

# Ten years of soil research

On 28 January, ACIAR celebrated 10 years of partnership with Indonesia's Research Institute for Coastal Aquaculture (RICA), responsible for leading efforts to recover almost 500,000 hectares of tsunami-damaged soils in Aceh. The 10-year partnership has helped the RICA scientists become national leaders in research with the knowledge and expertise to manage soil problems, such as those in Aceh.

RICA, which is based in South Sulawesi, has significantly expanded to now provide a national research service to Indonesia's aquaculture industry through its involvement in collaborative research projects addressing soil remediation, particularly problems associated with acid sulfate soils in aquaculture production.

Soils are just as important to aquaculture as they are to agriculture. However, soil quality and its effect on pond water quality is often ignored or overlooked in aquaculture. During the aquaculture boom of the 1990s many aquaculture ventures in Indonesia failed and losses were often blamed on other, unrelated factors.

Indonesia has approximately 6.7 million hectares of acid sulfate soils in its coastal lowlands. Under natural conditions, acid sulfate soils are harmless and are part of the natural landscape but produce sulfuric acid when they are excavated for shrimp or fish ponds. The acid dissolves metals and permanently alters the chemical and physical properties of the pond soils. Aquaculture ponds constructed in acid sulfate soils quickly degrade because the severe acidity and the dissolved metals are harmful to shrimp and fish.

Dr Gellwyn Yusuf, chairman of the Agency for Marine and Fisheries Research, congratulated researchers

for the successful partnership between RICA, Australia's University of New South Wales (UNSW), Gadjah Mada University and the Centres for Brackishwater Aquaculture Development at Ujung Batee in Aceh and Takalar in South Sulawesi.

Dr Yusuf acknowledged the important roles played by the co-funders of the research, ACIAR and Indonesia's Ministry of Marine Affairs and Fisheries.

"This collaboration provided an opportunity for Indonesian researchers to improve their capability and education and a network for Indonesian and Australian researchers to work together," Dr Yusuf said.

Local project leader Dr Akhmad Mustafa said the ACIAR projects enabled RICA to build expertise and provide a national research service to the aquaculture industry. "The ACIAR projects trained the team in soil assessment and management, soil mapping and pond engineering. With these skills we have been able to conduct research to find solutions to soil-related problems and help farmers improve their production," he said.

The ACIAR projects at RICA also established a national soil-testing laboratory and a land-suitability mapping facility to support the research. A key component of the research has been involving farmers in research.

Mr Akip, a farmer from Pinrang Regency, near RICA, believes the researcher-farmer partnership has benefited farmers directly. "The research was conducted on our farms and we learned a lot about how to identify and manage soil problems to increase production directly from the researchers," he said.

Further afield, the research has helped in recovering land and aquaculture ponds lost in Aceh province following the December



Management of acid sulfate soils can result in profitable returns to farmers.

The Regional Centre for Brackishwater Aquaculture Development (BBAP) facilities in Aceh being rebuilt following the tsunami.

2004 tsunami. The pond remediation methods developed by the project were quickly applied to the farming communities in Aceh after the tsunami damaged more than 20,000 ha of ponds.

"We were able to move quickly to assist the reconstruction effort in Aceh," said Dr Jes Sammut, Australian project leader from UNSW. "The team commenced a program of technical training in April 2005. We trained technical staff, extension officers, researchers, NGOs and farmers in basic soil assessment and management. Our team also helped other programs with pond engineering advice to improve water management. We have also mapped more than 470,000 ha of problem soils in Aceh and offered technical advice on how to manage them.

"The knowledge we have gained from the work in Indonesia is highly relevant to coastal planning and management in Australia," Dr Sammut said. "Over the past 10 years our joint research on acid sulfate soils has raised awareness of the problem in the region and we have been able to influence policy decisions and advise Indonesian and Australian Government agencies on management approaches. A lot of the research in Indonesia has helped us to develop management strategies for coastal development in Australia across several sectors."

During the past 10 years, the ACIAR projects have also supported eight postgraduate and more than 50 honours students from Australian and Indonesian universities.

## ACIAR secures increased funding in 2009–10 Budget

ACIAR's appropriation from the Commonwealth Government's 2009-10 Budget will be \$63.6 million, an increase from \$52.33 million in 2008-09.

These additional funds will support the implementation of a new Food Security through Rural Development Initiative, a key component the Australian Government's Official Development Assistance Program 2009-10 Budget allocation.

The Minister for Foreign Affairs, the Hon. Stephen Smith MP, said the initiative's key challenge was to "help lift agricultural productivity in developing countries by working with other donors and research institutions using environmentally sustainable approaches".

"It will also improve rural livelihoods by improving the functioning of markets in ways that increase job opportunities and incomes for the rural poor," Mr Smith said.

In 2009-10 ACIAR will deliver programs that help meet this challenge, including new program thrusts that will:

- safeguard food security and climate change adaptation and mitigation in the rice-based farming systems of South Asia and South-East Asia;
- exploit opportunities for developing high value agricultural, forestry and fisheries products in Pacific island countries; and
- increase financial support to the Consultative Group on International Agricultural Research to help build a stronger CGIAR system.

In addition ACIAR will also be involved in delivering key elements of the Food Security through Rural Development Initiative in Africa. These initiatives will help to strengthen the ability of countries in the Asia-Pacific region and Africa to address food insecurity.



PHOTO: BRAD COLLIS

On the world stage: Peter Core (left) and Dr Mangala Rai, Director-General of the Indian Council of Agricultural Research (ICAR) and Secretary to the Government of India, sign an agreement on marker-assisted wheat breeding.

## Farewell to Peter Core

Mr Peter Core, ACIAR's Chief Executive Officer, is retiring on 30 July this year, after seven years leading ACIAR. During that time the Centre has changed in a number of ways.

The revised style of *Partners* is a small reflection of the way the Centre has evolved and grown under Mr Core's leadership.

The history of success of ACIAR projects has continued under Mr Core's tenure. During this period ACIAR has strengthened its focus on delivering impacts that improve the lives of smallholder farmers in the Asia-Pacific region. Many of these success stories have been reported in this magazine.

Under Mr Core's guidance, each year the agency has produced an Annual Operational Plan outlining key priorities for the coming year. He oversaw the change from a Board of Management to the new ACIAR Commission and changes to the Centre's governing legislation. During his time at ACIAR Mr Core has also been involved in shaping and developing the reform processes under way within the CGIAR system.

Mr Core has also overseen ACIAR's move into research on climate change, and has been a passionate advocate of putting into practice measures amongst ACIAR staff to reduce water and electricity



(From left) Australia's Ambassador to Indonesia Mr Bill Farmer, ACIAR stakeholder manager in Indonesia Ms Mirah Nuryati with her Australian Public Service Medal, ACIAR CEO Mr Peter Core, and ACIAR's country manager for Indonesia Mr Julien De Meyer.

consumption (see page 28).

ACIAR wishes Mr Core all the best in retirement and thanks him for his significant contribution and active leadership of the Centre during the past seven years.

## ACIAR celebrates 25 years in Indonesia

Australia's Ambassador to Indonesia Mr Bill Farmer hosted a reception on 19 January to mark 25 years of ACIAR's involvement in Indonesia.

Indonesia was one of ACIAR's first partner countries and today is ACIAR's largest partner country, with nearly \$11 million invested this year in projects and training activities.

The reception was attended by key senior Indonesian partners and ACIAR chief executive officer Mr Peter Core.

Speaking at the function, Mr Farmer reflected on the strength of the partnership and its collaborative nature. "Indonesia is ACIAR's largest partner country, reflecting the strong levels of cooperation between our two countries over the past 25 years in the development of agriculture, fisheries and forestry in Indonesia, and in reducing poverty," he said.

Mr Core said ACIAR had a broad partnership in agricultural research with Indonesia, including collaborative programs with the three main ministries—forestry,

fisheries and agriculture—and also across provinces.

"The work ranges from improving export market access for commercial Javanese mangosteen growers, through to improving basic food security for subsistence highland communities in Papua," Mr Core said.

"ACIAR has also supported more than 50 Indonesians to complete postgraduate study in Australia, many of whom are now making a valuable contribution to Indonesia's economic and social development."

Mr Core and Mr Farmer also acknowledged the contribution made by ACIAR stakeholder manager Ms Mirah Nuryati during her 17 years working for ACIAR in Indonesia.

## Fellowships pay dividends back home

An evaluation of ACIAR's John Allwright Fellowship (JAF) has revealed a high rate of knowledge transfer upon returning home. Of those fellows surveyed in 2008 almost all said the skills they acquired through their fellowship training were passed on, upon returning home, to those they worked with.

The John Allwright Fellowship scheme provides selected ACIAR project scientists from developing countries with postgraduate

## Website accessibility improves

ACIAR's website is now accessible to mobile phone users, with a low-bandwidth template presenting the site in a mobile-compatible format. Visitors to the site can also opt to use this version, compensating for slow internet speeds through the text-only presentation.

The implementation of a mobile-friendly template is just one of a number of improvements to the site, to boost accessibility and make information quicker to access. Other improvements include RSS feeds, printer-friendly pages and enhancements to the site's search engine.

A number of internet visitors use slow connections with low bandwidth. This can mean that websites with photos or graphics are slow to download. To access the text-only version of the ACIAR site users can choose the 'Text only theme' option in the drop-down menu under 'Change website theme (for low-bandwidth version)', which is on the right-hand side of the page, just under the map of the world. Mobile phone users will find that the text-only theme loads automatically on their phones.

Another innovation is a print-friendly template on most website pages. Clicking on the 'Print' option at the top of (most) pages brings up a print-friendly version of that page and speeds up printing.

Next to the print option is an email option, allowing visitors to email a page's address, with a comment. Links to ACIAR pages can also be shared on other sites, such as Twitter and Facebook.

Several pages that are updated regularly, such as 'ACIAR Books Online', 'Current Issues' and 'Media Releases', now have RSS subscription feeds. These allow users to subscribe to these pages and be notified of new updates, such as new publications.

The search engine for the ACIAR website has been enhanced to increase the relevance of pages listed in search returns.

A final improvement is the addition of a Google map feature that shows the location of ACIAR projects and country offices. Using this feature, visitors to the site can find the location of a number of projects and the research being conducted.

ACIAR's website operates as a primary source for people and organisations wanting to find and access information about ACIAR and its work. The website provides comprehensive and accessible information about ACIAR's programs and projects, including country strategies and priorities, project summaries, progress reports, final reports, impact assessments and other evaluation studies.

Research outcomes are published in the form of free, downloadable electronic publications and there is an online shopping facility on the site for purchase in hardcopy. Final reports from completed projects outlining project activities, outcomes and papers arising from projects are now also available online.

You can visit the site at [www.aciar.gov.au](http://www.aciar.gov.au).



A bank of 48 solar panels was installed on the roof of ACIAR House in Canberra as part of ACIAR's Climate Change Initiative.

training opportunities at Australian universities. Fellows are placed so they take leading roles in the institution where they work and so they can transfer knowledge and skills within those institutions and to professional networks. To date, 149 JAF alumni have completed fellowships.

A survey of all contactable alumni was carried out in 2008 to help evaluate the effectiveness of the scheme. Of the 149 fellows, 111 were contacted. Of those not contacted some 28 fellows no longer live in their home country. Another eight were not contactable and two had died. Of the 111 fellows contacted, 106 responded to the survey, with 75% of respondents still working at the institution at which they commenced their fellowship.

The most encouraging finding was that 99% of fellows are actively transferring knowledge and skills acquired during their studies to other staff at their place of work.

## Energy efficiency for ACIAR

ACIAR has maintained a diverse portfolio of projects relating to prediction of seasonal climate variability, adaptation of farming systems and research into greenhouse gas emissions and agricultural mitigation. In 2008-09, ACIAR built on this existing project portfolio by establishing an ACIAR Climate Change Initiative.

Through this initiative ACIAR has cut its annual electricity consumption by more than 25% with a staff commitment to turning lights off when not needed, using fewer, more energy-efficient lights and paying attention to the settings on its air-conditioning system. As part of its ongoing computer system upgrades, ACIAR

has reconfigured its hardware to a more energy-efficient system.

Just before Christmas 2008, ACIAR installed 48 solar panels that are now supplying about 7% of its electricity requirements. This is the third-largest operating solar facility in the ACT.

Under its energy-efficiency initiatives, ACIAR has cut its electricity consumption from 292,391 kWh in 2005-06 to 222,120 kWh in 2007-08, and the prediction is for 2008-09 consumption to be below 2007-08 levels. ACIAR's target is to reduce its gross electricity consumption to below 200,000 kWh in 2009-10.

During a recent visit to ACIAR House the Parliamentary Secretary for International Development Assistance, Mr Bob McMullan, congratulated ACIAR staff on their efforts to reduce electricity consumption and their decision to install the solar facility.

"ACIAR is making a significant contribution to reducing its carbon footprint," Mr McMullan said.

"We don't really have a choice—our energy systems and our consumption must become less carbon intensive," Mr McMullan said. "Without change, our food production systems will be further damaged, challenging our longer-term capacity to produce enough food to feed the world's population, which is predicted to number more than 8.5 billion people by 2050.

Mr McMullan also acknowledged that ACIAR had cut water consumption by two-thirds over the past three years, partly through the use of tank water.

Rainwater tanks were installed in October 2007 and the captured rainfall is used to reduce consumption of non-potable water in operating facilities at ACIAR House.

## NEW APPOINTMENTS



**Dr John Dixon** has been appointed senior adviser, cropping systems and economics. For the past four years John has been director, impacts, targeting and assessment at the International Maize and Wheat Improvement Center (CIMMYT), managing activities on impact assessment, value chains, impact knowledge sharing and systems agronomy. Prior to that, he was senior officer (farming systems) and agricultural management group leader at the Food and Agriculture Organization (FAO) in Rome. John is a PhD graduate of the University of New England and has more than 30 years' developing country

experience, including extensive experience in field crops, economics and natural resource management in Asia (including South Asia) and Africa. John will also take over the regional coordinator (South Asia) role.

**Dr Craig Meisner** is ACIAR's agricultural research and extension manager in Cambodia for the AusAID-funded Cambodia Agricultural Value Chain Program, designed accelerate growth in the value of agricultural production and smallholder incomes. He worked for CIMMYT for 15 years (until 2005) as a principal scientist and regional coordinator. Since that time he has been working part-time for Cornell University, the International Fertilizer Development Center and as a consultant in agribusiness, economics, agronomy and program review for the UK's Department for International Development, NGOs and several companies. Craig combines research skills and a research management record with significant experience with extension systems/farmer field schools and farmer groups. He has worked with a wide range of crops in rice-based farming systems (including horticultural and field crops) and with nutrients, water and agricultural engineering inputs. Craig has experience in managing USAID and AusAID programs, and has won awards for both his team leadership and research management.



**Dr Mirko Stauffacher** is ACIAR's new research program manager for land and water resources. After achieving a PhD the Swiss-born Dr Stauffacher worked at the University of Geneva and the United Nations Environment Programme and UN High Commission for Refugees. Mirko migrated to Australia to join CSIRO Land and Water in Canberra. In 2002 he was appointed to the divisional executive as program director for salinity. Since 2005 Mirko has been on secondment to run

programs and a research project portfolio in the combined DAFF/DEWHA natural resource team. Mirko has a strong publication record and experience across hydrology, salinity, geographic information systems, catchment management and exposure to natural resource management and farm level research. Mirko started with ACIAR in December. Dr Stauffacher replaces Dr Christian Roth, who has taken up a position with CSIRO in Brisbane.



**Dr Tony McDonald** is ACIAR's country manager for Papua New Guinea and Solomon Islands. He has a Bachelor of Social Science from RMIT, a Master of Environmental Planning from the University of Melbourne and a PhD in Natural Resource Management from Charles Sturt University. Tony has more than 17 years' experience contributing to development aid programs, working as a team leader or member implementing activities with government, international NGOs, the private sector and at the local community level for projects in South-East Asia, East and Central Asia and elsewhere. He has worked with a wide range of international organisations such as the World Bank, Asian Development Bank and AusAID and he has managed and implemented a number of large-scale multidisciplinary projects related to natural resource planning, with strong emphasis on participative approaches, institutional strengthening, capacity building and community development.

**Dr Peter Horne** has moved from working for ACIAR in Indonesia and returned to Canberra as the livestock production system manager. Peter worked on the Smallholder Agribusiness Development Initiative program in Indonesia, and was based in Sulawesi, with his activities focused on building adaptive research capacity in eastern Indonesia to contribute to better linkages between smallholder farmers and markets. Peter has spent most of his career based in Asia involved in agricultural research-for-development, with a particular focus on forages and livestock systems. Peter has also worked as a researcher for the International Center for Tropical Agriculture, CSIRO, North Carolina State University and the University of New England (UNE). He has a PhD in Tropical Agronomy from UNE.



## NEW RESEARCH PROGRAMS

### CROPPING SYSTEMS AND ECONOMICS

With the increased focus on food security in the Australian aid program, ACIAR has created a new Cropping Systems and Economics (CSE) program. CSE will use collaborative R&D partnerships to improve food security through enhanced productivity and sustainability of field crop farming systems through biophysical and economic research and development. The main responsibility of the program will be developing a proposed program with a food security focus in the Mekong countries and South Asia, and managing a portfolio of research and development projects commissioned by ACIAR in crop improvement, agronomy and farming systems economics and in related areas.

### NEW CAMBODIAN PROGRAM

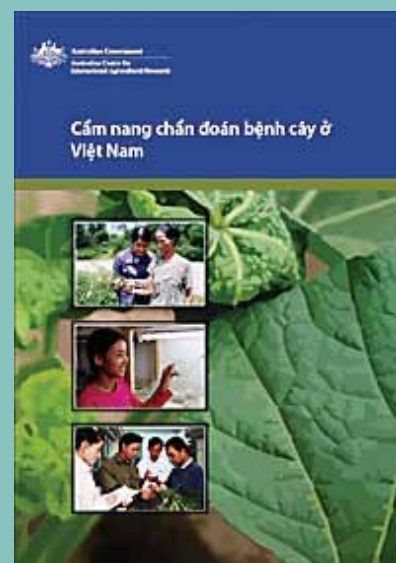
ACIAR is managing the research and extension component of the new five-year, \$42 million AusAID-funded Cambodia Agricultural Value Chain (CAVAC) Program, which commenced in early 2009. CAVAC's goal is to accelerate growth in the value of agricultural production and smallholder incomes in selected provinces (Kampong Thom, Takeo and Kampot) through improved productivity of rice-based farming systems. The ACIAR-managed program component will work in integration with components addressing agribusiness development, water management and irrigation and business enabling environment. Management of the ACIAR component in Cambodia will be undertaken by Dr Craig Meisner, supported by four Cambodian technical specialists (one located in Phnom Penh and the other three in each of the CAVAC target provinces). In addition, the program will engage administrative and support staff.

## NEW PUBLICATIONS

### CORPORATE PUBLICATIONS

#### The John Allwright Fellowship scheme: survey report 2008

The John Allwright Fellowship scheme, which enhances the research capabilities of partner-country institutions through postgraduate training of partner-country scientists, is one of ACIAR's key capacity-building activities. In 2008 a survey was carried out of those fellows who have successfully completed their postgraduate qualifications and returned to their home countries, with the results presented in this report.



## MONOGRAPHS

### Diagnostic manual for plant diseases in Vietnam [Vietnamese translation]

Plant diseases continue to cause significant crop losses in Vietnam and other regions of tropical South-East Asia. Outbreaks of disease of valuable cash crops can have a major impact on small farmers, particularly in localised areas where there are few suitable alternative crops. The accurate diagnosis of the cause of a disease is essential to the success of control measures and for the development of a scientifically sound national database on plant diseases. This translation of the original manual into Vietnamese is designed to help plant pathologists develop basic skills in the diagnosis of the cause of diseases, focusing on fungal diseases of the roots and stems. *Lester W. Burgess, Timothy E. Knight, Len Tesoriero, Hien Thuy Phan, ACIAR Monograph 129a, 210 pp.*

## PROJECT FINAL REPORTS

### SOUTH-EAST ASIA

#### Prospects for integrated timber-forage-livestock agroforestry systems for economic diversification in West Timor farming communities

*Paul van Nimwegen, David Lloyd and Jerome Vanclay, ACIAR Final Report SMAR/2006/080, [www.aciar.gov.au/publication/FR2009-01](http://www.aciar.gov.au/publication/FR2009-01)*

#### Fertilisation-independent formation of embryo, endosperm and pericarp for apomictic hybrid rice

*John Bennett, Anna Koltunow, Xinai Zhao, Ming Luo, ACIAR Final Report CIM/2002/106, [www.aciar.gov.au/publication/FR2008-48](http://www.aciar.gov.au/publication/FR2008-48)*

## OUT-OF-PRINT PUBLICATIONS NOW ONLINE

ACIAR is creating electronic versions of a series of out-of-print scientific publications. The publishing program at ACIAR began in the late 1980s, before the spread of the internet and before electronic versions of publications were common. As a result, a number of popular early monographs, proceedings and technical reports sold out of their print runs. With no electronic versions available, these publications have not been accessible, despite continued requests. ACIAR has scanned hardcopy versions of these publications and is now making them available as electronic downloads through its website.

The following publications are now available electronically from the ACIAR website:

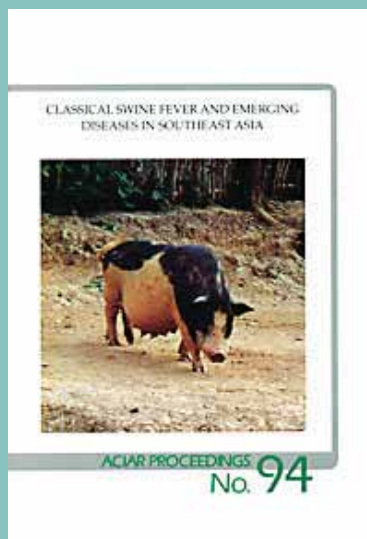
## MONOGRAPHS

- Monograph 3 **Grain protectants**
- Monograph 14 **The giant clam: an anatomical and histological atlas**
- Monograph 26 **Biological control of weeds: South-East Asian prospects**
- Monograph 35 **A survey of the subsistence and artisanal fisheries in rural areas of Viti Levu, Fiji**
- Monograph 42 **Global food security: implications for Australia**
- Monograph 43 **Management of soil, nutrition and water in tropical plantation forests**
- Monograph 47 **Partners in the harvest**
- Monograph 48 **Nutrient disorders of sweet potato**
- Monograph 49 **Biological control of weeds: theory and practical application**
- Monograph 57 **Haemorrhagic septicaemia**
- Monograph 60 **Biological control of water hyacinth**
- Monograph 62 **Developing forage technologies with smallholder farmers: how to select the best varieties to offer farmers in South-East Asia**
- Monograph 63 **The food and environment tightrope**
- Monograph 75 **Socio-economic evaluation of the potential for Australian tree species in the Philippines**
- Monograph 88 **Developing forage technologies with smallholder farmers: how to grow, manage and use forages**



## PROCEEDINGS

- Proceedings 94 **Classical swine fever and emerging diseases in South-East Asia**



## TECHNICAL REPORTS

- Technical report 30 **A review of the biology and management of rodent pests in South-East Asia**

For more information visit the ACIAR website, [www.aciar.gov.au/node/9933](http://www.aciar.gov.au/node/9933)

## NEW PROJECTS

ADP/2005/068	Plausible futures for economic development and structural adjustment—impacts and policy implications for Indonesia and Australia
AH/2008/037	Potential economic impacts of the Varroa bee mite on the pollination of major crops in Papua New Guinea
FST/2006/087	Optimising silvicultural management and productivity of high-quality acacia plantations, especially for sawlogs

## ACIAR'S DISTRIBUTION POLICY

ACIAR provides complimentary copies of its publications to developing-country libraries, institutions, researchers and administrators with an involvement in agriculture, and to any scientist involved in an ACIAR project. For enquiries about complimentary copies, please contact ACIAR's Communications Unit, [comms@aciarc.gov.au](mailto:comms@aciarc.gov.au).

For other customers, please use our online ordering facility at [www.aciar.gov.au](http://www.aciar.gov.au), or direct enquiries to our distributors, National Mailing & Marketing, PO Box 7077, Canberra BC ACT 2610, Australia, phone +61 2 6269 1055, fax + 61 2 6260 2770, [aciarc@nationalmailing.com.au](mailto:aciarc@nationalmailing.com.au).

Copies of most publications are available as free downloads from the ACIAR website, [www.aciar.gov.au](http://www.aciar.gov.au).

## ACIAR'S 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.



The Australian Centre for International Agricultural Research (ACIAR) operates as part of Australia's international development cooperation program, with a mission to achieve more productive and sustainable agricultural systems, for the benefit of developing countries and Australia. ACIAR commissions collaborative research between Australian and developing-country researchers in areas where Australia has special research competence. It also administers Australia's contribution to the International Agricultural Research Centres.

Back cover: Indonesian girl on the island of Sugal.

PHOTO: DR GIO BRAIDOTTI

Front cover: CARDI research assistant Then Rothmuny planting rice seed in a breeding program.

PHOTO: BRAD COLLIS



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Research that works for developing countries and Australia

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