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Water licences valued at \$2.8 billion traded in Australia's emerging water markets

Water to the value of \$2.74 billion¹ was traded in 2008 – 2009, which is an increase of about 70% over 2007 – 2008, when \$1.6 billion was spent in Australia's emerging water markets (National Water Commission 2009:6). The use of water trading is a key policy of Australian Governments to reform water use and move water to more profitable uses (Council of Australian Governments 2004). Many countries are watching the Australia's use of water markets and cap and trade to manage its water resources.

The main water markets in Australia involve the trading of irrigation water licences, as water utilities supply potable water to the major Australian cities and trade of water within cities is limited. However, the existing rural-urban divide, where water trading occurs in the country and water supply occurs in the cities, is changing. More and more, the divide is becoming less obvious. Urban water utilities are buying water licences from irrigators and moving water to their storages to supplement their potential supply shortages. As well, innovative small scale trading is occurring in some cities but discussion about these arrangements is beyond the scope of this paper. This paper primarily considers rural water markets within the Murray-Darling Basin (MDB), which is relatively dry, accounting for only 6% of Australia's runoff in 2004 – 2005 (National Water Commission 2007:VIII).

The Basin is characterized by large scale public and private infrastructure to regulate water delivery on a district basis, and is hydrologically linked enabling interregional water trading (Australian Competition and Consumer Commission 2006:8). It is the largest geographic water trading area within the Australian continent and possibly, the largest in the world, as the Murray-Darling Basin extends across one seventh of the Australian continent and is the size of France and Spain combined. Approximately two million people live within the Basin and another million people are heavily dependent on its water. Its rivers cross the jurisdictions of the Australian Capital Territory and the States of New South Wales, South Australia and Victoria. The region accounts for around 70 per cent of irrigated agriculture in Australia.

The Basin and its rivers can be seen in the following diagram showing its location within the mainland continent of Australia. Its major irrigation districts are depicted and water trading is active between states and irrigation districts.

¹ Figures are in Australian dollars

Major Irrigation Districts in the Murray-Darling Basin



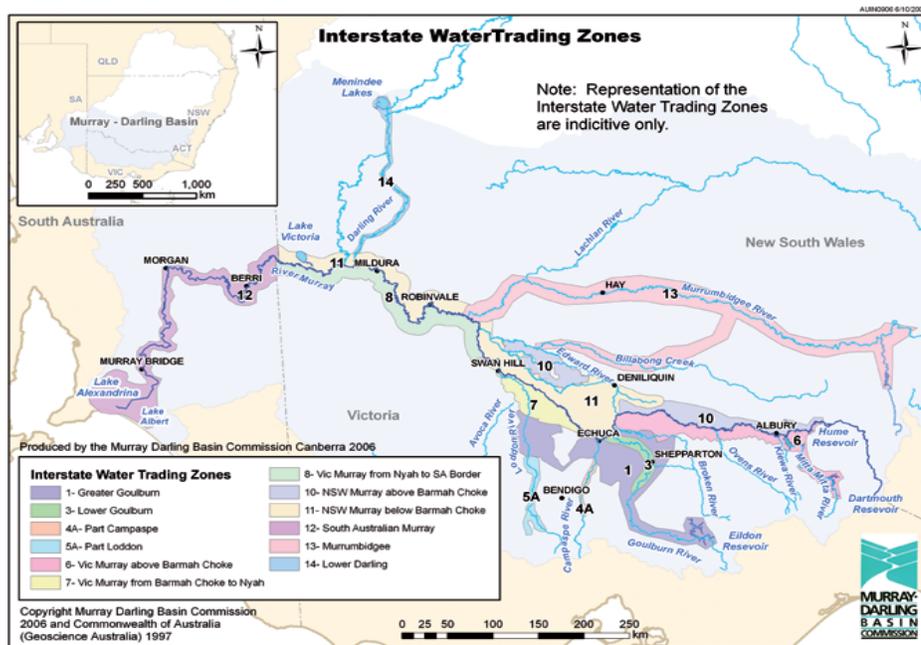
Source: Murray-Darling Basin Commission (2007a)

History of Water Trading

Permanent transfers of water entitlements were introduced in the States of South Australia in 1982, New South Wales and Queensland in 1989, and Victoria in 1991 (Murray-Darling Basin Commission 1995:37). This allowed trading of surface and ground water within state borders. Later, greater flexibility with the trading of water licences was considered by the Council of Australian Governments 'to allow water to flow to higher value uses subject to social, physical and environmental constraints' (Council of Australian Governments 1994).

The following diagram shows water trading areas along the River Murray-Darling, which allow the trading of temporary and permanent water licences across the State borders of New South Wales, South Australia and Victoria. These trading zones were originally based on irrigation districts.

Interstate Water Trading Zones within the Murray-Darling Basin

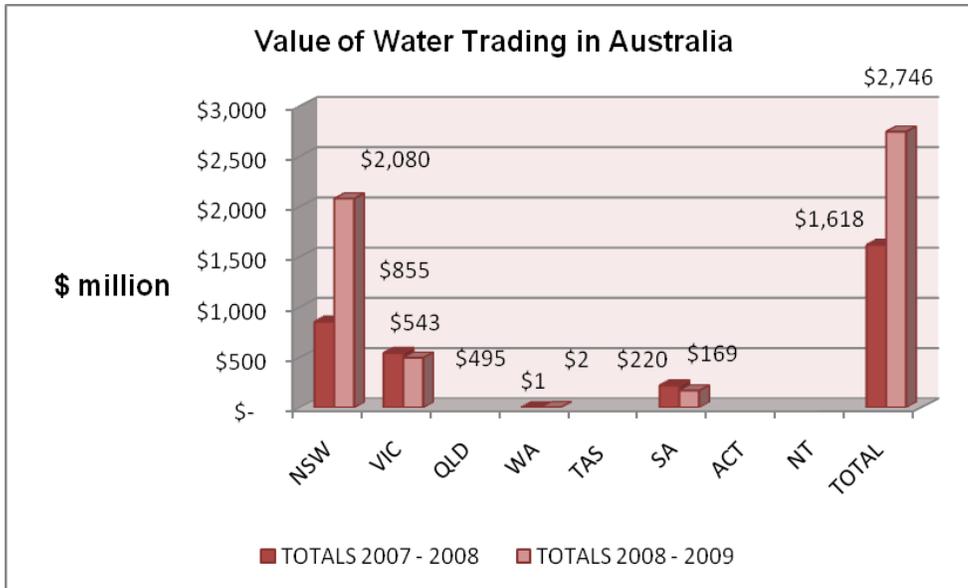


Source: Murray-Darling Basin Commission (2007b)

The trading of water entitlements increased in 1995 when the cap was implemented by Governments and, generally, no new water licences were issued. However, progress towards efficient water markets has not occurred quickly. In 1998, the Murray-Darling Basin Commission 'established a pilot interstate water trading project that allowed limited interstate trade of permanent water entitlements' (Murray-Darling Basin Commission 2007c). This was the beginning of active interstate water trading. The States of New South Wales, South Australia and Victoria agreed to allow state based licences to transfer to another State. This co-operation has continued since that time and trading of permanent and temporary licences across State borders has expanded significantly.

By far, the largest water users in the Basin are irrigators. They used about 65% of available water in 2004 – 2005 (Australian Water Resources 2009). The value of water trading has increased significantly in recent years.

Value of water trading in Australia



Source: National Water Commission 2009

New State Wales is the largest trading State followed by Victoria and then South Australia. Water trading in Queensland will grow and is likely to overtake the States of Western Australia and South Australia in the future.

General Description of Water Trading

Trading involves the temporary or permanent transfer of a water licence. A temporary or term trade involves the transfer of an allocation of water for a set period of time and traditionally occurs within the Australian financial year, which extends from 1 July until 30 June. A temporary trade of water allocation can commence at any time during the financial year and will expire on 30 June. Historically, the permanent and temporary trade of water licences involved manual processes and would occur between farmers with the assistance of their local irrigation authority or utility. Now, more third parties, such as lawyers, conveyancers and brokers, are involved, as specialist knowledge is becoming more important. As well, the temporary transfer of water allocations are facilitated through the use of electronic exchanges but a single national exchange does not exist.

Market Size

In 2004 – 2005, the total volume of water access entitlements in Australia was 18,608 gigalitres² (Productivity Commission 2010:47). Assuming a value of \$2,000 per megalitre³, then the total value of water access entitlements in Australia in 2007 is approximately \$A37 billion⁴. Also, the price of water licence bought from the River Murray-Darling has increased significantly over the last 18 years. Different growth rates apply in different geographical areas but 15% annual growth in the value of water licences

² 1 gigalitre (GL) equals 1,000 megalitres (ML)

³ 1 acre*foot equals 1.223 megalitres

⁴ The price of rural water licences across Australia is highly variable and this figure should be considered an unscientific estimate.

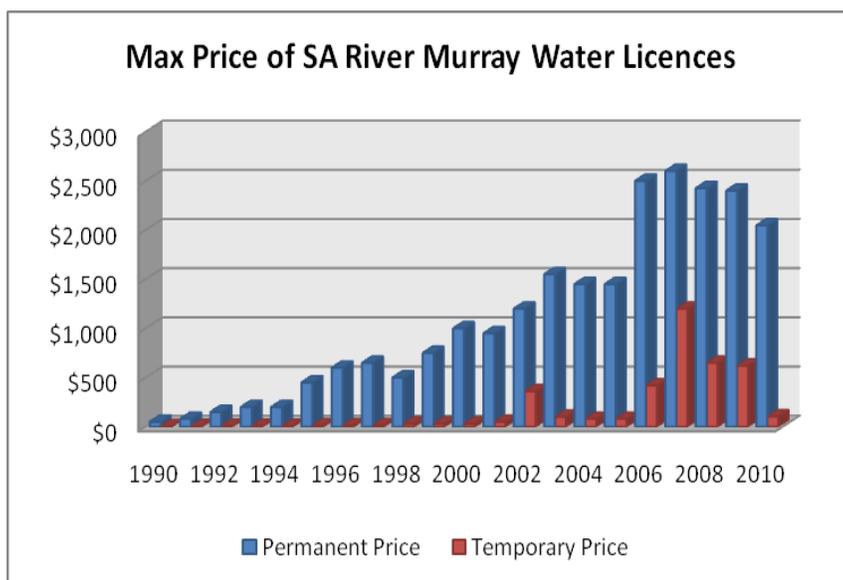
have been found (Bjornlund and Rossi 2006). The increase in price is due to (1) the policy initiative to assist the trading of water licences, (2) the introduction of a cap on new licences issued by governments, (3) the growth of managed investment schemes⁵ and (4) significant droughts in Australia. The increase of price indicates that water is being moved to higher value users but further study is required in this area.

Value of Water Licences

Water licences have significantly increased in value over the years. In 1990, the value of a permanent water licence in the State of South Australia for a megalitre (ML) of River Murray water was reported to be about \$50 - \$100 per ML and reached a high of about \$2,600/ML in 2007. These figures would reflect prices for River Murray water licences across the southern part of the Murray-Darling Basin

Since 2007, prices paid for River Murray water licences in SA have fallen. In 2010, the Federal Government has been paying irrigators around \$2,075/ML to buy their water licences and these licences will be converted to environmental entitlements controlled by the Federal Government. The following table shows the increase in the price of permanent and temporary water licences from the South Australian section of the River Murray-Darling. Similar price trends have occurred across the Basin.

Chart 2: Increase the price of water licences in SA



Source: Percat Water 2010

SUMMARY

Water markets in Australia are new and evolving and trading totalling billions of dollars is occurring. However, the development of markets has been an on-going incremental process since 1994. The time

⁵ Since 1995, grape growers in South Australia with access to River Murray water expanded vine area by 67% (Young et al 2000:13)

taken has partly been due to the fact that both ground and surface water in the Basin crosses State and Territory borders and disagreements between jurisdictions have occurred. Also, the scope and size of the change needed to introduce a cap and trade system has meant the development of new policy and legislation; the use and application of science to measure and understand different water resources, as well as the challenge of supporting developing working water markets. However, since 2004, the speed of change has accelerated, as Australia scene has been impacted by the combined effects of (1) on-going drought over the southern part of the continent (2) over-allocation of water licences and (3) climate change. The use of water markets is seen as an important policy initiative to manage the future impact of these pressures, which are stressing the Australian economy.

Observations of the Australian experience indicates that the efficient trading of water licences is more likely to occur when there is:

- (1) a driver for change e.g. stressed water resources;
- (2) a commitment to market based instruments (MBIs) to drive water reform;
- (3) policies adopted by stakeholders that reflect a commitment to water markets;
- (4) compatible legislation and regulation that support water markets;
- (5) the application of science in order to understand the characteristics of the water resource from which water is traded; and
- (6) government and bureaucratic support of market systems and private enterprise involvement in water trading.

In conclusion, the need to reform water use and manage water more efficiently has resulted in greater understanding of Australia's water resources, significant policy and legislative change, and emerging water markets.

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