

THE QUEEN OF RICE

Being strategic about how agricultural research is structured, managed and financed is a skill that has grown in global importance and is a particular contribution that Australia's Professor Beth Woods OAM has made to international poverty reduction efforts

BY GIO BRAIDOTTI

When an improvement can be made to rice yields, quality or supply chains, the impact is enormous. As a research strategist, Professor Beth Woods OAM notes that there are 2.5 billion people worldwide who depend on rice every day and that still includes regions where rice represents 80% of the local diet.

Improved rice farming and poverty alleviation go hand in hand. The key site for research-driven innovations that make large and measurable changes for rice farmers is the International Rice Research Institute (IRRI), the centre where Professor Woods was dubbed the 'queen of rice'.

An example of the impacts possible include work by Australian rice breeder Dr Melissa Fitzgerald in developing molecular markers to a quality defect—chalking—that reduces edible grain amounts and devalues it by up to 30% in international markets. Then there is IRRI's work developing rice varieties tolerant to flooding, which otherwise causes A\$600 million losses a year.

Professor Woods's relationship with IRRI spanned a decade, joining the Board in 2005 and chairing it between 2008 and 2010. Her particular expertise relates to structures and strategies that help get "the most bang" from the money invested in research.

It is a role that this agricultural economist has also played extensively in Queensland where she is the newly appointed director-general of the Queensland Department of Agriculture and Fisheries (DAF). "My day job in Australia is thinking about the strategy and the effectiveness and efficiency of investment in R&D," Professor Woods says.

"When the total spend reaches in the region of \$100 million, my role is to think about how you manage that—how you ensure you have the infrastructure to support high-priority

R&D going forward. I'm hands on in an R&D management role and that's what I bring to the international system."

That includes chairing the Board of WorldFish, a role that director-general Dr Stephen Hall describes as critical to the running of WorldFish, providing direction to management and strategic guidance on research and funding.

"We welcomed Professor Woods and her in-depth knowledge of the CGIAR system and excellent credentials," he says.

Recently Professor Woods was also a member of the expert panel for the World Bank's Agricultural Pull Mechanism, an initiative that is creating the architecture and incentives to encourage more rapid adoption and quicker delivery of benefits from agricultural R&D.

"The investment required to meet the food needs of the global population in 2050 is estimated to be US\$83 billion (A\$110 billion) per year, a sum that requires 'pull mechanisms' (incentives) to draw in private-sector engagement," she says.

Adding to the urgency is the food crisis of 2008 and the global financial crisis of 2010. "The task facing international agricultural research has just become a lot more complex," she says. "Fortunately we have technologies and relationships that will allow us to meet this challenge."

For example, Queensland scientists who worked on drought tolerance in sorghum collaborated with IRRI scientists working on the same mechanisms in rice, with the work drawing on advanced rice genomic technologies and exploiting genetic similarities across crop species.

This kind of multilateral sharing of R&D resources—and the resultant efficiencies—is something that Professor Woods has long sought to strengthen both domestically and internationally.

Ultimately, she embodies the belief that a spectrum of problems—in food security, economics, health and the environment—can be solved by producing food more smartly.

In Professor Woods, this tendency to see in agriculture the means to solve problems more broadly is a trait that traces back to childhood. "I dug up the end of the family's grass tennis court so that we could have vegetables by growing them." ■

PHOTO: QUEENSLAND DAF

Professor Beth Woods

As the newly appointed director-general, Professor Beth Woods leads agriculture development initiatives that aim to deliver a highly efficient, innovative, productive and successful Queensland agriculture sector. Professor Woods was also responsible for the fisheries and forestry portfolios until 2 September 2013. She obtained her PhD in agricultural economics at the University of Oxford.

WORLD FISH

In the developing world, more than one billion people obtain most of their animal protein from fish and 250 million depend on fishing and aquaculture for their livelihoods. WorldFish is an international, non-profit research organisation that harnesses the potential of fisheries and aquaculture to reduce hunger and poverty.

