A ‘green revolution’ involving WA’s Centre for Legumes in Mediterranean Agriculture (CLIMA) aims to build pulse food resources on the world’s deteriorating soils and reverse trends which see 800 million people go hungry everyday.

In a race to meet productivity demands, international scientists pooled their expertise in January at the ‘2nd International Congress of Plant Physiology’ (inaugural held in 1988) and an ‘International Chickpea Conference’ (last held in 1989).

India, which hosted both conferences, embodies the production dilemma, with its government hoping to drive grain production to 300 million tonnes by 2020 when available arable land will have dropped by 70 million hectares from 170 million ha.

Attending both conferences and meeting with local and international researchers during a month long sabbatical, University of WA based CLIMA Director, Kadambot Siddique, pledged to help push production in these countries and in WA, by exchanging suitable germplasm and co-operatively addressing production impediments.

Benefits will flow both ways, with CLIMA hoping to access promising technology.

“For example, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has developed cold tolerant chickpea germplasm which CLIMA and the WA Department of Agriculture has been using to develop robust varieties able to withstand WA’s low inland overnight temperatures, which can knock returns by $60 per hectare,” Professor Siddique enthused.

“Ascochyta blight has been even more damaging, halving chickpea production since its 1996 arrival in Australia. But breeding for resistance using genetic resistance sources identified by ICRISAT and the International Centre for Agricultural Research in the Dry Areas (ICARDA) could lead to superior varieties in Australia.

“A spontaneous brachytic mutant at Hissar Agricultural University, India has also been isolated and used as a donor parent for erect chickpea growth which, if incorporated into CLIMA breeding programs, could enable local growers to better harvest chickpea with cereal headers.
“Like CLIMA, our collaborators overseas are progressing on many fronts. Germplasm exchange and technology transfer, between like minded partners, can advance crop science here and in Asia.

“This Grains Research and Development Corporation supported conference travel allowed us to window shop for what we need and also to see what we can provide,” Professor Siddique said.

For its part, CLIMA will provide genetic resources and breeding technologies to help countries such as India overcome productivity challenges that have seen chickpea yields drop from 820 kg to 775 kg per hectare in recent years.

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