

A CHAMPION FOR SEMI-ARID REGIONS

When it comes to cropping in the semi-arid tropics, home to 800 million of the world's poorest people, the Director General of ICRISAT is rolling out an ambitious R&D program that has important implications for Australian farmers



PHOTO: BRENDON CANT

"We take a broad, multidisciplinary approach to improving the wellbeing of the poor of the semi-arid tropics and our mission is to reduce poverty, increase agricultural productivity, enhance food and nutritional security and protect the environment."

– DR WILLIAM DAR

ICRISAT Director General Dr William Dar spoke on the topic 'Champions of the poor of the semi-arid tropics' at UWA's Institute of Agriculture.

BY BRENDON CANT

With the world's population soaring against the background uncertainties of climate change, the imperative of increasing agricultural production to feed the world, especially its poor, continues to be pressing.

It's a challenge that Dr William Dar, Director General of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), addressed in a lively Institute of Agriculture seminar at the University of Western Australia (UWA).

Dr Dar explained that the semi-arid tropics—home to 800 million of the world's poorest people—are blighted with an unpredictable climate, with low or erratic rainfall, poor soils and inadequate social and physical infrastructure. ICRISAT's agricultural research encompasses crop improvement, agroecosystems, biotechnology and socioeconomics.

ICRISAT, based near Hyderabad in India, is the region's only global R&D organisation for semi-arid agriculture. Dr Dar stressed the importance of the institute's Australian connections at UWA and the Department of Food and Agriculture, WA.

He said these collaborations also had relevance to the future of Australian grain

growers, who face similar challenges to the smallholder farmers in the semi-arid tropics.

ICRISAT's chickpea improvement program is actually being funded by WA farmers through a grant from the Council of Grain Grower Organisations (COGGO). The program is developing chickpea lines tolerant to excess boron and salinity, problems experienced by many Australian growers.

The institute's work on 'super early' chickpeas—which mature in 75 days, can tolerate drought and heat stress, and have improved resistance to *Fusarium* wilt—is vitally important in the face of climate change and the ever-present threat of disease across the semi-arid tropics. More than 2,000 chickpea breeding lines have already been reviewed and COGGO will be funding the second phase of this work, in which further pre-breeding work will be done by ICRISAT and UWA.

ICRISAT recently received a \$6 million grant from the Indian Government for biotechnology research, but Dr Dar has some reservations about genetic modification, arguing that it should only be used when problems cannot be solved through conventional breeding. The 'fruit' of ICRISAT's research—its germplasm—is now used widely across South-East Asia and ICRISAT is currently working with about 70 seed companies.

Dr Dar stressed that climate change was not just a threat to the future, but was happening "here and now", affecting hundreds of millions of people across the semi-arid tropics. The threat underlies much of ICRISAT's work on drought, land degradation, bioenergy and the need for agricultural diversification.

"ICRISAT champions the poor across the semi-arid tropics and strives to empower them to overcome the many challenges they face," Dr Dar said. "Our work in the Sahel, for example, where local growers are establishing planting basins to harvest rainwater and reduce soil erosion, and planting legume crops and trees to improve soil fertility and mitigate drought is both practical and important to their long-term wellbeing."

Similarly, the development of community watersheds has increased yields four-fold and incomes by 77% in India and 45% in South-East Asia. "In fact, they've been so successful they've served as a model for Asia and southern Africa," he said.

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