveness in improving livelihoods through more-productive and sustainable agriculture, and in achieving intermediate knowledge generation and capacity building outcomes; and
3. The efficiency of ACIAR's operations and arrangements for managing research programs and building capacity, including internal capability and systems, risk management, performance oversight, and transparency.

Methodology

The review will be conducted by an independent panel appointed by the Minister for Foreign Affairs and will report to the Minister through the Commission for International Agricultural Research. The Development Effectiveness Steering Committee will act as a reference group for the review, and the review will be supported by a Secretariat led by ACIAR.

The Panel will consult extensively across the Australian Government, non-government organisations and with other key stakeholders in the Australian community and internationally. ACIAR's Policy Advisory Council will be a key conduit for international engagement, complemented by fieldwork undertaken to consult with a selection of ACIAR's bilateral and multilateral partners.

The Panel will provide independent recommendations to improve the effectiveness and efficiency of the Australian Government's commitment to overcoming poverty through international agricultural research.

Time Frames and Reporting

The review will commence in September 2012.

The Development Effectiveness Steering Committee will act as a reference panel for the review.

Appendix 2: Institutions Consulted by the Review

International

- CAB International (CABI)
- Canadian International Development Agency (CIDA)
- Centre de Coopération Internationale en recherche Agronomique pour le Développement (CIRAD)
- Center for International Forestry Research (CIFOR)
- Center for Tropical Agricultural Research and Education (CATIE)
- CGIAR Consortium
- International Center for Agricultural Research in the Dry Areas (ICARDA)
- International Centre of Insect Physiology and Ecology (ICIPE)
- International Finance Corporation (IFC)
- International Food Policy Research Institute (IFPRI)
- International Fund for Agricultural Development (IFAD)
- International Maize and Wheat Improvement Center (CIMMYT)
- Independent Science & Partnership Council, GCARD
- International Water Management Institute (IWMI)
- Secretariat of the Pacific Community (SPC)
- The World Vegetable Centre (AVRDC)
- World Agroforestry Centre (ICRAF)
- World Bank

Australian Government

- Australian Agency for International Development (AusAID)
- Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
- Australian Centre for International Agricultural Research (ACIAR)
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- Department of Agriculture, Fisheries and Forestry (DAFF)
- Department of Finance and Deregulation (Finance)
- Department of Foreign Affairs and Trade (DFAT)
- Department of Prime Minister and Cabinet (PM&C)
- The Treasury

Australian Institutions

- Australian Council for International Development (ACFID)
- Australian National University (ANU)
- Aurecon
- Australian Council of Deans of Agriculture (ACDA)
- Business for Millennium Development (B4MD)
- Chief Scientist
- Crawford Fund
- Curtin University
- Department of Agriculture and Food, WA
- Department of Primary Industries, Victoria
- Edith Cowan University
- Fortune & Associates
- Grains Research and Development Corporation (GRDC)
- James Cook University
- La Trobe University
- Murdoch University
- Oxfam Australia
- Queensland Alliance for Agriculture and Food Innovation (QAAFI)
- Queensland Department of Agriculture Fisheries and Forestry
- South Australian Research and Development Institution (SARDI)
- University of Adelaide
- University of Melbourne
- University of Queensland
- University of Sunshine Coast
- University of Sydney
- University of Western Australia
- University of Western Sydney
- World Vision

Vietnamese Institutions

- Forestry Science Academy of Vietnam
- Hanoi Agricultural University
- Ministry for Agriculture and Rural Development (MARD)
- National Institute of Medicinal Materials (NIMM)
- Plant Protection Research Institution
- Vietnamese Academy of Agricultural Science (VAAS)
- Vietnamese Women's Union (VWU)

PNG

- Aquaculture and Inland Fisheries, National Fisheries Authority
- Cocoa Coconut Institute
- Department of Agriculture and Livestock
- Institute of National Affairs
- National Agricultural Research Institute
- National Agriculture Quarantine Inspection Authority
- Oil Palm Research Association
- PNG Forest Authority
- Rural Industries Council
- Sustainable Development, World Bank
- University of Natural Resources and Environment

African Institutions

- Forum for Agricultural Research in Africa
- African delegations to the Food Security Conference, Sydney, November 2012
- African delegations to the GCARD, Punta del Este, October 2012

Indonesian Institutions

- Assessment Institute for Agricultural Technology, NTB
- Bapada, NTB
- Bogor Agricultural University (IPB)
- Dinas, NTB
- Forestry Research and Development Agency (FORDA)
- Mars Indonesia
- Ministry of Agriculture
- Ministry of Fisheries
- University of Mataram

China

- China Agricultural University
- Lanzhou University
- Ministry of Agriculture

Other

- Commission for International Agricultural Research
- Policy Advisory Council

Timor-Leste

- Ministry of Agriculture

Appendix 3: Submissions to the Review

- Center for International Forestry Research, Indonesia
- Charles Sturt University, Australia
- Chinese Academy of Forestry, China
- Crawford Fund, Australia
- Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
- Curtin University, Australia
- Department of Primary Industries, NSW, Australia
- Development Policy Centre, Australia
- Forestworks Industry Skills Council, Australia
- Fortune and Associates, Australia
- Indian Council of Agricultural Research, India
- International Agriculture for Development Pty Ltd, Australia
- Mars, Indonesia
- National Agricultural Education Accreditation Council, Pakistan
- National Agriculture and Forestry Research Institute, NAFRI, Lao PDR
- Network of Aquaculture Centres in Asia Pacific, Thailand
- Oxfam, Australia
- Salwood Asia Pacific Pty Ltd, Australia
- The National Farmers' Federation, Australia
- The University of Adelaide, Australia
- The University of Sydney, Australia

Appendix 4: Australia in International Agricultural Research

Australia's Role in International Agricultural Research

Australia's contributions to agricultural development policy and practice and international agricultural research comprise both funding support and institutional collaboration. Many parts of the Australian agricultural expertise spectrum are involved to a greater or lesser extent in this international collaboration, whether at a multilateral, regional or bilateral level. Federal and state government departments and agencies (such as CSIRO), universities and other research institutions (such as Cooperative Research Centres [CRCs]), and agricultural industry research bodies (such as the Grains Research and Development Corporation [GRDC], Meat and Livestock Australia [MLA], and others) all have some participation. ACIAR plays a key catalytic role in drawing on Australia's considerable range of expertise in agricultural research, development and training, to match this expertise with projects identified as appropriate for development and support in partner developing countries. AusAID is also active in this regard, but ACIAR's role is especially focused on agriculture, while AusAID has a responsibility for a wide range of other ODA sectors as well. Many Australian institutions and agencies undertake international agricultural R&D work and there is collaboration on a wider scale than through ACIAR and AusAID programs and projects, as summarised below.

ACIAR's, and Australia's, capacity to contribute to international agricultural research and development depends very much on the continuing strength of Australia's own domestic agricultural research and development base, which faces considerable challenges. Australia's total investment in rural-related research and development is estimated at around A\$1.5 billion per annum (originally calculated in FY2009–10, with this figure still being cited), including investment by federal and state governments, industry levies, universities and business.¹

The Productivity Commission's 2011 inquiry report, 'Rural Research and Development Corporations', cited a 2010 study which estimated Australia's rural R&D accounted for less than two per cent of global total rural R&D (both public and private sector). The report also compared the research intensity of Australia's rural R&D with that of other OECD countries and, in the context of some qualifications about the comparability of different countries' data in this area, concluded that Australia's rural R&D expenditure at around 3.3 per cent of the gross value of rural production (GVRP) in FY2009–10, was not 'widely out of kilter with international norms'. But it also noted that Australia had a higher proportion of public sector rural R&D (around 75 per cent) than major OECD countries like the USA, UK, France and Germany. One reason for the lower share of private sector rural R&D investment compared to other major OECD economies is likely to be the continuing dominance of small, family-owned farming and fishing businesses in Australia (an important basis for the rural research and development corporation model with industry levy funding). Another reason is likely to be the tendency for the dominant North American and Western European multinational corporations in agribusiness (and the food industry) to undertake the majority of their R&D in their own countries.

¹ See www.daff.gov.au/abares/media-releases/2012/strengthening-australias-rd-and-e-framework; Core, P., 'A Retrospective on Rural R&D in Australia', November 2009; and the Productivity Commission Inquiry Report, 'Rural Research and Development Corporations', February 2011. (www.daff.gov.au/__data/assets/pdf_file/0020/1435331/rd-retrospective-report.pdf) (www.pc.gov.au/__data/assets/pdf_file/0006/109995/rural-research.pdf)

At the same time, the global context is changing, with major emerging economies like China and India increasing their rural R&D investment significantly over the past two decades to maintain and lift agricultural productivity growth.² China's agricultural R&D has been estimated to be around 0.53 per cent of the GVAP (2005 figure)³, so that with agriculture, fisheries and forestry accounting for approximately 10 per cent of China's GDP (2010), the approximate value of China's agricultural R&D could be at least US\$3 billion per annum (based on GDP in 2010). Given the significant emphasis given to modernising agriculture and increasing rural incomes in China's 12th Five-Year Plan (2011–16), and the view of the Chinese Academy of Agricultural Sciences (CAAS) that around 2 per cent of GVAP was a proper level of agricultural R&D intensity to aim for, China's agricultural R&D expenditure can be expected to rise further.

Debate focuses on the adequacy of the current level of rural R&D expenditure in the face of Australia's slowing agricultural productivity growth and the expected major growth in global food and fibre demand over coming decades, as well as the renewed recognition of the importance of agricultural research and development in effective economic development and poverty reduction in developing countries.

CSIRO (Commonwealth Scientific and Industrial Research Organisation)

CSIRO, Australia's national science agency, originally established as CSIR in 1926 to conduct and apply scientific research that assists Australian industry, furthers the interests of the Australian community and contributes to the achievement of Australian national objectives or the performance of the national and international responsibilities of the Commonwealth (as set out in the *Science and Industry Research Act, 1949*). CSIRO has a current annual budget of around A\$1.5 billion (AFY 2011–12), and 6,500 staff.⁴ Today it performs its functions through an organisational model of eleven National Research Flagships, drawing scientific skills from twelve capability focused Divisions. At least seven of these Flagships have some direct relevance to agriculture:

- Sustainable Agriculture
- Food Futures
- Wealth from Oceans
- Water for a Healthy Country
- Climate Adaptation
- Energy Transformed
- Biosecurity

All of the research done in these flagships is aimed at providing new ways to improve the quality of life and the economic, environmental and social performance of Australia's industries; but all of the research outcomes are also relevant to challenges in other countries and globally, and form a crucial base of Australian scientific expertise that can be leveraged in Australia's international scientific engagement. Global citation metrics place CSIRO in the top ten institutions in the world for the fields of agricultural science and plant and animal science (reference: *A ten year citation analysis of major Australian research institutions*: vol. 53, no. 1, pp35–41, 2011, at http://www.aur.org.au/archive/53-01/aur_53-01.pdf). CSIRO has a comprehensive international engagement strategy driven by considerations of global science excellence, access to leading-edge skills and technologies, progressing solutions to global challenges and supporting Australia's national interests on a global stage.

2 World Bank Development Report 2008, 'Agriculture for Development' (Chapter 7: Innovating through Science and Technology).

3 Zhai Huqu, President of Chinese Academy of Agricultural Sciences (CAAS), 'Agricultural R&D and Poverty', presentation to IFPRI 2020 Conference, Beijing, October 2007.

4 CSIRO (www.csiro.au), *CSIRO Annual Report 2011-12*, p vii.

Within each of the seven agriculture-related flagships there are also a number of specific international research collaboration programs and projects, for example:

- Sustainable Agriculture Flagship's joint project with the South Asian Association of Regional Cooperation (SAARC) and the CGIAR's International Rice Research Institute (IRRI) to provide a two-year research and study program over 2011–13 for 24 scientists from South Asia to design improved rice-based cropping systems with reduced use of water resources.
- Water for a Healthy Country Flagship's four-year collaborative research project on strengthening sustainable water resources management in India, in partnership with key water management stakeholders in the India–Australia Water Science and Technology Partnership (including AusAID and Australia's International Centre for Excellence in Water Resources Management [ICE WaRM], and several Indian Government agencies).
- Food Futures Flagship's research project focused on producing Omega-3 oils in plants common to Sub-Saharan Africa (such as cowpeas, a staple food in that region) aimed at improving the nutrition of infants and children, funded by the Bill and Melinda Gates Foundation.

DIISRTE (Department of Industry, Innovation, Science, Research and Tertiary Education)

In addition to its portfolio responsibility for CSIRO, the Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) manages some international research partnership arrangements that are relevant to agriculture and agricultural research. These include:

- The Australia–India Strategic Research Fund (AISRF)⁵, set up in 2009 to assist Australian researchers from both the public and private sectors to participate in leading edge scientific research projects and workshops with Indian scientists and support the development of strategic alliances between Australian and Indian researchers. The AISRF operates several programs:
 - the Indo-Australian S&T Fund supports collaborative research projects and workshops between Australian and Indian researchers, with agricultural research and marine sciences comprising two of the priority areas;
 - the Indo-Australian Biotechnology Fund supports collaborative research projects and workshops, including on transgenic crops and marker-assisted breeding, nutraceuticals and functional foods, and biotechnological interventions for improved agricultural productivity;
 - the Grand Challenge Fund supports collaborative projects of significant scale able to deliver solutions to key challenges for both countries, with food and water security one of key themes in 2010–11.
- The Australia–China Science and Research Fund (ACSRF)⁶, set up in 2011 for three years to 2014 to support strategic scientific research collaboration and partnerships, with funding support for joint research centres and knowledge exchange, including in the areas of agriculture, soil and water conservation, and forestry.

DIISRTE also has officials posted in Washington, Brussels, New Delhi and Beijing to facilitate scientific policy exchange and cooperation.

5 www.innovation.gov.au/Science/InternationalCollaboration/aisrf/Pages/AbouttheAISRF.aspx

6 www.innovation.gov.au/Science/InternationalCollaboration/ACSRF/Pages/AboutTheACSRF.aspx

DAFF (Department of Agriculture, Fisheries and Forestry)

The Department of Agriculture, Fisheries and Forestry (DAFF) is involved in international agricultural research through several arms of its organisation, and agencies and statutory authorities linked to it.

The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) is DAFF's main research arm. It provides professionally independent research, analysis, commodity forecasting and data across the fields of economics, science and social science. As much of Australian agriculture is largely export-oriented, much of ABARES' research focuses on global agricultural economic and trade trends. ABARES' reports and papers are published on its website and are available without charge, including to anyone outside Australia. Some of ABARES' research relates to Australia's agricultural capacity within the global market; for example, its major ongoing project 'Long-term demand for food: future challenges and opportunities for Australian agriculture'. ABARES also participates in particular projects of collaborative international agricultural research. For example, in 2012–13 ABARES is participating in 'a worldwide project to develop an internationally consistent set of agricultural productivity data for major agricultural producers', coordinated by the US Department of Agriculture (USDA) and involving several major agricultural producing countries.⁷ Another is a current project commissioned by ACIAR where ABARES is developing a plan for 'engagement in capture fisheries research and institutional capacity development in Indonesia' aimed at improving Indonesia's long-term capacity for capture fisheries management.⁸ ABARES is also participating in a multi-year collaborative project with India's National Centre for Agricultural Economics and Policy Research (NCAEPR) to 'analyse the effects of agricultural price fluctuations on Indian consumers, producers and related policy issues'.⁹

DAFF's Climate Change Division manages the Australian Government's Carbon Farming Futures program, under which the Filling the Research Gap component, the successor program to the earlier Climate Change Research Program, funds research projects to "support development of adaptation strategies to build the capacity of Australian farm enterprises to remain profitable in a changing climate", and "also encourage international research collaboration on mitigation projects through the Global Research Alliance on Agricultural Greenhouse Gases".

DAFF's three Biosecurity Divisions (Biosecurity Policy, Biosecurity Plant and Biosecurity Animal) are responsible for the development and implementation of Australia's biosecurity policies, and manage biosecurity risk analysis research related to animal and plant import proposals and import policy reviews. This research is carried out within Australia and other countries, developed and developing. The accumulation of this research knowledge and Australia's well-recognised expertise and high standard of biosecurity, as well as Australia's strong national interest in improving biosecurity standards and practices internationally, has made it logical for Australia to provide biosecurity training courses in a number of developing countries, particularly in developing Asia.

Research and Development Corporations (RDCs) and industry-owned research bodies

Australia has developed a national model of collaborative government–industry funding for research and development related to agriculture, fisheries and forestry, through a number of sector-specific bodies accountable to both government and industry.

7 ABARES (www.daff.gov.au/abares). *Profile and Work Program 2012-13*. Canberra. October 2012.

8 ABARES (www.daff.gov.au/abares). *Profile and Work Program 2012-13*. Canberra. October 2012.

9 ABARES (www.daff.gov.au/abares). *Profile and Work Program 2012-13*. Canberra. October 2012.

The federal government provides matching funding to the industry levies paid by primary producers to support the research and development work undertaken by fifteen organisations related to different sectors of agriculture, fisheries and forestry, comprising six research and development corporations and nine industry-owned companies. These are:

RDCs

- Grains Research and Development Corporation (GRDC)
- Sugar Research and Development Corporation (SRDC)
- Fisheries Research and Development Corporation (FRDC)
- Cotton Research and Development Corporation (CRDC)
- Grape and Wine Research and Development Corporation (GWRDC)
- Rural Industries Research and Development Corporation (RIRDC)

Industry-owned companies

- Australian Egg Corporation Limited
- Australian Livestock Export Corporation Limited
- Australian Meat Processor Corporation Limited
- Australian Pork Limited
- Australian Wool Innovation Limited
- Dairy Australia Limited
- Forest and Wood Products Australia Limited
- Horticulture Australia Limited
- Meat and Livestock Australia Limited

Most of the sectors covered by these bodies are substantially export-oriented and dependent on knowledge of, and trends and developments in, international markets. Consequently some part of each sector-specific body's research relates to international markets and trends, including some in conjunction with international partners. For example, the GRDC (which covers 25 grains and pulses) plays an important role in forging long-term strategic collaborations with key international research partners such as the International Maize and Wheat Improvement Center (CIMMYT), the International Center for Agricultural Research in the Dry Areas (ICARDA), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), all part of the CGIAR network of international research centres.

Universities and Cooperative Research Centres (CRCs)

Australian universities play a central role in agriculture-related research across a wide range of disciplines, from agronomy and crop science to veterinary and production animal science, from integrated pest management and biosecurity to land and water resource management, from agricultural economics to value chain analysis and marketing studies, from marine science to fisheries and aquaculture, and beyond. Much of what was once classified as 'agricultural science' has been extended and diversified into additional related fields such as environmental science and ecosystems research. There is extensive collaboration across universities and research linkages to numerous partners, whether to Cooperative Research Centres (CRCs), Centres of Excellence, specific institutes, state departments of agriculture and their research centres, federal agencies like CSIRO, industry bodies like the GRDC, and the private sector. This research capacity of the universities and other bodies linked to them is obviously important also for their teaching and training capacity, particularly at postgraduate level, in terms of maintaining Australia's broader agriculture-related research and innovation capacity.

A number of universities have significant research and teaching capacity related to agriculture—mainly agricultural sciences, agricultural economics and environmental sciences. These include:

- **University of Sydney, NSW (www.usyd.edu.au)**
 - *Faculty of Agriculture and Environment*
 - Undergraduate and postgraduate courses and research in agricultural and resource economics, environmental sciences, and plant and food sciences
 - Several research institutes (Plant Breeding Institute, with several sites in NSW; Holtsbaum Agricultural Research Station, located at Spring Ridge, Liverpool Plains NSW; Precision Agriculture Laboratory [fka Australian Centre for Precision Agriculture]; Pulsford Laboratory [fka Centre for Nitrogen Fixation])
 - *Faculty of Veterinary Science*
 - Undergraduate and postgraduate courses and research in veterinary science, with focus on food security, control of emerging diseases and protecting animal health and welfare
 - Several research and clinical facilities at Sydney and Camden campuses
- **University of New England, Armidale NSW (www.une.edu.au)**
 - *School of Environmental and Rural Science*
 - Undergraduate and postgraduate courses and research in agricultural science, animal and plant sciences, environmental sciences, geology and environmental engineering, under banner of 'saving the planet, feeding the world'
 - Several research facilities, and partnerships with three Cooperative Research Centres (CRCs for beef, sheep, and poultry) located at UNE
 - International Graduate Centre of Animal Science (IGSAS) in conjunction with UWA and CSIRO Livestock Industries
 - *UNE Business School*
 - Agricultural and Resource Economics
 - Development and Environmental Economics
- **Charles Sturt University, Wagga Wagga NSW (www.csu.edu.au)**
 - *School of Agricultural and Wine Sciences*
 - Undergraduate and postgraduate courses and research, and diploma courses, in agricultural science, viticulture and oenology, ecological agricultural systems, water policy and governance, and agricultural business management
 - *School of Animal and Veterinary Science*
 - Undergraduate and postgraduate courses and research in animal science, veterinary science
 - *School of Environmental Science*
 - Undergraduate courses in environmental science, ecological agricultural systems
- **Southern Cross University, Lismore NSW (www.scu.edu.au)**
 - *School of Environment, Science and Engineering*
 - Undergraduate and postgraduate courses and research in environmental science, forest science and marine science, and management
 - Centre for Coastal Biogeochemistry Research
 - Marine Ecology Research Centre
 - *Southern Cross Plant Science – Special Research Centre*
 - Focus on plant genetics, photochemistry and ethnopharmacology
 - *Southern Cross GeoScience – Special Research Centre*
 - Focus on land and water resource management

- **University of Western Sydney, NSW (www.uws.edu.au)**
 - *School of Sciences and Health*
 - Vincent Fairfax Chair in Sustainable Agriculture and Rural Development
 - Research projects with postgraduate students
 - Hawkesbury Institute for the Environment
 - Research on soil biology and genomics; plants, animals and interactions; ecosystem function and integration
- **University of Queensland, QLD (www.uq.edu.au)**
 - *Faculty of Science: School of Agriculture and Food Science*
 - Undergraduate and postgraduate courses and research in animal production, plant biology, soil science, agronomy and horticulture, food science & nutrition, natural resource management, agribusiness and agricultural economics
 - Queensland Alliance for Agriculture and Food Innovation (QAAFI)
 - Centre for Plant Science
 - Centre for Animal Science
 - Centre for Nutrition and Food Sciences
 - UQ Gatton
 - Centre for Advanced Animal Science
 - *Faculty of Science: School of Veterinary Science*
 - Undergraduate and postgraduate courses and research in veterinary science
 - Centre for Animal Welfare and Ethics
 - *Global Change Institute*
 - *Faculty of Social and Behavioural Sciences*
 - *Faculty of Business, Economics and Law*
- **James Cook University, Townsville & Cairns North QLD (www.jcu.edu.au)**
 - *Faculty of Science and Engineering: School of Marine and Tropical Biology*
 - Undergraduate and postgraduate courses and research in marine science & biology, aquaculture, plant science, zoology, genetics & genomics, ecology & conservation
 - Centre for Sustainable Tropical Fisheries and Aquaculture
 - Centre for Tropical Water and Aquatic Ecosystem Research
 - ARC Centre of Excellence for Coral Reef Studies
 - Centre for Tropical Environmental and Sustainability Science
 - *Faculty of Science and Engineering: School of Veterinary & Biomedical Sciences*
 - Undergraduate and postgraduate courses and research in veterinary science, animal health and production, microbiology and immunology
- **University of Melbourne, VIC (www.unimelb.edu.au)**
 - *School of Land and Environment*
 - Undergraduate and postgraduate courses and research in agricultural science, food science, animal science, plant biology, forestry and climate change
 - Other campuses: Dookie (agriculture, viticulture, agribusiness), Creswick (forestry)
 - Animal Welfare Science Centre
 - Primary Industries Climate Challenges Centre (PICCC)
 - *Faculty of Veterinary Science*
 - Undergraduate and postgraduate courses and research in veterinary science (research focus on molecular biology of parasites and related diseases)

- **La Trobe University, Melbourne, VIC (www.latrobe.edu.au)**
 - *Faculty of Science, Technology and Engineering: School of Life Sciences*
 - Undergraduate and postgraduate courses and research in agricultural sciences (animal science, plant and soil science, environmental geoscience)
 - Centre for AgriBioscience
 - Plant Biosecurity CRC
- **University of Tasmania, Hobart, TAS (www.utas.edu.au)**
 - *Faculty of Science, Engineering and Technology: School of Agricultural Science*
 - Undergraduate and postgraduate courses and research in agricultural sciences (research focus on agronomy, plant physiology & pathology, crop nutrition, food safety, animal nutrition and genetics)
 - Tasmanian Institute of Agriculture (agricultural production systems, value chains, food safety, development and extension)
 - *Australian Maritime College*
 - Undergraduate and postgraduate courses and research in marine conservation, fisheries and aquaculture
- **University of Adelaide, SA (www.adelaide.edu.au)**
 - *Faculty of Sciences: School of Agriculture, Food & Wine (Waite & Roseworthy Campuses)*
 - Undergraduate and postgraduate courses and research in food and nutrition, agronomy, farming systems and dryland farming, soil science, crop improvement, sustainable agriculture, plant breeding and genetics, plant protection and integrated pest management, plant physiology, animal science, horticulture, viticulture, oenology and wine business
 - Waite Research Institute [WRI] (multidisciplinary research to find solutions to major problems including meeting the challenge of ensuring global food security and providing Australia's agricultural, wine and food industries with innovative research-led developments)
 - Australian Centre for Plant Functional Genomics [ACPFPG] (wheat and barley)
 - Australian Plant Phenomics Facility [APPF] (plant biology rapid analysis)
 - Australian Wine Research Institute [AWRI], and Wine Innovation Cluster
 - *Faculty of Sciences: School of Animal and Veterinary Sciences (Roseworthy Campus)*
 - Undergraduate and postgraduate courses and research in veterinary science and veterinary medicine, and animal anatomy, physiology, pathobiology, reproduction and genetics
 - *Faculty of the Professions*
 - Global food studies
- **University of Western Australia, WA (www.uwa.edu.au)**
 - *Faculty of Science: School of Agricultural and Resource Economics*
 - *Faculty of Science: School of Animal Biology*
 - *Faculty of Science: School of Plant Biology*
 - *Faculty of Science: School of Earth and Environment*
 - Undergraduate and postgraduate courses and research in agricultural science, agricultural economics, environmental science, natural resource management (land and water; marine and coastal), plant and animal biological science, soil science, crop science, marine science and estuarine science
 - UWA Institute of Agriculture (integrated land and water management, animal and plant production systems, sustainable agriculture, rural policy)

- UWA Future Farm 2050 (1,600 hectare farm near Pingelly, a multidisciplinary project to develop profitable mixed-farming enterprise at cutting edge of practical technology for cropping, livestock production and sustainable natural resource management and biodiversity)
- Centre for Land Rehabilitation
- Center for Legumes in Mediterranean Agriculture [CLIMA]
- International Centre for Plant Breeding, Education and Research
- Centre for Environmental Economics and Policy [CEEP]
- Centre for Excellence in Natural Resource Management
- Australian Herbicide Resistance Initiative
- Oceans Institute (multidisciplinary research into oceans)
- Centre for Coral Reef Studies and Coastal Marine Systems
- **Murdoch University, WA (www.murdoch.edu.au)**
 - *Faculty of Health Sciences: School of Veterinary and Biomedical Sciences*
 - *Faculty of Science & Engineering: School of Biological Sciences and Biotechnology*
 - *Faculty of Science & Engineering: School of Environmental Science*
 - Undergraduate and postgraduate courses and research in veterinary science, animal science, biological sciences and biotechnology, and environmental science
 - Centre for Production Animal Research
 - Western Australian State Agricultural Biotechnology Centre (SABC)
 - Centre for Fish, Fisheries and Aquatic Ecosystems Research (CFFAER)
- **Curtin University of Technology, WA (www.curtin.edu.au)**
 - *Faculty of Science and Engineering: School of Science: Department of Environment and Agriculture*
 - *Curtin Business School*
 - Undergraduate and postgraduate courses and research in agricultural science, agribusiness, environmental science, coastal zone management, viticulture and oenology, agrifood industry trends and marketing
 - Centre for Marine Science and Technology (CMST)
 - Curtin Water Quality Research Centre (CWQRC)
 - International Institute for Agri-Food Security (IIAFS)

State and Territory Governments

State and territory departments of agriculture, fisheries and forestry (under various names) have traditionally been a significant bastion of both pure and applied research for Australian agriculture, fisheries and forestry industries, as well as providing legislative, administrative and regulatory services to the sector. However, state governments' budgets have come under increasing pressure, and other expenditure priorities have tended to crowd out the historical importance accorded to agriculture, fisheries and forestry, or have been re-prioritised as a subset of environmental and natural resource management and biodiversity conservation and national parks. The budgetary resources and staffing for agricultural research and extension have as a result been reduced, and research centres consolidated or closed. This has meant a steady decline in the part played by state departments in Australia's total agricultural, fisheries and forestry research effort, particularly in applied research.

Yet recently there appears to have been some renewed recognition of the significance of agriculture and fisheries, with a number of states re-establishing a separate department for agriculture and fisheries (usually including forestry) and perhaps adding the word “food” to the departmental or ministerial title. This may be attributable to the increased public profile of the issue of “food security” since the 2007–08 global food price spike and renewed global focus on the future outlook for agriculture and food demand and supply.

In general, in response to shrinking funding, state and territory departments have sought to sharpen their focus on the research areas of key importance to their region, and also to improve their cross-border cooperation and collaboration, including through agreeing on areas of major research specialisation to reduce duplication of effort. At the behest of the Primary Industries Ministerial Council (PIMC), the National Primary Industries Research Development and Extension Framework (NPIRDEF) has been in development collaboratively by the federal government’s Department of Agriculture, Fisheries and Forestry (DAFF), state and territory government departments, rural R&D corporations, CSIRO and the universities, aimed at agreeing on which entity or entities should take the lead on research on which particular agriculture, fisheries or forestry sector.¹⁰ By 2012, 14 sectoral strategies (for beef, cotton, dairy, fishing and aquaculture, forestry, grains, horticulture, new and emerging industries, pork, poultry, sheep meat, sugar, wine and wool) and four cross-sectoral strategies (for animal welfare, biofuels and bioenergy, climate change, and water use in agriculture) had been agreed upon and endorsed by the PIMC.¹¹ Development of a further four cross-sectoral strategies is underway (for animal biosecurity, food and nutrition, plant biosecurity, and soils).

NSW Department of Primary Industries (DPI) (www.dpi.nsw.gov.au)

The Department of Primary Industries (DPI) has been subsumed into a broad NSW Trade and Investment cluster of several departments. Of the NSW Government’s total budget appropriation for recurrent services for FY2011–12 of A\$52.7 billion¹², and of the Trade & Investment agency cluster’s budget allocation of A\$2.44 billion, approximately A\$364 million was allocated to agriculture, fisheries and biosecurity, or approximately 0.7 per cent of the total NSW budget; though allocations for some other items such as water management, and catchment and lands would also be partly related to agriculture, fisheries and forestry. No disaggregation for the share of the agriculture, fisheries and forestry budget allocated to research and extension is available. NSW’s Gross Agricultural Product was estimated to contribute approximately 3.3 per cent of NSW’s Gross State Product in FY2010–11 (or A\$12.3 billion out of A\$372 billion).¹³

NSW DPI accords priority to strategic research in ‘frontier’ technologies, in particular agricultural biotechnology, genomics, functional foods, and fisheries technology. It also prioritises research into pests and diseases and natural resource management in relation to agriculture, fisheries and forestry. NSW DPI conducts research at a number of research stations, centres and institutes across the state.¹⁴

10 See www.daff.gov.au/agriculture-food/innovation/national-primary-industries

11 www.npirdef.org/home

12 NSW Budget Papers FY2011/12 [see www.treasury.nsw.gov.au/Publications_Page/Budget_Papers; and www.treasury.nsw.gov.au/__data/assets/pdf_file/0007/22012/bp5_Appropriation_Bill.pdf]

13 NSW Parliamentary Research Service: Agriculture in NSW – Statistical Indicators, July 2012. [www.parliament.nsw.gov.au/prod/parliament/publications.nsf/key/AgricultureinNSW\(July2012\)/\\$File/Agriculture+in+NSW+Statistical+Indicators+No+4+2012.pdf](http://www.parliament.nsw.gov.au/prod/parliament/publications.nsf/key/AgricultureinNSW(July2012)/$File/Agriculture+in+NSW+Statistical+Indicators+No+4+2012.pdf).

14 See www.dpi.nsw.gov.au/research/overview

Victorian Department of Primary Industries (DPI) (www.dpi.vic.gov.au)

The Victorian Department of Primary Industries includes not only agriculture, fisheries and forestry, but also earth resources, energy, game hunting and animal welfare.¹⁵ Of the Victorian Government's total budget appropriation for FY2011–12 of A\$46.75 billion¹⁶, DPI was allocated approximately A\$505.3 million or 1.1 per cent of the total.¹⁷ Within Victoria's DPI budget, expenditure for the category of 'strategic and applied scientific research' was A\$224.4 million, covering all areas of the portfolio. In FY2009–10, Victoria's Gross Value of Agricultural Production was A\$10.347 billion¹⁸, equivalent to around 3.5 per cent of Victoria's Gross State Product of A\$298 billion in FY2009–10.¹⁹ Victoria is estimated to account for the leading share of Australia's agricultural exports (food, fisheries and fibre), worth around A\$9 billion in FY2011–12 or 29 per cent of the national total.²⁰

With regard to agricultural research, Victoria's DPI focuses on improving the productivity, sustainability and profitability of the key agricultural sectors of greatest economic importance to Victoria: dairy, grains and red meat, the top three agricultural export earners for Victoria, plus horticulture. The main emphasis of scientific research efforts in relation to fisheries is to ensure reliable scientific knowledge, data and advice to guide decisions on management, policy and compliance, in order to underpin the sustainable development of Victoria's wild fisheries and aquaculture. Research in relation to forestry is similarly focused.

Victoria's DPI operates several agricultural research centres across the state, each with a particular research focus²¹, as well as a major Biosciences Research Centre (AgriBio) established jointly with La Trobe University, and the Primary Industries Climate Challenges Centre (PICCC). Major research themes include farming systems productivity, plant and animal genomics, biotechnology, agronomy, pest and disease control, and adaptation to climate change.

Queensland Department of Agriculture, Fisheries and Forestry (DAFF) (www.daff.qld.gov.au)

The 2012 reorganisation of government structure included the re-establishment of a standalone Department of Agriculture, Fisheries and Forestry (DAFF). In the new government's total budget appropriation of A\$48.5 billion for FY2012–13, approximately A\$442 million was allocated to the new DAFF, or around 0.9 per cent of the total budget allocations.^{22[1]} In FY2009–10, Queensland's Gross State Product was worth around A\$251 billion^{23[2]}, with its Gross Value of Agricultural Production A\$9.137 billion or 3.6 per cent of total state's GSP.^{24[3]}

15 See www.dpi.vic.gov.au/about-us

16 See [www.budget.vic.gov.au/CA2579B200132B63/WebObj/BP2Ch4/\\$File/BP2Ch4.pdf](http://www.budget.vic.gov.au/CA2579B200132B63/WebObj/BP2Ch4/$File/BP2Ch4.pdf)

17 See [www.budget.vic.gov.au/CA2579B200132B63/WebObj/BP3Ch2DPI/\\$File/BP3Ch2DPI.pdf](http://www.budget.vic.gov.au/CA2579B200132B63/WebObj/BP3Ch2DPI/$File/BP3Ch2DPI.pdf)

18 See Australian Bureau of Statistics (ABS), Year Book Australia 2012 [Agricultural Production]. www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1301.0~2012~Main%20Features~Agricultural%20production~260

19 See Australian Bureau of Statistics (ABS), Australian Nation Accounts – State Accounts 2010–11. www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5220.02010-11

20 See 'Victorian Food and Fibre Export performance 2011–12', at www.dpi.vic.gov.au/agriculture/investment-trade/market-news-and-trends/victorian-food-and-fibre-export-performance-2011-12

21 See www.dpi.vic.gov.au/agriculture/innovation-and-research/research-services; and www.dpi.vic.gov.au/agriculture/innovation-and-research/research-capability/research-centres.

22 [1] See <http://budget.qld.gov.au/budget-papers/2012-13/bp5-daff-2012-13.pdf>

23 [2] See Australian Bureau of Statistics (ABS), Australian Nation Accounts – State Accounts 2010–11. www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/5220.02010-11

24 [3] See Australian Bureau of Statistics (ABS), Year Book Australia 2012 [Agricultural Production]. www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1301.0~2012~Main%20Features~Agricultural%20production~260

Queensland's DAFF has released for public comment a draft 30-year Queensland Agriculture Strategy, with a vision of doubling the value of food production by 2040, in recognition of the common projections of significant growth in global food demand (including Australian domestic demand from population growth), and as part of the new government's strategic identification of agriculture as one of the four pillars of the Queensland economy. This strategy paper estimates the gross value of Queensland's agricultural, fisheries and forestry production as A\$14.7 billion, including first-round processing, equivalent to around 3 per cent of GSP, and with exports worth over A\$5.4 billion.^{25[4]} The paper recognises that Queensland's agriculture, fisheries and forestry industries need to be efficient, innovative and profitable, as well as sustainable and biosecure. In order to achieve this, there needs to be a "*refocusing (of) agricultural research, development and extension to unlock greater productivity*", in addition to other essentials such as a strong biosecurity framework and an adequately skilled workforce. As part of this, the draft strategy paper cites the government's new research funding support for the state's key agricultural sectors of beef, sugar, horticulture, fisheries and forestry, as well as support for the Queensland Alliance for Agriculture and Food Innovation (QAAFI), a research partnership between Queensland DAFF and the University of Queensland.

Queensland DAFF operates several research stations across the state, covering fisheries and aquaculture, animal and plant science, and food science.^{26[5]} Queensland DAFF also engages in collaborative agricultural research with other organisations including other state departments of agriculture, universities, CRCs, CSIRO, industry bodies and others. For example, the FutureBeef Program for Northern Australia is a partnership for profitable and sustainable beef production in Northern Australia, involving Queensland DAFF, the Western Australian Department of Agriculture and Food (DAFWA), the Northern Territory Department of Primary Industry and Fisheries (DPIF), Meat and Livestock Australia (MLA), and the Northern Beef Research Alliance Group, together with QAAFI (UQ), CSIRO and (federal) DAFF.

Western Australian Department of Agriculture and Food (DAFWA) (www.agric.wa.gov.au)

Western Australia's Department of Agriculture and Food (DAFWA) has long been a standalone department responsible for agriculture, with the term 'and Food' added in recent years.²⁷ Of the Western Australian Government's total budget appropriation for recurrent services for FY2011–12 of A\$24.3 billion²⁸, approximately A\$157 million or 0.6 per cent was allocated to DAFWA. In FY2009–10, Western Australia's Gross State Product was around A\$188 billion, with the gross value of production of agriculture, fisheries and forestry accounting for approximately A\$7.15 billion or 3.8 per cent of the total.²⁹

Major areas of focus for research efforts by the DAFWA include improving animal and plant production systems and increasing crop and livestock production yields (especially for beef, sheep and grains), improving sustainable natural resource use especially water-use efficiency, and maximising use of advanced technology. DAFWA operates a range of research stations and facilities across the state, and has recently established some new ones, such as its New Genes for New Environments (NGNE) facility at Merredin (located in WA's eastern wheatbelt), another at Katanning (in south-eastern WA), for GM wheat research in cooperation with CSIRO, and another at Merredin for research into grains suited to low rainfall in cooperation with the GRDC and other partners. DAFWA has also launched a program of public discussions to stimulate industry to think more strategically about future opportunities and challenges for agriculture, fisheries and forestry, called '*Agrifood 2025+:the Future Way*'.³⁰

25 [4] See www.daff.qld.gov.au/documents/Corporate/Qld-Agriculture-Strategy-Consultation.pdf

26 [5] See www.daff.qld.gov.au/4791_4916.htm

27 See www.agric.wa.gov.au/objtwr/imported_assets/aboutus/dept/dafwa_ar_2012.pdf

28 See www.treasury.wa.gov.au/cms/uploadedFiles/State_Budget/Budget_2012_13/2012-13_budget_factsheet_where_the_money_comes_from_and_where_the_money_goes.pdf

29 See www.agric.wa.gov.au/objtwr/imported_assets/content/amt/ministerial_priority_plan.pdf

30 See www.agrifood2025.agric.wa.gov.au/

DAFWA strongly supports a national strategy for Australian agricultural research to maximise the effectiveness of national public investment in agricultural research and to reduce duplication and improve coordination among the states' agricultural research activities.³¹ Thus DAFWA is a keen supporter of the development of the National Primary Industries Research Development and Extension Framework (NPIRDEF), and is according 'major priority' to research development and extension (RD&E) in relation to grains and sheep, plus 'support' in relation to pork (WA Pork Innovation Hub).³² DAFWA also puts strong emphasis on the benefit:cost ratio of its research and development investment and activities, and maximising public and private sector co-investment in research and development activities. DAFWA also works collaboratively with a wide range of other organisations and entities in its research efforts. For example, in 2012 DAFWA and the GRDC jointly established the Australian Export Grains Innovation Centre (AEGIC) as a national Centre of Excellence located in Perth, to undertake several research programs related to improving the productivity and quality of Australian grains.³³ The AEGIC also forms a major part of DAFWA's contribution to the NPIRDEF. In addition DAFWA is taking the lead in developing the National Wool Research Development and Extension Strategy in conjunction with the industry body Australian Wool Innovation (AWI).³⁴ DAFWA is also a partner in the Future Farm Industries CRC located with the University of Western Australia, along with some other state departments of agriculture and a number of universities, industry bodies and CSIRO.³⁵

Western Australia and DAFWA have had a long involvement in international agricultural research and development, and DAFWA continues to have significant engagement. DAFWA's AGWEST Food Security provides consulting expertise to overseas agricultural research and development projects, using current and retired AGWEST staff, focusing on its main areas of expertise: broadacre farming, irrigation, biosecurity and quarantine. Recent AGWEST projects have included developing integrated biosecurity plans for a number of Asian and African countries. Also indicating the international standing of DAFWA's expertise, the pest diagnostic protocols developed by DAFWA for the khapra beetle (a highly destructive grains pest) were adopted in 2012 by the World Trade Organization's Committee on Sanitary and Phytosanitary Measures (WTO SPS Committee) as an international protocol.

South Australian Department of Primary Industries and Regions (PIRSA) (www.pir.sa.gov.au)

South Australia's Department of Primary Industries and Regions (PIRSA) is focused on agriculture, food, fisheries and forestry, along with responsibility for regional development.^{36[1]} In South Australia's FY2012–13 total budget allocation of A\$15.9 billion^{37[2]}, PIRSA was allocated A\$159 million or 1 per cent of the total (with A\$14.6 million of this marked for the regional development program of the department). South Australia's Gross State Product was estimated to be A\$79 billion in FY2009–10, and the gross value of production of its agriculture A\$4.6 billion (not including fisheries or forestry) or 5.8 per cent of the total GSP.

The South Australian Research and Development Institute (SARDI) is the research division of PIRSA and the South Australian Government's principal research institute, covering plant and livestock sciences and production systems, food sciences, aquatic sciences, and sustainable agriculture, food and fisheries production systems.^{38[3]} SARDI was formed in 1992 from the research divisions of the former several state government departments of Agriculture, Fisheries, and Woods and Forests.^{39[4]}

31 See www.agric.wa.gov.au/objtwr/imported_assets/aboutus/dept/dafwa_ar_2012.pdf

32 See www.daff.gov.au/agriculture-food/innovation/national-primary-industries

33 See www.aegic.org.au/

34 See www.wool.com/National-Research-Development-Extension-Strategy.htm

35 See www.futurefarmonline.com.au/about/about-ffirc.htm

36 [1] See www.pir.sa.gov.au/

37 [2] See services.sa.gov.au/net/documents/bp1_budget_overview2012-13.pdf

38 [3] See www.sardi.sa.gov.au/about_us

39 [4] See www.sardi.sa.gov.au/information_and_news/2012_media_releases/science_underpins_south_australias_premium_food_image

SARDI was allocated A\$13.7 million of the PIRSA state budget allocation for FY2012–13, with an expected external grant income of A\$46 million. SARDI has approximately 400 staff, and 12 research centres across the state. SARDI does extensive research work in collaboration with a wide range of public and private sector partners, including on a commercial basis. Many of SARDI's scientists are co-located with researchers from CSIRO and the University of Adelaide, at the University of Adelaide Waite and Roseworthy campuses, collaborating across a range of research areas including plant genomics, field crop improvement, plant health and molecular diagnostics, animal welfare, animal reproduction, and intensive animal production. The SARDI Aquatic Sciences Division is South Australia's leading research centre for research on fisheries, aquaculture, marine biotechnology, oceanography, and environmental and ecosystem science.

PIRSA and SARDI have long had significant involvement in international agricultural research efforts and projects, especially in the Asia–Pacific region. For example, SARDI's Pig and Poultry Science program has been involved in projects in the Pacific islands, PNG and Indonesia, focused on improving the efficiency and profitability of smallholder farmers' pig and poultry production.^{40[5]} The SARDI Pastures Genetic Resources Collection based at the University of Adelaide's Waite Campus, one of Australia's five national germplasm centres, houses the world's largest collection of temperate pasture species and *Medicago* species with 46,000 seed accessions, many not held anywhere else.^{41[6]} This Centre along with the four other national germplasm centres supports Australia's participation in the global sharing of plant germplasm through the International Treaty on Plant Genetic Resources for Food and Agriculture, which exchange makes an important contribution to global food security.

Northern Territory Department of Primary Industry and Fisheries (DPIF) (www.nt.gov.au)

In the September 2012 reorganisation of the Northern Territory Government, the former Department of Resources was split into two separate new departments: the Department of Mines and Energy and the Department of Primary Industry and Fisheries (DPIF).⁴² In the FY2012–13 mini-budget related to the new government structure, of total budget allocations of A\$4.8 billion, approximately A\$51 million or 1.1 per cent of the total was allocated to the new Department of Primary Industry and Fisheries.⁴³ The Northern Territory's Gross State Product (GSP) was approximately A\$16.3 billion in FY2011–11, with the gross value of production of agriculture and fisheries estimated to be around A\$538 million or 3.3 per cent of GSP.⁴⁴

The Northern Territory's main agricultural and fisheries industries include cattle (interstate and live export), other livestock (buffalo and crocodiles), horticulture (fruit, vegetables, nursery and cut flowers) and mixed farming (field crops, hay and seeds) and forestry, plus aquaculture and wild catch fisheries. Cattle accounted for over 50 per cent of the GVP in 2010–11, though this is likely to have declined markedly since then. Over 50 per cent of national mango production and 35 per cent of national melon production now comes from the Northern Territory.

40 [5] See www.sardi.sa.gov.au/information_and_news/2012_media_releases/Food_security_project_enhances_pig_and_poultry_industries

41 [6] See www.sardi.sa.gov.au/information_and_news/2012_media_releases/sardi_aiding_food_security

42 See www.dob.nt.gov.au/services-government/finance/Pages/agency_arrangements.aspx

43 See www.nt.gov.au/ntt/minibudget/1-MB-1213.pdf

44 See www.nt.gov.au/d/Content/File/p/pi/PIF_Overview_2011_final.pdf

The Northern Territory's DPIF undertakes a significant amount of agricultural and fisheries research, focusing on the main areas of the state's existing agricultural and fisheries industries, and DPIF's own existing capabilities. It operates approximately 10 research farms and stations across the Territory, including the Darwin Aquaculture Centre. The Northern Territory's particular interest in tropical agriculture has seen it identify a common interest in research projects relevant to the Territory, other northern Australia jurisdictions and parts of the Pacific and South-East Asia. For example, in FY2011–12, DPIF was engaged in agricultural research projects on topics ranging from quality of supply chains for mangoes and rambutans in Australia and Indonesian province Nusa Tenggara Barat, to cow reproductive performance and cattle fattening in low-input cattle production systems in northern Australia and Indonesia (both ACIAR-funded projects). Fisheries research includes collaboration with national and international organisations, and ranges from monitoring key NT fish species to developing aquaculture systems for a range of tropical species. A key focus area over recent years has been wildstock fisheries and aquaculture research and development projects in association with remote Aboriginal communities. The Fisheries Division also participates in significant resource development research at a national level via strong partnerships with Western Australia and Queensland. Academically, formal partnerships are in place with Charles Darwin University, and the Fisheries Division regularly partners on research projects with a range of other institutions in Australia and, from time-to-time, internationally (for example, recently with the University of British Columbia in Canada). The DPIF is the lead agency for mango in the National Horticultural Research Framework and chairs the Northern Hub of the nationally established fisheries Research Prioritisation Forum.

Tasmanian Department of Primary Industries, Parks, Water and Environment (www.dpiw.tas.gov.au)

Responsibility for agriculture and fisheries in the Tasmanian Government lies with the Department of Primary Industries, Parks, Water and Environment (DPIPWE), while forestry sits with the Department of Infrastructure, Energy and Resources (DIER). Of Tasmania's total budget allocations for FY2012–13 of around A\$4.9 billion, under DPIPWE's allocation of A\$191 million approximately A\$16.7 million was allocated to agriculture and fisheries or 0.3 per cent of the total government budget, though other DPIPWE areas like water resource management (A\$9.9 million) and biosecurity services (A\$15 million) are closely relevant to agriculture and fisheries. The gross value of production of Tasmania's agriculture and fisheries was estimated to be A\$1.64 billion in FY2009–10^{45[1]}, equivalent to 7.4 per cent of Tasmania's Gross State Product for that year of A\$22.3 billion.^{46[2]}

Tasmania's key agriculture sectors are dairy, red meat (beef and sheepmeat), wool, wine, fruit and vegetables, and some field crops (e.g. poppies and pyrethrum), while the main wild catch fisheries are abalone and rock lobster, and farmed fisheries are salmon and trout. The state government's research, development and extension efforts are focused on these key sectors.

45 [1] See [www.dpiw.tas.gov.au/inter.nsf/Attachments/CART-8Z5VQX/\\$FILE/OutputGroup2PrimaryIndustriesAR12.pdf](http://www.dpiw.tas.gov.au/inter.nsf/Attachments/CART-8Z5VQX/$FILE/OutputGroup2PrimaryIndustriesAR12.pdf)

46 [2] www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1307.6Main+Features4Dec+2010

The Tasmanian Institute of Agriculture (TIA) provides the principal research, development, extension and education services for agriculture as required by the state government under a Joint Venture Agreement and specific project agreements; and the University of Tasmania's Institute of Marine and Antarctic Studies (IMAS—formerly called the Tasmanian Aquaculture and Fisheries Institute/ TAFI) provides aquaculture and fisheries research as directed by DPIPWE under a Sustainable Marine Research Collaboration Agreement.^{47[3]} DPIPWE has also worked with the Tasmanian Climate Change Office to provide advice on the potential risks and impacts of climate change on Tasmanian agriculture, as well as supporting the South Eastern Australian Climate Change Project to coordinate relevant research activities. Tasmania supports the NPIRDEF, with DPIPWE and TIA taking the lead for national research on cherries, beans and nuts other than almonds and macadamia.^{48[4]} TIA participates in international agricultural research projects, and IMAS engages in international fisheries research. For example, TIA is the lead Australian player in a four-year ACIAR research project over 2010–2013 looking at ways to increase vegetable production in PNG's Central Province to supply the domestic market.^{49[5]}

Challenges for Australian Agricultural, Fisheries and Forestry Research

There is widespread and growing awareness across the Australian agricultural, food, fisheries and forestry spectrum—in government, universities and research institutes, industry organisations and businesses—that there are significant challenges to meet in order to maintain and strengthen the sector's sustainable productive capacity. A key challenge among these is the decline in the number of graduates in agriculture, food science, fisheries and forestry in the Australian university system, translating into declining numbers of graduates able to take up positions not only in research and teaching, but also in industry and government.

For example, in relation to agriculture and agricultural science, in its November 2011 submission to the Senate Enquiry into 'Higher education and skills training to support future demand in agriculture and agribusiness in Australia', the Australian Council of Deans of Agriculture (ACDA) stated:

There can be no doubt that there is an alarming shortage of agricultural and agribusiness graduates to service the needs of the greater agricultural industries at a time when the needs of the industry are at an all time high. Research by the ACDA has shown that there has been a continual decline in graduate completions in university agriculture and related degrees for the last two decades (currently <300 in agriculture and <700 in agriculture and related courses) whereas the job market for graduates, as evidenced by job advertisements, indicates that there have been in excess of 4,000 positions per year consistently over the past 4 years [data to end of CY2010]...

...that the number of campuses in Australia providing agriculture/agricultural science degrees has declined from 23 in the 1980s to around 9 in 2011...with the number of such campuses in regional Australia declining from 9 to 4 in the same time...[which] has an impact on the availability of facilities and particularly on access to higher education in agriculture and related areas...

...that the age structure of the agricultural research workforce is skewed towards the older end with an estimated 50% of researchers being above 50 years of age...

...whilst there is adequacy in numbers of new technology graduates such as molecular biology, the ACDA has concerns about the lack of pipeline for field research such as agronomy, entomology, plant pathology, plant breeding, soil science and the like.⁵⁰

47 [3] See [www.dpiw.tas.gov.au/inter.nsf/Attachments/CART-8Z5VQX/\\$FILE/OutputGroup2PrimaryIndustriesAR12.pdf](http://www.dpiw.tas.gov.au/inter.nsf/Attachments/CART-8Z5VQX/$FILE/OutputGroup2PrimaryIndustriesAR12.pdf)

48 [4] See www.npirdef.org/files/resourceLibrary/resource/8_Horticulture_RDE_Framework.pdf

49 [5] See <http://aciarc.gov.au/project/SMCN/2008/008>

50 See www.csu.edu.au/special/acda/docs/submissions/ACDA-Senate-Enquiry-Agric-Education.pdf

The ACDA highlighted what it considered to be some of the main factors contributing to this decline:

- The poor image of agriculture generally as an occupation in much of the Australian community, despite the considerable knowledge, technical and business skills involved in modern agriculture.
- Decline of agriculture as a subject in the secondary school curriculum, and often inadequate science content in existing agriculture courses.
- Low number of students nationally studying mathematics and science to HSC level, so reducing the number of students able to study related disciplines like agricultural science at university level.
- Inadequate level of funding and priority given by federal, state and territory governments to agriculture and agribusiness higher education and vocational education and training.
- Few agricultural appointments among the various government and other schemes relating to research fellows (QEII, ARC, Federation Fellows and so on), despite agricultural science delivering around 10% of the national research effort, and also despite the agricultural and veterinary sciences performing strongly in ERA (the ARC's Excellence in Research for Australia evaluation system) ratings of research in all fields at Australian universities (ranked No. 2 out of 22 fields of research in the 2012 ERA results)⁵¹.
- Declining public investment in research and development in agriculture in general.
- Marked reduction in state government funding of departments of agriculture, fisheries and forestry, including state government-funded research capacity and extension services, so reducing potential long-term career paths in agriculture, fisheries and forestry expertise and research.
- The snowball effect of declining agricultural student numbers resulting in universities being reluctant to invest in new facilities or refurbishment of existing facilities, exacerbated by the fact of agriculture being an expensive discipline to research and teach (in terms of required equipment, machinery, laboratories, technical support and so on), which in turn can further reduce the attractiveness and quality of agricultural courses offered.

The ACDA has pointed to some of the implications of this decline in agricultural science graduates and postgraduate students, most notably:

- slowing productivity growth rates in agriculture resulting from the decline in public investment in agricultural research and development
- the threat to Australia's capacity to increase or even maintain its present levels of agricultural production and exports as a significant contributor to national income, wealth and national food security, and also to respond the expected growth in global food demand over coming decades.

There are similar concerns and issues in relation to Australia's research capacity in food science, fisheries and forestry. For example, a 2012 report to the federal government by the industry-based Food Processing Strategy Group about the issues, opportunities and challenges for Australia's food processing sector stated its concerns about the decline in food processing research and development investment leading to declining innovation and competitiveness, and the difficulties in attracting sufficient numbers of scientists, chemists and engineers to the food processing industry, especially in competition with the mining sector.⁵²

Another major factor is undoubtedly the broader demographic context of a shrinking and ageing population in the agricultural, fisheries and forestry industries generally. In the case of agriculture, the number of farmers in Australia has been declining for many decades, caused by many different factors; for example, small farmers selling up to large-scale farming operations, and fewer young people taking over family farms. Between 2006 and 2011, the number of farmers in Australia fell by 19,700, down by 11 per cent over 5 years, leaving a total of 157,000 farmers by 2011 compared to 263,200 some 30 years earlier, a decline of 40 per cent.⁵³ At the same time, the median age of Australian farmers increased from 44 in 1981 to 53 years by 2011, compared to a median age of 40 years for other occupations. Also, while noting that farmers tend to work longer years than most other occupations, by 2011, 23 per cent of farmers were aged 65 years or over compared to 3 per cent of people in other occupations.

51 See www.arc.gov.au/era/era_2012/outcomes_2012.htm

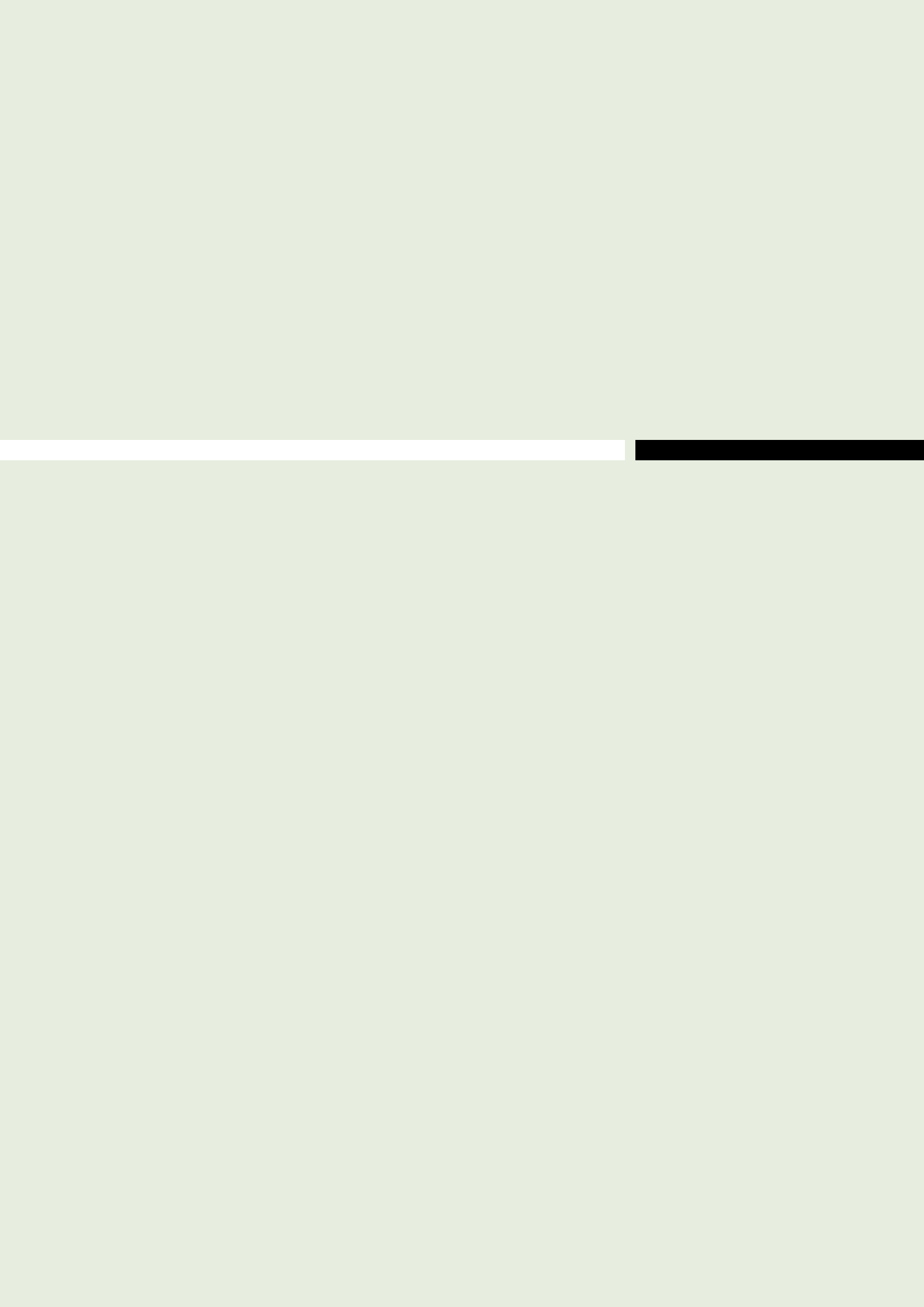
52 See www.innovation.gov.au/Industry/FoodProcessingIndustry/Documents/FPISGFinalReport2012.PDF

53 See [www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/3794FDCDA8D5275ACA257AD0000F2BE9/\\$File/41020_australianfarmingandfarmers_dec2012.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/3794FDCDA8D5275ACA257AD0000F2BE9/$File/41020_australianfarmingandfarmers_dec2012.pdf)

Appendix 5: Acronyms

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACIAR	Australian Centre for International Agricultural Research
ADF	Australian Defence Force
AFP	Australian Federal Police
AIFSC	Australian International Food Security Centre
ANU	Australian National University
AO	Order of Australia
AOP	Annual Operational Plan
APEC	Asia-Pacific Economic Cooperation
APS	Australian Public Service
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
AVRDC	The World Vegetable Center
AYAD	Australian Youth Ambassadors for Development
BFMP	Barramundi Fishery Management Plan
CABI	CAB International
CAPF	Comprehensive Aid Policy Framework
CARE	Cooperative for Assistance and Relief Everywhere
CATIE	Center for Tropical Agricultural Research and Education
CEO	Chief Executive Officer
CGIAR	formerly Consultative Group International Agricultural Research, now just CGIAR
CHOGM	Commonwealth Heads of Government Meeting
CIAP	Cambodia-IRRI-Australia Project
CIE	Centre for International Economics
CIFOR	Center for International Forestry Research
CIMMYT	International Maize and Wheat Improvement Center
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DAFWA	Department of Agriculture and Food, WA
DESC	Development Effectiveness Steering Committee
DEWG	Development Effectiveness Working Group
DFAT	Department of Foreign Affairs and Trade
DG	Director General
DIAC	Department of Immigration and Citizenship
DIISRTE	Department of Industry, Innovation, Science, Research and Tertiary Education
DPI	Department of Primary Industries
EOI	Expression of Interest
FAO	Food and Agriculture Organization of the United Nations
FMA	Financial Management and Accountability
FRDC	Fisheries Research and Development Corporation
FTE	Full Time Equivalent
GAFSP	Global Agriculture and Food Security Program
GCARD	Global Conference on Agricultural Research for Development
GFRP	Global Food Crisis Response Program
GM	Genetically Modified
GRDC	Grains Research and Development Corporation
IAS	Impact Assessment Series
ICARDA	International Center for Agricultural Research in the Dry Areas

ICIPE	International Centre of Insect Physiology and Ecology
ICRAF	World Agroforestry Centre
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IHR	In-House Review
IPB	Bogor Agricultural University
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
IRRI	International Rice Research Institute
ISPC	Independent Science and Partnership Council
IT	Information Technology
IWMI	International Water Management Institute
JAF	John Allwright Fellowship
JCU	James Cook University
MARD	Ministry for Agriculture and Rural Development
MCC	Millennium Challenge Corporation
MDGs	Millennium Development Goals
NGO	Non-Government Organisation
NSW	New South Wales
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operative and Development
PAC	Policy Advisory Council
PDR	People's Democratic Republic
PM&C	Department of Prime Minister and Cabinet
PNG	Papua New Guinea
QAAFI	Queensland Alliance for Agriculture and Food Innovation
RCT	Randomised Control Trial
RIRDC	Rural Industries Research and Development Corporation
ROU	Record of Understanding
RPM	Research Program Manager
SARDI	South Australian Research and Development Institution
SES	Senior Executive Service
SMT	Senior Management Team
SPC	Secretariat of the Pacific Community
SRA	Small Research Activity
UQ	University of Queensland
USAID	United States Agency for International Development
WFP	World Food Programme



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