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IN RESEARCH FOR
DEVELOPMENT

Landcare unites
communities

Livelihood lift
from legumes

Water managers
extend monsoon

**WOMEN
AT WORK**



Focus on rural women

The many roles women play sustaining and improving agricultural production in developing countries are increasingly the focus of development programs. As women prove viable agents of change, their participation is changing the way research programs are conceived, structured and delivered.

With a number of trends pushing more women into heading smallholder farms through the Asia-Pacific region and beyond, the focus on women's participation is a long-term strategy. The emphasis on women becomes critical, given that income-earning opportunities in cities and regional hubs are encouraging more men to migrate from their homes, either on a seasonal basis or semi-permanently. The spread of HIV/AIDS, and in some countries recovery from past conflict and civil unrest, has also taken a toll, often leaving women to run families and farms.

The rise in the number of women heading farming households comes with a trade-off. Increased income sent home by men who have migrated from their farms is offset against a reduction in farm labour inputs, as women manage additional duties on the farm while still managing the home. This can lead to reduced farm productivity. For women farmers without access to a source of off-farm income, any reductions in labour inputs and farm productivity can make even subsistence farming difficult.

Together with constraints such as diseases, insect and weed pests, and rising pressures on water consumption, the potential for families to lose their farms and only livelihood can become overwhelming.

For farming families, particularly in marginalised or impoverished areas, any reduction in farm productivity is also a reduction in food, income and opportunity.

These factors have been increasingly recognised with research efforts aiming to engage and empower female farmers. A number of ACIAR projects have specific components and objectives to train women—and sometimes whole families—in new approaches to managing farms. The lessons learned from this are informing training approaches that engage both male and female farmers.

Engaging with women, whole families and disadvantaged groups, such as ethnic minorities, can address productivity losses and help boost production. The benefits of

increased production can spread beyond the farm, reducing poverty in rural areas.

An ACIAR project examining the impacts of off-farm migration found that training women increased yields by 15–20% in rice-based mixed farming systems in the Philippines. In Vietnam, the same project demonstrated that working with

women resulted in a major reduction in farm-input costs, leading to surpluses that were sold by women, creating increased income.

Training and engaging women, and where appropriate whole families, utilises both an additional labour source and new perspectives and skills that can be applied to agricultural production and marketing of increased outputs.

Women are also leading the way in a number of ACIAR projects extending the results of research through building networks that spread knowledge and training, and as extension workers.

In view of the growing need for agricultural expertise and support, ACIAR is working within many of its projects to engage women leading farms and families, to deliver training to lift farm productivity. With this come opportunities for women and their families, to become drivers of productivity and economic growth in the agricultural sector.

For women farmers without access to a source of off-farm income, any reductions in labour inputs and farm productivity can make even subsistence farming difficult.

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Communities make a stand on shared care for the land

Women are the force behind landcare in remote areas of the Philippines in a quest to reduce farm input costs, increase incomes and nourish families

BY JENNI METCALFE AND MARY O'CALLAGHAN

Only about 500 Philippine eagles remain in the wild, and the primary reason is their habitat is being destroyed by deforestation, some of it illegal. Our guide at the Philippine Eagle Center in Davao City in southern Mindanao tells us this

magnificent bird—a symbol of strength and bravery—is being bred in captivity to ensure its longevity.

It makes an apt introduction to the work we have come to see, the ACIAR-supported Philippines–Australia landcare project, in which families, particularly the women, are demonstrating strength by

taking risks and trying new ideas in their search for a better life for themselves and their communities.

Landcare brings together groups of farmers, villagers and extension specialists and provides them with training and tools to help manage their farm, on which they depend, and some of the problems



PHOTO: IAN WILLET

THE TREASURER

Neneng Baijang is the treasurer of one of the newest landcare groups in the village of Malisbong in southern Mindanao. The area is home to about two million Muslims and due to recurring bouts of violence is off-limits to foreigners. Neneng and her husband, the chair of the landcare group, and three farmers have travelled by public bus for more than two hours to meet us in General Santos City.

She describes Malisbong as a long, narrow coastal strip of land that rises steeply to the mountains, beautiful and lush with plenty of water, but where families eke out a hand-to-mouth existence.

The persistence of a pair of energetic landcare facilitators from South Cotabato—Eldon Ruiz and Lorena Loma, both supported by the SEAMEO (Southeast Asian Ministers of Education Organization) Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) and the Landcare Foundation of the Philippines—finally paid off when they succeeded in convincing the Philippines Department of Agriculture to provide seeds for the Muslim community.

Women are often the first to take on landcare and the women in Malisbong are



The Philippines

PARTNER COUNTRY: The Philippines

PROJECT/DESCRIPTION: ASEM 1998/052: Community and industry-led groups working with scientists to adopt simple conservation practices; ASEM/2002/051: Sustaining and growing landcare systems in the Philippines and Australia

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Treasurer, Neneng Baijang



PHOTOS: JENNI METCALFE

Mayor, Irene Hitigano

no different. They have planted vegetables and fruit trees around their homes as a more diverse and nutritious food source for their families and they hope to eventually increase their incomes.

For Neneng, hunger is at the root of the problems in Malisbong. She is passionate about the benefits of landcare and hopes that the Malisbong Landcare group can one day inspire neighbouring communities, both Muslim and Christian: “When there is food and people are earning, there is peace,” she says. “Landcare can sustain peace because productivity brings peace.”

THE MAYOR

In the municipality of Trento in the province of Agusan del Sur, Mayor Irene Hitigano aims to provide the woman in every family in the municipality with a pig to generate additional income. The municipal piggery is one of the projects of which she is most proud.

Irenea believes that landcare can help farmers in her community tackle poverty by reducing farm input costs and diversifying their income source. She visits each village (or *barangay*) with her agricultural officers

threatening the health of their land.

In a region where conflict is not uncommon, their landcare movement is emerging as a community builder, with women emerging as leaders not only within the landcare groups, but also in leadership roles within local government, schools, research institutions and industry.

and a landcare facilitator from the Catholic Relief Services (CRS) to provide farmers with information on landcare, answer their questions and provide technical support such as how to make organic fertiliser. She has appointed a landcare coordinator to help drive the spread of landcare in her municipality.

“I do this because I want to help farmers and I want to lift their incomes. The fertilisers they buy from the stores are so expensive. One hectare of rice can cost 8,000 pesos to fertilise, but with organic fertiliser it will cost only 2,000 pesos,” she explains.

Irenea’s plans for the municipal piggery are to supply one of the biggest supermarkets in Davao City with organic pork within two years. Pigs from the households will be purchased by the municipal government and delivered to market.

Irenea targets women for landcare activities, such as raising pigs and planting vegetables and fruit trees. “The women can help their husbands instead of going from house to house gossiping. If they care for the land, they and their families will have healthy food and healthy bodies,” she says.

THE SCIENTIST

With her qualifications and experience, Dr Delia Catacutan could probably choose to live and work anywhere in the world. Indeed, she’s often flying overseas for summits and meetings that seek out her skills as a social scientist working with poor rural communities in developing countries. Instead, the World Agroforestry Centre research manager chooses to work from her home town of Lantapan in a remote area of



Scientist, Delia Catacutan.

Children teaching parents

The children attending Malamba Elementary School, an hour’s drive from Davao City, are growing up with landcare. Ninety-five per cent of the children are Bagobo indigenous people and many of them swim or raft across the Davao River each day to attend school.

Since November last year, the elementary school and adjacent high school have been working with Catholic Relief Services (CRS) to bring landcare into the schools. CRS has also been promoting landcare to schools in five other Mindanao provinces.

The children at Malamba have planted fruit trees, such as lanzones and rambutan, and a vegetable garden in the school grounds. They have been taught how to make fertiliser from leaves and decaying matter. School principal Melba Robrigardo sees that the benefits of students doing landcare have spin-offs to better farming practices throughout the community. “The children understand the importance of landcare because it affects their lives and their future,” she says. “And they are starting to influence their parents. They are teaching them to stop the ‘slash and burn’ way of farming.”

The produce grown is also generating income for the school, some of which goes to the children’s families and some to improve school facilities. In spite of its proximity to Davao City, the school has no electricity. Three recently donated desktop computers sit on display, still wrapped in plastic. “I let the children touch the keyboards now and again so that they can get the feel of them,” she says.



PHOTOS: JENNI METCALFE

the north-central region of Mindanao.

Dr Catacutan’s work keeps her involved in the local ACIAR–AusAID landcare project, in which she first played a part back in 1996 when landcare started in the Philippines. Often travelling on foot or by donkey to remote villages in her region, she presented slide shows on landcare to engender or maintain the enthusiasm of the local communities.

Supported by an ACIAR John Allwright Fellowship, Dr Catacutan completed her PhD at the University of Queensland in 2005. In her research, she developed criteria for selecting the best sites for promoting landcare in the Philippines. Eager to return home to her three teenage children, she completed her PhD research 12 months early. “I was able to achieve this with the support of World Agroforestry Centre colleagues and landcare project staff, especially during my field work in the Philippines,” she says.

Dr Catacutan’s study did not stop with

her PhD. Awarded a six-week ACIAR John Dillon Fellowship, she bolstered her management and leadership skills and built closer links with Australian research agencies, including CSIRO, the Queensland Department of Primary Industries and Fisheries, and the University of Queensland. She is now looking forward to a postdoctoral position in the US, researching the links between knowledge generation and policy practice.

But Dr Catacutan’s heart remains with the Filipino farmers: “I like to share their experiences to inspire others across the world. And then I enjoy coming home and connecting farmers with the knowledge and resources that can help them. Ultimately, they are my clients.”

THE CHIEF EXECUTIVE

In January 2008, the Landcare Foundation of the Philippines took over responsibility for strategic planning and support processes of ACIAR–AusAID’s landcare project. This



Chief Executive,
Maria Aurora Laotoco.



Farmer, Sergia Subaah.

Melba Robrigardo, principal of Malamba Elementary School, with landcare students.

is a dream come true for Maria Aurora Laotoco, or Au as she prefers to be called, the foundation's executive officer since 2005.

The foundation is a non-government organisation established to support the development of landcare in the Philippines.

Au has long been passionate about the need for a single organisation to bring together landcare projects and other natural resource management activities. Her experience of landcare stretches back to the year 2000 when, as a facilitator, she worked on the first ACIAR-funded landcare project in the Philippines.

"The biggest challenge I face," Au says, "is leading the foundation's members and staff to develop and transform it to an institution that is ready to push and market landcare to a broader level."

Au faces challenges at a personal level too. "There are so many new things that I want to learn or read about, and so many good ideas that come to mind that I want to

put to action. Juggling the responsibilities at home and work is not easy. My work often requires me to travel for two weeks straight or more. This kind of responsibility needs a very understanding family. But I'm happy that my three children can now mainly manage on their own. And landcare is not simply work, but a life commitment to contribute something in the little way I can to rural development."

Au sees an increasing number of women involved in landcare in the rural communities and in the local government municipal agriculture offices.

"The increase is perhaps because the women are as involved as the men in the farm activities. They are as concerned about the sustainability of the household farm production. And they are interested in new ways of increasing the household income. In some cases, it is the women who participate in the landcare meetings. They then share what they've learnt with their husbands so that it can be applied on their farms."

THE FARMER

Sergia Subaah works a farm for a landowner in San Isidro in the north-west of Bohol, an island in the Visayan region of the Philippines. High rainfall on steep slopes was giving the landowner quite a headache.

"Big portions of our soil used to flow down onto the neighbour's rice fields below and cover the plants, killing them," Sergia says.

That all stopped after she convinced the landowner to plough the slopes as contours, rather than vertically, and to replace the corn crop with seven different crops, including a variety of fruit trees.

Erosion is common on Bohol. The World Agroforestry Centre and the Landcare Foundation of the Philippines are supporting facilitators in spreading landcare to more sites on the island. Sergia is an active member of the local landcare women's group, which has started a nursery and is producing flowers for market. The income from the flowers is used to support other activities, such as tree planting and extension training. ■



A Lao farmer chopping stylo for the family's pigs.

PHOTO: BRAD COLLIS

Forage crops ease the burden of finding pig feed

Growing legumes as feed for village pig production is having a big impact on the livelihoods of rural families in Laos

BY ROBIN TAYLOR

Keeping a 'piggy bank' is serious business for farmers in remote mountainous northern regions of Laos. Owning a few pigs that can be sold is a way of building savings for people who do not have access to banks or other methods of accumulating money, as well as being a source of regular income.

In traditional systems, farmers feed scavenging pigs on a diet of starchy foods supplemented with leaves collected from the forests. But gradually, forests are

becoming depleted through overuse, leaving women and children to spend hours each day searching for greenery to feed their pigs.

A typical family from a remote village 60 kilometres from the provincial capital, Luang Prabang, is Sone, her husband Onkeo and their children. They normally raise four or five sows at a time and sell the piglets. Those they cannot sell they fatten in pens until the pigs reach 60 kilograms and can be sold for slaughter. Under the

traditional system, Sone and her children spent several hours each day collecting palatable green plants from the forest while their sows roamed in the village scavenging for food. Sone would cook these leaves with rice, bran, cassava and maize to feed the pigs at night. On this diet, it took pigs in fattening pens 10 months to reach the saleable weight of 60 kg.

However, research by the International Center for Tropical Agriculture (CIAT) to promote high-protein legumes and grasses for cattle, buffalo and goats has had an unexpected spin-off for village pig farmers like Sone.

"Innovative farmers fed these forages not only to cattle and buffalo but also evaluated them as a pig feed," says Dr Werner Stür, leader of an ACIAR project looking at forage legumes for pigs.

The legume that farmers have embraced is stylo 184 (*Stylosanthes guianensis*). Stylo is rich in protein, grows well in poor soil and can be fed directly to pigs without being cooked (unlike forest plants). Most importantly, stylo grows well in the early part of the wet season when rice bran, maize and cassava are in short supply. The positive experience with stylo paved the way for a new project, which is introducing more legumes and helping to spread the practice more widely.

This project, being carried out by the Lao National Agriculture and Forestry Research Institute (NAFRI) and CIAT with support from ACIAR, has taken farmer innovation to heart and is evaluating best-bet legumes for their feeding value for pigs. The team is also working with other non-government organisations (NGOs) and development projects to scale-up use of stylo 184 in smallholder pig production systems.

Eighteen months into the project, researchers studying existing pig systems in northern Laos identified different options available to farmers and the problems they are encountering.

Three main feeding systems were found in use: free scavenging (in very remote areas), semi-confined (where pigs are kept in pens during the planting season) and penned (where they are confined the whole time).

Research fellow on the project, Phonpaseuth Phengsavanh, says the main problems identified are slow growth rate, high mortality from disease and the large amount of time spent collecting and preparing feed.

The researchers are collecting samples of traditional local feeds, such as banana stems, leafy vegetables and native tubers, and sending them to the Queensland Department of Primary Industries and Fisheries (QDPI&F) for nutritional analysis. The QDPI&F is also testing the digestibility of stylo.

“So far, results show that some of the local green feed is quite high in quality but the problem could be that the amount of green feed is insufficient,” Mr Phengsavanh says. While green feed provides much-needed protein for pig growth, feeding too little results in poor growth rates. Stylo 184 provides an alternative.

Sone and Onkeo joined a small group of farmers who started growing stylo 184 as a supplement for their pigs. When pigs were fed a few handfuls of fresh stylo each day they put on weight much faster and could be sold in six rather than 10 months. The other benefits were that scarce forest resources were not being used and it took the women less than half an hour each day to collect the stylo leaves grown nearby, allowing them more time to tend their upland rice fields.

With a readily available source of green feed, the family started to confine their sows

in pens instead of letting them scavenge around the village. They were able to manage more animals and are now raising up to 14 pigs at a time. Pig production is providing more than half the family’s income.

As well as feeding fresh stylo, some farmers are feeding stylo leaf meal or dried leaves and, as part of the project, the NAFRI team is carrying out village learning activities to compare growth rates between pigs fed on fresh stylo 184 and those fed on leaf meal.

The project has successfully involved women, who are usually responsible for rearing pigs, even though it is traditionally men who attend meetings.

“Whenever we talk to village committees, we say we want women to come to the meetings because they are the ones who are looking after pig production,” Mr Phengsavanh says. “In almost all households it is the women who often spend up to two hours collecting green feed each day. With stylo, women no longer need to collect native greenery and spend only 15 to 30 minutes a day cutting stylo and chopping it ready for pigs to eat. This labour-saving has been a major reason for adoption of stylo 184.”

Last year, the project team introduced 17 new legume varieties for farmers to evaluate and are now waiting on the farmer reports of these species.

So far the project is working with about 400 farmers from 30 villages in two provinces but, through collaboration with

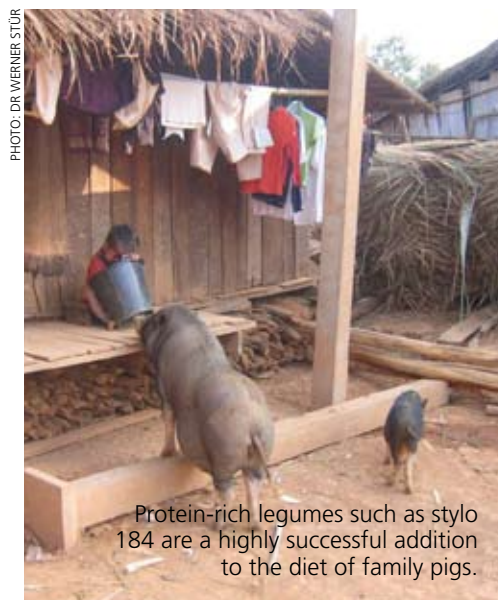


PHOTO: DR. WERNER STÜR



PARTNER COUNTRY: Laos

PROJECT/DESCRIPTION: AH/2004/046:
Forage legumes for supplementing village pigs in Laos

CONTACT: Dr Werner Stür, w.stur@cgiar.org

NGOs and development projects, the work on forage legumes is reaching about 1200 farmers.

As well as exploring different feed options, the researchers are studying the growth potential of local pigs by feeding them on a commercial diet at the research station. This trial shows that the local breed performs well when they are well fed. Pigs on the commercial diet gained an average of 500 to 600 grams a day compared with the average village production of 100 g a day. Fed stylo 184, pigs gain 200 to 250 g daily for virtually no extra cost. ■



PHOTO: BRAD COLLIS

Technology marriage joins PNG farmers to a dedicated market

ACIAR and a Tasmanian pesticide manufacturer are working in partnership with the PNG province of Enga to improve village production of pyrethrum in a project that is directly linking extension work with commercial outcomes

BY GIO BRAIDOTTI

A Tasmanian pesticide manufacturer has come to the aid of women in the Papua New Guinea (PNG) highlands, offering itself as a buyer to encourage production of one of the few cash crops available to the women, the daisy flower from which pyrethrum is extracted.

Botanical Resources Australia (BRA) was approached in 2006 by Wakasa Mecksaene of the Enga Provincial Government and John Kendiga of the PNG National Government, with an unusual commercial proposal: help PNG's highlands increase production and quality of their pyrethrum crop ... and then buy the pyrethrum.

Pyrethrum is used as a pesticide in insect sprays, in pet shampoo and home gardening products, and Tasmanian-based BRA is a major world producer. While the plant grows well in the cool Tasmanian climate, it is also cultivated as a cash crop in the PNG highlands, mainly by women who use the money to buy essential items like cooking oil, salt, clothing or to contribute to their children's school fees.

It is one of the few cash-crop options they have so, when pyrethrum production started to decline, the Enga Provincial Government approached BRA for help. The result is a three-year deal in which BRA has agreed to buy PNG's pyrethrum product, but this means greater productivity needs to be achieved.

Despite conducting research in Tasmania, BRA had little experience with research for development, or in PNG—areas where ACIAR could provide expertise. BRA

approached the aid agency to discuss a partnership and seeing merit in the proposal, ACIAR agreed to provide support, starting by funding the company's first preliminary visit to PNG in 2006. ACIAR's involvement means the research results will be spread to pyrethrum-growing areas throughout PNG, and not tie growing and purchasing exclusively to BRA.

"The ACIAR project kicked off in 2007," said Mr Brian Chung, Manager of Product Development at BRA. "To date Bill Casey and Maurice Kerr from BRA have helped improve the Enga processing factory and refurbished its lab. Both are now up and running.

"There are also two agricultural research partners involved—Dr Phil Brown of Australia's University of Tasmania and Dr

Sergie Bang and his staff of PNG's National Agricultural Research Institute (NARI)—so there are efforts under way to improve seed production, seed lines and growing and harvesting methods."

The company, for instance, has already hosted a visit to the BRA Tasmanian factory by a team of five key PNG officers and is keenly looking forward to co-supervising Kud Sitango, a NARI research officer awarded ACIAR's John Allwright Fellowship to undertake a Masters degree at the University of Tasmania. Mr Chung thinks opportunities may also arise to bring other key young PNG officers, such as Janet Yando, to Australia to undertake studies in extension or business development.

While the company's involvement in

A year into the project, Janet Yando tells of her experiences

GETTING STARTED

Since the industry was revived in early 2006, the Enga Provincial Government formed an executive team to work on the project.

I was working as a volunteer with the National Volunteer Service of Papua New Guinea when the opportunity came along, so I asked the management (of Enga Pyrethrum Company Ltd) to consider me for the project. I was given the position as an Extension and Promotion Officer based at Taluma High Altitude Resource Centre.

I mostly work with local farmers, particularly pyrethrum growers in several communities. Activities carried out are basically general

awareness to encourage farmers, mostly women and youth groups, to increase production. I also conduct informal trainings at their farm sites to show them better ways of planting the crop, better management practices, the right time to pick, and so on.

However, 45% of my time every week is spent at the resource centre working on clonal selection plots, poly-cross nurseries, density trial plots and other tasks. This is a collaborative work with the NARI agronomist to improve planting materials for farmers.

Information on results obtained from research trials with NARI agronomists are passed on to the farmers during field visits.



Seedling distribution to pyrethrum growing families in Papua New Guinea.

PHOTO: WAKASA MECKSAENE

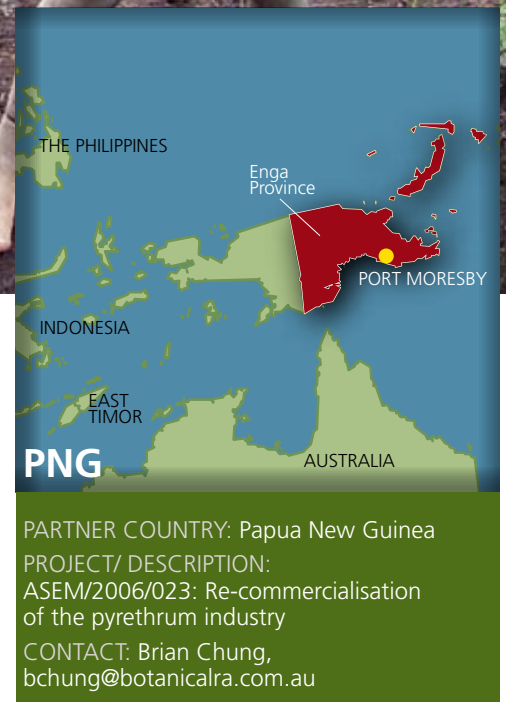
a development aid project was initially unexpected, the company has since found its stride: “It is now obvious we have the skills and technology to make substantial improvements so we are in it for the long run,” he says.

To justify the company’s ongoing involvement after 2010, Mr Chung stresses the need to achieve rapid improvements in pyrethrum volume and quality. The relationship has also developed to the point that there is potential to extend the work to

other crops, such as fresh market vegetables.

Janet Yando, an ACIAR-funded extension officer from the Enga Provincial Administration, is the key link between the partners and is helping to transfer expertise to PNG’s pyrethrum-cultivating women.

Ms Yando administers one of the project’s more crucial and challenging cornerstones—to act as a bridge between the remote highland women and the outside efforts to improve production. ■



PARTNER COUNTRY: Papua New Guinea

PROJECT/ DESCRIPTION: ASEM/2006/023: Re-commercialisation of the pyrethrum industry

CONTACT: Brian Chung, bchung@botanicalra.com.au

USING A PARTICIPATORY APPROACH

The working atmosphere in those local areas where I am working with farmers is all right without any big issues. But it is not easy. Different people have different ways of taking messages and understanding, which means some people respond positively while others do not. These experiences are challenges and I appreciate that I have made it through the first year.

Here it is worth mentioning another project—the collaborative work with NARI in PNG, to improve and develop technologies more advanced and appropriate to practical adoption by growers. I was involved with designing research trials, data collection and analysis. That was very good

experience for me because I can now design my own trials from what I have learnt.

On the reporting part, I have not learned much because there has been little feedback. Taluma is very remote with no power supply or equipment (such as computers) to report quickly. Once every two weeks, I come to Taluma to report.

IMPROVING AGRICULTURE PRACTICES

Women’s participation and involvement in agricultural practices play a major role in improving family welfare and easing other socioeconomic issues. Women are honest and trustful in their activities. They produce enough for their family units to reduce malnutrition and other social problems.

In Papua New Guinea, human instinct has allowed men and women to identify roles that each individual can play in a society. In our Melanesian culture, different groups have identified roles. Because of this, individuals feel that their roles are identified and they should not do something that somebody else has to do. For example, women are not given a chance in public decision-making.

Roles that people have are passed down from ancestors so we do not have the flexibility to make (new) rules.

Because we are still trying to resolve our roles, objectives and priorities, agriculture has moved at a slow pace. Customs, cultures and norms often clash with imported values.

'Agents of change'

help secure
monsoon farmers





Villagers construct a seepage pit to capture shallow groundwater for crop irrigation.

PHOTOS: PETER CORNISH



India

PARTNER COUNTRY: India

PROJECT/DESCRIPTION: LWR/2002/100: Water harvesting and better cropping systems for the benefit of small farmers in watersheds of the East India Plateau

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Farming communities in India are learning to manage water so that it is available for agriculture beyond the monsoon season

BY MELISSA MARINO

If Indian farms are small by Australian standards, then those in some of its most impoverished states, Jharkhand and West Bengal on the East India Plateau, are absolutely tiny—even by Indian standards. Mostly less than one hectare, these diminutive farms struggle to produce enough food to feed one family. Traditional subsistence farming, that relies on low inputs and monsoonal rains, deliver only one crop each year, despite enough water for additional crops to be grown. The key is capturing this water and better utilising it.

Not only does a single crop deny the farmers an income stream from the possible sale of additional crops, it also leaves them vulnerable to drought or other elements. If their crops don't grow, they don't eat.

But that is starting to change through

a project addressing better water resource management and cropping practices as a way to improve livelihoods, and is based on participatory processes that emphasise the role of women in facilitating change.

The first partnership of significant scale between ACIAR and a non-government organisation (NGO) in India, the project combines the resources and expertise of Australian partners led by Professor Peter Cornish from the University of Western Sydney with the hands-on know-how of Indian rural development group PRADAN and the Indian Council for Agricultural Research.

When the idea for the project was first raised some years ago, ACIAR decided to try a relatively new approach to the challenge of achieving uptake and adoption from research projects.

PRADAN, with its long history of working for community development in the region and experience in meeting farmer's needs across six Indian states, provided the answer to boosting uptake while doing good research—engage the community and, in particular, the women at all stages of the project.

PRADAN always mobilises women in the community first, to ensure their work is effective. When project executive Kuntalika Kumbhakar first enters a community, she establishes self-help groups for women, creating a platform for action by teaching them to manage finance or the goals of a particular project.

"I anchor the program for women's self-help groups (SHGs), monitoring and supervising the program, developing training modules and implementing them," she says.

Ms Kumbhakar says PRADAN has played a major role in ensuring local participation in the project. "We are mobilising and organising the community and getting the works executed in the field," she says. "The organisation has a knack for being creative



Local farmers are equal partners in research, taking part in on-farm experiments.

and open to new ideas, and working with a sizeable number of families, the information spreads.”

The ACIAR project began with villagers choosing a mixed-gender group to work with the research team, but the women soon dropped out. Ms Kumbhakar’s expertise was enlisted by Professor Cornish when he subsequently found the men also losing interest in the project in Amagara, a village of more than 200 people in a catchment of less than 100 hectares.

“We’d negotiate all this work, we’d start it and then the farmers would be reluctant to come and weed the plots,” he says. “And then Kuntalika said ‘how about you bring in the women’s groups’, and then the women chose the farmers and the fields and they organised the labour. It seems that women are much better at organising themselves than the men, and at the moment it seems to be working quite well.”

ACIAR South Asia regional manager, Dr Kuhu Chatterjee, says one reason women are the agents of change in such communities is because of the nature of subsistence farming that requires men to migrate for work seasonally, leaving women as the ongoing presence in the village.

They also seem keener on change than the men. “Women are really driving the changes all throughout the area,” she says.

By embracing PRADAN’S customary approach to target women first, the project, which is halfway through its four-year duration, has now successfully engaged the community at large, and is already producing positive results from its participatory approach.

Professor Cornish says the truly participatory nature of the project, which has involved farmers in devising the trial priorities as well as conducting and evaluating the research itself, has meant they are learning how to learn.

“The farmers do almost all of the fieldwork and they participate in the data collection and interpretation of the data,” he says. “They are involved from beginning to end.”

Ms Kumbhakar says PRADAN was keen to develop some ‘rules of thumb’ for water harvesting and improved cropping practices based on demonstrated principles that could be followed easily and replicated in the field. Its large and established networks



Women and farmers from Pogro village, collaborators on the ACIAR project, in a teambuilding workshop.

are expected to provide an effective means to disseminate the new techniques and promote the adoption of new technology.

In a region where 60% of the annual 1,200 millimetres of rainfall is lost to run-off, the project, now running in three East India Plateau villages, hinges, perhaps unsurprisingly, around water.

By finding ways to store and access run-off or shallow groundwater from the monsoon, which accounts for 80% of the year’s rain, farmers can free themselves from reliance on one annual rice crop. This unlocks not only a more secure food source, but also provides a potential income from their enterprise.

PRADAN had already developed water-harvesting techniques to both capture run-off and tap into shallow subterranean flows.

“PRADAN has trialled this on a small scale and they wanted us to evaluate them more scientifically and to provide principles for applying them elsewhere,” Professor Cornish says. “And what we’re evaluating is if their techniques can be improved.”

Water-harvesting measures that retain more of the rainfall in situ have been implemented to convert degraded uplands into productive fruit-growing areas or plantations. This will also reduce pressure to crop those uplands and may reduce flood peaks in the future.

Water harvesting in the uplands is expected to have the added benefit of increasing infiltration of rainfall to the shallow groundwater, which can be accessed after the monsoon using ‘seepage tanks’ in lower lying areas. Crops following rice can be irrigated from the tanks, which are recharged naturally within days.

One of the big discoveries for everyone has been the value of the residual water that remains in the soil at the end of the monsoon. “I think everyone is surprised at the potential to grow a second crop after the monsoon even without irrigation in some areas,” Professor Cornish says. “We’re extending the duration and the variety of cropping.”

But with increased opportunities comes

the need for increased knowledge of agronomy.

“Growing two crops a year for most of these farmers is brand new so before they can use their water resources better, whether it’s water captured in a pond or in a seepage tank or extracted from the soil after the monsoon, they have to improve their agronomic skills,” he says.

And so the project has now expanded to develop locally relevant information on basic agronomy including appropriate fertiliser use, weed management and line planting, working closely with PRADAN and the farmers to identify the research questions and carry out the work.

Traditionally, for example, farmers in the region would broadcast seed, which makes weeds difficult to control in non-flooded crops.

Part of the program therefore is providing opportunities for farmers to experience the benefits of planting crops in rows, to achieve improved weed control and more efficient fertiliser use. “This might seem like common knowledge,” Professor Cornish says. “But it’s brand new for them.”

Ms Kumbhakar says the communities hoped to increase their cropping options and understanding of agronomic practices, and are taking up new approaches keenly. “To date the work on cropping options and improved agronomy has been an eye-opener for us,” she says. “We have come to know and understand the different use of fertilisers with a variety of crops and its interdependence with controlled irrigation.”

The impact of phosphorus-based fertilisers has impressed both the scientists and the farmers in the region.

Phosphorus is naturally low in the region’s soil that has been cropped for a significant amount of time with little or no fertiliser or manure. The response when fertiliser was applied, says Professor Cornish, left everyone stunned.

“We’ve even shown significant responses to phosphorus fertiliser in paddy rice, which is a relatively new and unexpected finding for rice,” he says. “The preliminary estimate is that it increases yield by 30%.”

The new techniques are opening farmers’ minds to new possibilities, allowing them to grow completely new crops and old crops in new ways. Hopefully this will nearly

double both the cropping intensity and the amount farmers can expect to produce in each crop.

Just one example of change in the farming system comes with new, short-season varieties of rice—a crop that helps manage risk in dry years and, with its early maturity, also increases the chance of planting a second crop using the residual soil water and some irrigation if required.

Those second crops, depending on the amount of residual water in the soil, could be rainfed or irrigated mustard, or irrigated wheat—both of which are being trialled in the region.

“Neither mustard nor wheat are new crops to anyone, but it’s the short-duration rice and mustard and the sparing irrigation of mustard and wheat that are new,” Professor Cornish says. “So there are different ways of growing the same crop.”

And there are other benefits of the new approach to farming. By extending the

cropping season in the region and increasing the diversity of crops, social cohesion will be improved by ensuring that men no longer have to leave the village in the dry season to find poorly paid work elsewhere.

Diets and the health of people in the region are also expected to improve through the addition of vegetables, fruit and pulses.

Environmental benefits including the revegetation of degraded uplands, less soil erosion and possibly reduced flood peaks are also expected. Improved water management and agronomy enable greater agricultural production by increasing plant water use, which, in turn, may reduce the amount of run-off.

The farmers in the region, like those everywhere, have a great appreciation for the value of water. “These farmers have expressions like ‘water is everything’, and they’re right,” Professor Cornish says. “This project will provide them with effective systems to reap its full potential.” ■

“I think everyone is surprised at the potential to grow a second crop after the monsoon even without irrigation in some areas. We’re extending the duration and the variety of cropping.”

— PROFESSOR PETER CORNISH



The trend is towards engaging both men and women in the planning of research experiments.

The power of knowledge lifts women farmers to centre stage

Seasonal migration off-farm by men is leaving women in charge of farms, which is challenging providers of agricultural development aid

BY GIO BRAIDOTTI

When husbands and sons from smallholder rice farms in Asia are driven by poverty to migrate in search of work, the task of producing food as well as caring for the family acquires challenging new dynamics. Asian social scientists believe off-farm migration is quietly reweaving the social fabric of rural communities. For women in particular, male migration has meant more fluid gender roles as wives take over managing the farm and supplying the family with leadership, experience and labour.

Concerned that donors and governments need to understand and match these social upheavals and innovations, ACIAR has funded collaborative research efforts to understand the impacts. The goal is to make adjustments that ensure appropriate resources, agronomic information, and support reach the women heads of households. ACIAR has also brought Australian R&D resources into this project through the participation of Dr Fay Rola-Rubzen at the Curtin University of Technology in Western Australia.

Heading the project is Dr Thelma Paris, senior scientist (socioeconomist and gender specialist) at the International Rice Research Institute (IRRI) in the Philippines. Prior to the project she collaborated with Ms Truong Thi Ngoc Chi at Vietnam's Cu Ulong Delta Rice Research Institute to compile a series of case studies. These explored the experiences of rice-producing Vietnamese women in the face of male migration. The results provided the impetus for a broader, expanded program throughout the Lower Mekong Basin and the Philippines that saw the additional involvement of Dr Chai Wongsanum, a Thai extension specialist who is introducing farmers to liquid bio-fertiliser, and Ms Joyce Luis from the Philippines who trained

women on improved seed health.

"During these interviews, we encountered women who cried due to their problems," Ms Chi says. "They are facing increased workloads, loneliness, emotional insecurity, worries and the pressure of managing their farms in addition to caring for their families. They felt alone and without support."

The stresses faced by women ranged across agronomic, social and family issues. The research identified a lack of access to new rice varieties, difficulties in disciplining children, fears about thieves, drunks, and "bad men" who might exploit a husband's absence. The safety of the absent family member was another source of worry, especially given migration to urban environments with their ready presence of alcohol, other women and diseases. "The wives can come to feel lonely, abandoned, and depressed due to the physical separation," Ms Chi says. "It clearly impacts on their health."

Surveying in 1999 helped disclose the extent of families affected by male migration from rural communities, which is estimated at about 70% in Thailand, 57% in the Philippines and 49% in Vietnam. Wherever it occurs, females assume the role of head of the household and farm. Entrenched gender roles, however, can mean that the women were not previously trained in modern farming practices.

"Despite the long-standing involvement of poor Asian women in rice production, they are not considered 'farmers' in their own right, leading to gender inequity in access to resources and opportunities," Dr Paris says. "Most often, plant breeders and other scientists talk to men only, neglecting women's indigenous knowledge and their potential roles as agents of change."

That the women have genuine farming experience and reserves of know-how is made abundantly clear by an extraordinary finding: farm production by female-headed



PHOTO: BRAD COLLIS

Dr Thelma Paris, a social scientist with the International Rice Research Institute (IRRI).

PARTNER COUNTRIES: the Philippines, Thailand, Vietnam

PROJECT/DESCRIPTION: PLIA/2000/039: Impact of migration and off-farm employment on roles of women and appropriate technologies

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households affected by migration does not differ greatly from households unaffected by migration.

"The women obtain information from their relatives, friends and neighbours because they are rarely given training on agriculture and they are rarely included in extension programs," Dr Paris says. "One of the reasons for their non-participation is due to scheduling clashes between extension activities and the need to take care of households, children and farm jobs."

The ACIAR project has set about addressing the gender bias, providing training programs that endeavour to reach all farmers, irrespective of sex. The scheduling of these activities is adjusted to take into consideration constraints on women's time.

Dr Paris recounts efforts on three agricultural fronts. There are new technologies targeting emerging problems such as drought, salinity and submergence. Efforts are also in place to ensure that

extension programs about increasing rice productivity reach women, including widows as well as those acting as heads of households. Then there is the provision of skill regarding pest management—reducing use of seeds, reducing fertiliser and reducing pesticides in Vietnam.

“In the ACIAR project, women engaged in managing farms were organised into groups and given new knowledge and skills on farm management,” Dr Paris says. “Awareness on the important roles of women in agriculture increased due to this training and women developed self esteem. As a group they were empowered to make sound and timely decisions in rice farming.”

Both Ms Chi and Dr Paris say that the farmers reached by the project have responded well to the challenge and are adopting the new seeds and the agronomic techniques provided by the ACIAR-funded training schemes.

“Now they are more outspoken in expressing their needs, such as seeking help from the government not to limit their loans due to the limited size of their landholdings,” Ms Chi says. “They want more opportunities to attend technical training programs and develop strong interaction with local extension or agricultural staff.”

Importantly, the women also want scientists and extension workers to listen to their ideas and consider their opinions in technology development and dissemination. One such idea is to develop employment opportunities within their village, negating the need for husbands and sons to migrate to wealthier rural or urban areas when seeking additional income.

The researchers experienced a sense of a renewed commitment to their work, demonstrating to the agricultural R&D establishment the power of social science and gender research to drive farming improvements side-by-side with the more traditional technical R&D programs.

Ms Chi adds that she is still perplexed why discrimination against women still exists in Vietnam’s society.

As educated women they understand that knowledge is power—the kind that can make women left behind by male migrants effective farm managers, capable of translating increased productivity to improvements in income and household welfare. ■

Refining communication as a tool for social change

BY ELSKE VAN DE FLIERT*

Agricultural aid can make meaningful improvements at the farm and community level, yet novel ideas that work in scientific trials do not necessarily offer the same potential on-farm. Crucial to success is an effective communication approach that is responsive to the agro-ecological, socioeconomic and cultural factors that can influence the outcome of technology transfer during an agricultural development program.

This issue is being examined in its own right in an ACIAR-supported project that is seeking to maximise outcomes for Vietnam’s ethnic minority communities participating in agricultural programs.

Vietnam has been one of the fastest growing economies in the world, with an average annual GDP growth of about 7.5%, and agricultural development has contributed largely to this growth. For instance, Vietnam is now one of the largest rice exporters in the world, just 20 years after being a net importer.

Vietnam’s Agricultural Science and Technology system—which covers research, extension, education, specialised government agencies, and mass organisations—has significantly aided this growth. It has particularly helped farmers in the lowlands, where the largest potential for growth lies and the greatest impacts have been achieved.

The picture changes in Vietnam’s remote highlands, which are predominantly inhabited by ethnic minorities, 75% of which fall below the international poverty line, compared with 31% of the Kinh majority. The remoteness, ethnocentricity, language and cultural barriers all contribute to a difficulty in communicating in ways that hinder research and extension, as well as making it difficult for these communities to articulate their farming needs and constraints.

To address the communication issues faced by crop protection researchers and extension officers in the Central Highlands, ACIAR supported the University of Queensland (UQ) and the Vietnam Plant Protection Research Institute (PPRI) to conduct a small project in 2007.

An exploratory field study in seven ethnic minority communities in Dak Lak and Gia Lai provinces revealed that little more than a third of the respondents felt comfortable communicating in Vietnamese, despite the large majority having attained several years of formal education. Interestingly, commune leaders tended to assess their members as being more proficient in Vietnamese than the members did themselves and, as a result, many commune leaders used Vietnamese when communicating to them, but they too are often

dealing with a mix of ethnic groups.

Community members, however, complained that language is one of the constraints in dealing with the government, in addition to long distances and difficulties in gaining access to government officials.

Farmers expressed a strong need for information, particularly about fertilising and pest management practices. Most farmers reported that they have never or seldom met an extension officer. Their main sources of information are fellow farmers and agricultural input retailers. They also expressed a concern about their limited access to market information, as a result of which they often under-price their produce.

In an initial attempt to build communication bridges between R&D practitioners and ethnic minority communities, 25 staff from several research institutes, a university and the provincial extension service in Dak Lak and Gia Lai provinces joined a training workshop.

The workshop aimed to improve the skills of the participants to effectively target their research and extension efforts towards these communities. This was done by raising awareness about contextual aspects of rural highland conditions and ethnic minority culture, and building skills in ‘participatory communication’. Participants also explored how they could incorporate these new skills and knowledge in their current work and follow-up activities.

Overall, the project has highlighted that setting research agendas, as well as testing or adapting innovations and evaluating impacts should be done with the specific communities, using their criteria for improvement, in order to bring about meaningful change.

A subsequent project is being developed in the north-west highlands of Vietnam that will assist to identify the needs, opportunities and challenges for agricultural research and development in this region. The proposed study will investigate the constraints and potentials for improvement of the agricultural sector, including enterprise diversity, crop and livestock production systems, and marketing mechanisms. This will provide input for agricultural research activities such as the ethnic minority women farmers and native vegetables project.

* *Elske van de Fliert is Associate Professor at the University of Queensland’s Centre for Communication and Social Change, School of Journalism and Communication.*

MORE INFORMATION: www.un.org.vn/undocs/mdg02/mdg02.pdf and www.adb.org/Documents/Reports/Indigenous_Peoples/VIE/default.asp

Indigenous plants could herald new economy

Vietnam's native vegetables offer an empowering pathway to market for ethnic minority women farmers

BY GIO BRAIDOTTI

The knowledge of indigenous plants among women farmers in Vietnam's ethnic highland populations may become the basis for a new agricultural economy able to improve the livelihoods of remote communities and the health of consumers.

The plants and the women who know how to cultivate them are the focus of a project initiated by the Vietnam Women's Union (VWU) to scale-up production and expand market demand for indigenous vegetables. The project is being undertaken in partnership with the NSW Department of Primary Industries (DPI) with the support of ACIAR.

The background to the partnership lies with concerns for the welfare of Vietnam's linguistically diverse ethnic minority groups, who make up one of the richest ethnic mixes in South-East Asia. An estimated 53 ethnic minorities, totalling 10 million people, account for 14% of Vietnam's population. Most are indigenous people living in rural communities that remain socially and linguistically apart from the urbanised lowlands favoured by the Kinh majority. Some are more recent migrants from neighbouring countries.

Also scattered throughout the hills and mountains are indigenous plants with a long tradition of cultivation for local use as vegetables, fruit, spices and medicines. They are cultivated primarily for home consumption but a trickle of produce finds its way to small, local markets. Many of these plants are rich in the micronutrients and vitamins known to help overcome malnutrition.

Key to their cultivation by ethnic minorities are women farmers, whose agricultural endeavours—despite not reaching large markets—contribute a formidable work force. Nationally, women in rural areas account for more than 80% of all female workers.

The link between the indigenous plants and the wellbeing of women agriculturalists, their families and communities recently inspired a scoping study to examine the possibility of undertaking a remarkable project. The idea is to empower the ethnic minority women to brand, market and manage the supply chain for selected indigenous produce ... and then, with the help of agronomists, scale-up their own production to meet the expanded demand.

However, the challenges facing such a project are formidable. Remoteness, linguistic barriers, a lack of agronomic information, local poverty, and cultural isolation could each, alone, have sunk a foreign aid project. However, the idea originates with the VWU, a network of 13 million women with a strong track record of enabling gender equality and supporting women's interests across Vietnam's central, provincial, district and commune levels.

Rather than pursuing the project alone, the VWU—through its vice-president, Ms Truong My Hoa, and project coordinator, Ms Tran Thi Hoa—approached ACIAR's Vietnam office in Hanoi. They also gained support at a very high level—Madame Truong My Hoa, the then Vice-President of Vietnam visited the chief executive officer of ACIAR in Australia to discuss the project. It was also supported by Madame Ha Thi

Khiet, the then president of the VWU.

In the process of obtaining ACIAR's support, they brought on board the agronomic expertise of the NSW DPI, with Ms Virginia Brunton heading the Australian and Vietnamese partners.

"We highly appreciate ACIAR's partnership model," says project coordinator Ms Tran Thi Hoa. "They are so cooperative, participatory and consultative. We feel happy to work in this way to assist women farmers, most of whom are our members."

For the project, the DPI adapted and applied participatory techniques that proved key to both the completed one-year



Vietnamese women are now profiting from growing indigenous vegetables.



Women are leading the cultivation of indigenous vegetables.

scoping study and the larger, follow-up project that began in 2008.

“A process known as participatory action research (PAR) is being adapted for this project,” Ms Brunton says. “PAR is an approach that involves active farmer participation in all stages of the research and skill development.”

Together, the partners set out in 2007 to visit the farmers and prepare the way for the project. Travelling to the remote mountain villages, the international team found that in addition to helping women improve farming techniques, opportunities definitely exist for the farmers to expand the market



This Central Highland Ede community is located in one of the plains, not too far from the city, a location where there is high competition for land after the Kinh and Thai moved in from the north.

PHOTO: ELSKE VAN DE FLIERT



Vietnam

PARTNER COUNTRY: Vietnam

PROJECT/DESCRIPTION: CP/2006/113: Scoping study to investigate the role of women in the production and promotion of indigenous vegetables

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for their vegetables. On the agronomic front, the indigenous vegetables proved hardy, well adapted to local agro-ecological growing conditions, and are generally easy to grow, harvest and preserve.

With the findings assimilated, the partners are launching into the larger, ongoing project. Activities will take place initially in the north-west of Vietnam, beginning in Phu Tho province. In later stages, it will move to Lao Cai and Yen Bai provinces. These regions contain some of Vietnam’s poorest people, many belonging to ethnic minorities who have, in the past, experienced barriers to participating in agricultural programs.

“Each project area will focus on one or two vegetables and build a reputation for those particular crops,” Ms Brunton says. “In the long-term, the group of women farmers might consider branding their varieties to enhance market appeal.”

Through all these stages, Ms Brunton stresses that the VWU’s support is essential to the project’s success. In particular, its strong communication and support networks are proving invaluable, as is its ability to rally women farmers’ enthusiasm to participate in the project.

In the meantime, the VWU remains strongly committed and supportive of the ongoing efforts: “I am so impressed by this project because of the project ideas, its activities, approaches and the cooperation among related stakeholders,” Ms Hoa says.

“At all points in the supply chain, the skills of women will be developed. Women will be provided with opportunities to engage in business development, market research and supply chain management. By providing more efficient crops and farming practices, the lives of farmers will be improved through enhanced income and less time consumed in generating that income.” ■

Ibu Supriyani: organic farming pioneer in Aceh

ACIAR is continuing its long-term work in rebuilding agricultural capacity in tsunami-affected areas of Aceh. Here, project leader Gavin Tinning writes about one of the key people linking the project work to farmers



BY GAVIN TINNING*

Ibu Supriyani made an immediate impression on me when we met in April 2007. My Indonesian is average and her English minimal but with the aid of her catalogue of training and field photos she described her work with groups of rural women around the tsunami-affected town of Meulaboh on Aceh's west coast.

Supriyani is a local extension worker with PPL (Penyuluh Petani Lapang), the local-level agricultural extension agency in Aceh. She prefers to work with women because they do much of the work on the family farm. They also respond well to new ideas, so are a useful conduit for demonstrating new farming techniques and crops to their husbands and brothers who manage the family's land. Supriyani has formed and supported four women's groups since 2006. She also supervises demonstration trials for the agricultural agency, but her passion lies in her work with the women.

Composting, small-scale poultry production and natural pest management are some of the techniques that Supriyani has introduced to the women who are eager to learn and create sources of income. Composting is particularly important as soil organic matter was stripped away by the 2004 tsunami and manure is still scarce.

Small amounts of initial funding from NGOs like TearFund have helped the groups establish their demonstration plots. ACIAR is supporting these groups so they can maintain their activities and demonstrate the benefits to other women in the district. Most of the groups are from areas severely affected by the tsunami. While the landscape still shows the scars of the destruction, and recovery is slow, the women are resilient and keen to move on.

Without the assistance of extension staff like Supriyani, the women's crops often fail or do not produce sufficient income to encourage them to continue. Supporting her work and the work of similar extension staff across Aceh is one of the most important aspects of the ACIAR-funded project led by NSW Department of Primary Industries (DPI) to restore agriculture in tsunami-affected areas of Aceh.

As a member of the ACIAR project, Supriyani has been able to further her training at project forums and participate in project activities. More importantly, she

receives support to allow her to form groups, visit them regularly, and record her training and extension activities as the groups develop.

She is just one of the dynamic members of a project that brings together staff from the Assessment Institute for Agricultural Technology (BPTP) in Banda Aceh, BPTP Medan, the Indonesian Soils Research Institute, and the Indonesian Centre for Rice Research. Working with committed and enthusiastic partners like Supriyani is one of the reasons that this ACIAR project in Aceh is so enjoyable and successful.

Communication of project activities and outcomes is a high priority in the project, given the problems facing farmers and government staff in a province where agricultural extension has been limited due to the long-running civil war, and communication networks were all but destroyed following the tsunami. Communication of new information is traditionally managed through formal presentations at meetings, with the information then 'trickled down' through extension and farmer networks. But with

Blooming Flowers

One of the four groups that Supriyani has formed is called Bungong Barona, or 'Blooming Flowers', an appropriate name for the women who are restoring food crops and colour to a devastated landscape.

Twenty-five women have formed a cooperative to farm small plots of land near the coast as a means of generating income for themselves and their families. The plot I visited was planted out to red chilli bushes, which appeared in robust health.

Supriyani has encouraged the group to manage the crop using organic fertilisers and pesticides. While this requires extra labour to collect material for composting and to brew the compost teas and pesticides, it has reduced the group's fertiliser and pesticide costs. Chilli is a profitable crop if managed well. Corn is another successful crop the women

have grown since forming in 2006.

Bungong Barona has a simple profit-sharing arrangement that enables members of the group to be independent. A third of the profit is kept in the group account, a third is used to fund the next crop, and the remaining third is shared equally between members.

Most of the women work in rubber plantations or have small-scale poultry production at home. They meet in the afternoon after work, tend their crops and learn from Supriyani.

One of the group's immediate goals is to purchase more poultry to enable them to produce more compost. The destruction of poultry and livestock by the 2004 tsunami means that manure is still scarce around Meulaboh. – GAVIN TINNING



Ibu Supriyani



Indonesia

PARTNER COUNTRY: Indonesia

PROJECT/ DESCRIPTION: SMCN/2005/1 18: Restoration of annual cropping in tsunami-affected areas of Nanggroe Aceh Darussalam Province, Indonesia

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these networks disrupted, involving extension staff like Supriyani in the ACIAR project is one of the keys to helping farmers restore their tsunami-affected soils and deal with associated crop problems.

Supriyani's skills in working with groups were very evident when the ACIAR project held meetings for local farmers and extension staff in Meulaboh in April 2007. Our project was seeking feedback from farmers about a booklet on soil biology and other activities that we were conducting. Supriyani was able to engage her group and encourage them to give their ideas, helping us to improve our work and benefit farmers and extension staff across Aceh.

Supriyani was also one of the presenters at a communication forum in Saree, near Banda Aceh. She used poster presentations to talk about her work with groups of women around Meulaboh, and accompanied our group to visits at sites where she has worked. Unfortunately her collection of photos cannot be reproduced in sufficient quality for printing so I am hoping that she can make use of a digital camera provided by the NSW DPI and capture more of the interesting work carried out by her and the groups she works with. ■

*Gavin Tinning, from the NSW Department of Primary Industries, is the project manager for the ACIAR cropping project in tsunami-affected Aceh.

ACIAR and ATSE Crawford Fund support training for aquaculture rehabilitation in Aceh

BY MIKE RIMMER AND JANE OAKEY*

Although it is now more than three years since the tsunami of Boxing Day 2004 devastated the Indonesian province of Nanggroe Aceh Darussalam ('Aceh'), rebuilding of infrastructure and livelihoods is still ongoing. One of the major sectors affected by the tsunami was aquaculture.

The Food and Agriculture Organization estimates that about 20,000 hectares of coastal aquaculture ponds, known locally as *tambak*, were damaged or destroyed by the tsunami. Many thousands of coastal *tambak* farmers lost their livelihoods when their ponds were destroyed.

The Brackishwater Aquaculture Development Centre (BADC) at Ujung Batee, about 20 kilometres from the capital of Banda Aceh, was badly damaged in the 2004 tsunami. The Australian Government is rebuilding the facility as part of the Australia-Indonesia Partnership, and has funded a program to build the capacity of staff who work

there. The capacity-building project is being delivered by ACIAR and will support not only the reconstruction of coastal aquaculture in Aceh, but the longer-term development of sustainable aquaculture. ACIAR is also supporting further training in aquaculture in Aceh from its own resources.

As part of the capacity-building project, BADC Ujung Batee staff are being trained in laboratory practices, including polymerase chain reaction (PCR) techniques to test for shrimp and fish viral diseases. A joint ACIAR-ATSE Crawford Fund training activity has assisted in the development of improved disease monitoring and diagnostic practices for aquaculture in Aceh.

Two BADC staff, Mrs Endah Soetanti and Mr Islahuttaman, undertook training in PCR in Australia, at the Tropical and Aquatic Animal Health Laboratories in Townsville, Queensland. The training was hosted by Biosecurity Queensland, part of the Queensland Department of Primary Industries and Fisheries which operates the Townsville facility. ProAqua, a Brisbane-based company, donated the molecular test kits used for the training. Dr Jane Oakey, senior molecular biologist at Biosecurity Queensland, was the main trainer in Townsville.

"We have learnt so much from Jane," Endah says. "She has been patient, talked very slowly to us to make sure we understand, and she is very dedicated to her profession. We have learnt useful techniques that we can apply in our new laboratory, from diagnostics to quality control."

The trainees are implementing their new skills by checking the disease of shrimp postlarvae before they are stocked in ponds. ACIAR research has demonstrated that, by ensuring stocked shrimp do not carry specific viral pathogens, farm production and profitability improves.

Skills and knowledge are not the only attributes to return to Aceh. The molecular biology facilities in the new laboratory being constructed at BADC Ujung Batee have been modelled on those in Townsville. As a follow-up training exercise, Dr Oakey will visit Aceh later in 2008 to provide additional training and to assist in implementing best laboratory practices in the newly constructed laboratory.

* Mike Rimmer is from the School of Marine and Tropical Biology at James Cook University, Queensland; Jane Oakey is a senior molecular biologist at the Tropical and Aquatic Animal Health Laboratory in Townsville, Queensland.

More information: Mike Rimmer, aceh_arp@iprimus.com.au



As part of rebuilding Aceh's aquaculture capacity, Mrs Endah Soetanti and Mr Islahuttaman are trained in laboratory techniques to test for shrimp and fish viral diseases.



Australian Government
Australian Centre for
International Agricultural Research

PAST LESSONS A WELLSPRING OF OPTIMISM

Dr Meryl Williams reflects on her experiences in development aid, casting new light on the influence of gender divisions on project planning

BY GIO BRAIDOTTI

The former director general of the WorldFish Center, Dr Meryl Williams, is sitting onboard a vessel docked in north Queensland as she talks about the ongoing need for agricultural development programs and her own involvement in putting gender issues on the global R&D program.

Now semi-retired, the zoologist and statistician has taken on a number of non-executive roles that call on her long and varied experience in fisheries, aquaculture, agriculture, forestry and gender. These include chair of the ACIAR Commission, a role that sees her advising Australia's Minister for Foreign Affairs and the Parliamentary Secretary for International Development Assistance on agricultural aid to developing countries.

The Commission replaces the ACIAR Board of Management and was established as part of changes to ACIAR's governance arrangements, made in 2007, and takes over from the Board of Management. No changes have been made to the Policy Advisory Council's role. The Commission is responsible for providing advice to the Minister in relation to ACIAR's programs and its membership includes The Hon. Neil Andrew, Mr Barry Buffier, Mr Peter Core, Mr David Crombie, Mr Bruce Davis and Dr John Williams.

Dr Williams is excited by her new role, describing ACIAR as "unique" and much

admired around the world: "From its inception it has been incredibly dedicated, on track and very well placed," she says. "John Crawford, one of the founding fathers of CGIAR, really had a terrific vision in persuading the Australian Government to establish an agency like ACIAR for Australia."

Intermittently, her answers during the interview are interrupted as the vessel's radio broadcasts turbulent news on Queensland's weather front. It is January 2008 and the Queensland coast is being battered by ferocious storms that are approaching her mooring site. However, as a marine scientist, Dr Williams is well accustomed to weathering storms, real and metaphorical.

"It is hard enough farming anywhere in the world at the best of times," she says. "But doing it with the population needs we have, the political problems in various parts of the world, climate change, and the added stress of new demands for biofuels ... well, it is a very challenging era."

She nonetheless exudes a sense of measured optimism and excitement. We are at the point, she says, where lessons learned in the past are about to come together in important ways: "After many decades, development assistance has come a long way. We've learnt by trial and error as well as by following new ideas. There is no simple recipe—and that is probably

Dr Meryl Williams (third from left) pictured with fellow members of the ACIAR Commission and the Parliamentary Secretary for International Development Assistance, the Hon. Bob McMullan (fourth from left). The Commissioners are (from left) Peter Core, Barry Buffier, Dr John Williams, the Hon. Neil Andrew, David Crombie and Bruce Davis.

one of the big lessons. You cannot just go into a community, add the technology, and suddenly be on the path to development."

For researchers, this means being involved at the outset with the goal of gathering insights and a mutual understanding of the context surrounding the intended development. It means appreciating the local culture and its often unique social, economic and environmental circumstances, coupled with what the people want and need, and their assets, strengths and opportunities.

Dr Williams describes ACIAR as being 'pre-adapted' for the modern approach to development aid because it has built everything on a partnership approach and tripartite arrangements. "ACIAR provides funds plus program and development expertise. The overseas partner brings knowledge, priorities, resources and needs, while the Australian research partner provides scientific skills, contacts and desire to work overseas. There is long-term

commitment to the relationship and this makes for a powerful approach.”

Dr Williams makes these observations after a remarkable career that reached the upper echelons of international agricultural R&D. The journey started in Queensland where she did her doctorate on commercial crab species in the 1970s.

“I was part of a wave of people in the late 1960s who started to become more aware of marine science,” Dr Williams says. “It was a growing field at the time, with interest driven by the crown of thorns starfish outbreak and the fight over drilling for oil in the Great Barrier Reef. These issues made people realise they knew little about what happens beyond Australia’s coastline.”

At the same time commercial fisheries were starting to expand, providing an upswing in jobs for the newly-trained marine biologists. She started her first fisheries job in 1977 at the Queensland Fishery Service and recalls being only the second woman biologist they had ever hired.

Her career trajectory from there is remarkable. The mid 1980s saw stints at the South Pacific Commission and the Australian Department of Primary Industries and Energy where, by 1990, she became executive director of the Bureau of Rural Resources and went on to head the Australian Institute of Marine Sciences in Townsville. Then for a decade, from 1994, she was Director General of the WorldFish Center, one of the 15 centres of the Consultative Group on International Agricultural Research (CGIAR) charged with alleviating poverty, improving nutrition and reducing pressure on the environment.

It was during this period that Dr Williams was approached to provide the opening address at the Women in Fisheries Conference. It was held in Phnom Penh, Cambodia, in 1996 and amounted to her first involvement championing research on development and women. The topic would prove to have an enduring hold on the scientist and, to this day, Dr Williams continues to help researchers around the world explore the gender dimension of development programs.

“In the beginning, I had to do a quick crash course on where social science research was at with regards to women in fisheries and aquaculture, especially for the

Lower Mekong Basin countries—Thailand, Cambodia Vietnam and Laos,” she says.

What she learnt proved both interesting and compelling in terms of research priorities. Huge shifts in demographics came to light as a result of the region’s wars, with a higher proportion of women in the population and heading families. In post-conflict Cambodia, Dr Williams recalls women making up 65% of the adult population in some districts. Yet there was no corresponding shift in the way development action was structured. More generally, women’s participation in rural economies was frequently found to be unexamined and invisible, creating the potential for a gender bias in development efforts. “Fishing and aquaculture communities were the worst off in this regard,” says Dr Williams.

“When you talk about fisheries, everybody has always seen it as quite a ‘macho’ occupation. It is the men that fish or dig the aquaculture pond. So a lot of the fisheries development work concentrated just on the production side, with most training courses intended for men.”

Yet when gender researchers looked, women were seen working in the pre-catch and the postharvest service sectors, making and mending fishing nets, maintaining the gear, processing the fish and, in many countries, playing a major role in marketing. Fisheries drove home the message that, if you are going to help women, then you need to look right along the supply chains.

“When you start to look at gender issues you do start to discover different things about the fishery sector that require attention in the development sense. We were quite excited about the kinds of impacts we could have.”

By 2001, enough lessons had been learned for the focus to expand to gender issues more generally, not just women. The relationships between women, men and children were examined at two global symposia on gender and fisheries, held in 2004 and 2007, that saw fisheries take the lead in gender issues. One “shock discovery” found higher rates of HIV/AIDS infection in fishing communities compared to the general population right across developing countries. That finding resulted in Uganda mounting AIDS prevention programs specifically designed for fishing

communities and these have since been adopted by all countries surrounding Lake Victoria.

Along the way, Dr Williams has witnessed a turnaround in attitudes, both to the issues themselves and to her own participation with gender research.

“In our first Asian Fishery Forum symposium in 1998, we were the butt of so many jokes. All the men knew us as straight researchers with no connection to the ‘gender stuff’. We even had to stress in our first press release that women do, in fact, fish. Now people do not joke about this anymore. In fact they are more prone to stress how much gender-related activity they have done either in their mainstream job or alongside it.”

This year, in another breakthrough, the mainstream journal *Development*, will publish a special selection of gender and fisheries papers based on the November 2007 Asian Fisheries Society special symposium.

After retiring from the WorldFish Center, Dr Williams spent 18 months engaged in work that endows her with a special insight into agricultural R&D. She spent 18 months liaising among all 15 CGIAR centres, helping them create a formal alliance that can contribute towards CGIAR’s strategy and direction. Given the centres perform research across all sectors—crops, livestock, fisheries, forestry, water—she has a broad grasp of the issues, interactions and co-dependencies in the R&D needs associated with rural development. It was halfway through this CGIAR position that Australia recruited her to chair the ACIAR Board, and more recently the Commission.

It is an exciting time for Australian aid, she says. ACIAR, as the specialist agricultural, forestry and fishery R&D agency, is increasingly being integrated in Australia’s overall aid program. Beyond national boundaries, partnerships are expanding to include other international agencies, including non-government bodies, such as World Vision, that can build on the core scientific projects undertaken by ACIAR. Combined with internal changes, there is a new wave of bigger projects in the pipeline, Dr Williams says, that deliberately integrate plant, water, forestry, fishery and agricultural components to deliver more holistic and multi-disciplinary programs for all partner participants. ■

GRAINS RESEARCHERS ON THE MARK

A new collaboration between India and Australia has been established to boost production and conquer threats to one of the world's most important food sources

BY MELISSA MARINO

Threats to the world's wheat stocks are being targeted as part of a new research collaboration uniting the top cereals scientists from Australia and India who have identified key research priorities to secure grain supply.

The priorities were established in India at a recent workshop launching a marker-assisted selection (MAS) wheat-breeding program, partnered by ACIAR and the Indian Council for Agricultural Research (ICAR).

The scientists will target their research across five themes:

- bioinformatics and molecular biology for wheat breeding;
- rust and other biotic stresses;
- water use efficiency, drought and roots;
- waterlogging and other abiotic stresses; and
- wheat quality.

MAS is a tool that allows researchers to identify specific genes, using short fragments of DNA that associate with the inheritance of certain traits. Once that gene is 'marked', or identified, generations of plants in a breeding program can be tested efficiently in the laboratory for the desirable characteristic.

Breeding for specific outcomes is accelerated with the use of markers, which track the inheritance of DNA, rather than requiring the growing of progeny to maturity to observe the expression of the trait.

In one of the first initiatives to stem from the new five-year collaborative program, researchers are screening stocks of wheat germplasm from Australia and India for resistance to the devastating rust strain Ug99.

Scientists around the world are working against the clock to thwart Ug99 by breeding resistant strains before this new race of stem rust spreads too much farther. Originating in eastern Africa there are concerns that spores could travel on prevailing winds from Yemen to Afghanistan and into the fertile Indo-Gangetic Plain—threatening the vast wheatbelts in what is the 'bread basket' of Asia.

Dr Paul Fox, research program manager

for Crop Improvement and Management at ACIAR, who is Australian coordinator of the MAS wheat-breeding program, says the partnership has enabled the enhanced cooperation in the fight against rust, which has the potential to wipe out entire crops.

Dr Fox says screening for Ug99 resistance has shown that the genetic background of potential resistant wheat lines from the two countries appear to be quite different, giving hope to the potential for boosted resistance in cross-bred specimens.

"We are mildly confident that putting those different sources of resistance from the two countries together will actually allow us to come up with something that's fairly bullet proof in the face of this new threat," he says.

Dr Fox says recent developments, including a rising wheat price and a drop in wheat supply, have made the research even more urgent. "We're really fast-tracking the work because of the potential threat not only to India, but on world food stocks as a whole," he says.

The Ug99 research is an extension of the Australian Cereal Rust Control Program partnered by the Grains Research and Development Corporation, the University of Sydney, CSIRO and the International Maize and Wheat Improvement Center (CIMMYT) in Mexico. Ug99 resistance is just one of the five themes identified at the workshop.

The other priorities are to begin a bioinformatics component within the MAS breeding program; to scope and develop a large integrated project to characterise suitable traits and markers for better crop establishment and roots; to continue the implementation of project development activities for germplasm addressing waterlogging and other associated abiotic stresses; and to scope and develop a project on quality traits. This final project will be undertaken later in the collaboration.

Dr K.V. Prabhu, head of the Indian Agricultural Research Institute (IARI) Department of Genetics, who is also on the MAS breeding program management



PHOTO: BRAD COLLIS

committee, says productivity, waterlogging and the threat of Ug99 were all key concerns for Indian growers.

"This is an opportunity for those things to be addressed in advance and be prepared so the impact will not be as disastrous. This is a frank partnership on a scientific basis, looking at the strong points that both countries have and using those on a shared basis," he says.

Dr Fox says similar conditions shared by the two countries had resulted in common problems including salinity and sodicity. "Just about all the participants in the workshop concluded that we are more united by our similarities than our differences."

In opening the 2007 workshop, ICAR director-general Dr Mangala Rai said previous collaborations between India and ACIAR had helped keep India free of major rust epidemics by deploying resistance genes.

"Molecular marker technology would now further help identify specific genes or genomic regions responsible for making the crop yield better, provide better quality product and enable the efficient and precise breeding for specific outcomes in a changing, stressful environment," Dr Rai said. ■

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.

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.

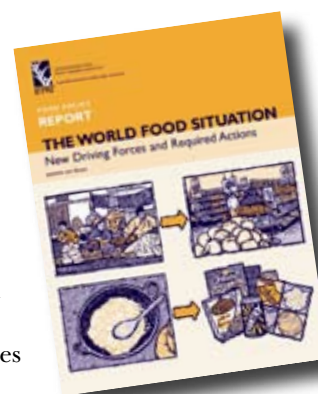
Dr Byerlee outlined the benefits that Australia receives from international agricultural research, the linkages between agriculture, development and poverty, and the way these can vary substantially between countries in the Asia–Pacific region.

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.

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.

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.

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;
- 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;
- 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.

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.

Andrew Sinclair

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 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.



Felicity Muller

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.



NEW PUBLICATIONS

CORPORATE PUBLICATIONS

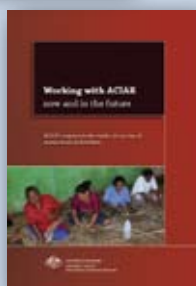
Annual Report 2006–07

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

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Back cover: Young Hmong girls near Sapa, in the north of Vietnam, earn money by selling handicrafts to tourists.

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

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