

SNAILS ADD TO 'SOUL' FOOD SYSTEM

Work to improve the traditional sweetpotato–pig farming systems of West Papua is helping to grow one Indigenous community's 'piggy' bank

BY REBECCA THYER

Small ponds filled with golden snails—an introduced pest in many parts of Asia—are becoming a feature on some of the sweetpotato–pig farms that dot the central highlands of the Indonesian province of West Papua.

The snails, easily reared in small on-farm ponds, have been found to be a good source of essential amino acids, helping farmers to diversify pigs' diets—an outcome of an earlier ACIAR-funded project to improve the region's traditional sweetpotato–pig farming systems.

Researchers working on the project “stumbled” across these pests, recalls project leader Dr Colin Cargill from the South Australian Research and Development Institute (SARDI). “We thought why not try feeding the pigs the snails?” he says.

With the pigs happy to have golden snails in their diet, at least 200 farmers now have small, snail-breeding ponds as a result of the project. “When farmers want them, they simply put a bamboo pole into the pond, the snails attach to it, and then they feed them to their pigs.”

The innovation is one of many Dr Cargill's team has made to pig diets, and through that the lives of the Dani people of the Baliem River Valley. The project started in 2001 and has seen ACIAR bring together SARDI livestock experts and International Potato Center (CIP) specialists, plus collaborators from Indonesian universities and other institutions.

For the Indigenous Dani people, pigs and sweetpotato are not only important nutritionally and economically, they also have strong mythological links. “One Dani man described the link as being ‘A Dani man without pigs is a man without a soul,’” Dr Cargill explains. Pigs are also looked upon as currency and sold when bills need to be paid.

Pig production makes up 85% of Baliem River Valley farmers' livelihoods, with sweetpotato the main dietary input. Different varieties of this root vegetable also form the main diet of the Dani people. This interconnected system is why both potato and livestock experts are needed to improve production, and with that reduce malnutrition and disease outbreaks.

As a livestock specialist, Dr Cargill has

examined pigs' diets and, after testing various combinations, has devised one that makes use of available inputs and suits small-scale production. Although it includes sweetpotato (cooked to remove anti-nutritional factors), it has been diversified with the addition of snails, silage made from the potatoes' tuber, and vines and leaves from trees grown to provide a fence for the animals.

With other work, including improved animal husbandry and new sweetpotato varieties (developed for humans and pigs by Indonesia's Research Institute of Legume and Tuber Crops), production has improved over the past five to six years in the Baliem River Valley. Pigs now grow by 250–300 grams a day, the number produced has tripled, and sweetpotato production has risen by 15%.

Sukendra Mahalaya has worked on the project since 2002. In that time he has seen income from pig sales double, noting that some farmers now own motorbikes and mobile phones. Some can also afford a university education for their children.

Through his PhD at the University of Adelaide, this ACIAR John Allwright Fellow is evaluating the project's impact on poverty and food security. His findings will be applicable to a new ACIAR project, which began earlier this year, and will continue work to improve the farming systems' productivity, with an emphasis on reducing the risk of malnutrition and disease transmission in pigs and people.

The team plans to develop storage and processing technologies for sweetpotato; improve pig husbandry; and diversify cropping and livestock options and, through that, diets.

In 2011, when he has completed his PhD, Mr Mahalaya will move to West Papua to continue working with the Dani people and also another group, the Arfak from the northern highlands. “The Dani and Arfak have many similarities. These two Papuan tribes rely on sweetpotato and pigs to support them and although their cultures may be different, this social capital plays an important role in both tribes' strategies to achieve livelihood outcomes,” he says.

With positive results attracting the attention of other farmers, the team is also training



Golden snails—easy to rear and harvest—are a good source of essential amino acids for pigs.

farmers to be trainers. As Dr Cargill says: “I've spent my whole life working with pigs, but in farmers' eyes, I am not a pig farmer. Trained farmers will be important in disseminating information.”

For Mr Mahalaya, who jokes he is becoming one of the world's only Muslim pig experts, leading the project will be a challenge, but one is he is looking forward to. “I enjoy talking to farmers and I can speak some Papuan. Colin has showed me how to be a good leader, and the Papuan are my people so it is my responsibility to make their future better. I want to achieve regional economic success.” ■