Benefits to NSW wheat producers from international development assistance spillovers

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Two levels of impact: two examples

I. Benefits accrued from Australian government contributions to the Consultative Group on International Agricultural Research (CGIAR): focus on the International Maize and Wheat Improvement Centre (CIMMYT)
II. Benefits accrued from targeted bilateral relationships: ACIAR/ICAR Indo-Australian program on Marker Assisted Wheat Breeding

CIMMYT instigated the Green Revolution, increased global wheat supply by 12.2% & reduced global wheat price by 7.4% *(Brennan and Quade, 2012)*

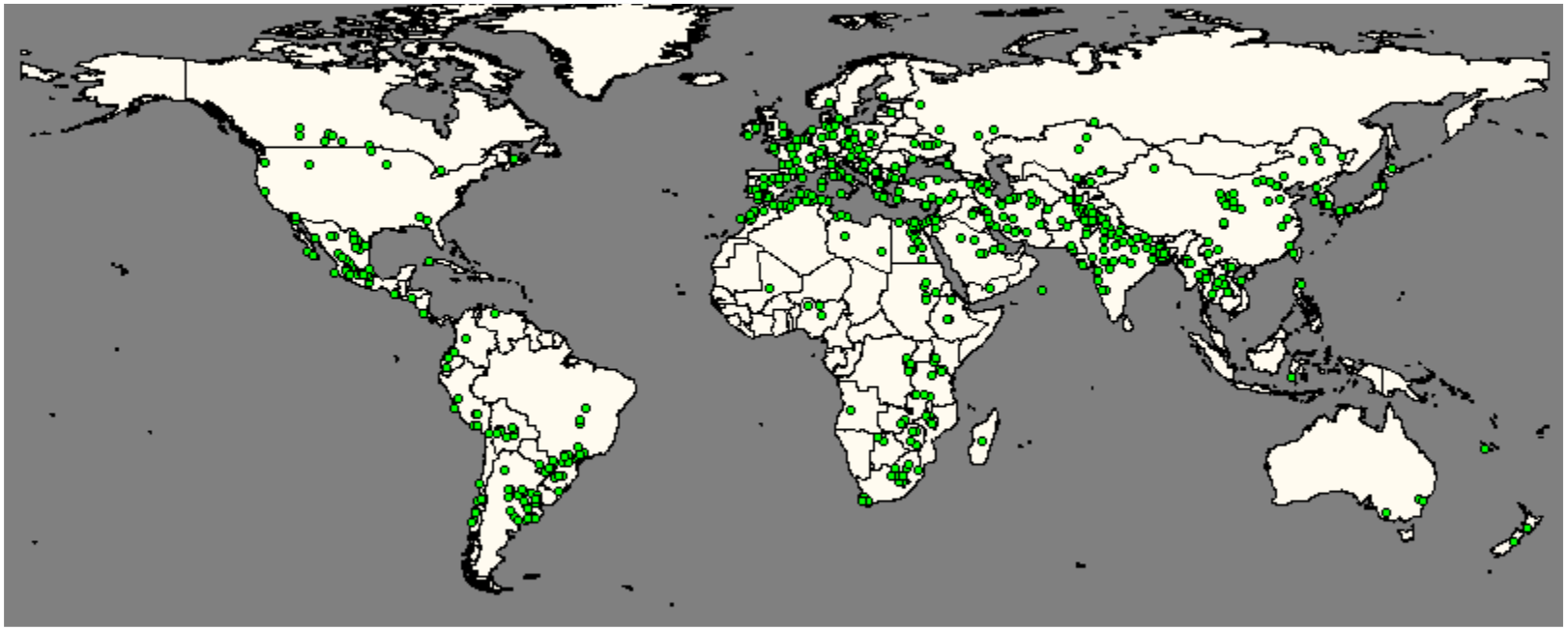
Since 1973, CIMMYT spillovers in Australia averaged A$30m/annum for an average investment of A$1m/annum *(Brennan and Quade, 2012)*

Total value of CIMMYT wheat to Australia A$750m *(Ausaid 2012)*

Percent increase in wheat yields from CIMMYT-Derived Semi-Dwarfs, 1973-2001 (adapted from *Brennan & Quade 2012*)

	NSW	Australia
1973 - 1980	3.5	1.9
1981 - 1990	7.6	4.6
1991 - 2001	8.9	5.7

Global distribution of CIMMYT wheat yield testing locations (prior to 2004)



Australian sites are few and limited by quarantine to disease testing only

The CIMMYT Australia ICARDA Germplasm Evaluation (CAIGE)Program

Locations where CAIGE yield trials are grown

Coordinated

Import

Quarantine

Evaluation &

Distribution

of CGIAR materials

In addition to yield, materials are screened for resistance to:

Rust

Septoria

Tan spot

Crown rot

Support from GRDC

Molecular marker technologies for faster wheat breeding in India

ACIAR/ICAR

This project aimed to:

Introduce molecular technologies into key applied Indian wheat breeding programs

Introduce effective data management in these programs

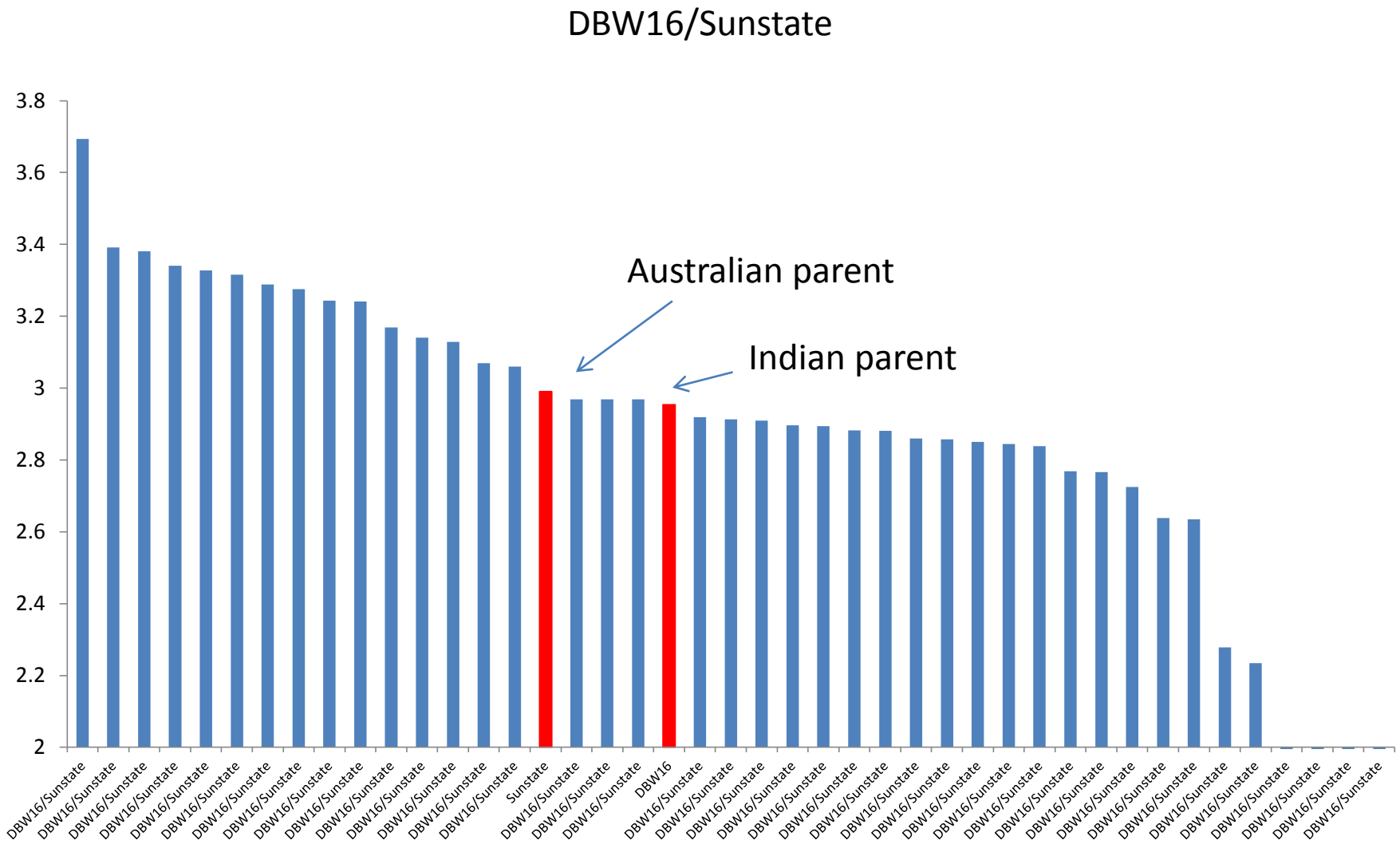
Train key scientists & students in molecular breeding

Create a unique Indo-Australian wheat germplasm for exploitation in both countries

Impacts in India

- Double haploid technology now routine and used in combination with molecular markers
- Pedigree, physical, environmental and molecular all stored in a relational database
- Elite materials developed in the project now in the final stages of national testing
- Six research fellows and one PhD student trained
- New Phase II project jointly funded ACIAR/ICAR targeting cutting edge technology

Yield (t/ha) of progeny from an Indo-Australian cross in northern NSW



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