

## CURRICULUM VITAE

KENNETH S. FISCHER  
Adjunct Professor, School of Land and Food Science  
University of Queensland,  
Australia.

### CAREER SUMMARY:

#### **Key Roles and Responsibilities:**

#### **2001- to present. Adjunct Professor, School of Land and Food Science.**

Advisor to ACIAR supported research projects in S E Asia

Co-Investigator of Rockefeller funded project on Screening for Drought Tolerance in Rainfed Rice in the Mekong Delta

Co-Supervisor of post graduate students

#### **2002 (for 6 months) Deputy Director General for Research ICLARM (The World Fish Center)**

Assisted the management team in developing a new Medium Term Plan  
Developed the Challenge Program Concept Note “ Increasing Productivity in the Coastal Zone.

Led workshop on “Pathways to Impact” to guide the research for development programs of The World Fish Center

Member of the management team that developed the “The Fish for All” Global Voice.

#### **2000 Special Advisor to IRRI**

Visiting fellow to Law School, Stanford University to develop concepts for IPR management by the public sector

Consultant World Bank to develop policy papers on the management of IPR for national systems

Visiting Fellow University of Wageningen to develop new models and approaches for priority setting of a research agenda for rice in Asia

#### **1991 –1999. Deputy Director General - Research, International Rice Research Institute (IRRI).**

Implementation and management of IRRI’s scientific Research Matrix of five rice Ecosystem Based Programs, six Divisions and four Support Units. Responsible for scientific leadership and the planning and priority setting, financing, and implementing of

the research agenda and in the monitoring of the scientific quality and of the delivery and impact to our major clients - the National Agricultural Research Systems in Asia.

The Research Matrix involved (approx.) 55 international scientists, 30 post-doctoral scientists (project scientists), and 190 research scientists from the Philippines and 280 research support staff. Responsibility for the international staff and project scientist recruitment, scientific growth, appraisal and rewards and for fostering a scientific environment for creativity, excellence and interdisciplinary problem solving within the frame work of well developed projects and outputs with described milestones and budgets.

Provision of a research environment with modern laboratories and equipment and with field stations representative of the rice ecosystems that attract the world's best scientists to the Institute.

Chair of the Institute's International Programs Committee that developed guidelines, protocols and policies on such areas as Intellectual Property Rights, Partnership with the Private Sector, Biosafety Guidelines. Responsible for the development of research contracts with the private sector for the sharing of the benefits of research in biotechnology between industrialized and developing countries.

Manager of the Institute's Task Force for the development of Medium Term Plans (1994-1998 and 1998-2001) to meet the Policies and Priorities of the Consultative Group for International Agriculture Research (CGIAR). The Medium Term Plans were developed with full consultation with IRRI's clients (major National Research Centers in Asia, advanced laboratories in developed countries and NGOs) and with the full participation of IRRI staff as the primary owners of the Plan.

Participation in public awareness efforts to communicate the mission and achievements of the Institute at the national level. Activities included: Scandinavia Day in 1991, Canada Day in 1992, Australia Rice Day, Parliament House, Canberra in 1993, Japan-IRRI Day in Tokyo in 1994, UK-IRRI Day, House of Commons, London in 1994, France, Rice Festival, Montpellier in 1995, India -IRRI Rice Day, Delhi, 1996.

**1987 - 1991 Deputy Director General Research, International Institute of Tropical Agriculture (IITA).**

Responsible for the implementation of the change in research orientation and focus from a commodity based to an ecosystem based systems approach. This involved the development of new research programs for four major ecosystems of tropical Africa and the implementation of a new research culture for the 60 international scientists and 300 research staff of the Institute.

Establishment of three new substations in three African countries to represent the major ecosystems of sub Saharan Africa. This included the citing of the stations, the negotiating of the land with Government officials and the designing of the decentralized laboratories and the assembling of scientific teams for the substations.

Developed a Strategic and Medium Term Plan in collaboration with scientific leaders of African countries to address research for sustainable food needs in Africa.

**1983 – 1987 Senior Lecturer, Department of Agriculture, University of Queensland.**

Crop physiology research at the University of Queensland, (in collaboration with CSIRO and the Department of Primary Industries, QLD.) with a focus on the adaptation and improvement of crops to the humid and semi arid tropics.

**1973 - 1983 International Scientist, CIMMYT (The International Center for Maize and Wheat Improvement)**

Coordinator, CIMMYT Asian Regional Maize Programs, Thailand (1981-1983). CIMMYT's regional program trained and supported scientists and research administrators of the national program of Pakistan, India, Nepal, Vietnam, China, Philippines, Indonesia, and Thailand in the development of personnel and field research for maize farming systems.

Physiologist, CIMMYT, Mexico (1973-1981). The Physiology Unit was developed to understand the processes of resource capture and efficiency of use by tropical maize, leading to new breeding and selection criteria for the genetic improvement in productivity of resource (including moisture) use.

And to develop a breeding program for developing more drought resistant maize.

**1972 – 1973. Post Doctoral Fellow, Department of Agronomy, University of Minnesota.**

**1965–1966. Research Officer, Bureau of Sugar Experiments Station, Queensland, Australia.**

**Major Career related (Scientist and Manager) Achievements**

- Improvement of yield characteristics of tropical maize population, which are the basis for the wide spread use of improved tropical maize varieties and hybrids.
- Initiation of a program for selection and breeding for drought tolerance in maize
- Managerial support of the biological control and campaign for the cassava mealy bug of Africa which provided a continent wide control of this devastating pest to Africa's most important food supply. (The Institute was awarded the King Baudouin Prize for International Agriculture).
- Initiation of a plantain crop improvement program leading to the development of Sigatoga resistant plantains and bananas in Africa in response to the devastation of this critical food supply in Africa. (The Institute was awarded the King Baudouin Prize for International Agriculture).
- Formation of interdisciplinary teams of scientists focused on the development of new plant types for the rice ecosystems, particularly for the rainfed system
- Managerial support for the integration and use of the new tools of biotechnology to enhance the productivity and quality of rice in Asia. The implementation of marker aided selection is now a routine tool in rice breeding.

- Initiation of the rice functional genomic project with a focus on developing a public goods platform for gene discovery in rice
- Initiation of a research project to exploit biodiversity for sustainable rice pest management.
- The development of research consortia with members from advanced and developing research institutes to address strategic research needs for the major rice ecosystems including the Rice Wheat System of the Indo Gangetic Plains.
- Formation of CORRA the Council for Collaboration on Rice research in Asia to guide rice research to meet NARS needs and to assist in the Partnership in rice research including the financing of joint activities.

### **Training and Skills in Research Management:**

Formal training in management (Australian Institute of Management) and specialized research management training by O'Hare Associates has provided insights and instruments in a range of management practices such as:

- managing change
- leadership task cycles
- organizational culture
- managing a matrix
- managing effective meetings
- human asset analysis
- conflict resolution
- effective report writing
- recruitment

Effective use of a Project Monitoring System for planning, implementation, review and fiscal monitoring of research.

Effective use of Performance Appraisal Systems for self-planning and evaluation, supervisory guidance and institutional rewards for scientific excellence and relevance.

Effective planning and chairing of structured meetings

### **Membership on Advisory Committees**

2000- present Member, Crawford Fund of Queensland

2000- present Board Member for the 4 Th. International Crop science Congress and 5 Th. Asian Agronomy Crop Science Society.

1996 - 1999 Member, Steering Committee, Global Resource Information Database (CGIAR/UNEP/GRID-Arendal).

- 1995 to 1999. Member, Advisory Group, Pacific Basin Study Center on Global Sustainability. San Francisco State University and University of California, Davis.
- 1992-1994 Member, Steering Committee, Rice-Wheat Consortium for the Indo Gangetic Plains.
- 1993- 1999. Member, Steering Committee, Asian Rice Biotechnology Network.
- 1990 to date. Editor, Field Crops Research.
1990. Chairman (joint), Project for Biological Control of Grasshopper and Locust.
- 1985-1986. Member Faculty Board, University of Queensland.
- 1983-1984. Member, Advisory Group to Chinese Academy of Science, 1977.
- 1983-1985. Advisor Pakistan Agriculture Research Council.

## **PERSONAL DETAILS**

- Mailing Address : Dr Kenneth Fischer, Adjunct Professor, School of Land and Food Science  
The University of Queensland, Brisbane, Q 4072. Australia
- Telephone : 61 7 3365 2987 or 61 7 33789961
- Fax : 61 7 3365 1188
- E mail : k.fischer@cgiar.org
- Nationality : Australian
- Date of Birth : 6 May 1944
- Marital Status : Married
- Education : University of Queensland:  
B. Agr. Sc., 1964  
M. Agr. Sc., 1968  
Ph.D., 1971
- Additional Language : Spanish (spoken)
- Membership : Member Australian Institute of Management  
Member Australian Institute of Agricultural Research  
Member, American Society of Agronomy

PUBLICATIONS (AND PRESENTATIONS) GROUPED BY RELEVANCE TO THE SELECTION CRITERIA.

**1. Scientific expertise and experience with a cross-disciplinary approach to research.**

Laetitia Willocquet, F.A. Elazegui, Nancy Castilla, L. Fernandez, K. S. Fischer, S. Peng, P. S. Teng, R. K. Srivastava, H. M. Singh, Defeng Zhu, and Serge Savary .(2003)  
Research priorities for rice disease and pest management in tropical Asia: a simulation analysis of yield losses and management efficiencies (to be submitted to Science)

Ladha, J.K., Fischer, K.S., Hossain, M, Hobbs, P.R., Hardy, B.( Eds) 2000. Improving the productivity and sustainability of rice-wheat systems of the Indo- Gangetic Plains: a synthesis of NARS- IRRI partnership research. IRRI Discussion paper No40,31pp.

Fischer, K. S. 1998. Toward increasing nutrient-use efficiency in rice cropping Systems: the next generation of technology. *Field Crops Research* 56:1-6.

Fischer, K. S. 1996. Research approaches for variable rainfed systems - Thinking globally, acting locally. In: Cooper, M. and Hammer, G. L., editors. *Plant adaptation and crop improvement*. IRRI and CABI. pp. 25-35.

Tangpremsri, T., Fukai, S., and Fischer, K. S. 1995. Growth and yield of sorghum lines extracted from a population for differences in osmotic adjustment. *Aust. J. Agric. Res.* 46: 61-74.

Jackson, P. A., Byth, D. E., Fischer, K. S. and Johnston, R. P. 1994. Genotype X environment interactions in progeny from barley cross. II. Variation in grain yield, yield components and dry matter production among lines with similar times to anthesis. *Field Crops Research* 37:11-13.

Fischer, K. S., Tangpremsri, T., Fukai, S., Henzell, R. G. 1991. The genotypic variation in osmotic adjustment in grain sorghum. I. Development of variation in osmotic adjustment under water-limited conditions. *Aust. J. Agric. Res.*

Fukai, S., Li, L., Vizmonte, P. T., and Fischer, K. S. 1991. Control of grain yield by sink capacity and assimilate supply in various rice (*Oryza sativa*) cultivars. *Expl. Agric.* 27: 127-135.

Tangpremsri, T., Fukai, S., Fischer, K. S. and Henzell, R. G. 1991. Genotypic variation in osmotic adjustment in grain sorghum. II. Relation with some growth attributes. *Aust. J. Agric. Res.* 42: 759-767.

- Byerlee, D., Iqbal, M. and Fischer, K. S. 1989. Quantifying and valuing the joint production of grain and fodder from maize fields: Evidence from Northern Pakistan. *Expl. Agric.* 25:435-445.
- Fischer, K. S., Edmeades, G. O. and Johnson, E. C. 1989. Selection for the improvement of maize yield under moisture-deficits. *Field Crops Res.*, 22.
- Chapman, S. C., and Fischer, K.S. 1988. Osmotic adjustment of *Sorghum bicolor* grown under moisture stress. *Plant and Soil* 107.
- Aluko, G. K. and Fischer, K. S. 1987. The effect of changes of assimilate supply around flowering on grain sink size and yield of maize (*Zea mays* L.) cultivars of tropical and temperate adaptation. *Aust. J. Agric. Res.*, 38:153-161.
- Fischer, K. S., Edmeades, G. O. and Johnson, E. C. 1987. Recurrent selection for reduced tassel branch number and reduced leaf area density above the ear in tropical maize populations. *Crop Sci.* 27:1150-1156.
- Paech, R.J., Wilson, B. and Fischer, K. S. 1987. The effect of available soil moisture on glyphosphate efficacy. *Proceedings of Eighth Australian Weeds Conference.* (Eds. D. Lemerle and A.R. Leys), 21-25 Sept., 1987, pp. 400-3. Weed Society of New South Wales.
- Fischer, K. S. and Palmer A. F. E. 1984. Tropical maize. In: *Physiology of tropical maize in the physiology of tropical crops.* Eds. P. G. Goldsworthy and N. M. Fischer. Wiley and Sons, pp. 213-248.
- Fischer, K. S. and Palmer, A. F. E. 1980. Yield efficiency in tropical maize: Paper prepared for presentation in the Symposium "Potential Productivity of Field Crops Under Different Environments" held at IRRI, September 22-26, 1980.
- Fischer, K. S. and Wilson, G. L. 1976. Studies of grain production in *Sorghum bicolor*. (L.Moench). VI. Profiles of photosynthesis, illuminance and foliage arrangement. *Aust. J. Agric. Res.* 27: 35-44.
- Fischer, K. S., Wilson, G. L. and Duthie, I. 1976. Studies of grain production in *Sorghum bicolor*. (L.Moench). VII. Contribution of plant parts to canopy photosynthesis and grain yield in field stations. *Aust. J. Agric. Res.* 27: 235-44.
- Fischer, K. S. and Wilson, G. L. 1975. Studies of grain production in *Sorghum bicolor*. (L.Moench). III. The relative importance of assimilate supply, grain growth capacity and transport system. *Aust.J.Agric.Res.* 26: 11-23.
- Fischer, K. S. and Wilson, G. L. 1975. Studies of grain production in *Sorghum bicolor*. (L.Moench.) IV. Some effects of increasing and decreasing photosynthesis at different stages of the plants development on the storage capacity of the inflorescence. *Aust. J. Agric. Res.* 26: 25-30.
- Fischer, K. S. and Wilson, G. L. 1975. Studies of grain production in *Sorghum bicolor*. (L.Moench). V. Effect of planting density on growth and yield. *Aust. J. Agric. Res.* 26: 31-41.
- Lawn, R. J., Fischer, K. S., and Brun, W. 1974. Symbiotic nitrogen fixation in soybeans. II. Interrelation between carbon and nitrogen assimilation. *Crop Sci.* 14:17-22.

Fischer, K. S. and Wilson, G. L. 1971. Studies of grain production in *Sorghum vulgare*.. I. The contribution of pre-flowering photosynthesis to grain yield. Aust. J. Agric. Res. 22: 39-47.

Fischer, K. S. and Wilson, G. L. 1971. Studies of grain production in *Sorghum vulgare*.. II. Sites responsible for grain dry matter production during the post anthesis period. Aust. J. Agric. Res. 22: 39-47.

Fischer, K. S. and Wilson, G. L. 1971. Measurement of distribution of photosynthesis in plant canopies. Nature 229:30.

## **2. A broad knowledge of agriculture and its policy setting for poverty reduction and visionary leadership with global perspective, and a capacity for strategic analysis of complex issues**

Fischer, K. S. 1998. Rice production systems: challenges for rice research in Asia-introduction. In Dowling N. Greenfield SA, and Fischer, K.S.- editors. Sustainability of rice in the global food system. California (USA): Pacific Basin Study Center and Manila (Philippines): International Rice Research Institute (in press).

Fischer, K. S. 1998. Rice production systems: caring for the biodiversity of tropical rice ecosystems-introduction. In Dowling N., Greenfield S.A., and Fischer K.S., editors. Sustainability of rice in the global food system. California (USA): Pacific Basin Study Center and Manila (Philippines): International Rice Research Institute (in press).

Fischer, K. S., and Cordova V. G. 1998. Impact of IRRI on rice science and production. In: Pingali, P., Hossain, M., editors. Impact of rice research. Proceedings of the International Conference, 3-5 June 1996, Bangkok, Thailand. Bangkok (Thailand): Thailand Development Research Institute and Manila (Philippines): International Rice Research Institute (in press).

Fischer, K. S. 1995. Setting priorities for agriculture research in Asia: A case study with rice. In: Global Agenda for Livestock Research, Proceedings of the Consultation for the South-East Asia Region, 10-13 May 1995, IRRI, Philippines. Edited by C. Devendra and P. Gardiner, pp. 91-104.

Hossain, M. and Fischer, K. S. 1995. Rice research for food security and sustainable agricultural development in Asia: Achievements and future challenges. Geo-Journal 35.3: 286-298.

Teng, P. S., Fischer, K. S., and Hossain, M. 1995. Meeting the food challenges of the 21st century: the role of national and international rice research. Tropical Biology (invited paper). Asian Journal of Tropical Biology 1, 1-21.

Teng, P. S., Hossain, M., and Fischer, K. S. 1995. Developing an R & D model for the humid tropical eco-region in Asia. In: Eco-regional approaches for sustainable land use and food production. Edited by J. Bouma et al., pp. 305-330.

## **3. Familiarity of the CGIAR system and communication of complex issues**

Fischer, K.S. Maintaining access to modern science to serve the poor: a case study in rice. Crawford Fund Parliamentary Seminar , Canberra , August 2002.

Fischer, K. S. 1994. New breakthroughs and present accomplishments in rice research in Asia. Paper presented at the 18th Session of the International Rice Commission. FAO, Rome, Italy, 5-9 September 1994.

Fischer, K. S. 1994. Improving cereals for the variable rainfed system: From understanding to manipulation. Paper presented at the Workshop on Physiology of Drought and Submergence. Organized jointly by International Rice Research Institute, Indian Council of Agricultural Research and N.D. University of Agriculture and Technology. 28 February-1 March 1994. Lucknow, India.