



THE UNIVERSITY OF
MELBOURNE

The Murray-Darling Basin Plan

The good, the bad and the future.

Introduction

The water reform agenda aims to achieve sustainable water management within the Murray-Darling Basin through the "triple bottom line" approach. The triple bottom line refers to the environmental, social and economic aspects, and the approach aims to prioritise them equally and fairly. Australian governments have been working towards improving the environmental health of the Murray-Darling Basin system while continuing to support the economic and social outcomes of surrounding rural communities. The purpose of this poster is to portray the outcomes of the Murray Darling Basin plan since its implementation in 2012.

Background Information

The Murray Darling Basin is the catchment for the Murray and Darling rivers, the largest river system in Australia. Covering around 14% of Australia's surface and stretching across five states (Vic, NSW, Qld, SA, ACT), it comprises of 22 major catchments. The basin has been used as a water source since the 1800's, with almost 4 million people reliant on it for water supply, including a large portion of agricultural production (MDBA, 2018). It was eventually realised that too much water was being extracted from the catchment (MDBA, 2018), leading to detrimental environmental consequences and compromised future resources.

The Murray-Darling Basin Authority was established in order to create a plan with the aim of restoring the environment to sustainable levels, whilst considering social and economic impacts (Kelly, 2011). The current Murray-Darling Basin water reform, the Basin Plan, is considered one of the most comprehensive ever attempted at a basin level (Connell & Grafton, 2011).



Social Impacts

THE GOOD

- Water quantity targets have been met: users have diverted more than ¾ of yearly allocations to the environment and more groundwater is being utilized in dry periods (Cosier et al., 2017)
- Communities have greater confidence in the future with water recovery targets being met (MDBA, 2018)
- Improved reliability of water trade with clarifications of entitlements (Cosier et al., 2017)
- Recreational benefits from fewer algal blooms worth, equated to \$5-11 million (MDBA, 2018)
- Increased tourism in lower region (Coorong) worth \$124 million, and in middle region (Barmah-Millewa Forest) worth \$38 million (MDBA, 2018)

THE BAD

- Water Quality targets have not been continuously achieved: salt export met 1 out of 3 desired outcomes (Cosier et al., 2017)
- Insufficient investment in structural adjustment to support communities affected by the water reform, less than 1% of the \$13 billion budget mad available (Cosier et al., 2017)
- Agricultural employment has declined by almost 26% in the past 15 years (Cosier et al., 2017)

Environment Impacts

THE GOOD

- Water for the Future Program has received \$12.9 billion in funding, which is primarily invested into improving environmental outcomes (Pitcock & Finlayson, 2011)
- Of the total 2075 GL recovery target, 1995.8 GL has been achieved (MDBA, 2018)
- Environmental water allows control of river flows, taking into account timing, magnitude and frequency (Reid & Brooks, 2000)
- Improvements have been made in water quality, salinity levels, and fish populations at some sites (Cosier et al., 2017)

THE BAD

- The overall condition of the Murray-Darling Basin is still ranked as 'poor' (Grafton et al., 2018)
- Aquatic conditions are still high variable due to climate change (Thompson et al., 2017)
- Invasive species of biota are limiting the restoration impacts of native species (Thompson et al., 2017)
- Current water levels across the basin are low. 52% capacity basin wide, and as long as 9% in some regions (MDBA, 2018)

Economic Impacts

THE GOOD

- Water is now delivered to the most efficient users: greater economic value derived from less water
- Opportunistic water holders within the MDB system trade their water during years of high prices, rather than on-farm use
- Infrastructure efficiency programs have now claimed "450 GL for the environment" (NSW Department of Industry, 2018)
- Some communities experienced population and economic growth (Cosier et al., 2017)
- Decline in agricultural employment led to growth in other sectors Cosier et al., 2017)

THE BAD

- Water buybacks have caused a reduction of 25% in available annual water (Kirby, et al., 2014)
- 51% decline in irrigated agricultural businesses (Cosier et al., 2017)
- The gross production of irrigated agriculture has decreased by 10%
- Tonnes of rice produced has decreased by 56.5% (Edgar, 2017)
- Number of Sunrice employees reduced from 1048 in 2001, to 368 in 2009 (Rice Growers Australia, 2010)
- Rice industry annual profit of \$4 billion is sharply declining (LeBlanc, et al., 2012)

THE FUTURE

- The goals for each aspect of the triple bottom line are:
- **Social Goal:** "communities with sufficient and reliable water supplies that are fit for a range of intended purposes, including domestic, recreational and cultural use" (OPC, 2016)
 - **Environmental Goal:** "healthy and resilient ecosystems with rivers and creeks regularly connected to their floodplains and, ultimately, the ocean" (OPC, 2016)
 - **Economic Goal:** "productive and resilient water-dependent industries, and communities with confidence in their long-term future (OPC, 2016)

Progress has been made towards each of these goals in order to achieve the triple bottom line, although very slow and behind target. With focused investment in affected rural communities and business, the negative outcomes on the triple bottom lines could potentially be minimised.

THE ACTION

To minimise the negative outcomes associated with water recovery, in particular social and economic, it is suggested that an initiative which will assist rural communities and improve rural business efficiencies is to be implemented.

Action: Provide free business health checks and advice on substitute activities and improvement methods

Stakeholders: The key stakeholders to be targeted are business owners in rural communities affected by the water recovery scheme, primarily farmers

Communication: Via an online source, such as the Murray-Darling Basin Authority's official website

This action will provide stakeholders with the necessary knowledge and advice to adapt to changes and continue to improve efficiency with limited resources.