

## Australia increases funds for international aid research

**CANBERRA:** The Parliamentary Secretary for International Development Assistance, the Hon. Bob McMullan, announced a new initiative called the Australian Development Research Awards, at the Global Development Network Conference in Brisbane in January.

The awards are part of an enhanced three-year Development Research Strategy for Australia's International Development Assistance program, which will provide an overarching framework for all research funded by the aid program.

"It is not good enough to just increase the quantity of aid, although that is very important; we must increase the quality of the aid as well," said Mr McMullan, speaking at the launch. "Therefore, the Australian Government will provide \$8.8 million for 27 new Australian Development Research Awards."

Through these awards, Australia's research base will be strengthened in six key sectors: economic growth, gender equality, humanitarian assistance, health systems, HIV/AIDS, and environment, forests and climate. The awards will be conducted annually and complement other development research funded by AusAID.

To see the full list of Australian Development Award recipients visit [www.ausaid.gov.au/media/pdf/awards.pdf](http://www.ausaid.gov.au/media/pdf/awards.pdf).

## World Development Report

**CANBERRA:** Funding international agricultural research is a win-win situation, not only for Australia's developing country partners, but for Australia as well, according to Dr Derek Byerlee, co-author of the World Bank's *World Development Report 2008: Agriculture for Development*.

Speaking at a joint ACIAR–Crawford Fund seminar held in Canberra on the key findings from the report, Dr Byerlee highlighted the role agriculture plays in reducing poverty, and praised the impact stemming from ACIAR's work.

"I wish to make special



Dr Denis Blight, Dr Derek Byerlee and Mr Peter Core.

note of the impact of the work carried out by ACIAR, which is held up internationally as an innovative example of support to agricultural science for development that pays high returns and benefits to poor farmers and consumers in developing countries and also in Australia," Dr Byerlee said.

These benefits include

agricultural policy changes, reduced spread of weeds, diseases and pests, sharing of germplasm and livestock genetics, shared technologies and safer foods.

Dr Byerlee outlined the benefits that Australia receives from international agricultural research, the linkages between agriculture, development and poverty, and the way these can vary substantially between countries in the Asia–Pacific region.

Mr Peter Core, chief executive officer of ACIAR, spoke on the role of agriculture as a driver for change, and the role of the World Bank report as a catalyst for boosting the profile of agriculture for development.

"Agriculture is one of the constants in long-term development," Mr Core said, "It is an important trigger for early stage development, particularly given its place as a large sector in nearly all developing countries, and the sector where the highest levels of poverty can be found. This places research into agriculture in a unique position, but one that must also be carefully managed."

## World food situation

**USA:** The International Food Policy Research Institute (IFPRI) has released a sobering report: *The world food situation: new driving forces and required actions*. The report summarises the key drivers that are rapidly redefining the world food situation, including climate change, income growth, rising energy prices, and increasing

urbanisation and globalisation.

An analysis of these drivers and their impacts on food production has been used to develop an outlook on food

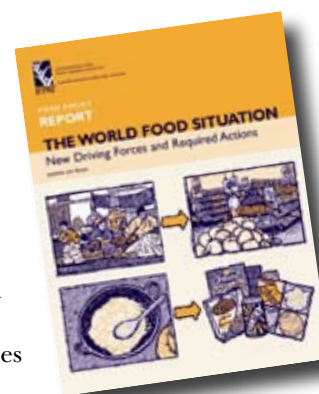
scarcity and food–energy price links. This reveals, among other things, world cereal and energy prices are becoming increasingly linked, with price rises in energy inputs flowing on to cereal prices. These price rises are in part the result of strong economic growth in developed countries and the associated demand for high-value agricultural products and processed foods.

The implications of these drivers and the growing linkages between energy and cereal prices are examined for their impact on poverty reduction. Five actions are recommended to ensure that the poorest people in the world are not left behind, including increased investments in rural infrastructure in developing countries, and placing food and agricultural issues onto the global climate-change agenda.

## Cambodian crop production workshop

**CAMBODIA:** A joint ACIAR–Cambodia workshop was held on 5 and 6 February in Phnom Penh to establish priorities for ACIAR research towards crop and horticulture production systems and marketing chains.

Agriculture in Cambodia has grown in recent years, with increases in rice production in a number of areas allowing farmers to diversify their cropping options. ACIAR research has helped to



introduce rice varieties that grow faster and deliver increased yields, freeing up cropping options.

As new crops such as maize, soybean and vegetables begin to be planted, marketing chains that were based on rice production have had to adapt and develop. The workshop was aimed at establishing the research priorities to help in the development of these marketing and supply chains for rice, and in introducing more suitable varieties of non-rice crops, together with management techniques for these crops. Diversification of agriculture in Cambodia has been one of the two major research thrusts for ACIAR, the other being to increase and secure the productivity of rice-based farming systems.

These priorities will be used by ACIAR as a framework for collaborative research for development activities over the next four-year period, subject to further advice and information from Cambodia and alignment with the Australia–Cambodia (Whole-of-Government) development cooperation strategy that is currently underway.

More information, including the statement of agreed priorities arising from the workshop, can be found on the ACIAR website [www.aciar.gov.au/node/8428](http://www.aciar.gov.au/node/8428).

## Kiribati's new jewels

**KIRIBATI:** In many South Pacific countries pearls are grown and then sold for use in the jewellery trade, where they are converted into a range of products. The value-adding from creating jewellery from pearls is usually done offshore, so communities

in Kiribati and elsewhere lose out on these returns. In response, ACIAR has begun to address this loss through a pearl oyster jewellery-making workshop, held in South Tarawa, Kiribati, last year.

The workshop was jointly organised by the Ministry of Fisheries and Marine Resources Development (MFMRD), the Kiribati National Council of Women (AMAK) and the Secretariat of the Pacific Community (SPC). It was designed to support ACIAR-funded research into the culturing of black pearls in Kiribati, and to help generate income from lower-grade pearls and pearl shell products that have little value and would otherwise be discarded.

Twenty-two participants from community groups across South Tarawa and Abaiang were selected to attend, based on their background in handicrafts

and jewellery-making. Pearls present a unique challenge for jewellery makers. For example, to drill a hole one must use a small drill bit at high speed (more than 30,000 revolutions per minute) and this must be carried out under water to prevent the pearl breaking.

Attendants at the workshop received tuition in the tools used, aspects of design and craftsmanship, the preparation and setting of pearls, and marketing techniques. Using these skills, the participants are now training others within their communities in the art of using pearls in jewellery making.

The new designs can be sold in Kiribati's domestic market and to foreign visitors arriving on cruise ships. Through the skills attained at the workshop and by accessing these markets, more of the value from locally cultured pearls will stay in Kiribati.

## Launch of PNG postharvest manual

**PAPUA NEW GUINEA:** The new ACIAR publication, *Quality management of fresh produce from the highlands of Papua New Guinea*, was officially launched in Port Moresby in November 2007. It is a practical manual for the management and marketing of fresh produce.

The potential for a PNG industry producing and selling fresh produce year-round was examined in an ACIAR project that helped identify some of the constraints on the production of fresh produce, including postharvest management and marketing techniques.

Speaking at the launch, hosted by PNG's Fresh Produce Development Agency (FPDA), the Governor of Western Highlands province, Mr Tom



Kiribati locals receive tuition in working with pearls and pearl-shell products as part of an ACIAR-sponsored workshop.

Olga, praised the book and its timing, which will support the province's new central marketing facility for fresh produce.

The manual was written by Vincent Haguluha and Ernest Natera (FPDA), and edited by the Australian project leader Professor John Spriggs (University of Canberra). It covers harvesting, postharvest handling, storage and transportation principles for a range of vegetables and commodities produced in the highlands of PNG.

Copies are available through the ACIAR website at [www.aciar.gov.au/node/3509](http://www.aciar.gov.au/node/3509).

## Derek Tribe Award 2007

**TURKEY:** Dr Ismail Cakmak is the recipient of the 2007 ATSE Crawford Fund Derek Tribe Award. Dr Cakmak, a Professor at Sabanci University in Istanbul, Turkey, was recognised for his outstanding work and leadership in identifying zinc deficiency as the underlying cause of poor wheat yields in the calcareous soils of the Central Anatolian region in Turkey.

Dr Cakmak led the uptake of zinc-containing fertilisers by farmers in the Central Anatolian region, including their development by fertiliser industries. As a result of this work, grain yields in the region have increased up to six-fold.

The diagnosis of zinc deficiency as a critical constraint to wheat production and Dr Cakmak's championing of the use of zinc fertilisers have seen the use of fertilisers in Turkey rise from zero in 1995 to a record level of 350,000 tonnes per annum. In addition to improvements in cereal productivity and farmers'



Vincent Haguluha of PNG's Fresh Produce Development Agency.

PHOTO: JOHN SPRIGGS



Professor Ismail Cakmak (left) with ACIAR Commissioner the Hon. Neil Andrew.

profits, the application of zinc fertilisers has provided zinc-dense grain to people with low incomes in Turkey and is predicted to lead to improvements in their health, productivity, mental development and livelihoods.

## John Fryer Forestry Scholarship

**VIETNAM:** The July–October 2007 edition of *Partners* reported the sad news of the passing of John Fryer. John was ACIAR's Research Program Manager for Forestry for 10 years, from 1994 to 2004. In that time he made a significant contribution to the development of forestry, particularly through the adoption of eucalypt and acacia species, in a number of countries across the Asia–Pacific region.

Vietnam captured more than just John's attention in that time and, following his retirement from ACIAR, John returned to Vietnam as a volunteer adviser to the Forest Science Institute.

To continue the work he started in Vietnam, John's family have initiated the John Fryer Forestry Scholarship Fund. The Fund will provide financial assistance for the education of forestry students at the postgraduate level in Vietnam. Scholarships will be available to support small courses and to top up existing scholarships. The Fund committee will consider nominations made by the Forest Science Institute of Vietnam, control the expenditure, and provide periodic reports that will be available to anyone who has contributed.

John's family, Clare, Tom and Mike, are hoping that the scholarship fund will help the forestry sector make a genuine difference in Vietnam. "We feel that John was confident in the contribution of forestry to sustainable development in Vietnam and we know that he was keen to assist those seeking to improve their educational qualifications."

Donations to the John Fryer Forestry Scholarship Fund will go towards the continued building of forestry research capacity in Vietnam.

ACIAR has offered to support two scholarships. Those interested in donating can contact the fund by emailing [johnfryerfund@gmail.com](mailto:johnfryerfund@gmail.com).

## Indian project team wins CSIR award

**INDIA:** The Indian Council of Scientific and Industrial Research (CSIR) has awarded one of two 2007 CSIR Awards for Science and Technology Innovations for Rural Development to the Indian project team from the Nimbkar Agricultural Research Institute (NARI) and the National Chemical Laboratory (NCL), working on an ACIAR project to improve sheep productivity.

The project is examining and extending the introduction of genes for improved reproductive rates and parasite resistance in Indian sheep. More than 100 local shepherds have received training, with their flocks being cross-bred to introduce the desired genes.

In giving the award CSIR commended NARI and the NCL and hoped that the award would inspire others to not only increase "their efforts of innovating more and more, but also to implement them successfully at ground level."

## UPCOMING EVENTS

ACIAR is supporting three upcoming events that link closely to its research programs and projects:

- the **International Grassland Congress** and **Rangeland Conference** will be held in Hohot, China from 29 June to 5 July 2008—for more information visit [www.igc-irc2008.org](http://www.igc-irc2008.org);
- ACIAR is sponsoring the **Ug99 workshop**, as part of the **11th International Wheat Genetics Symposium** in Brisbane, from 24 to 29 August 2008, to help develop an international approach to research into this new pathogen—for further details visit [www.fcconventions.com.au/IWGS/index.html](http://www.fcconventions.com.au/IWGS/index.html);
- the annual **ATSE Crawford Fund Seminar**, on 3 September 2008, will focus on climate change and international development—for details visit [www.crawfordfund.org/publications/seminars.htm](http://www.crawfordfund.org/publications/seminars.htm).

### CORRECTION

We inadvertently transposed the names of Dr Men Sarom and Chan Tong Yves in the photo caption on page 27 of the previous edition of *Partners*. The caption should have read: "(Left to right) Dr Men Sarom of CARDI, ACIAR project leader Dr Bob Martin and Chan Tong Yves of MAFF Cambodia meet farmer Neil Barwick on his zero-till farm in Tamworth, NSW." We apologise for the error.

## NEW APPOINTMENTS

### FELICITY MULLER

Felicity Muller is ACIAR's graduate trainee for 2008. The graduate trainee program commenced in 2007 and awards a traineeship each year to a young Australian graduate. The program provides an opportunity for that trainee to become involved in international agricultural research within the broader context of Australia's aid program.



Felicity Muller

Felicity will work within a number of areas of ACIAR, including with research program managers, the Communications Unit and the Executive. The traineeship provides a grounding in project development and monitoring, drafting and production of corporate documents, and the preparation of discussion papers on emerging issues. Felicity has a Bachelor of Science in agriculture (First Class Honours and University Medal) from the University of Sydney, and has worked as a tutor and research assistant, as well as an educational designer, at the University of Sydney.

### JOHN OAKESHOTT

John Oakeshott is ACIAR's new horticulture manager, based in Davao, the Philippines, where he will oversee activities in two major, ACIAR-funded horticultural programs to commence in the southern Philippines in early 2008. One aims to improve the smallholder and industry profitability and market competitiveness of selected vegetable industries, while the other addresses export and domestic industry development for tropical tree fruits. John will be responsible for liaison with research and industry program partners, fostering new partnerships with farmer groups and industry, coordination and integration of program components, supporting program implementation, and assisting to monitor and evaluate reporting functions.

John has a degree in agriculture from Sydney University and an MBA from the University of New England. He joins ACIAR from the Rural Industries Research and Development Corporation (RIRDC), where he was research manager for new rural industries. He has also worked at Horticulture Australia Ltd and in Japan, Korea and Qatar for a total of seven years, on agricultural market research and teaching projects.



John Oakeshott

### ANDREW SINCLAIR

Andrew Sinclair joins ACIAR as the manager for information technology and infrastructure, responsible for overseeing the Centre's IT and general working environment. He has a Bachelor of Business majoring in information technology and management. Andrew has a wide range of experience in IT, having worked for the Department of Defence, the Attorney-General's Department, Boeing, Intact and the ACT Government, where he provided IT services to a number of government agencies.



Andrew Sinclair

## NEW PUBLICATIONS

### CORPORATE PUBLICATIONS

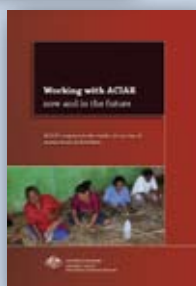
#### Annual Report 2006–07

ACIAR's Annual Report for 2006–07 outlines the Centre's research and financial performance during the past financial year. *October 2007.*



#### Working with ACIAR now and in the future: ACIAR's response to the results of a survey of international stakeholders

An independent, semi-structured dialogue survey of key international ACIAR stakeholders was conducted in six selected countries. The survey report included 11 key recommendations, which form the basis of the management action plan contained in this publication. *December 2007.*



#### Country Profiles: China; Cambodia, Lao PDR, Thailand; Indonesia; Pacific islands; Papua New Guinea; the Philippines; South Asia; Vietnam

The ACIAR country profiles are designed as a snapshot of the collaborative research being carried out between Australia and our various partner countries. *November 2007.*



### MONOGRAPHS

#### Guidelines for surveillance for plant pests in Asia and the Pacific [Vietnamese translation]

This is the Vietnamese translation of Monograph 119, a manual that aims to assist plant health scientists devise surveillance programs and transmit specimens to the laboratory for identification and preservation. *Teresa McMaugh, Vietnamese translation by Phan Thuy Hien, 2008, ACIAR Monograph 119b, 192 pp. \$55 GST inclusive (plus postage and handling).*

### TRAINING MANUALS

#### Financial and economic research methods

*Steve Harrison and John Herbohn, 2008, 86 pp. ACIAR Training Manual 1, www.aciar.gov.au/node/7333*

#### Research planning and management for foresters

*Michael Blyth, 2008, 62 pp. ACIAR Training Manual 2, www.aciar.gov.au/node/7330*

#### Communicating science

*Paul Holford, Janne Malfroy, Paul Parker, Patricia Robinson, Wesley Ward and Patricia Kailola, 2008, 47 pp. ACIAR Training Manual 3, www.aciar.gov.au/node/7331*

#### Social and community dimensions to ACIAR projects

*Digby Race, 2008, 33 pp. ACIAR Training Manual 4, www.aciar.gov.au/node/7332*

### PROJECT FINAL REPORTS

#### Food safety research in Indonesia: a scoping study and ACIAR's response

*Roger Morris and ACIAR, 2008, 67 pp. ACIAR Final Report AH/2005/107, www.aciar.gov.au/node/7097.*

#### Assessment of zoonotic diseases in Indonesia

*Nigel Perkins, Ian Patrick, Mahomed Patel and Stan Fenwick, 2008, 100 pp. ACIAR Final Report AH/2006/163, www.aciar.gov.au/node/6987*

#### Vaccine business development in the Lao PDR

*David Kennedy, Scott Williams, Stephen Page, Nancy Bourgeois-Lüthi and Richard Bevan, 2008, 139 pp. ACIAR Final Report AH/2006/155, www.aciar.gov.au/node/7316*

#### Future directions for animal health services in Indonesia

*Helen Scott-Orr, Bruce Christie and Tristan Jubb, 2007, 29 pp. ACIAR Final Report AH/2006/164, www.aciar.gov.au/node/3508*

#### Improving the marketing system for fresh produce of the highlands of PNG

*John Spriggs and Barbara Chambers, 2007, 67 pp. ACIAR Project Final Report ASEM/2001/037, www.aciar.gov.au/node/8457*

#### The vegetable industry in the Philippines

*P.J. Batt, S. Concepcion, K. Dagupen, M.C. Lizada, R. Murray-Prior, 2007, 63 pp. ACIAR Final Report ASEM/2005/062, www.aciar.gov.au/node/4189*

#### Mastotermes darwiniensis in the Lae area of PNG

*B.M. Thistleton, M. Neal, M. Peki and J. Dobunaba, 2007, 50 pp. ACIAR Final Report FST/2005/049, www.aciar.gov.au/node/3945*

#### Permanent beds for irrigated rice–wheat and alternative cropping systems in north-west India and south-east Australia

*Liz Humphreys, Geoff Beecher, Yadvinder Singh, S.S. Kukal, H.S. Sidhu, Jagdish Timsina, John Blackwell, David Smith, Rajinder Pal Singh, 2008, 69 pp. ACIAR Project Final Report LWR/2000/089, www.aciar.gov.au/node/7190*

#### Scoping study to assess the technical and economic feasibility of wheat production in southern Bangladesh

*P. Carberry, M. Saifuzzaman, H.M. Rawson, M.A. Sufian, A.B.S. Hossain,*

*N.P. Dalgliesh, 2008, 44 pp. ACIAR Final Report LWR/2005/042, www.aciar.gov.au/node/7189*

### Papua New Guinea coffee and cocoa policy linkages

*Derek Quirke, Matthew Harding, Bob Warner, 2007, 74 pp. ACIAR Final Report PLIA/2005/148, www.aciar.gov.au/node/3940*

### Philippine policy linkages scoping study

*A.M. Balisacan, S. Cuthbertson, M.A. Sombilla, J. Corbishley, 2008, 44 pp. ACIAR Final Report PLIA/2005/151, www.aciar.gov.au/node/7051*

### A constraints analysis of mango supply chain improvement in Pakistan

*R. Collins, T. Dunne, J. Campbell, P. Johnson, A.U. Malik, 2007, 39 pp. ACIAR Final Report PLIA/2005/159, www.aciar.gov.au/node/3939*

### Livestock health and vaccines in Cambodia and Laos

*Matthew Harding, Robert Warner, David Kennedy, 2007, 119 pp. ACIAR Final Report PLIA/2006/012 Part 1, www.aciar.gov.au/node/5195*

### Cattle and buffalo in Cambodia and Laos: the economic and policy environment for smallholders

*Matthew Harding, Derek Quirke, Robert Warner, 2007, 98 pp. ACIAR Final Report PLIA/2006/012 Part 2, www.aciar.gov.au/node/5196*

### Happy Seeder policy linkage scoping study

*P. Pagan, R.P. Singh, 2007, 33 pp. ACIAR Final Report PLIA/2006/180, www.aciar.gov.au/node/5019*

### A review of the future prospects for the world coconut industry and past research in coconut production and product

*Bob Warner, Derek Quirke, Chloe Longmore, 2007, 89 pp. ACIAR Final Report PLIA/2007/019, www.aciar.gov.au/node/3938*

### Vegetable value chains in Eastern Indonesia—a focus on chilli

*B. White, P. Morey, R. Natawidjaja and W. Morgan, 2007, 73 pp. ACIAR Final Report SMAR/2007/042, www.aciar.gov.au/node/3943*

### Securing the profitability of the Flores coffee industry

*Tony Marsh, Jeff Neilson and Surip Mawardi, 2007, 23 pp. ACIAR Final Report SMAR/2007/200 Part 1, www.aciar.gov.au/node/3942*

### Securing the profitability of the Toraja coffee industry

*Tony Marsh and Jeff Neilson, 2007, 38 pp. ACIAR Final Report SMAR/2007/200 Part 2, www.aciar.gov.au/node/3942*

### The citrus market in Indonesia—an Eastern Indonesian perspective

*Phillip Morey, 2007, 44 pp. ACIAR Final Report SMAR/2007/209, www.aciar.gov.au/node/3944*

### Improving lobster grow-out and nutrition in West Nusa Tenggara—a feasibility study

*Clive Jones, Made Susastika, Fatuchri Sukadi, Arif Surahman, 2007, 23 pp. ACIAR Final Report SMAR/2007/228, www.aciar.gov.au/node/3946*

### Options for teak industry development in south-east Sulawesi, Indonesia

*S. Midgley, A. Rimbawanto, Mahfudz, A. Fuazi and A. Brown, 2007, 41 pp. ACIAR Final Report SMAR/2007/229, www.aciar.gov.au/node/3870*

## NEW PROJECTS

AH/2006/161	Management of pig-associated zoonosis in the Lao PDR
AH/2007/060	Scoping opportunities for improving biosecurity in commercial poultry in Indonesia
CIM/2006/041	Increased productivity and profitability of rice-based lowland cropping systems in the Lao PDR
CIM/2006/094	Enhancing farm profitability in north-west India and South Australia by improving grain quality of wheat
CP/2006/114	Managing cocoa pod borer in PNG through improved risk-incursion management capabilities, IPM strategies and stakeholder participatory training
CP/2006/147	Integrated pest management of stem borers and insect vectors of viral diseases of sugarcane in Indonesia
CP/2007/098	Development of a mycoinsecticide to control sexava pests in oil palm
CP/2007/123	Scoping study to identify agricultural R&D needs and opportunities of rural upland communities in north-western Vietnam
FIS/2005/108	Freshwater prawn aquaculture in the Pacific: improving culture stock quality and nutrition in Fiji
FIS/2005/114	Building bivalve hatchery production capacity in Vietnam and Australia
FIS/2005/169	Improving productivity and profitability of smallholder shrimp aquaculture and related agribusiness in Indonesia
FIS/2006/183	Development of fish passage criteria for floodplain species of central Laos
LWR/2006/076	Evaluation of opportunities and constraints for R&D investment into increasing water productivity of agriculture in north-west China
LWR/2006/124	Fine-tuning the Happy Seeder technology for adoption in north-west India
SMAR/2007/100	Support for development of improved approaches to technology assessment and knowledge exchange
SMAR/2007/219	Identifying economic and social constraints for water management in vegetable production in Nusa Tenggara Timur (NTT) and Nusa Tenggara Barat (NTB)
SMAR/2007/225	Assessing mariculture market constraints and potential in south-east Sulawesi. Stage 1: Stakeholder engagement and situation analysis

## 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@aciar.gov.au](mailto:comms@aciar.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, [aciarn@nationalmailing.com.au](mailto:aciarn@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: Young Hmong girls near Sapa, in the north of Vietnam, earn money by selling handicrafts to tourists.

PHOTO: ROBIN TAYLOR

Front cover: Farmer Pa Heu with her prized buffalo being conditioned on fodder.

PHOTO: BRAD COLLIS