

Water and the Murray Darling Basin - A Statistical Profile

Australia

2000–01 to 2005-06

Introduction

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PREFACE

This publication provides environmental, economic and social information for the Murray-Darling Basin (MDB). It aims to provide statistics to inform decision-making, research and discussion about the Basin within governments and in the wider community. The publication is presented in five chapters:

- Chapter 1 presents a physical description of the MDB, including the area covered, land use, climate, water availability and environmental assets.
- Chapter 2 explores the characteristics of people living in the MDB. The chapter is divided into four main sections: population characteristics; education; work; and farmers. Data are presented for 1996, 2001 and 2006, and comparisons are provided with national level data.
- Chapter 3 examines water use by industries and households, using the most recent economy-wide water use data available. As a result of the significance of agricultural water use in the MDB, this chapter places a strong emphasis on water use by agriculture. Data presented include: water use for a range of crops and pastures, changes in water use over time, the location of water use, water sources, and irrigation practices.
- Chapter 4 outlines agricultural production in the MDB and includes comparisons with Australian totals and between irrigated and non-irrigated agriculture. It also outlines changes in agricultural area and production levels between 2000–01 and 2005–06. The economic contribution of irrigated agriculture in the MDB, including comparisons for different agricultural commodities, is also discussed.
- Chapter 5 presents information about natural resource management (NRM) activities that farmers in the MDB are implementing to address a range of NRM issues including water issues.

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Suggestions or comments on this publication would be appreciated, and should be sent to the Director, Environmental Accounts and Water, Locked Bag 10, Belconnen ACT 2616.

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INTRODUCTION

The Murray-Darling Basin (MDB) is an area of national significance for social, cultural economic and environmental reasons. The social impacts of changes in agriculture and environmental events, such as drought, are important for people in the MDB. The MDB also contains nationally significant environmental assets which are reliant on water to maintain ecosystem health.

SUMMARY OF FINDINGS

Physical Attributes

- The Basin covers 1,059,000 square kilometres or 14% of Australia's land area. Most of the Basin's area is located in New South Wales (597,926 square kilometres or 56% of the Basin's area) and Queensland (259,313 square kilometres or 24% of the Basin's area) (BRS data available on request 2008).
- Australia's three longest rivers, the Darling (2,740 km), Murray (2,530 km) and Murrumbidgee (1,690 km) are found in the MDB (MDBC 2006).
- The 2005–06 ABS Agricultural Census found that 84% of the land in the MDB is owned by businesses engaged in Agriculture. Modelling by the Bureau of Rural Sciences (BRS) has identified that 67% of the MDB is used for growing crops and pasture.
- In 2005–06 temperatures recorded in the MDB were up to 2°C hotter than average.
- The MDB receives an average annual rainfall of 530,618 GL. Of this, 94% evaporates or transpires, 2% drains into the ground, and the other 4% becomes run-off.

People

- At the time of the ABS 2006 Census of Population and Housing there were 2,004,560 people living in the MDB - 10% of Australia's population.
- Most of the MDB population lived in New South Wales (39%) and Victoria (29%).
- Agriculture is a significant employer in the MDB. In 2006, 10% of all people employed in the MDB worked in Agriculture, compared to 3% Australia-wide.
- The other common industries of employment in the MDB were Retail (14% of all people employed), Health and community services (11%), Government administration and defence (10%), and Manufacturing (9%).
- The mean equivalised household income of people in the MDB in 2006 was \$675 per week compared to \$732 per week for Australia as a whole.
- Almost two-fifths (38%) of Australia's farmers resided in the MDB.
- The number of people employed as farmers in the MDB decreased by 10% between 1996 and 2006. Over the same period the number of people employed in all other occupations increased by 18%.
- Nearly two-fifths (39%) of people employed and aged 65 years or over in the MDB were farmers.

Water Use

- In 2004–05, industries (including Agriculture) and households in the MDB used more than half (52%) of Australia's total water consumption.
- In 2004–05, 83% of water consumed in the MDB was consumed by the Agriculture industry.
- Other users of water in the MDB included the Water supply industry, which consumed 13% (predominantly through irrigation water supply losses), and Households (2%).
- In 2004–05, 3% of Australia's electricity and 33% of the nation's hydro-electricity was generated in the MDB.
- In 2005–06, 7,720 GL of water was consumed for agricultural production in the MDB, 66% of Australia's agricultural water consumption.
- In 2005–06, the majority of water consumed in the MDB originated from two main sources: surface water (6,499 GL or 84% of MDB agricultural water consumption) and groundwater (1,069 GL or 14%).
- In 2005–06, the majority of surface water consumed by Agriculture in the MDB was in New South Wales (57%) and Victoria (30%). Over 70% of the 1,069 GL of groundwater consumed in the MDB was in New South Wales.
- In 2005–06, the agricultural commodities that used the most water in the MDB were:
 - cotton - 1,574 GL or 20% of water used for agricultural production in the MDB;
 - dairy farming - 1,287 GL or 17%;
 - pasture for other livestock - 1,284 GL or 17%; and
 - rice - 1,252 GL or 16%.
- Between 2000–01 and 2005–06, water consumption by some agricultural commodities was more variable than others. For example:
 - cotton water consumption - ranged from 1,186 to 2,599 GL; and
 - rice - ranged from 615 to 2,418 GL.

Agriculture

- There were 61,033 farms in the MDB in 2005–06, accounting for 39% of all farms in Australia.
- A significant proportion of Australia's food production was grown in the MDB in 2005–06:
 - 100% of rice;
 - 95% of oranges;
 - 62% of pigs;
 - 54% of apples; and
 - 48% of wheat.
- In 2005–06, the MDB contained 65% of Australia's irrigated land.
- The 1.65 million hectares (ha) of irrigated crops and pasture in the MDB were distributed as follows:
 - pasture (43%);
 - cereals other than rice (20%);
 - cotton (15%);
 - rice (6%);
 - grapes (6%);
 - fruit and nuts (5%); and
 - vegetables (2%).

Agriculture continued

- In 2005–06, the Gross Value of Agricultural Production (GVAP) in the MDB was worth \$15 billion, or 39% of the total Australian value of agricultural commodities.
- Between 2000–01 and 2005–06, the GVAP in the MDB increased by 7.3%, from \$13,972 million to \$14,991 million. Over the same period, the GVAP of all Australian Agriculture increased by 12.8%.
- Between 2000–01 and 2005–06, the total Gross Value of Irrigated Agricultural Production (GVIAP) in the MDB remained at approximately \$4,600 million. GVIAP as a proportion of GVAP in the MDB decreased from 33% in 2000–01 to 31% in 2005–06.
- In 2005–06, irrigated agriculture in the MDB generated 44% of Australia's GVIAP. Of this:
 - dairy farming generated \$938 million, or 20% of the total MDB GVIAP;
 - fruit and nuts generated \$898 million, or 20%;
 - cotton generated \$797 million or 17%; and
 - grapes generated \$722 million or 16%.
- In 2005–06, some irrigated crops in the MDB accounted for relatively high levels of GVIAP using relatively low levels of water consumption. Examples included:
 - fruit and nuts (20% of total GVIAP; 5% of agricultural water consumption); and
 - vegetables (12% of total GVIAP; 2% of agricultural water consumption).
- Other irrigated crops in the MDB accounted for relatively low levels of GVIAP using relatively high levels of water consumption. Examples included:
 - rice (6% of total GVIAP; 16% of agricultural water consumption); and
 - cereals other than rice (2% of total GVIAP; 10% of agricultural water consumption).

*Natural Resource
Management*

- In 2004–05, the vast majority of MDB farms (92% of total farms in the MDB) conducted NRM activities for preventative or remedial reasons, consistent with the proportion of all Australian farms (92%).
- Most NRM effort in the MDB during 2004–05 was spent managing weeds, pests, and land and soil. Farmers in the MDB reported the lowest effort expended on managing water issues (27 person days per farm on average) of all the NRM issues, equivalent to half of the effort put towards land and soil activities (54 person days per farm on average).

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