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Foreword

Neil Andrew

Paper prepared for presentation at the “Biodiversity And World Food Security: Nourishing The Planet And Its People” conference conducted by the Crawford Fund for International Agricultural Research, Parliament House, Canberra, Australia, 30 August – 1 September, 2010

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Foreword

THE HON. NEIL ANDREW

The Crawford Fund's sixteenth annual Parliamentary Conference in 2010 focussed on the relationship between biological diversity and food security. These proceedings are a record of presentations and discussions over three days at the premier event in Australia marking the UN International Year of Biodiversity, and presaging the UN 2011–2020 Decade of Biodiversity.

Agriculture—the planned sowing and harvesting of plants that had previously been gathered in the wild, and the parallel domestication of animals—probably first dawned in the Fertile Crescent of the Middle East around 10 000 years ago, and independently in northern and southern China, Africa's Sahel, New Guinea and several regions of the Americas. Some of these sites had access to only a few species of productive and nutritious plants, and the limited range and quantity of food remained a major constraint on population health and size for thousands of years, despite recogni-

tion long ago of the potential value of irrigation, crop rotation, fertilisers and pesticides. Expanded global travel over the last 500 years has greatly broadened the range of species available to agriculture worldwide, while the rise of the chemical industry in the last century has transformed the availability of fertilisers, pesticides and herbicides. Most recently yields have been significantly raised by efficient plant breeding programs that have exploited the natural genetic diversity that is present in most species. These programs have improved yields by increasing disease resistance; harvest index; growth rate; tolerance to heat, cold and waterlogging; and so on.

A consequence of increased agricultural productivity and the availability of cheap fossil energy has been rapid growth of the human population. This population growth has been accompanied by the extensive replacement or modification of natural ecosystems by agricultural or pastoral activity, or by settlements and infrastructure—a process that is far from any equilibrium, despite the obvious ultimate incompatibility of an increasing population aspiring to greater consumption while dependent on a diminishing land base and finite resources of water and nutrients. Less obvious, but of great long-term significance, is the threat posed by loss of biological diversity—in our crop species, in potential crop species, in insects that have a role in pollination or are predators of pests, and so on.

FAO estimates that food production must increase by more than 75% in the next 50 years, and the resource base available for this will be inevitably diminished. The Crawford Fund was pleased that, coinciding with this conference, Julian Cribb's thoughtful analysis of this challenge—*The Coming Famine*—was released by CSIRO Publishing.

THE HON. NEIL ANDREW was born in the SA Riverland, where his family and later Neil had interests in horticulture. He was an active participant in the SA Agricultural Bureau movement, and was Chairman 1980–1982. In 1975 he was awarded a Nuffield Agricultural Scholarship to make an overseas study tour. In 1983, he was elected to the Australian Parliament as the member for Wakefield in the House of Representatives. With changes in the boundaries of his electorate, he later moved to Gawler. He held various positions including that of Government Whip from 1997, and from November 1998 became Speaker of the House of Representatives. Neil retired from the position and from his seat in November 2004. He now lives in Adelaide and became Chairman of the Crawford Fund on the retirement of The Hon. Tim Fischer in June 2005. He retired as Chair of the Fund in late 2010.

A major element of the potential contribution that biodiversity can make to future food security is to provide the basis for new varieties of established crops capable of producing under conditions more diverse than now entertained. Entirely new crops, especially in warmer or dryer climates, are also a real possibility, as has been shown by the recent commercialisation of hardy and nutritious indigenous vegetables in Africa.

Can we have our biodiversity and eat too? This was the pivotal question posed by Professor Hugh Possingham at this conference. His question, which neatly captures the dilemma faced by a hungry, resource-scarce world, was asked against a remarkable and stark background set by the conference's two outstanding keynote speakers: Professor Stephen Hopper, the Director of the world's most famous garden—the Royal Botanic Gardens, Kew—and Dr Cristián Samper, the Director of the National Museum of Natural History, Smithsonian Institution.

Hopper addressed the global ambition of sustainable healthy living for all, which he said was challenged by accelerating change, entrenched patterns of land and water use, biodiversity loss, rising consumption and population growth. There was, he said, little hope of continuing the green revolution if it remained focused on a few mainstream crops without new land and water ethics, and new economic and political systems that valued social and natural capital as much as financial assets.

Samper said that of the millions of species, some described but many more lost, only a few hundred plants and animals have been domesticated; whilst biological diversity remains vast and variable in space and time, it is being homogenised. Agriculture and trade are having major impacts on natural ecosystems through their transformation into production systems, habitat loss and fragmentation, pollution and species invasion. It is time, he said, to bring together knowledge from biodiversity science and agricultural research through a whole-of-system approach to ensure these opportunities are seized—biodiversity is the basis for agriculture and for a sustainable future. (This conference was one of few being held in the year of biodiversity specifically to bring these two groups together).

Hopper's view was that the world is at a turning point. What is not clear is whether we have yet found the policy visionaries to advise the world's leaders on the development of public policy that is both far-sighted and practical.

Just how difficult the policy challenge will be was illustrated by the presentation on tropical forest biodiversity loss by Luca Tacconi, Director, Environmental Management and Development Program at the Crawford School of Economics and Governance. He pointed to the need for governments to commit to changes in existing policies that drive deforestation and forest degradation, adjusted policies and property management rights, clearer lines of authority for every level of governance, addressing of corruption, and stronger law enforcement.

The conference is possible only because of the generous support of our sponsors, a full list of whom is incorporated in these proceedings. I thank both those who have provided sustained support for the conference since its inception some 20 years ago, as well as to those who have joined us more recently.

Finally, I should like to express my personal appreciation of the time and effort invested by all of our speakers in making the event such a success. In particular, I would wish to thank Parliamentary Secretary for International Development Assistance the Hon. Bob McMullan for his contribution; along with many of his Parliamentary colleagues from all sides of politics, he has been a long-term supporter of the Fund.

Watch for our announcement of the 2011 conference topic and timetable.



The Hon. Neil Andrew AO
Chairman
Crawford Fund Board of Governors