



## **EIANZ POSITION STATEMENT ON WATER**

March 2007



### **BACKGROUND**

Water is vital for all life on earth – it is the most essential resource that sustains all species in every ecosystem on the planet. Water is also the basic provision for our society's economic development and general wellbeing.

The planet is rich in water. However, this is mainly seawater with only a small percentage of the total water available for human consumption. Of the total water resource of the planet:

- 2.5% of the total volume of water on Earth is fresh water;
- 69% of all freshwater is frozen (in glaciers and permanent snow cover);
- large quantities of water are held in underground aquifers; and
- 0.26% of fresh water is in rivers and lakes.

Lakes and rivers are considered as renewable water resources because they have a natural circulation (recharge) time for water to go around the natural water cycle. The average circulation time of water is:

- 16 days in rivers;
- 17 years in lakes; and
- 1,400 years in groundwater reservoirs.

Groundwater recharges so slowly that it is considered to be a non renewable water resource. Since the annual global recharge rate of groundwater is so slow, sustainable consumption of groundwater can not be more than 2,000 km<sup>3</sup> per year for the world population (the estimated annual global recharge rate of groundwater).

## **Australia**

As the driest, inhabited continent on Earth, the challenges for water management in Australia are significant. Only Antarctica has less annual rainfall. Australia has the least amount of water in its rivers, but twice the fluctuation in flow compared to European rivers, meaning droughts and floods are common. Flow fluctuations in Australian rivers are second only to southern Africa. These spatial and temporal variations mean that water is scarce in many parts of the continent.

Australia has 3 million kilometres of rivers and creeks, at least 16 million hectares of nationally important wetlands, and more than 1,650 estuaries. In general, there are competing water uses within each catchment area including domestic supply, recreation, agriculture, industry and environmental needs.

Australia has extensively developed many of its rivers and groundwater resources. Australia's two largest rivers, the Murray and the Darling, have been dammed for power generation and irrigation. As a result, the flow to the sea has been reduced by three-quarters but provides three million people and 40% of Australia's farms with water. Around \$90 billion has been invested in water infrastructure assets, which now underpins Australia's economy particularly in rural areas. Irrigation agriculture accounts for around 70% of the 21 gigitalitres of water per year used by Australians.

These economic and social benefits have been achieved at the expense of some environmental degradation. Rising water tables as a result of over-irrigation and excessive land clearing has increased salinity in rivers and soil, resulting in 2.5 million hectares of severely salt-affected land with the potential to increase to over 15 million hectares in 50 years. Salt-affected land is now recognised as a problem of national significance. Over-allocation of freshwater in rivers and aquifers has resulted in deterioration of water resources, both in terms of quantity and quality. All of these impacts are having a negative effect on environmental sustainability and hence Australia's economic development.

Lessons learnt from work on repairing the Murray-Darling system and other stressed waterways indicate that it is much cheaper to protect healthy water systems than to repair them once been degraded. As water resources become scarcer, tension between different users (including the environment) can be expected to increase, particularly in relation to new major projects.

Many capital cities and regional areas are currently subject to water restrictions due to lack of adequate water supply. Again, these impacts are having a negative effect on sustainability with environmental, economic and social consequences for the nation. Thus, in most areas of Australia, there are needs to improve water resource management to improve sustainability outcomes.

Furthermore, research suggests that "global warming" is affecting the drought regime in Australia<sup>1</sup> with drought periods in the future expected to be longer and more intense in many of the main agricultural areas. This includes the impact of reduced rainfall, higher temperatures and increased evaporation rates.

Significant water reforms began in Australia in 1994 when the Council of Australian Governments (COAG) agreed to implement a strategic framework to achieve an efficient and effective water industry. The next major development was the National Water Initiative (NWI) in 2003 designed to establish a nationally compatible system of water access entitlements, efficient water markets, institutional arrangements for the recovery and management of water for the environment, improved accounting and best practices for water pricing, and urban water issues. It also provides ongoing funding to improved water management throughout Australia.

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<sup>1</sup> Our Water, Our Future, Green Paper, Victorian State Government, 2003

## ***New Zealand***

In contrast, New Zealand is rich in water but the challenges it faces are no less significant. Like Australia, a large number of its nationally important rivers have been damaged by or are further threatened by large scale hydro-electric or irrigation proposals. Demands for water in some areas are reaching unsustainable levels as a result of irrigation and other competing demands. Additionally, there are problems with the enforcement of resource consents under the Resource Management Act 1991 (RMA) across the country which relate to wastewater and effluent disposal. The impact of climate change is already affecting the drier eastern coast of NZ.

Despite its clean image and pristine waters, New Zealand's water quality has declined in lowland streams due to water extraction and pollution. Approximately 95% of lowland rivers are now deemed unsafe for drinking or swimming. Excessive nutrient inflows have resulted in annual toxic algal blooms in volcanic lakes around Rotorua and Taupo. Sewerage and industrial waste water contributes to further pollution of many rivers. Waterways and public drinking water supplies are inadequately protected from the impacts of intensive land use. Rates of infection of waterborne diseases are excessive and pose a significant public health risk.

To address these challenges the New Zealand government has embarked on development of a sustainable water strategy to improve the management of freshwaters, recognising the fundamental importance of water to all New Zealanders. This was established in 2003 as one of four priority areas under the sustainable development programme of action and followed extensive public consultation. The strategy focuses on three national objectives for fresh water to:

- improve the quality and efficient use of freshwater by building and enhancing partnerships with local government, industry, Maori, science agencies and providers and rural and urban committees;
- improve the management of undesirable effects of land use on water quality through increased national direction and partnerships with communities and resources users; and
- provide for growing demands on water resources and encourage efficient water management through increased national direction working with local governments to identify options for supporting and enhancing local decision making, and developing best practice.

A number of initiatives are currently underway as a result of these actions, including the Lake Taupo Water Quality Protection Programme and the Rotorua Lakes project.

In New Zealand the principles of sustainable management of natural and physical resources and the protection of significant waterways is entrenched in legislation under the Resource Management Act 1991. Culturally, each water body is recognised as having values and appropriate uses. These spiritual values of water are also protected under the Resource Management Act and must be accounted for when water is used for other purposes.

## **POSITION STATEMENT OF THE EIANZ**

The EIANZ believes that provision and protection of water is a crucial national issue where responsible and collaborative action must be taken at all levels of government, industry and community to ensure water for human and environmental purposes is used in a sustainable manner. The key water related issues are scarcity, growing consumption, competing uses, water quality, human intervention and damage to ecological systems, and allocation of water for ecosystems. To address these issues measures must be put in place (including stronger legislation and improved practices) to protect existing water resources and ensure that water is harvested in a sustainable manner now and for the future.

The EIANZ believes that effective *leadership and coordination* is required at all levels of government. This is necessary to give water users enough confidence to invest in water-efficient schemes and technologies. This includes:

- a coordinated intergovernmental approach to management of national water resources;
- acknowledgement that water policy and ongoing water reforms are not independent of policies for climate change, energy and sustainability;
- embodiment of the principles of sustainable management in water policies and strategies;
- application of the Precautionary Principle to development and protection of water resources;
- development of a system of guaranteed access to water of specified quality and volume.

The EIANZ advocates continuing *research and investment* to:

- incorporate sustainable water harvesting technologies, water efficiency technologies and water sensitive urban design principles into existing and proposed land developments;
- encourage new technological and other options for improving the efficiency of water use in industry;
- facilitate an integrated approach to water management, accounting for the total water cycle: (catchment water balance, connectivity between surface and groundwater systems, upstream / downstream relationships) to ensure secure the rate of supply to consumptive users, to the environment and to future needs; and
- further develop national planning instruments and best practice water management with targets for industry that are beyond simple compliance with existing initiatives.

The EIANZ believes that ongoing *awareness raising, education and involvement* at the regional or local level is necessary to:

- help people to understand water and adapt to using it as a scarce resource;
- provide improved access to information for users of water (investors, farmers, catchment groups and the public);
- ensure that water management decisions are transparent, accountable and based on sound science and economics; and
- include wide stakeholder engagement/consultation and adequate review timeframes for effective decision-making.

Under Australia's policy reforms, environmental flows are regarded as a use of water therefore future investment in irrigation can only proceed if economically viable and sustainable. State and territory governments must implement water allocation and entitlement systems to separate water property rights from land (including separation of entitlements in terms of ownership, volume reliability, transferability and quality). Water trading within catchments must take into account the physical and natural constraints of the catchments.

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World Water Council: website ([www.worldwatercouncil.org](http://www.worldwatercouncil.org))

Australian Government: Department of the Prime Minister and Cabinet ([www.dpmc.gov.au](http://www.dpmc.gov.au))