

Cherish the generalists

By Leigh Vial, 2005 Scholar

Peter Jennings was amongst a special group of agricultural researchers that gave birth to the Green Revolution. Working at the International Rice Research Institute in the 1960s, he discovered the semi-dwarf gene in rice. The first semi-dwarf variety, IR8, thrust the rice world forward to a new yield horizon. Decades later, the same Dr Jennings warns that the solutions to coming production and sustainability challenges may lie less with the specialized breeders, molecular biologists, physiologists or soil scientists, but more with making the whole gambit work as a system. We need the generalists; they are the ones that can best piece together the technologies and innovations for a net result. That is quite an admission for a well-trained specialist! He laments that the well-regarded generalist is now a rare species in agricultural R&D.

One unavoidable consequence of mankind's progression is specialization: in the 1700s Adam Smith detailed how much quicker you can make pins if it is done by a number of people with each doing one task. It is well-past impossible to know everything about everything, so to progress in most professions one has to know more-and-more about less-and-less. With it has come the challenge of how to move forwards when more than one specialty is involved; there is a real place for those that know a bit about most things. In agriculture, farmers of the world are best placed to do this.

For the past 16 months, I have been pursuing a PhD in sub-tropical rice systems in Lao PDR. The compulsory process of abandoning the general for the specific has driven me, and especially my supervisors, to distraction. My Lao colleagues have found the process of placing me in a specialized 'box' equally challenging. Depending on the day, I might be an 'expert' in tillage, soil compaction, herbicide, mechanics, grain quality, legume nodulation, irrigation, land-forming, or economics. Alas, I will become an authority in one of these shortly. Needless to say, the process takes longer than your average Nuffield Scholarship, but the experience has heightened the value of a Nuffield in my eyes.

In my time here, I have lost count of the occasions when I have acted as a 'bridge' between specialists: talked to a breeder about market demand, a research station manager about herbicide resistance or a soil scientist about the opportunity cost of water. These bridging moments are not often heralded in the world of science, but they are fundamental in helping it deliver a result. It is a truism that when you have a hammer, every problem looks like a nail. Every specialized researcher is armed with their hammer; it is the job of the generalists to expose them to the tech-screws, rivets or spot-welds that accompany the nails.

Australia has been wise to embrace farmers in agricultural R&D, be it through membership of RDC boards, advisory committees or the plethora farming systems programs that are dotted around. Rest assured this is not common in the world; so often, farmers are treated as clients, customers, targets or at best 'stakeholders' (jargon if ever I have heard it!). Value it and the well-rounded approaches this often brings, but do not take it for granted. Especially as Nuffield alumni, your knowledge,

perspective and networks can be the perfect complement to the specialists. Do not underestimate your value to R&D systems both in Australia and abroad. If our political representatives look to reform agricultural R&D away from farmer involvement, resist it.

A final caveat: do not under-estimate what the well-informed Aussie farmer can contribute to agricultural development around the world. Bureaucrats, cynical politics, and waste abound. Straight talk and straight action can be just the tonic to this system, at times. It is not everyone's cup of tea - or curdled yak's milk - but it can be an excellent personal diversification strategy in your agricultural career.

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