



Getting results: hill tribe farmers growing peach trees with cabbages.



New awareness: vegetable growers harvesting cucumbers that can be sold as 'pesticide free' in local supermarkets.

TAKING R&D FROM VISION TO REALITY

By **ROBIN TAYLOR**



Planting vegetables under plastic: the sheeting not only acts as mulch, but also deters pests.

Wading rivers to reach remote communities, crossing a (collapsing) suspension bridge high across a valley and travelling 10 kilometres on the back of a motorbike along a rough track to an otherwise inaccessible community, were experiences Terry Davis may not have been expecting when he agreed to review a series of ACIAR projects. Davis was one of a three-member review team.

The ACIAR–World Vision collaborative project ‘Facilitating farmer uptake of ACIAR project results’ could be described as one big experiment, furthering the outcomes of a number of ACIAR projects in Thailand, Laos and Vietnam. Three of the projects were based in Thailand – reducing pesticide use on vegetables in key watershed areas of the Songkla Basin; profitable fish farming through utilisation of low-cost feeds; and high-value, low-chill, temperate fruit for hill areas of northern Thailand.

The other projects were: rodent control in rice crops using integrated pest management techniques; improvement of soil fertility for crop production in Bac Binh province, Vietnam; and improving crop yields in rainfed rice-based systems in the central lowlands of Laos.

After reviewing the projects, Mr Davis, an agricultural consultant from New South Wales with extensive experience in developing countries, discussed some of the challenges facing



A HELPING HAND FOR THOSE MOST IN NEED

World Vision's Graham Tardif likens Thailand's north-eastern provinces to a drain. Life is so grindingly hard and the prospects for improvement so poor, that people are leaving their villages in droves in search of the means of survival elsewhere. They often do not want to go, but choice is rarely part of the equation.

Tardif, World Vision's ACIAR program coordinator, says people in such poverty hotspots need drastic intervention to help turn around their fortunes. "The way they have always been doing things hasn't brought them out of poverty," he says. "We are working in areas where the poverty is so entrenched that they need something quite drastic to kick them out of it."

ACIAR is helping to provide that vital 'something' through its collaborative research partnership with World Vision. Tardif says the partnership is accelerating the uptake of new agricultural technologies, crop varieties and cultivation techniques in desperately poor communities that might otherwise wait years for the information and benefits to filter through.

World Vision's field staff as well as farmers benefit from the direct link to senior agricultural experts. They and local agricultural extension officers learn how new systems work from demonstration plots, rather than second-hand through journals, and get invaluable advice during regular visits by project scientists. Agency staff can then spread the knowledge to other communities they are working with around the country.

Without the partnership, Tardif says the process of dissemination would take much longer, cost much more, and leave many more families to fall victim to the poverty trap. Poverty is a home-breaker. Parents leave their families for months, often years, to work overseas, or in cities. Children are denied their future, forced by the family's deepening debt spiral into working rather than attending school.

In Thailand's north-east province, the path to the debt treadmill is well-

worn. Farmers sell their rice crop before it is harvested at a drastically reduced price to pay debts. The reduced income is not enough for the household to survive on, so they have to borrow more, often from local rubber plantation owners.

As the cycle deepens, more and more family members, including children, are forced to work at the plantation to pay off the household debt.

Tardif says the answers must compete with the money family members might get by migrating to work in city bars, plantations or overseas. "You have to put in something pretty drastic, and that is a new crop, or a higher-yielding crop, or something at least to guarantee they have food and nutrition ... and these are areas where normal things have failed."

ACIAR projects have helped families get off the treadmill by introducing new cash crops. In Vietnam, rural families have saved money and their health by learning how to use farm chemicals properly. In Laos, where malnutrition is a problem, impoverished households are growing high-yielding staple crops that help them not only to feed themselves, but earn cash from the surplus.

"The partnership is a major benefit for all of them and for us at grassroots level," says Tardif. "But ACIAR also benefits. It is able to strengthen the application of its research, to ensure the benefits reach those poor families and communities most in need of assistance with improved agricultural technologies and practices.

"ACIAR does not really have the contacts at community level, but works through government extension officers. Through our community contacts, we provide areas for testing outside Australia where the people are already accept the presence of NGOs. It is helping people to help themselves" ■

— CLAIRE MILLER

Contact:

Graham Tardif, World Vision program officer, 1300 303 287, graham.tardif@wva.com.au.

► both ACIAR (as a facilitator and funder of agricultural R&D) and NGOs, such as World Vision (as facilitators of community development), in putting agricultural R&D to work.

He says cooperation between a technology provider and an NGO with strong community contact was a significant advantage when introducing new practices, because it helped to spread the outcomes of research to more farmers: "It is a way of addressing the divide between generating new technology and its uptake".

The review found that the ACIAR–World Vision project was very successful, with five out of the six components producing results above expectations. Some of the questions both organisations will be asking, in planning for future cooperation are, "what worked and what didn't ... how can we do it better in future ... and, has it reached its full potential".

In his review, Davis found that synergies and symbiosis between the participating groups brought benefits to both organisations as well as to the end users.

For research partners the benefits were:

- more feedback on the suitability of their technology;
- broader testing of the technology; and
- better leads as to future directions and better-trained extension workers.

"A lot can happen in a short time when you put a provider of appropriate technology alongside an organisation with community contacts," says Mr Davis. "Without this program, adoption of these technologies would not have been as substantial. In some cases they achieved more than people thought possible."

In the Songkla Basin in the south of Thailand, a previous ACIAR project had shown that chemical runoff was contaminating drinking water. The World Vision team worked with farmers whose livelihoods depend on vegetable production. Together they were able to change horticulture practices to decrease chemical use without affecting their viability. For example, chemical fertiliser was partially replaced with diluted chicken manure. The manure was soaked in a tank of water overnight and the liquid run into a drip irrigation system under plastic mulch.

Adoption of these methods has led to a three to four- ►

► fold reduction in the use of chemical fertilisers and herbicides, and an increase in farmers' incomes because their input costs are lower. As well, farmers have marketed their own 'pesticide-safe' label in local supermarkets for a 20 per cent price premium.

A rubber-tapper who was growing vegetables on an opportunity/part-time basis was trained in the low pesticide technology, and through membership of a small revolving credit group formed by World Vision, he was able to buy the drip irrigation equipment and other inputs. His first crops were so successful that he has now moved into full-time farming, with his wife adding value by selling cooked corn-on-the-cob at local market days.

He proudly explained to the evaluation group that he was now a trainer for other farmers joining the pesticide-safe program.

World Vision, with the continued support of ACIAR's original research partner, the Prince of Songkla University, hopes to expand the program into neighbouring provinces. By September 2003, it had directly benefited more than 500 families and indirectly benefited another 2000.

In Mr Davis's opinion, the most successful project was improving the profitability of fish farming using low-cost feeds. This project, based in the Udon Thani and Surin provinces of north-east Thailand successfully demonstrated that fish production with the support of community enterprises supplying low-cost inputs (feed and fingerlings) will increase food security and incomes.

The project's aim was to establish individual and community fish farms to improve food security and provide income (through sales of surplus fish and fish feed).

The project involved demonstrating and training in aquaculture technology at a community centre, showing how to build household-size ponds, and expanding this at a community level to the construction of large, community operated fish ponds. The Thailand Department of Fisheries provided technical support and training.

The initial activity included a market survey that established there was local demand for freshwater fish. When purchased feeds are used, the profit margin for fish farming is low, so an earlier ACIAR project developed methods to replace commercial diets with diets produced from locally available materials.

The World Vision collaboration enabled the distribution of 'how to' guides for preparing these diets and the financing of small pelleting machines.

Community centres are now operating in Udon



Ingenuity: A vegetable grower demonstrates his simple tool for cutting planting holes in the plastic sheeting used as a mulch. Hot charcoal is placed in the tin can which is then pressed onto the plastic sheet.



Persuasion: Weaning farmers off the excessive use of pesticides has been an ongoing campaign. Dr Kong Luen Heong holds up a poster that was part of an awareness program by the International Rice Research Institute (IRRI).



Initiative: Fingerlings being raised for sale to farmers building their own small aquaculture ponds.

Thani and Surin and training courses have been run at both centres for fish breeding and production of low-cost, farm-made feeds. About 600 people have built small household ponds. Experiments comparing the homemade diets with commercial diets have demonstrated similar or better growth and feed conversion ratios than commercial pellets.

Rodent control has been the focus of a number of ACIAR projects as rats are a major threat to rice crops in many countries. Using the community trap barrier system developed by CSIRO in an earlier project, the collaborative program with World Vision established several demonstration groups in the Bac Binh province in Vietnam. The system involves planting an enclosed lure crop, which ripens before the main crop, to attract rats which

are then trapped in cages inside the lure crop. The demonstrations showed the viability and economic value of the system. The demonstrations have been so successful that Binh Thuan province has asked for help to expand the system to all districts.

"The challenge is to raise living standards but we also have to increase the skill of rural communities to manage change. This means being adaptable so that farmers can change the technology to suit their local situation," says Mr Davis.

Another project in Bac Binh province demonstrated significant yield benefits from changing the fertiliser practice and variety selection in peanut production on infertile sandy soil.

The fifth component, introducing high-value, low-chill temperate fruit to the hill areas of northern Thailand, builds on the successful introduction of subtropical stone-fruit varieties, including plum, peach and nectarine in other parts of northern Thailand. These fruits achieve high prices in the Bangkok markets and are potentially a profitable alternative source of income for hill tribes in the region.

As part of the World Vision extension project, 18,000 tree seedlings were distributed to more than 1000 families near Chiang Rai, although results are not expected for several years.

World Vision is now looking at ways farmers can generate income in the short term, such as growing vegetables and other cash crops, intercropped with the fruit trees.

The project to improve crop yields in rainfed rice-based systems in Savannakhet, Laos, has trained and mobilised district extension workers to form farmer groups involving 157 farmers in 32 villages and to support them in undertaking on-farm variety/fertiliser trials.

Mr Davis says that to maximise the benefits of their collaboration, ACIAR and World Vision need to extend their expertise into participatory technology development – to build more learning opportunities into the project process and to follow project design through to the longer term.

Once this has been done at the organisation and management level, more support needs to be given to field teams to help them understand and implement the participatory approach, to come to grips with the new agricultural technology, and to monitor, evaluate and report on the process.

The projects and the review have highlighted areas where ACIAR is trying to maximise the benefits from the agricultural research it funds.

Mr Davis says that future work with NGOs and farmer groups would need scope to include capacity building, which at the moment was not being covered. The project also presented challenges for the World Vision field teams who needed to learn technologies vastly different from their previous experience. ■

PROJECT:

CTE/2000/165 Facilitating farmer uptake of ACIAR project results: World Vision collaborative program