



Australia and IRRI

History of partnership

Australia and IRRI began working together in 1963 when Australian national Ian MacRae came to do research at IRRI as a soil microbiologist. More than 50 Australian scientists, trustees, and consultants have since come to work at IRRI, contributing to IRRI's work and direction-setting.

Currently, two Australians are serving in the institute's top leadership: Matthew Morell, director general, and Kaye Basford, chair and vice-chair of the audit and program committees of the institute's board of trustees.

Through the Australian Agency for International Development (AusAid) and the Australian Centre for International Agricultural Research (ACIAR), Australia has, over several decades, funded numerous IRRI activities involving projects on rice germplasm and varietal



Participating the plaque unveiling for the Lloyd T. Evans Plant Growth Facility at IRRI in January 2016 were (from left) Fernando Sanchez, Jr, UPLB Chancellor; Matthew Morell, IRRI director general; Amanda Gorely, ambassador of Australia to the Philippines; John Evans, Australia National University and son of Lloyd T. Evans; Melissa Wood, general manager for ACIAR global operations.

Key contributions

- **Funding modern research facilities.** In 1974, Australia donated USD 1 million for the establishment of IRRI's phytotron facilities, which simulate various climates and environments required in rice research, enabling scientists to control environmental conditions in select experiments.
In a grand extension of these research capabilities, in 2014, Australia donated USD 10 million for the construction of the Lloyd T. Evans Plant Growth Facility (PGF) at IRRI. The PGF is a state-of-the-art complex of glasshouses, chambers, and laboratories that enables the creation of various climate scenarios simulated under controlled environmental conditions, to help scientists better understand the effects of climate change on plant growth. Evans (1927-2015) was a renowned Australian plant physiologist who also once served on the IRRI Board of Trustees from 1984 to 1989.
The PGF officially opened in dedication rites on 21 January 2016.
- **Overcoming climate change in Vietnam.** Rice varieties tolerant to flooding and salinity have been developed in Vietnam through the recently concluded ACIAR-supported project, Climate change affecting land use in the Mekong Delta: Adaptation of rice-based cropping systems, or CLUES. Other initiatives of the project involved putting together risk maps on sea-level rise, showing hotspots for flooding and salinity by 2030 and 2050 in the delta; analysis of land suitability for potential land-use systems under various sea-level and infrastructure development scenarios; and enabling crop rotation through the integration of non-rice crops into rice-based systems.
- **Better rice varieties in Cambodia.** IRRI supports CARDI in developing rice varieties that yield better, are tolerant of environmental stresses (e.g., drought, flooding, and to poor soil), and have good eating quality. Knowledge generated and rice produced for Cambodia are shared with the Australian rice industry. IRRI has improved germplasm for different agroecological systems in Cambodia and Australia.
- **Building scientific capacity.** Sixty Australian nationals completed either degrees or short training courses with IRRI from 1969 to 2015. Among them, three completed PhDs and another three, masteral degrees; six were interns, one was an on-the-job-trainee, and 47 were participants of short courses. In November 2012, Australia was represented among 300 participants at the first IRRI Young Scientists' Conference.
- **Conserved rice genetic diversity.** The International Rice Genebank has received 178 types of cultivated rice and 86 types of wild rice from Australian partners.



improvement for rainfed lowland and flood-prone ecosystems; germplasm diversity and potential; biotechnology tools for rice breeding; the use of green manure; strategic research on social science and gender issues; and improving the productivity and sustainability of rice-wheat systems. Australia has also funded training courses in Cambodia and the Philippines, as well as information dissemination efforts.

Australia has supported IRRI's collaborative work in Bangladesh,

Vietnam, and, especially, Cambodia. January 2016 marked the 30th anniversary of IRRI's involvement in postwar Cambodia.

Two Australian agronomists, Donald Puckridge and Glenn Denning, were part of a 1986 IRRI mission to the country, during which they assessed the situation and determined what was required to rebuild the country's agricultural infrastructure that was decimated in what was known as the "killing fields" in the late 1970s. With funding from

Australia, Puckridge's and Denning's findings gave rise to the Cambodia-IRRI-Australia Project (CIAP) in 1987.

CIAP started a remarkable episode in agricultural history that illustrated the power of international collaboration and of commitment to inclusive and sustainable development. In 2001, with assistance from Australia and IRRI, CIAP was replaced through the establishment of the country's own Cambodian Agricultural Research and Development Institute (CARDI). ■

Current research and development activities with Australia

- **Intensifying rice-based systems in Myanmar.** An ACIAR-funded project involving research on cropping options that aim to increase productivity and sustainability of cropping systems. The project will eventually increase crop diversification among smallholder farmers in the Ayeyarwady Delta.
- **Breeding materials for reducing chalk in rice.** In a continuing project on reducing chalkiness in rice, IRRI is testing identified markers, using resequencing resources, on a diverse collection of rice. The aim is to map a path for deploying functional markers for low chalk in breeding programs.
- **Collaborative research on photosynthesis and phenotyping.** IRRI, with the Australian National University, has invested in a prototype field phenotyping platform for rice and a system for it. The initiative will provide a holistic understanding of how photosynthesis at the leaf level can be related to yield.

International Rice Research Institute (IRRI)

IRRI is the world's premier research institute committed to convening international knowledge and expertise in the creation of a sustainable global rice sector to achieve food and nutrition security, improve the quality of life of rice-related communities, and protect the rice-growing environment for future generations. The organization works to connect dual spheres, generating and harnessing international expertise to expand the horizons of knowledge, and building local capacity to leverage best practices in agriculture, economics, and climate change management.

Contact

Corinta Guerta
Director for External Relations
c.guerta@irri.org

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www.irri.org