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**Water for Irrigated Agriculture and the Environment:  
Finding a Flow for All**

**Alexander Downer**

*Paper prepared for presentation at the “Water For Irrigated Agriculture And The Environment: Finding a Flow for All” conference conducted by the Crawford Fund for International Agricultural Research, Parliament House, Canberra, Australia, 16 August 2006*

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## OPENING ADDRESS<sup>1</sup>

# Water for Irrigated Agriculture and the Environment: Finding a Flow for All

THE HON. ALEXANDER DOWNER MP  
MINISTER FOR FOREIGN AFFAIRS

## Introduction

It is always a pleasure to be part of this annual conference and discuss the challenges of agricultural development and natural resource management in developed and developing countries.

This year's theme, 'Water for Irrigated Agriculture and the Environment: Finding a Flow for All', is as relevant to Australia as it is to our neighbours in the region. We face much the same issues and challenges, and we are seriously engaged in developing solutions — for Australia and to assist our neighbours in the region:

- Solutions that will balance water demand and pricing against the need to help lift people out of poverty through gains in agricultural productivity and crop diversification.
- Solutions developed by working in partnerships — applying knowledge, experience and technological innovation. This conference is an important forum to share that knowledge and strengthen those partnerships.

I extend a very warm welcome to Dr Frank

THE HON. ALEXANDER DOWNER has been Australia's Minister for Foreign Affairs since the election of the Howard Government in March 1996, and has held the seat of Mayo for the Liberal Party continuously since 1984. Born in 1951, Mr Downer was educated at Geelong Grammar School, Victoria; Radley College, Oxford, United Kingdom; and the University of Newcastle on Tyne, United Kingdom. He holds a Bachelor of Arts (Hons) in Politics and Economics and is a Doctor of Civil Laws (*honoris causa*). Mr Downer is a member of the National Security Committee of Cabinet.

Rijsberman, Director-General of the International Water Management Institute in Sri Lanka. This is the world's pre-eminent research institution on the management of water for food and agriculture and I am very pleased that we are able to contribute to its work through the Australian Centre for International Agricultural Research — ACIAR.

## Water: a significant challenge in Australia

We cannot talk about water use, water pricing, agriculture and the environment in isolation. The policy issues and practical implications are firmly intertwined. I am reminded of this every time I fly between Canberra and my home in Adelaide, over some of our most important cropping and grazing country. Looking down from the plane window I marvel at our ability to thrive in the world's driest inhabited continent. However, as we now know, this has come at a cost: declining water quality, increasing salinity, outbreaks of toxic algae and the loss of biodiversity.

So now we face the biggest challenge of all: changing the way we use and manage water to undo some of that environmental damage yet satisfy our growing needs.

We have taken very serious steps to address this problem, with the Council of Australian Governments signing a framework for reform in 1994 and establishing the \$2 billion Australian Government Water Fund to invest in water infrastructure and better water practices generally.

We have certainly made significant advances in

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<sup>1</sup>This is an edited version of the Minister's speech

conserving water and using it more intelligently.

Advances in research and technology have the potential to reduce water use in agriculture without adversely affecting crop yields and farm incomes. They also offer potential for environmental improvements and greater economic efficiencies at national level.

Our efforts in water management are being recognised internationally, and many developing countries in the Asia–Pacific region are drawing on our expertise: but much more remains to be done.

## **The Murray–Darling River system**

A particular challenge for Australia is to restore the health of the Murray–Darling River system. The Living Murray Initiative is one of the most significant river restoration programs in the world, involving four state and territory jurisdictions and the Commonwealth.

The Living Murray initiative will provide additional environmental water to six ecological sites along the river to achieve specific environmental benefits, such as healthier fish, birds and vegetation.

It also involves on-ground works and monitoring programs to ensure the most effective delivery and use of the environmental flows.

No-one pretends that achieving this outcome will be easy, but there are encouraging signs of improvement in the environment as a result of shifting the balance between flows a little more in its favour.

## **The Mekong challenge**

The same approach is being applied in other countries in our region, drawing on the expertise of the Murray–Darling Basin Commission to advise on management of rivers such as the Mekong.

There the Australian Government, through its international aid agency AusAID, is helping the Mekong River Commission to better plan and manage the water and related resources of the Mekong River in Laos, Thailand, Cambodia and Vietnam.

If we think dealing with issues over state borders is difficult, then let me say that a river that passes through a number of countries presents a whole new set of challenges.

But our work there is very encouraging. AusAID is supporting the Mekong River Commission to develop a basin-wide approach, drawing on our Murray–Darling Basin experience. Basin planners are focussing on integrated water resource management, sharing the resources of the basin, and more fully involving local communities in planning and decision-making.

Base-line information on river flows is essential for managing the river, so Australia has provided technical support to improve hydrological monitoring.

The Mekong doesn't only provide water to irrigate the region's rice crop. It also provides freshwater fish, frogs and shellfish that are the main protein source for many people, particularly the poor. So maintaining flows for river ecosystems is a very high priority. Knowing how flow in the river changes through the seasons, from place to place and with different uses, is an important first step in balancing competing demands for water.

The benefits of the basin-wide approach will be amplified by initiatives within countries and communities.

For example, more than a quarter of a million people in the Mekong delta will soon benefit from an AusAID water management project on the island of Vam Nao. An almost-complete system of dykes and canals will improve irrigation and help to control seasonal flooding, reducing crop losses and enable farmers to grow an additional high-value crop in the dry season.

## **Using water efficiently**

Elsewhere in Vietnam, ACIAR's work to improve the efficient delivery of water to farmers means crops will not suffer from too much or too little water, and yields will increase. Through an Australian computer software program and a better database of information to manage the water supply network in the La Khe irrigation system, rice yields have already increased by 11%.

Because water inputs have been reduced, so have energy inputs, resulting in significant cost savings. In addition, flow-on benefits could be significant.

Hundreds of millions of people in the region depend on river water for growing rice and other staple crops, as well as for the habitat it provides for flora and fauna. Improving the efficiency of agri-

cultural production and water use is fundamentally important to improving economic growth, sustainability and reducing poverty.

## ACIAR projects

In three Indian states on the East India Plateau, 27 million people rely on rainfall during the monsoon for crop productivity. Watershed management and the sustainable use of water, such as through water harvesting, are priorities. This is because capturing rainfall is fundamental to increasing crop production and is the basis for improving the income of some of India's poorest people. Australian assistance, through ACIAR, is helping to improve these aspects of water management. Similar techniques are being applied in the Philippines.

With population growth and urbanisation, water consumption is also accelerating. And pressure to increase efficiency is growing, particularly on the main user of freshwater resources — irrigated agriculture. Continued research on more efficient irrigation is vital, not just for Australia but for developing countries, to relieve some of this pressure.

Nowhere is this more acute than in China. Irrigated rice production is one of the largest users of available water, but without it China would struggle to produce enough food. ACIAR, in partnership with Chinese researchers, the International Water Management Institute and the International Rice Research Institute, have trialled new irrigation methods for rice based on alternate wetting and drying of soils instead of continuous flooding. The results of this work are impressive — less water is being used but high yields have been maintained. One-and-a-half million hectares of land in China is under the wetting-drying technique, and now this approach is being trialled in Sri Lanka and the Philippines.

These are just some examples of our efforts.

## The challenge

Food security will become more pressing as the population of the Asia-Pacific region increases by an estimated 30% over 35 years to 4.2 billion by 2025.

With agriculture accounting for 70% of water use, the test is how to balance all the competing uses for water while continuing to lift people out of poverty. We are talking about an area where fresh water supply is already among the world's lowest

per capita, and 700 million people live on less than \$1 a day.

Part of ensuring a flow for all is acknowledging that it's not a free-for-all, that there is a cost for water and that its pricing should be used to reduce demand and encourage more efficient allocation and use.

One of the priorities for our assistance is to ensure that pricing reforms take account of the capacity of the poor to pay.

In China there are significant gains to be made in allocating surface and groundwater more efficiently. The potential gains from reallocation of water in the Yellow River Basin are estimated by the Australian Bureau of Agricultural and Resource Economics (ABARE) to be over a billion yuan (\$160 million) per year.

If these gains are to be allocated equitably and rural incomes improved, however, property and resource entitlements will need to be established to allow trade. With funding from AusAID, ABARE has been working with the Chinese Academy of Sciences and the Chinese Centre for Agricultural Policy to look at rights and entitlements, and institutional reforms, that will promote trade in rural China.

Water policy, including water pricing and trade, cannot be considered in isolation. It needs to be viewed in the context of overall economic, agricultural and rural policy to address issues of urban and industrial development, food security and the discrepancies between urban and rural incomes.

One way forward for China's agricultural producers is to move to higher-value crops or other employment, but in order to do that they will need to address problems with infrastructure and effective use of surface and groundwater.

With the resources of the aid program, and the application of our knowledge and research expertise, we are working with several countries in a variety of ways to better manage water across a range of competing uses.

We are demonstrating the benefits of more efficient irrigation, and encouraging uptake. In Pakistan we have been trialling raised crop beds, which have resulted in lower irrigation water consumption and potentially increased yields of maize and wheat. Raised beds have also been trialled for rice-wheat rotations in India, for vegetables on heavy

clay soils in Indonesia, and for wheat in China. In each country lower irrigation water use has been achieved.

Using less water will also reduce runoff and pesticide contamination of water resources, reducing health and environmental problems, and in some cases enabling farmers to capture a price premium for selling chemical-free vegetables.

When I launched the White Paper on the Australian Aid Program in April, I reiterated the importance of good governance in the effective management of natural and human resources. We have invested significantly over the past decade to help developing countries improve their policy and regulatory environment, and we will continue to do so.

Australia is firmly committed to support efforts to develop sound water policies and practices, governance systems and institutional arrangements necessary to underpin them.

## Conclusion

All of us now know that there are ways of managing our water without damaging the environment and making poor people poorer.

Developing countries can benefit from Australia sharing its technology and its hard-learned lessons.

Future research needs to steadily build the case for change while equipping farmers, irrigation system operators and other water resource managers with the means to respond.

Our considerable expertise in integrated river basin management allows us to help other countries avoid the same problems. And our scientists' and farmers' pioneering efforts to reduce water use — whilst maintaining crop production and incomes — is paying dividends by freeing up water to maintain river health.