

Building on the past for a better future

How ACIAR is working to increase the delivery of research results to farmers

The success of ACIAR's projects is built through effective partnerships. These create answers to agricultural problems, for dissemination to the farmers and other end-users confronting those problems head-on.

Linking the expertise of Australian agricultural scientists with their counterparts in developing countries has been and remains the foundation of successful projects. Some address problems previously not researched, others take past research and aim to deliver the results directly to end-users.

To help deliver research to the relevant farmers, natural resource managers and policy makers, ACIAR has worked with a variety of organisations over the past two decades.

Organisations such as Australian Volunteers International (formerly the Overseas Service Bureau), World Vision and Catholic Relief Services have all been involved in ACIAR projects. A variety of agricultural extension agencies, scientific research organisations and private businesses have also played a role in getting solutions to those who need them.

To help end-users further capitalise on the science and technology emerging from ACIAR-supported research, some changes have been made to project development. These will help define the timeframe from project commencement to dissemination of results and benefits to end-users. There are three categories, or timeframes, for the delivery of results:

■ **Category 1: likely to achieve impact within**

five years of project completion (near-term)
– 40 percent of ACIAR's project expenditure will be aimed at near-term projects;

■ **Category 2: likely to achieve impacts in five to 10 years of project completion (medium-term)**

– 40 percent of ACIAR's project expenditure;

■ **Category 3: likely that benefits will take more than 10 years from project completion to be seen on the ground (long-term)**

– 20 percent of ACIAR's project expenditure.

Details on these changes can be found in the 'Guidelines for the Development of Project Proposals' (under Project Guidelines on the ACIAR website), and in relevant Country priorities, to be detailed in the Country chapters of ACIAR's 2005–06 Annual Operational Plan.

A key element of this change is increased opportunities for funding of projects likely to deliver benefits to end users within five years of project completion. These Category 1, or near-term, projects are expected to have strong linkages and partnerships with community-based organisations who work directly with end users.

With 60 percent of investment aimed at medium- to longer-term projects there is still a major emphasis on research that addresses real problems but does not necessarily deliver results on the ground. The useful results and technologies emerging from longer-term projects may be developed into near-term projects in later years.

A range of organisations, from NGOs to industry representative bodies to research institutions, may be involved in disseminating research results. The main advantage these organisations have is the ability to reach target communities and end-users directly.

So what type of projects is ACIAR expecting to fund to deliver community-level impacts in the shorter term?

In the June 2004 issue of *Partners* Robin Taylor reported on ACIAR's engagement with World Vision and how this has disseminated research results to farmer communities in Thailand, Laos and Vietnam – an example of one type of near-term project.

One facet of this project was work led by World Vision to change horticultural practices in Thailand's Songkla Basin region. Farmers growing vegetables were relying on chemical fertilisers, but chemical run-off was contaminating water. Some of this was used for

Thai farmers show the practical results of the ACIAR–World Vision project. In Thailand, and elsewhere in the developing world, women often lead smallholder farming enterprises.



drinking. By adopting the use of diluted chicken manure, soaked overnight in a tank of water, chemical use was reduced. The liquid manure/fertiliser was run through drip irrigation, leading to an increase in income from reduced chemical input costs. Marketing the produce as chemical-free attracted a price premium, also boosting income.

A second example of a project delivering impacts to end-users was the introduction of ectomycorrhizal fungi to eucalyptus plantations in China.

fungi play a beneficial role in improving the growth and establishment of eucalypt species. By matching the fungi to plantation sites in three provinces, root stocks and seedlings were able to be inoculated in nurseries before planting. This significantly expanded the potential area of eucalypt plantings, both to generate income and to rehabilitate degraded land.

As a result of the project's training activities, and its dissemination of information, mainly in Chinese, a total of about 25 percent of new plantings are of inoculated stocks. The majority of private forestry companies, now taking over the plantation sector following the withdrawal of government resources, use local people to prepare and maintain plantation lands. These companies have indicated that more than 50 percent of new plantings will use inoculated seedlings by 2007.

In South Africa, the involvement of the Agricultural Research Council and several other organisations in a CSIRO-led project is helping smallholder farmers gain access to the commercial beef sector.

Smallholder cattle farmers use cross-bred and non-commercial varieties. This difference from commercially accepted varieties has been a barrier to selling to the commercial sector.

By proving that the smallholder farmers who adopted appropriate management and feeding strategies for non-commercial varieties could meet the specifications of the commercial sector, the door has been opened to increased income.

Disseminating this information has been undertaken by several groups. The National African Farmers Union is working on a new feedlot system for smallholders. Members of the South African Feedlot Association, a commercial supplier, have established buyers in regional areas to take advantage of the new source of cattle.

A Beef Improvement Network has also been established to link farmer groups.



In Laos, the emphasis of the World Vision work has been on training rice farmers in techniques to grow dry season crops. As a result of this training, farmers are now able to grow dry season crops for consumption and for sale. In total, according to government counterpart reports, 1663 kilograms of crops were grown in the January to March dry season. Peanuts, green beans and wheat had also been planted and total crops harvested totalled 567kg. Following the wet season training and seed distribution, it was noticed that the farmers were working hard to use the lessons learnt in their training. By the end of June, all the farmers who received seeds from the project had completed sowing using the new methods.

While each of the three projects above has unique characteristics, all have successfully delivered project results to end-users and catalysed new approaches.

Fostering technology change is one avenue through which NGOs, private and public research and other organisations can become involved. Utilising the expertise of such agencies as a part of a project, for their communication

activities or ability to involve volunteers in projects, are other avenues.

ACIAR will focus on projects that pilot new and existing technologies emerging from projects supported by the Centre. This will position partner organisations to 'scale-up' these technologies to the district and provincial levels and, where appropriate, beyond.



John Dillon Fellows visit

ACIAR's John Dillon Fellows for 2005, selected for their potential as future R&D leaders in their countries, visited the ACIAR's Canberra office in March. The six fellows were in Australia visiting Australian organisations and events designed to boost their experience in their relevant fields of expertise.

Prior to visiting ACIAR, the fellows received training at the Melbourne Business School's Mt Eliza Centre for Executive Education, one of the leading management training institutions in Australia. Each fellow also visits one or more research, policy or extension organisations, these acting as host organisations (see list of the fellows and their programs).

Fellows are selected on a range of criteria. Each has been involved in a recent or current ACIAR project, is from a developing country and has demonstrated outstanding potential as a future research manager and leader.

By supporting a five-week visit to Australia, the fellowship provides an opportunity to gain insights into how leading organisations operate, management techniques and relevant processes that can be applied in the fellow's home organisation. The visits to host organisations are built around the specific interests of the fellows, such as examining priority-setting mechanisms or visiting state of the art laboratories. Visiting ACIAR strengthens the networks that project involvement has already established.

During their week at ACIAR, the fellows gave presentations on their home institutions, outlining the challenges ahead. They also attended a training course in research management in agriculture.

The course, run by Associate Professors Geoff Hinch and Brian Sindel of the University of New England, is designed to assist with the transition from hands-on research to management.

For many of the fellows this transition presents a challenge and shift in mindset, moving away from a single research area or series of experiments.

A highlight of the week was a meeting with the Minister for Foreign Affairs, the Hon. Alexander Downer. The Minister presented the fellows with a plaque for advanced training in agricultural research management.

The fellows ended their week by attending ACIAR's In House Review, the forum where projects are evaluated and recommended for approval, followed by a visit to the Australian Department of Agriculture, Fisheries and Forestry.

ABOUT JOHN DILLON

Professor John Dillon was a leading agricultural economist who served as Chairman of ACIAR's Board of Management from 1985 to 1994. A long-time champion of agricultural research, Professor Dillon made an enormous contribution both to ACIAR and the wider



Hosts and guests: the 2005 John Dillon Fellows with their University of New England course leaders. From left, Associate Professor Brian Sindel, Dr Eric Omuru, Associate Professor Geoff Hinch, Dr Larry Digal, Dr Harminder Singh Sidhu, Ms Rahmini, Dr Changyong Zhou and Ms Norah Omot.

international research community.

This included serving on the Boards of five consultative groups on international agricultural research centres, including chairing three. He was also a lecturer and later Professor of Rural Economics at the University of New England.

THE 2005 JOHN DILLON FELLOWS

Dr Larry Digal – Associate Professor 1, School of Management, University of the Philippines. Program – AARES 2005 Conference, ABARE Outlook 2005 Conference, University of Sydney and Rural Industries Research and Development Corporation.

Dr Eric Omuru – Head of Economics and Planning, Cocoa Institute of Papua New Guinea. Program – AARES 2005 Conference, ABARE Outlook 2005 Conference, NSW Department of Primary Industries, and Rural Industries Research and Development Corporation.

Ms Norah Omot – Agricultural Economist, National Agricultural Research Institute, Papua New Guinea.

Program – AARES 2005 Conference, ABARE Outlook 2005 Conference, NSW Department of Primary Industries, and Rural Industries Research and Development Corporation.

Dr Harminder Singh Sidhu – Research Engineer, Punjab Agricultural University, Ludhiana, India.

Program – CSIRO Sustainable Ecosystems,

Agricultural Institute and Charles Sturt University, CSIRO Land and Water.

Ms Rahmini – Researcher (in rodent pests), Indonesian Institute of Rice Research, Indonesia. Program – CSIRO Sustainable Ecosystems, Cooperative Research Centre for Pest Animal Control, Grains Research and Development Corporation, Agricultural Institute and Charles Sturt University.

Dr Changyong Zhou – Director of Citrus Institute, Chinese Academy of Agricultural Sciences, China.

Program – Horticulture Australia, University of Sydney, AusCitrus, CSIRO Plant Industry, NSW Agriculture, South Australian Research and Development Institute.

NEW APPOINTMENTS

POLICY ADVISORY COUNCIL MR BROWN BAI

Mr Brown Bai, Chairman of the Rural Industries Council of Papua New Guinea, has been appointed to ACIAR's Policy Advisory Council. Mr Bai, a former Secretary of the Prime Minister's Department, has been involved in agriculture and community development, both in PNG and internationally throughout

his career. This includes working in a variety of capacities in the PNG Government's Departments of Agriculture, Livestock and Fisheries, Primary Industries, Finance and Treasury and the National Planning Office.

Mr Bai has also been involved in a number of industry groups in agriculture, chairing the Livestock Development Corporation and the PNG Oil Palm Management Board, and was founding chair of Ramu Sugar. He has also served on the Coffee and Cocoa Industry Boards and the Copra Marketing Board.

The Rural Industries Council promotes the agricultural industry in PNG. The council's membership is made up of regional or national associations that represent growers or primary producers of agricultural crops and livestock.

Dissemination of relevant information of interest relating to rural industries is a main priority of the council, achieved in part through radio programs, publications and grower conferences.

Mr Bai's three-year appointment to the Policy Advisory Council began on 7 March 2005.

The Policy Advisory Council provide advice to the Minister for Foreign Affairs regarding:

- agricultural problems of developing countries and
- programs and policies with respect to agricultural research.

The council includes the members of the ACIAR Board, the Director, the Director

General of AusAID (or his or her nominee) with the remainder (no fewer than nine nor more than 11) appointed by the Minister based on their experience in agricultural research and their knowledge of agricultural problems in developing countries.

DR T.K. LIM

Dr T.K. Lim is Research Program Manager for Crop Protection. The Crop Sciences Program is divided into two parts, with crop protection focusing on the protection of horticultural crops, cereals, food legumes, forages and oilseeds, with an increasing focus on biosecurity.

Dr Lim was most recently a senior manager at the Department of Agriculture, Fisheries and Forestry in Canberra, working on market access and crop protection issues for horticultural crops. In this role, he gained strong international experience and international and Australian networks, and carried out regular high-level representational work for the Australian Government.

Prior to this he was deputy director for horticulture with the Northern Territory Government, leading a large team of researchers and extension workers on horticulture and crop protection issues.

Dr Lim and his family migrated to Australia almost 15 years ago. He was born and brought up in Malaysia and gained a PhD in the US. Prior to coming to Australia, he was a researcher and associate professor at the major Agricultural University in Malaysia.

IRRI BOARD OF TRUSTEES

The International Rice Research Institute (IRRI) has announced the appointments of former ACIAR Chair Dr Beth Woods and ACIAR South Asia Adviser Dr Tony Fischer as new Board of Trustees members.

The 15-member Board of Trustees (BoT) meets twice a year as IRRI's most important policy-making body. It is made up of eminent scientists and world leaders in a range of scientific and other disciplines.

Dr Woods, who stepped down as Chair of ACIAR in 2004 to take up the position of Executive Director of Research and Development Strategy at the Queensland Department of Primary Industries and Fisheries, is also the Foundation Professor of Agribusiness at the University of Queensland.

Dr Fischer, aside from his role advising ACIAR, is on the Board of the Grains Research and Development Corporation and has been Director of the CIMMYT Wheat Program.

IRRI is the world's leading rice research and training centre, based in the Philippines. It is

NEW PROJECTS

- ADP/2002/089** Agricultural trade liberalisation and domestic market reforms in Indian agriculture
- ASEM/2002/051** Sustaining and growing Landcare systems in the Philippines and Australia
- ASEM/2002/103** Enhancing project impact and science capability through ongoing evaluation
- ASEM/2003/009** Bridging the gap between seasonal climate forecasts and decision makers in agriculture
- AS2/2001/094** Sustainable development of grasslands in western China
- CP/2003/028** Biological control of two major weeds affecting crop and livestock production in East Timor
- CP/2003/029** Management of potato late blight in Papua New Guinea
- FIS/2000/065** Assessing the potential for low-cost formulated diets for mud crab aquaculture in Australia, Indonesia and Vietnam

PROJECT VARIATIONS

- ADP/1997/092** Impacts of alternative policy options on the agricultural sector in Vietnam
- ASEM/2000/107** Future prospects for smallholder poultry producers in the Philippines: ducks and native chickens
- AS2/1998/035** Ruminant production in the red soils region of southern China and in northern Australia
- CP/1996/091** Biological control of *Chromolaena odorata* in Indonesia, Papua New Guinea and the Philippines
- CP/2001/032** Impact and management of *Oribius* weevils in Papua New Guinea
- CTE/2000/165** Facilitating farmer uptake of ACIAR project results: World Vision collaborative program
- FIS/1997/031** Pearl oyster resource development in the Western Pacific
- FST/1998/096** Domestication of Australian trees for reforestation and agroforestry systems in developing countries
- FST/1998/118** Planning methods for sustainable management of timber stocks in Papua New Guinea's forests
- FST/2000/123** Heart rots in plantation hardwoods in Indonesia and southeast Australia
- PHT/1997/017** Reducing aflatoxin in peanuts using agronomic management and bio-control strategies in Indonesia and Australia
- SMCN/1999/005** Improved soil management on rain-fed vertisols in Nusa Tenggara
- SMCN/2001/048** Legumes and reduced tillage for rice- and maize-based cropping in the Democratic Peoples Republic of Korea (DPRK)

NEW PUBLICATIONS

MONOGRAPHS

WORM CONTROL FOR SMALL RUMINANTS IN TROPICAL ASIA

This book and the accompanying CD draw together information from a number of sources to describe the state of research and development on worm control in Asia and the Pacific.

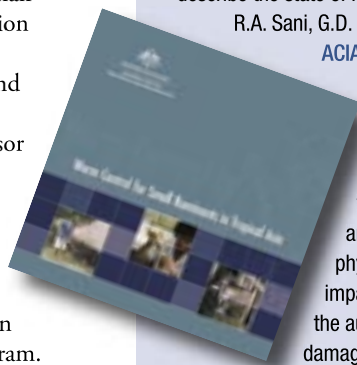
R.A. Sani, G.D. Gray and R.L. Baker (eds).

ACIAR Monograph 113, 264pp, price \$32.00 (plus postage and handling).

DIVERSITY AND MANAGEMENT OF PHYTOPHTHORA IN SOUTH-EAST ASIA

Phytophthora is one of the most important plant pathogens in the world and many economically important crop species in South-East Asia are susceptible. By bringing together information on the identification of phytophthora diseases based on symptoms, their occurrence, economic impact and development of integrated disease management practices, the authors of this volume provide practical information on how to limit the damage caused by phytophthora. A. Drenth and D.I. Guest (eds).

ACIAR Monograph 114, 238pp, price \$32.00 (plus postage and handling).



TECHNICAL REPORTS

USING SEASONAL CLIMATE FORECASTING IN AGRICULTURE: A PARTICIPATORY DECISION-MAKING APPROACH

The challenge in using seasonal climate forecasts in agriculture is to assess and capture the potential benefits so that peoples' well-being is improved in terms of increased food security, protection of the resource base, lower costs or better economic outcomes within the community. This report arises from an ACIAR project involving Indonesia, Zimbabwe, India and Australia. A.K.S. Huda and R.G. Packham (eds).

ACIAR Technical Report 59, 52pp, price \$13 (plus postage and handling).

IMPACT ASSESSMENT SERIES

EUCALYPT TREE IMPROVEMENT IN CHINA ACIAR IMPACT ASSESSMENT SERIES 30, AUTHOR: MARTIN VAN BUEREN

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BOOK REVIEW

HIGH-YIELDING ANTHRACNOSE-RESISTANT *STYLOSANTHES* FOR AGRICULTURAL SYSTEMS BY S. CHAKROBORTY (ED)

Review by J. CLEMENTS, Executive Director, The ATSE Crawford Fund

This is the most recent of a number of reviews of the state of scientific knowledge of *Stylosanthes* (stylo) and its use in farming and livestock production systems around the world. It comes at the end of an ACIAR-funded project aimed at developing new, high-yielding, anthracnose-resistant stylo cultivars for China, India, Brazil and Australia. While the results of this work are reported in detail and are the main focus of the book, the authors have taken the opportunity to review more broadly the recent literature on *Stylosanthes* (approximately 1000 publications since 1990) and to place it in perspective. There is a degree of repetition in the chapters, and there is much information in the earlier reviews that is not covered here but, on the whole, the book is a considerable success and will be a welcome addition to the shelves of all tropical forage legume researchers. It is likely to be too data-intensive for most farmers and graziers.

The book is arranged in three sections. The first contains reviews of aspects of scientific research on *Stylosanthes* – species relationships, genetic diversity, potential forage productivity, constraints to production, and the use of stylo in a wide range of livestock and crop-livestock production systems. The second contains the results of the ACIAR project, in journal paper format. The third contains chapters on aspects of the commercialisation of *Stylosanthes*, with emphasis on seed production and the emerging use of stylo leaf meal for livestock in China and India.

The book is notable for the excellence of the figures and illustrations, many of which are in full colour. Another strength is the abundance of information on the history of cultivar development and seed production in Latin America, Thailand, China, India and, to a lesser extent, Africa. Some of this information has been published before, but some

has not. By adding this new information, the historically-minded reader can now piece together a well-documented story of determined efforts to bring stylo technology to farmers around the tropical world.

One of the particular achievements of the past 10 to 20 years is the increased adoption of stylo in farming systems in developing countries. Scaling up of stylo technology commenced in India and Thailand during the 1970s and in China during the 1980s. Estimates of sown areas are hard to come by, but from this book and other sources we estimate that the total sown area in these three countries has risen to about 750,000 hectares. There are other significant areas in Brazil and parts of Africa, and the total sown area in developing countries is now approaching the area sown in Australia. Worldwide, the economic benefits of stylo technology are now very significant.

The book highlights the significance of anthracnose disease caused by the fungus *Colletotrichum gloeosporoides*. During the past decade much of the research agenda has been driven by (or has arisen from) the urgent need to control this disease in order to enhance the sustainability of stylo-based agricultural systems. Reviewing the achievements of the last decade, particularly the increased level of adoption of stylo by farmers, one is struck yet again by the small number of cultivars that make up the bulk of the area now sown worldwide to stylo, and the vulnerability of these cultivars to anthracnose. This is well documented in the book, as are the advances in our scientific understanding of the host, the pathogen and their interaction.

Another lesson from the book is the diversity and complexity of the farming systems to which stylo can contribute. The provision of robust technology is vital; for example, in Brazil there have been hard-learned lessons about the difficulty of promoting cultivars that do not readily produce seeds or possess lasting anthracnose resistance. However, robust technology is not in itself sufficient to ensure widespread adoption. A particular challenge is to provide a farm operating environment – a suitable business and policy context – that will enable farmers to adopt stylo technology in an economically sustainable manner. Some of the factors that we take for granted in Australia (for example security of land tenure, and reliable access to markets for farm produce) do not exist in other countries. In India, Thailand and China, successful adoption has required long-term support by governments and aid agencies.

We have come a long way, and farmers have enjoyed many years of sustained economic benefits from stylo technology. Adoption is now increasing very rapidly. Sadly, (as Chakraborty states in this book) although stylo anthracnose disease has become one of the best-studied diseases of forage plants, it continues to hang over the heads of countless farmers and graziers. While researchers have lessened some of this threat, the potential for trouble persists, even as the research investments falter.

High-yielding anthracnose resistant *Stylosanthes* for agricultural systems. S. Chakraborty (ed). 2004. ACIAR Monograph 111, 264pp, price \$45.00 (plus postage and handling).

