Research ambition shines in Lombok’s peanut fields

A peanut improvement program on the island of Lombok, part of the ACIAR–SADI initiative, aims to make peanuts a productive and profitable local industry.

When Dr Agustina Asri Rahmianna arrives in a peanut-growing village in Lombok, Indonesia, word spreads fast and she is soon surrounded by farmers anxious for advice or keen to show her the progress of their crops.

Dr Rahmianna, popularly known as Anna, is a leading researcher with the Indonesian Legume and Tuber Crops Research Institute who is working with the Queensland Department of Employment, Economic Development and Innovation on a peanut improvement program as part of the ACIAR–SADI initiative.

SADI, the Smallholder Agribusiness Development Initiative, is funded as part of the Australia Indonesia Partnership, a collaboration between research providers and private companies aimed at developing a more commercial approach to agricultural development among poor rural communities. It uses ‘market pull’ as opposed to ‘research push’ to lift smallholder farming from traditional subsistence levels to a farming approach that is more productive and sustainable because it embodies an income incentive.

In the peanut program on the island of Lombok, Anna and her team are working with Garuda Foods, the main buyer/processor, and selected villages keen to make peanuts a productive and profitable local industry.

Research trials have been introducing...
improved sowing efficiency (which improves cultivation and harvesting efficiencies) and also water-use efficiency, which is important because irrigation water is limited once the rice harvest is over. Peanuts are grown in rotation with rice and give farmers an extra crop that can use the soil moisture remaining in paddies.

Improved crop water-use efficiency, along with improvements to the rate and timing of fertiliser applications, plus new knowledge about the use of fungicides to control aflatoxin, are contributing to increased yields and a healthier, higher-quality product.

Garuda Foods pays a premium for quality in its quest to increase the local share of the fresh peanuts market, which at the quality end is dominated by imports.

Aflatoxin has been a major part of Anna’s work, which throughout her career has been driven by a passion for research—something soon noticed by Australian scientists when they first began helping Indonesia lift its peanut production in the early 1990s. With the encouragement of Queensland peanut researchers Dr Graeme Wright and Dr Mike Bell, Anna successfully applied to ACIAR for a John Allwright Fellowship that allowed her to undertake a PhD in Australia, which she completed in 1998.

Anna was a young mother, making it a difficult decision, but illustrating the depth of her commitment as an agricultural researcher.

“At first I said no because I had a new baby boy, my second child after my little girl, and it was important for me to be a good mother,” she says. “Doing a PhD in Australia would mean being away from my family for five years.”

However her husband, Joko Purnomo, is also a researcher and understood the value of the ACIAR scholarship. He persuaded Anna not to turn down such an opportunity.

“So the next time I saw Graeme Wright I asked if the scholarship was still available. I convinced him I was serious and he gave me a lot of help with the application.”

Anna’s baby was just 10 months old when she went to Denpasar to attend English classes. Then in the following year when her daughter was three-and-a-half and her son just 18 months she left home for study in Australia.

“It was hard being away from my children but I really enjoyed studying in Australia. The facilities, and especially the library, were so good.”

The academic experience further heightened Anna’s research ambitions. “Everything about research excites me. Research gives you a freedom for thinking and problem solving.”

After finishing her PhD Anna was invited to join the ACIAR-supported peanut initiative in Indonesia and has been involved with the program ever since, concentrating on reducing the damaging, and often deadly, impact of aflatoxin.

“The problem is a combination of issues: partly postharvest management, but also a tendency by farmers to harvest too soon,” Anna says. “The time of harvest is influenced more by the market price than by the crop’s maturity. If prices are up, farmers will harvest even if the peanuts are not fully ripe and therefore susceptible to fungal attack,” Anna explains.

“So the first thing to lower the risk of aflatoxin is to get farmers to harvest at the correct time. However, it is difficult to get farmers, especially the older farmers, to change. They will follow what you say when you are working with them, but go back to their old ways when you leave. So change can’t be achieved by researchers alone. It needs extension support and the participation of processors so new knowledge continues to be reinforced after the researchers have gone.

“That is why linkage programs like the ACIAR–SADI peanuts initiative are so important. They involve everyone … farmers, processors and researchers.”

Anna says she gains a lot of personal satisfaction from her work and can see farmers making considerable advances, but as a researcher she is only too aware of the work still ahead. “There is a lot of research to be done to better control aflatoxin, as well as to help farmers lift to a higher level of peanut quality generally. There is a long way to go before we achieve our ambition to produce export quality peanuts … but we have made a start.”