

Ivan R. Kennedy BSc(Agric) PhD DSc(Agric) FRACI AM,  
Professor Emeritus in Agricultural & Environmental Chemistry

With decades of collaborative research on microbiology, plant biochemistry and molecular biology since graduating with a PhD from the University of WA in 1965, Kennedy has claimed three main interests -- biological nitrogen fixation, risk management of pesticides and action in ecosystems.

He was awarded a DSc(Agric) by the University of WA in 1992 for a thesis entitled "The metabolism of inorganic nitrogen and its environmental effects". International experience includes invitations to deliver lectures or key-note papers at international symposia in Egypt, China, Russia, Germany, Pakistan, Italy, Belgium, USA, Indonesia, France, Vietnam, India, Belgium, Hungary and Sarawak, Malaysia; direction of an International Development Program (IDP) Linkage between Shandong University (Biological Nitrogen Fixation), Jinan in China and the University of Sydney and separate ARC-funded collaborative research programs on BNF with the Institut Pasteur in Paris (early 1990s) and the University of Knoxville (ORNL) (2007-2009). In Vietnam and Indonesia, he has directed major ACIAR and AusAID-funded projects on rapid ELISA immunotests for pesticides and mycotoxins and on plant growth promoting inoculant biofertilisers in Vietnam and Sri Lanka, funded since 1999. The major goal of all this work has been to help farmers to help themselves, guarding the planetary interest.

Awards and special appointments include:

- 1967: Fulbright Fellowship at Purdue University
- 1974: Stagiare and Lecturer, University of Nice
- 1988: Australian Academy of Science/Academia Sinica Fellowship (Acidification of Ecosystems)
- 1992: Visiting Professor, University of Paris Institut Pasteur)
- 1992: Fellowship Royal Australian Chemical Institute (FRACI)
- 1995-2011: Director SUNFix Centre for Nitrogen Fixation
- 2004: Cotton Researcher of the Year
- 2008: World Bank 2008 Development Marketplace Award *Sustaining Nitrogen-efficient Rice Production (in Vietnam)*
- 2010: Visiting Professorship at Tianjin University of Science and Technology

Since retiring from formal teaching in 2012, in the Sydney Institute of Agriculture he has refocused his skills on physical aspects of climate science, including estimating the quantum action and entropy of atmospheric gases (including the vortical entropy of anticyclonic and cyclonic motion), applying the virial theorem to estimating natural temperature gradients (6.9 °C per km rather than 9.8) and the role of increasing water vapour and surface vorticity from human activity (e.g. cities, clearing forests, wind turbines) as partial agents in global warming – calling for greenhouse credits as rewards for water use efficiency and recycling of soil nutrients, with microbial inoculation. He concludes that relying on renewable energy can only provide a partial means of managing variations in climate.