



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Research Commons

<http://researchcommons.waikato.ac.nz/>

Research Commons at the University of Waikato

Copyright Statement:

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

The thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- Any use you make of these documents or images must be for research or private study purposes only, and you may not make them available to any other person.
- Authors control the copyright of their thesis. You will recognise the author's right to be identified as the author of the thesis, and due acknowledgement will be made to the author where appropriate.
- You will obtain the author's permission before publishing any material from the thesis.

**Improving Water Allocation Law and Policy in New Zealand:
Lessons from Australia**

A thesis submitted in fulfilment
of the requirements for the degree
of
Doctor of Philosophy
at
The University of Waikato
by
Jagdeepkaur Singh-Ladhar



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2019

Abstract

The main research question in this thesis is what lessons can New Zealand learn from the Australian experience in water allocation? In order to answer this question the thesis first examines the current water allocation law and policy problems in New Zealand. New Zealand has problems with over allocation and a lack of mechanisms to transfer water. There are also more complex issues relating to the lack of systematic planning for water allocation across New Zealand catchments and the consequences of the “first come, first served” method of water allocation that applies under the administrative provisions of the Resource Management Act 1991.

Much of the water allocation literature has an economic or scientific perspective. For that reason the thesis also examines key terms such as “scarcity” in order to fully understand its various dimensions within the literature. The thesis also makes it clear that legal problems relating to how to regulate water allocation require legal analysis. Hence the economic and scientific literature inform the analysis but do not form the primary basis for the analysis. The method of analysis is conventional legal analysis between New Zealand and Australia.

The thesis continues by examining the key characteristics of the recent Australian water law reforms of the last 20 years. The analysis shows that implementing law reform for water allocation has been fraught with constitutional barriers as it tried to work across political state boundaries within the Murray Darling Basin. The Australian approach of co-operative federalism has played a key role in supporting the implementation of the reforms in the National Water Initiative 2004 and Water Act 2007 (Cth). The implementation of the reforms are also examined at the state level.

The analysis of the Australian water law reform provides a rich source of lessons for New Zealand. The analysis shows that Australian reform was based on firm legal foundations. There was independent oversight of the reform implementation by the National Water Commission. Water allocation information was recorded on

a water register which could include information relating to water securities. The actual water allocation was aided by the creation of many water products. Water allocations could be distinguished on the basis of a right to receive water at a site, a delivery right to use water infrastructure, temporary allocations and allocation based on a percentage of the total amount of water available in a catchment. These innovative features of water law and policy ought to be considered as possible features to introduce in New Zealand water law.

There are also cautionary lessons from Australia. More recent reviews of the changes to water law reform, including the disestablishment of the National Water Commission, are critical of the Australian government in undermining the progress that has been made. Allegations of water theft and a lack of compliance monitoring are so serious that there has been a Royal Commission by the South Australian government. There is the potential that the reforms could be undermined significantly if state support falls. The lesson from New Zealand from these points is equally if not more important. It shows that regardless of how much is invested in water law reform, compliance and monitoring of water allocation need to be addressed urgently whenever the issue arises. New Zealand also has allegations of water theft and a lack of compliance with the water metering regulations. A strong compliance culture for measuring water takes is essential to the long-term success of water allocation law reform.

Acknowledgements

Writing this thesis has been a long journey, and many people have supported me on the way to completion. I thank my PhD supervisors Professor Barry Barton and Professor Grant Samkin at the University of Waikato for their time in providing feedback and support to me as I undertook writing the thesis. I have learned a lot from both supervisors about research and academia. I have benefitted from the quality research supervision provided to me by both supervisors over the years.

I wish to thank my colleagues at the University of Waikato in Accounting. Thank you for your kind words of support and encouragement when I tried to balance work and research. Special thanks must go to Professor Howard Davey and Professor James Guthrie for your support of my research. Thank you to Alison, Andrea, Dani, Mary, Vida, Stephen, Maxine, Murugesh and Umesh for all your kind words of support over the years. I also appreciate the support of my fellow PhD students Ingrid, Mike, Phoebe, Steve, Daniella and Marie. Thank you also to Alan, Bill, Jessica, Lydia, Artika, Divya, Matt and Anna who worked with me in teaching taxation at Waikato University.

Thank you to my family who lived through the research process with me over the years. Thank you to my father-in-law, Dara Singh Ladhar and mother in law, Manjit Kaur for supporting me and helping to look after family so that I could work on my research. Thank you to my sister-in-laws Hamrinder Kaur and Ramandeep Kaur, for your ongoing care, support and showing interest in my research. Thank you to my brother in law Jagjit and the Malhi family, for your encouragement. My “little” brother Amardeep, I appreciate your constant love and encouragement along with Dad and Mum, Sohan Singh Chahal and Debral Sukhdave Kaur. Jaswinder, my husband, and Jashandeep, son, you were both very patient as I worked on the thesis. I truly appreciate the encouragement and understanding from you both over the years and it is not easy to convey in words.

Thank you to the families of Harbhajan Singh Chahal (late) , Mahinder Singh Ark (late) and Makhan Singh Shettra for kind words of encouragement and support.

Thanks to Sukhvir, Joyti, Aman and Harleen for dropping by the office at University to see how I was progressing with writing. When the writing was challenging, I remembered the stories told to me by my Aunts Harbhajan Kaur and Shindoo Kaur about my grandfather the late Kabal Singh Chahal and Amro Kaur and how much they cared for me. Late Thaiji Mohan Singh Ark you helped me start my journey to University when you bought me my first car and I know you, Thaji and the family were proud of my efforts. Thank you to my grandparents Sarwan Singh Thiara (late) and Tej Kaur. Thank you also to Aunty Bashi, Aunty Amrit (late) and Monique for your encouragement in my studies from the first day of University.

Finally, to the more recent additions to the family, Jasmine, Milanpreet, Ajooni, Agam, Nirvair, Harfateh (nieces and newphew) and Yuvraj (my son) your beautiful smiles helped to keep me motivated to finish the thesis so I can spend more time with you all.

List of Abbreviations

CTH Commonwealth Government of Australia

COAG Council of Australian Governments

MAF Ministry of Agriculture and Fisheries

MDBA Murray Darling Basin Authority

NSW New South Wales

NWI National Water Initiative 2004

RMA Resource Management Act 1991

RMLR Resource Management Law Reform Project

SA South Australia

VIC Victoria

WA Western Australia

TABLE OF CONTENTS

ABSTRACT	I
ACKNOWLEDGEMENTS.....	III
LIST OF ABBREVIATIONS	V
CHAPTER ONE – INTRODUCTION	
1 INTRODUCTION.....	1
2 RESEARCH PURPOSE AND OBJECTIVES	5
3 CONTRIBUTION TO KNOWLEDGE	7
4 RESEARCH METHODOLOGY AND METHOD.....	11
4.1 REASONS FOR SELECTING AUSTRALIA AS A POINT OF COMPARISON.....	15
5 CHAPTER OVERVIEW	20
6 SUMMARY	22
CHAPTER TWO: ECONOMIC AND LEGAL CONCEPTS IN WATER ALLOCATION LAW AND POLICY	
1. INTRODUCTION.....	23
2 PART I - GLOBAL WATER SCARCITY.....	24
2.1 DEFINING “WATER SCARCITY”	24
2.2 WHAT CAUSES WATER SCARCITY?.....	27
2.3 THE EFFECT OF WATER SCARCITY ON WATER ALLOCATION	29
2.4 GLOBAL RESPONSE TO WATER SCARCITY - THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOAL 6 - WATER.....	30
2.5 IMPLEMENTING SUSTAINABLE WATER ALLOCATION.....	33
3 PART II – ECONOMIC CONCEPTS OF WATER.....	34
3.1 WATER AS A PUBLIC GOOD	34
3.2 TIETENBURG’S CONCEPTUAL FRAMEWORK FOR ANALYSING ENVIRONMENTAL PROBLEMS.....	34

3.3 THE VALUE OF WATER AND ECOSYSTEM SERVICES.....	36
3.4 ECONOMIC SOLUTIONS FOR WATER ALLOCATION PROBLEMS.....	37
3.5 LIMITATIONS OF ECONOMIC SOLUTIONS FOR WATER ALLOCATION.....	38
4 ANALYSING WATER ALLOCATION LAW AND POLICY IN AUSTRALIA AND NEW ZEALAND.....	43
5 SUMMARY.....	44
 CHAPTER THREE - BACKGROUND TO NEW ZEALAND WATER ALLOCATION 1967- 1991	
1 THE GOVERNMENT AS DEVELOPER OF THE SETTLER ECONOMY.....	46
2 WEAKENING GOVERNMENT CONTROL OF WATER ALLOCATION IN NEW ZEALAND AND THE MANAPOURI-TE ANAU DEVELOPMENT ACT 1960.....	47
3 THE INTRODUCTION OF STATUTORY WATER ALLOCATION UNDER THE WATER AND SOIL CONSERVATION ACT 1967.....	49
4 NATIONAL WATER AND SOIL CONSERVATION AUTHORITY.....	50
5 GOVERNMENT EFFORTS TO CONTROL WATER ALLOCATION.....	51
5.1 THE NATIONAL DEVELOPMENT ACT 1979.....	51
5.2 THE CLUTHA DEVELOPMENT (CLYDE DAM) EMPOWERING ACT 1982.....	52
6 THE RESOURCE MANAGEMENT LAW REFORM PROJECT.....	53
7 THE ABOLITION OF THE NATIONAL WATER AND SOIL CONSERVATION AUTHORITY AND WATER ALLOCATION COUNCIL.....	54
8 THE MINISTRY OF WORKS AND DEVELOPMENT AND THE NEW ZEALAND ELECTRICITY DEPARTMENT'S ROLE IN WATER POLICY.....	55
9 THE SPLIT OF WATER POLICY - WATER FOR IRRIGATION.....	56
10 THE IRRIGATION SCHEMES ACT 1990 AND GOVERNMENT DIVESTMENT FROM IRRIGATION SCHEMES.....	57
11 NEW ZEALAND POLITICAL CONTEXT AND THE RESOURCE MANAGEMENT LAW REFORM PROJECT OF THE 1980S.....	59
11.1 THE RESOURCE MANAGEMENT BILL 1989.....	62
11.2 A COMMITMENT TO SUSTAINABILITY.....	63

11.3 WATER MARKETS DURING THE RESOURCE MANAGEMENT LAW REFORM PROJECT	65
11.4 EXPECTATIONS OF IMPROVED RESOURCE MANAGEMENT OUTCOMES THWARTED BY THE “POLICY GAP”	66
12 SUMMARY	67
CHAPTER FOUR- THE WATER ALLOCATION POLICY GAP IN NEW ZEALAND 1991-2011	
1 INTRODUCTION.....	69
2 WATER POLICY - A GAP IN NATIONAL GUIDANCE ON WATER ALLOCATION POLICIES.....	71
2.1 WATER ALLOCATION LIMITS	71
2.2 LACK OF HISTORICAL HYDROLOGICAL INFORMATION	75
3 STATUTORY FRAMEWORK - WATER ALLOCATION UNDER THE RMA.....	78
4 THE RMA AND THE ALLOCATION OF WATER.....	79
4.1 THE FUNCTIONS, POWERS AND DUTIES OF CENTRAL GOVERNMENT	79
4.2 THE FUNCTIONS, POWERS AND DUTIES OF REGIONAL GOVERNMENT	82
5 THE TRANSFER OF WATER PERMITS UNDER THE RMA.....	87
5.1 STATUTORY CRITERIA.....	87
5.2 WATER TRANSFERS IN IRRIGATION SCHEMES	87
5.3 RECORDING WATER TRANSFERS.....	88
6 SETTING MINIMUM FLOWS - FROM NATIONAL DIRECTION TO REGIONAL RESPONSIBILITY.....	91
6.1 <i>ELECTRICITY CORPORATION OF NEW ZEALAND LTD V MANAWATU-WANGANUI REGIONAL COUNCIL</i>	91
7 THE SETTING OF MINIMUM FLOWS UNDER THE RMA.....	94
7.1 MINISTER OF CONSERVATION V OTAGO REGIONAL COUNCIL 2003	94
7.2 FISH AND GAME NEW ZEALAND (CENTRAL SOUTH ISLAND REGION) V OTAGO REGIONAL COUNCIL.....	97
7.3 AMENDMENTS TO THE OTAGO REGIONAL COUNCIL WATER PLAN.....	98
7.4 THE SETTING OF MINIMUM FLOWS BY THE WAIKATO REGIONAL COUNCIL	99
8 MINOR AND MAJOR WATER ALLOCATION IN REGIONAL PLANS.....	101

9	MAJOR WATER TAKES AND IRRIGATION IN REGIONAL PLANS.....	103
9.1	HORIZONS REGIONAL COUNCIL’S ONE PLAN.....	104
9.2	ENVIRONMENT CANTERBURY	105
9.3	ENVIRONMENT CANTERBURY (TEMPORARY COMMISSIONERS AND IMPROVED WATER MANAGEMENT) ACT 2010.....	108
9.4	TARANAKI REGIONAL COUNCIL FRESHWATER PLAN AND THE “FIRST COME, FIRST SERVED” RULE.....	109
10	DETERMINING PRIORITIES FOR WATER ALLOCATION	112
10.1	<i>FLEETWING FARMS V MARLBOROUGH DISTRICT COUNCIL</i> AND THE “FIRST- COME, FIRST-SERVED” PRECEDENT.....	112
10.2	<i>GEOTHERM GROUP LIMITED V WAIKATO REGIONAL COUNCIL</i>	114
10.3	<i>AORAKI WATER TRUST V MERIDIAN ENERGY</i>	115
10.4	<i>SOUTHERN ALPS AIR LTD V QUEENSTOWN LAKES DISTRICT COUNCIL</i>	117
10.5	<i>CENTRAL PLAINS WATER TRUST V NGAI TAHU PROPERTIES</i>	119
10.6	<i>THE LEGAL IMPLICATIONS OF THE “FIRST-COME, FIRST-SERVED” RULE</i>	121
10.7	<i>HAMPTON V CANTERBURY REGIONAL COUNCIL</i>	122
10.8	THE USE OF PROPERTY CONCEPTS AND WATER PERMITS.....	125
11	SUMMARY	126
CHAPTER FIVE - NEW ZEALAND WATER ALLOCATION LAW AND POLICY 2011 – 2018		
		129
1	INTRODUCTION.....	129
2	THE LAND AND WATER FORUM.....	130
3	FIRST REPORT OF THE LAND AND WATER FORUM – IDENTIFYING PROBLEMS WITH FRESHWATER ALLOCATION	132
3.1	THE CONSEQUENCES OF A LACK OF LONG-TERM HYDROLOGICAL DATA..	133
3.2	THE “FIRST-IN, FIRST-SERVED” RULE AND OVER-ALLOCATION	134
4	NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT 2014	135
5	FUNDING FOR FRESHWATER ‘CLEAN UP’ AND IRRIGATION AFTER THE FIRST REPORT.....	136
5.1	THE END OF STATE FUNDED IRRIGATION.....	138

6	THE SECOND AND THIRD REPORTS OF THE LAND AND WATER FORUM.....	139
7	FOURTH REPORT OF THE LAND AND WATER FORUM – WATER MARKETS	1
	40
8	NATIONAL POLICY STATEMENT FOR FRESHWATER MANAGEMENT 2017 AMENDMENTS.....	141
9	THE FIFTH REPORT OF THE LAND AND WATER FORUM	143
10	NATIONAL POLICY STATEMENT FRESHWATER MANAGEMENT IMPLEMENTATION.....	144
11	SUMMARY	145
 CHAPTER SIX - AUSTRALIAN WATER ALLOCATION LAW AND POLICY		
1	INTRODUCTION.....	146
2	WATER POLICY DEVELOPMENT IN THE MURRAY-DARLING BASIN	148
	2.1 IRRIGATED SETTLEMENT SCHEMES ESTABLISHED.....	148
	2.2 COMMON LAW RIPARIAN RIGHTS	149
	2.3 WATER AND THE DRAFTING OF THE AUSTRALIAN CONSTITUTION	152
3	EARLY WATER-SHARING AGREEMENTS BETWEEN STATES.....	155
	3.1 THE STATE-SPONSORED CONSTRUCTION OF DAMS.....	156
	3.2 EVIDENCE OF OVER-ALLOCATION IN THE MURRAY-DARLING CATCHMENT	157
4	COMMONWEALTH UTILISATION OF ‘EXTERNAL AFFAIRS’ POWER.....	158
	4.1 “EXTERNAL AFFAIRS” POWER AND THE TASMANIAN DAM CASE.....	160
5	THE COAG WATER REFORM FRAMEWORK 1994 AND “COOPERATIVE FEDERALISM”	164
6	THE COAG WATER REFORM FRAMEWORK 1994 OBJECTIVES	165
7	THE ESTABLISHMENT OF THE NATIONAL WATER COMMISSION.....	167
	7.1 BACKGROUND TO THE ESTABLISHMENT OF THE NATIONAL WATER COMMISSION - A COMMITMENT TO WATER MARKETS IN THE NATIONAL WATER INITIATIVE	167
	7.2 THE LIVING MURRAY	173
	7.3 THE SIGNIFICANCE OF A WATER CAP ON WATER EXTRACTION.....	174

8	COMMONWEALTH WATER LAW AND POLICY - THE WATER ACT 2007 (CTH)...	176
	8.1 ESTABLISHMENT OF THE MURRAY-DARLING BASIN AUTHORITY AND SUSTAINABLE DIVERSION LIMITS.....	177
	8.2.1 <i>The Return Of 2750GL To The Environment</i>	178
	8.3 WATER BUY-BACKS	181
	8.4 ESTABLISHMENT OF THE COMMONWEALTH ENVIRONMENTAL WATER HOLDER.....	182
	8.5 WATER CHARGES.....	183
9	PROPERTY IN WATER ENTITLEMENTS - ICM AGRICULTURE V THE COMMONWEALTH	184
10	WATER ACCOUNTING	188
11	SUMMARY OF COMMONWEALTH WATER LAW AND POLICY REFORM	191
12	WATER ALLOCATION LAW IN VICTORIA	193
	12.1 STATUTORY FRAMEWORK - WATER ACT 1989 (VIC).....	194
	12.2 VICTORIAN WATER REGISTER.....	194
	12.3 UNBUNDLING - WATER SHARES AND WATER LICENCES.....	195
	12.3 BULK WATER ENTITLEMENTS (MAJOR WATER TAKES).....	198
	12.4 THE VICTORIAN ENVIRONMENTAL WATER.....	200
	12.5 ENVIRONMENTAL WATER AT TIMES OF SCARCITY.....	201
	12.6 THE STATUTORY ROLE OF THE VICTORIAN ENVIRONMENTAL WATER HOLDER.....	203
	12.7 ALLOCATION OF ENVIRONMENTAL WATER ENTITLEMENT.	204
	12.7 ENVIRONMENTAL WATER ALLOCATION AND THE WATER MARKET.....	204
13	NEW SOUTH WALES WATER LAW AND POLICY	206
	13.1 STATUTORY FRAMEWORK - IRRIGATION ACT 1912 (NSW).....	207
	13.1.1 <i>The Process Of Privatising Irrigation Schemes</i>	209
	13.2 STATUTORY FRAMEWORK - WATER MANAGEMENT ACT 2000 (NSW)....	210
	13.3 UNBUNDLING AND WATER LICENCES.....	213
	13.4 NSW WATER REGISTER.....	217
	13.5 ENVIRONMENTAL WATER IN NEW SOUTH WALES	218
14	WATER LAW AND POLICY IN SOUTH AUSTRALIA.....	220
	14.1 STATUTORY FRAMEWORK	220

14.2 UNBUNDLING AND WATER LICENCES.....	221
15 WATER LAW AND POLICY IN WESTERN AUSTRALIA.....	226
15.1 STATUTORY FRAMEWORK	227
15.2 UNBUNDLING AND WATER LICENCES.....	228
15.3 WESTERN AUSTRALIA WATER REGISTER.....	228
15.5 WESTERN AUSTRALIA WATER PLANS AND ENVIRONMENTAL WATER...	229
16 SUMMARY	232
CHAPTER SEVEN - COMPARATIVE ANALYSIS.....	235
1 INTRODUCTION.....	235
2 COMPARATIVE ANALYSIS TABLE	238
3 NEW ZEALAND'S NATIONAL WATER INSTITUTIONS.....	255
3.1 LESSONS FROM AUSTRALIA ON THE ROLE OF NATIONAL WATER INSTITUTIONS.....	256
4 A NEW ZEALAND WATER REGISTER.....	258
4.1 RECORDING AND REPORTING OF WATER DATA	260
5 ALTERNATIVES TO THE "FIRST COME, FIRST SERVED" METHOD OF WATER ALLOCATION IN NEW ZEALAND.....	262
5.1 UNBUNDLING WATER ALLOCATIONS	265
5.2 GENERAL WATER ALLOCATION (WATER SHARES, LICENCES AND ENTITLEMENTS).....	267
5.3 BULK WATER ALLOCATION	269
5.4 ENVIRONMENTAL WATER ALLOCATION.....	270
6 SUMMARY	271
CHAPTER EIGHT - CONCLUSION	274
1 THE NEW ZEALAND SITUATION	274
2 LESSONS FROM AUSTRALIA.....	276
BIBLIOGRAPHY	281

CHAPTER ONE – INTRODUCTION

1 *Introduction*

This thesis asserts that by drawing upon lessons from the Australian water law experience over the past 20 years New Zealand can learn how to improve its water allocation. The primary legislation regulating water allocation in New Zealand is the Resource Management Act 1991 (RMA). When enacted, the Act led the world in implementing principles of sustainability in environmental planning and natural resource allocation.¹ Extensive environmental law reform preceded its enactment, creating expectations that it would improve resource allocation, including water allocation.² It is now clear that the current problems with water allocation under the RMA were unforeseen and that the reality is quite different from the expectations that it would provide a “greener” law for water allocation.³ New Zealand is experiencing problems with its current “first come, first served” method of water allocation. One of the major problems facing catchments is how to address over-allocation. The National Policy Statement for Freshwater Management 2014 requires all regional councils to have rules in place to stop over-allocation by the year 2025.

While several factors regarding the problems facing New Zealand water allocation law and policy have been identified, one influential factor that has not been examined in sufficient detail is the consequences of the failure to fully implement the RMA. For 20 years, from 1991 until 2011, New Zealand did not have national

¹ Hon Simon Upton “Stace Hammond Grace Lecture: Purpose and Principle in the Resource Management Act” (1995) 3 Waikato L. Rev. 17; Caroline Miller *Implementing Sustainability. The New Zealand Experience* (Routledge, New York, 2011); Geoffrey Palmer *Environmental Politics. A Greenprint for New Zealand* (John McIndoe, Dunedin, 1990); and Nicola Wheen “A Natural Flow - A History of Water Law in New Zealand” (1997) 9(1) Otago L. Rev. 71.

² Ministry for the Environment *The State of New Zealand's Environment* 1997 (Ministry for the Environment, Wellington, 1997) provides an overview of the Resource Management Law Reform Project; Bret C. Birdsong “Adjudicating Sustainability. New Zealand's Environment Court and the Resource Management Act” (2002) 29(1) Ecology L. Q. 1; and Nicola Wheen “The Resource Management Act 1991: A Greener Law for Water” (1997) 1 NZJ Env'tl. L. 165.

³ Geoffrey Palmer “The Resource Management Act: -How we Got It and What Changes are Being Made to It” (paper presented to Address to Resource Management Law Association 27 September 2013, New Plymouth, 2013).

guidance on water policy.⁴ During this time a “gap” in water allocation law and policy existed, a lacuna which in turn affected the creation of rules for water allocation in regional plans. Under the RMA, central and local government had the statutory function of establishing rules for resource management according to policies and principles within a hierarchical structure.⁵ Ideally, these plans and policies should have included rules and policies for water allocation. However, fully implementing the RMA required a National Policy Statement for water allocation.⁶ Finally, after several failed attempts, the government developed the first National Policy Statement for Freshwater Management in 2011.⁷

The water policy gap from 1991 until 2011 contributed to the emergence of a default model of water allocation which has acted as a significant barrier to reallocating water to other uses. The barrier existed because water permit applications were prioritised following the “first come, first served” precedent established in *Fleetwing Farms v Marlborough District Council*.⁸ The effect of the precedent was that it did not allow for a comparative evaluation of applications for the same water take. As a result, for some applicants, the time of application for a water permit became the most critical factor in successfully securing a water permit. The consequences of the policy gap on regional water allocation practice are an important feature of New Zealand water allocation as the policy gap has contributed to the variation in the creation and application of rules for water allocation. Alternatives to the policy gap included government direction on priorities for water allocation. However, instead of following such a course, New Zealand finds itself

⁴ National policy was only promulgated in 2011. See National Policy Statement for Freshwater Management 2011. Revised in 2014 and reviewed in 2017.

⁵ Establishing Regional Plans is one of the “functions” of regional councils under section 30 of the RMA. A key distinction in the New Zealand context is that a “function” does not confer a legal obligation to create the Regional Plan. District plans must have regard to regional policy and not be inconsistent with national policy statements. See Resource Management Act, s 73(4).

⁶ However, it is important to acknowledge that there was no statutory obligation for the government to create a National Policy Statement for water under the RMA. Establishing National Policy Statements is also expressed as one of the “functions” of regional councils under section 24(a) of the RMA. The Minister for the Environment may recommend the issue of a national policy statement subject to the process in section 52 of the Act.

⁷ See Chapter Four at 2.1.

⁸ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA). The rule is also referred to as the “first in, first served” rule or allocation by priority of time in policy documents referred to in this thesis.

in a situation where a lack of national and regional guidance on water allocation, water allocation by priority of time and the policy gap have contributed to contemporary water allocation problems facing New Zealand.⁹

Government policy recognises the limitations of the current “first come, first served” default method of water allocation in New Zealand. For instance, it is recognised that in the case of fully-allocated or over-allocated catchments the “first come, first served” method of water allocation leaves limited scope to reallocate water to higher value uses.¹⁰ The New Zealand government did not anticipate the potential economic impact of the “first come, first served” method of water allocation under the RMA. Consequently, that lack of foresight may have had some influence on the lack of progress in water allocation. By drawing upon lessons from Australia, this thesis examines how to address New Zealand’s water allocation problems which have emerged since the promulgation of the RMA.

Water allocation is a significant issue in Australia and the challenges of water scarcity have increased in their severity over time. More recent reforms began with a focus on improving productivity and within this context specific policy on water allocation was developed.¹¹ It is these more recent Australian reforms that are the

⁹ Refer to Chapter Five for a detailed evaluation of the law and policy relating to the contribution of the policy gap to current problems with New Zealand water allocation.

¹⁰ New Zealand Government *Briefing to the Incoming Ministers – Environment and Climate Change* (Ministry for the Environment, Wellington, 2017) at 11. See also the extensive policy work undertaken by the Land and Water Forum in their four reports at n 3 above. Sarah Boone and Stephen Fragaszy “Emerging Scarcity and Emerging Commons: Water Management Groups and Groundwater Governance in Aotearoa New Zealand” (2018) 11(3) *Water Alternatives* 795.

The Land and Water Forum has undertaken significant policy work which includes identifying problems with water quality and allocation under the RMA. New Zealand; Land and Water Forum *Terms of Reference for Land and Water Forum Project* (Land and Water Forum, Wellington, 2009); Land and Water Forum *Report of the Land and Water Forum: A Fresh Start for Fresh Water* (Land and Water Trust, Wellington, 2010); Land and Water Forum *Second Report of the Land and Water Forum. Setting Limits for Water Quality and Quantity* (Land and Water Trust, Wellington, 2012); Land and Water Forum *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water* (Land and Water Trust, Wellington, 2012); Land and Water Forum *Fourth Report of the Land and Water Forum* (Land and Water Forum Trust, Wellington, 2015).

¹¹ The Council of Australian Government (COAG) COAG Water Reform Framework 1994- Attachment A: Water Resource Policy (Communique, 25 February 1994); Productivity Commission *Impact of Competition Policy Reforms on Rural and Regional Australia*, Report No. 8 (Productivity Commission, Canberra, 1999); National Water Initiative 2004; Water Act 2007(Cth); Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018); John Quiggin, Thilak

focus of the research. New Zealand can observe Australia's successes and shortcomings during that experience and use those lessons to improve its own water allocation law and policy. Specifically, Australian water allocation reform included creating a water register, distinguishing bulk water allocation, unbundling of water entitlements and ways in which to regulate water markets.¹²

The purpose of the comparison is to consider the lessons from the Australian experience in water law reform that may be used to address New Zealand's water allocation problems. This thesis argues that changes should be made to New Zealand water allocation law and policy based on the lessons from Australia.

This thesis contributes to the literature by departing from the traditional accounts of New Zealand water law and policy that focus mainly on the Water and Soil Conservation Act 1967 and the RMA.¹³ It contributes to the New Zealand literature on water law and policy by including the impact of privatising irrigation schemes under the Irrigation Schemes Act 1990. Water allocated to irrigation is a part of the water allocation debate in New Zealand. The public funding of New Zealand irrigation schemes has gained increasing interest in recent years. In May 2011, the New Zealand National-led government announced the launch of the Irrigation Acceleration Fund, which appeared to contradict the privatisation of irrigation schemes undertaken in 1990. The Fund provided an initial public investment in irrigation schemes of \$35 million over five years to investigate "investment ready" proposals and then increase the amount to \$400 million to invest as equity into

Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray Darling Basin* (Edward Elgar, Cheltenham, 2012); Murray Darling Basin Authority *Guide to the Proposed Basin Plan* (MDBA, Canberra, 2010); Daniel Connell and Quentin Grafton "Planning for water security in the Murray-Darling Basin" (2008) 3(1) *Public Policy* 67; and Australian Government, *Murray Darling Basin Authority A Path to Water Reform. Timeline of Water Resource Management in the Murray-Darling Basin* (Murray Darling Basin Authority, Canberra, n.d.).

¹² Water Act 2007 (Cth).

¹³ Wheen, above n 1; Miller, above n 1 and Palmer, above n 1.

irrigation schemes.¹⁴ The Fund came under increasing public scrutiny until the newly elected Labour-led government ended it in 2017.¹⁵

2 *Research Purpose and Objectives*

The purpose of this research is to provide an account of lessons from the Australian experience in water law reform that can apply to New Zealand. The study is focused on identifying legal solutions to legal problems. The comparison with Australia will provide recommendations to address the water allocation problems faced by New Zealand.

The specific research questions are:

- What are the issues facing water allocation law and policy in New Zealand?
- Which factors contributed to water allocation law reform in Australia and how was it implemented?
- What lessons from the Australian experience of reforming water allocation law and policy can be implemented in New Zealand?

One point of language use worth addressing is to simplify the understanding of “water allocation” as a term used in this thesis. Readers will be assisted by looking at the definition of the word “allocation”. An “allocation” may be either the “act of setting aside” something or “that which is allocated to a particular person”.¹⁶ In New Zealand as understood in a general sense - pursuant to the RMA the term “water allocation” is the grant of a consent in the form of a water permit by the Crown to take and use water at a particular location to the applicant, such as in individual or company. The volume of water allocated under a water permit is the “water allocation” which is usually a fixed amount, unless the regional council has

¹⁴ David Carter “Budget 2011: Lifting investment in irrigation” *New Zealand Government* (9 May 2011) – Press Release.

¹⁵ Labour, New Zealand First, New Zealand Labour Party & New Zealand First Coalition Agreement 52nd Parliament (Labour, New Zealand First, Wellington, 2017).

¹⁶ "allocation, n." OED Online. Oxford University Press, June 2019. Web. 16 July 2019.

made rules that affect the reliability of that water permit. In Australia, the term “water allocation” is used in a general sense to refer to the system of distribution of water. Under the NWI reforms, however, the equivalent term is a “water entitlement” which refers to a legal right to access water in the form of a “water licence”. The amount received under the water licence is not the same and the volume of water actually received. This distinction is due to the introduction of concepts that relate to sharing water. Typically, the holder of a water entitlement will not receive a set volume of water, instead they will receive a pro-rate seasonal or annual share of the water available to be allocated. This process of determining the volume of water delivered or pumped under the water entitlement is what is commonly referred to as “water allocation” in the Australian literature.

A word is needed to avoid confusion about the term “unbundling”. Unbundling is a term that is used in different ways. The meaning ascribed to it evolves. At times it is used to mean the separation of a water allocation from land. This use is often found in non-legal literature on water allocation. At other times it is used in its correct legal sense which is the separation of the right to take water from the right to use. To avoid confusion in this research both definitions are used according to the context of the writing. The former is used more so where there is a policy discussion. The latter is used more in the Australian section of the thesis where water rights have actually been unbundled in the correct legal sense.

There is a compound understanding of unbundling which is best illustrated by Australian experience in water allocation law reform. In a fully unbundled system the water take and use can be further unbundled so that new types of water products are created. The more recent water allocation reforms in Australia provide an example of how full unbundling can occur. For example, a fully unbundled system can set the volume of water allocation that will be physically delivered to each water licence holder at the catchment level. A fully unbundled system will have a seasonal water allocation determined for a catchment usually as a percentage of the water that licence holders are entitled to receive under their water licence.

New Zealand usage of unbundling is quite loose when it refers to separating water takes from land. It leads to some adjustment being required because unbundling has not occurred in New Zealand in the true legal sense.¹⁷ This is despite the occurrence of some limited trading in irrigation schemes which are administrative in nature. To unbundle New Zealand water allocations in the correct legal sense requires Parliament to pass appropriate regulation to unbundle. This has occurred with the example of fisheries in New Zealand which have unbundled the allocation of fisheries resources successfully. Which leads to the point that regional councils are not in the position to implement unbundling as defined in the correct legal sense, which is comparable to the Australian experience of water law reform, as they do not hold the mandate to do so.

3 Contribution to Knowledge

This thesis provides a detailed account of New Zealand water law and policy that crucially evaluates New Zealand's aspirations for sustainable water allocation under the RMA. By examining historical water allocation law and policy those features of water allocation law that under the Water and Soil Conservation Act 1967 were not transitioned into the RMA can be identified. The present study contributes to the literature on the privatisation of irrigation schemes in New Zealand by examining the effect of irrigation schemes on water allocation. Water transfers may occur in a catchment if the relevant regional plan allows the transfer under s 136 of the RMA. Once scheme operators obtain a overall water take consent for their scheme then further trades may occur within the scheme. But there is limited trading that occurs because the water permit is tied to a particular use and this presents a barrier to trade.¹⁸ The effect of the Irrigation Schemes Act 1990 was

¹⁷ K G Counsell and L T Evans, "Essays on Water Allocation in New Zealand: The Way Forward" (Working paper for the New Zealand Institute for the Study of Competition and Regulation, 2005) at 45 states "Water rights defined to be clearly separate from land and tradeable across uses and locations. In the New Zealand case, this would include ensuring rights are not defined to apply only to a specific use".

¹⁸ Above at 20; Olivia Nyce "Water Markets Under the Resource Management Act 1991: Do They Hold Water?" (2008) 5(14), *CanterLawRw* 123 and A Hayward, 'Freshwater Management:

to privatise irrigation schemes. However, the privatisation model was not accompanied by further regulation that would assist with temporary water transfers within those schemes or mandatory water management plans. Generally, water transfers (both temporary and permanent) that occurred within the schemes were based on private contractual arrangements with limited ability to change water use in comparison to the examples of regulated irrigation schemes like those operating in Australia.

The research also clearly identifies a national policy gap in water allocation that existed from 1991 to 2011. Again, the impact of this gap on water allocation law and policy has not been addressed in depth when examining the national policy gap. The thesis shows that water allocation policy and plans developed on a regional basis varied greatly. As this study shows, there were some regions where plans were not developed and the New Zealand government intervened on an ad hoc basis. Overall, the cumulative effect of the lack of regional plans for water allocation is that this shortcoming has affected the over-allocation problem experienced in some regions. This in-depth examination of how water allocation policy and plans developed should be considered together with the Court's interpretation of the priority rule for water allocation, "first come, first served". By identifying the factors that have influenced water allocation policy and law the research provides an up-to-date account of the source of the problems that currently exist in New Zealand water allocation.

The research on the Australian water allocation reform experience makes a contribution to the literature by consolidating and comparing the implementation of the National Water Initiative 2004 across various states. It provides a detailed examination of the law and policy that were used to implement a change to unbundle and allocate water through markets. The account states key points in water law reform that assist with implementation. These key points were necessary for Australia because of the constitutional barriers it faced in water management.

Water Markets and Novel Pricing Regimes' (2006) 10 *New Zealand Journal of Environmental Law* 215.

Extensive effort was made by the Commonwealth government to attain cooperation from states in implementing water reform.

Finally, the main contribution of this research is to provide a comprehensive comparative analysis of water law and policy in Australia and New Zealand. The comparison is detailed to the level of considering how particular points of implementing water law reform would work in New Zealand.

A limitation of this thesis is that it does not address the role of Māori claims relating to water. When observed the marginalised role of Māori in the history of water law.¹⁹ When states any pre-existing notions of Māori customary law were not acknowledged when common law was applied by the Courts.²⁰ This stance was continued as it was “ignored or avoided as introduced common law was applied”.²¹ Preliminary research includes an extensive literature review undertaken on the interpretation of water related law and Māori customary law.²² In the Australian context, greater inclusion of indigenous participation in water allocation is one of the challenges for the more recent reforms.²³ Māori customary law has not been used for the allocation of water by the New Zealand government. Its treatment is beyond the scope of this thesis. However, the role of Māori in water law in New Zealand is worthy of separate attention as an area of future research.

While this thesis does not address issues relating to Maori claims, it is conceded that this issue has come into much sharper focus over the time that this research was undertaken. Even if this dimension was acknowledged as part of the scope of the research the question of water allocation remains to be addressed. The present method of water allocation is unsustainable regardless of who holds the allocation. Indeed the lack of political to address water allocation may be in part due to the

¹⁹ Nicola Wheen “A Natural Flow - A History of Water Law in New Zealand” above, n 1, at 75.

²⁰ At 72.

²¹ At 72.

²² Jacinta Ruru *The Legal Voice of Māori in Freshwater Governance. A Literature Review*. (Landcare Research, 2009).

²³ Elizabeth Macpherson and others “Lessons from Australian Water Reforms: Indigenous and Environmental Values in Market-Based Water Regulation” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance*. (Springer, Singapore, 2018)

associated questions about the role of Maori in water allocation and the complexity of finding answers.

The Crown is in ongoing discussions with the Iwi Leaders Group and Iwi Chairs regarding freshwater related discussions. The Cabinet position was initially that no one can own freshwater, including the Crown, which preserves the common law position on water ownership. It has also stated that there will not be a national settlement of freshwater claims on a national level and that generally looking forward to the next stage of freshwater reforms there will be provision for including iwi/hapu rights and interests.²⁴ In 2018, these “bottom lines” were updated to include the common interest in improving water quality and quantity, that while no one owns freshwater, however, there is a guardianship role for all to look after freshwater resources.²⁵ There was specific reference to the high rate of undeveloped land being owned by Maori and acknowledging the interests of existing users. It contains a policy intention to work with Maori and regional government to address the water quality and allocation.

In 2018, the government released a policy document on the Maori and Crown relationship with regards to freshwater. It stated that a phased approach would be taken and water quality issues would be addressed before water allocation issues. Policy 10.2 stated that there were three possible options for the Crown and Maori to move forward on freshwater issues:²⁶

10.2 Option B: find a mechanism to more equitably share the resources over time through a ‘regulatory’ route: in scarce catchments this proposal could require the generation of ‘headroom’ between the total allocated quantum of ‘use rights’ and the sustainable limit in order to give Māori (and other new users) the opportunity to obtain a share of those use rights.

²⁴ Ministry for the Environment and Māori Crown Relations Unit. *Shared Interests in Freshwater: A New Approach to the Crown/Māori Relationship for Freshwater*. (Ministry for the Environment and Māori Crown Relations Unit, Wellington, 2018).

²⁵ Cabinet Paper “A New Approach to Crown/Maori Relationship for Freshwater” (3 July 2018) CAB 18-00032.

²⁶ Ministry for the Environment and Māori Crown Relations Unit, above n 24 at 39.

Option A of relying on a resource levy was not considered further because of the Coalition Agreement of the present government. Option B involved an approach where the Courts and Waitangi Tribunal would influence policy outcomes. If Option B is to be pursued than examining methods by which water allocation law and policy can work to provide that “headroom” between total allocation and sustainable limits will require a careful examination of water allocation law and policy. In 2017, the incoming briefing to the current Minister for the Environment stated that a new allocation system “should include sharper economic incentives” and continues by observing the potential effect on Maori by implementing such instruments:²⁷

93. Two examples of sharper economic incentives are a cap and trade system, and a price on water or discharges. Note that introducing sharper economic incentives is likely to bring ownership issues to the foreground, and iwi and hapū rights and interests will need to be addressed in this.

It appears that the Crown reluctance to act on matters regarding water allocation is of benefit to existing permit holders, the majority of which are irrigators. Yet these issues are important to consider when implementing substantive reform in the area of water allocation.

4 *Research Methodology and Method*

The sources of material this research relied upon are those used in conventional legal analysis. This research involves the use the primary materials such as case law and legislation relevant to the Australian and New Zealand jurisdictions. Secondary material includes books, journal articles, conference papers, reports and government documents.

²⁷ Ministry for the Environment *Briefing for the Incoming Minister for the Environment. Water Issues*. (Ministry for the Environment, Wellington, 2017) at 19.

Comparative legal analysis is the methodology used in this study.²⁸ Here the comparative analysis analyses the similarities and differences between Australia and New Zealand in order to answer the research questions. The underlying premise is that both jurisdictions need to address similar legal problems.

Comparative legal method examines different legal practices in two or more jurisdictions with a view to understanding the context from which those differences arise.²⁹ It acknowledges that to some extent “all legal systems are overlapping” and will have some characteristics that are similar.³⁰ Despite recognising that similarities in law can exist between jurisdictions, the purpose of applying comparative legal method in this research is not just to look for common patterns. It is to undertake a in-depth analysis of the policy trends influencing the current law in both countries. Merely focusing on a common legal pattern in the development of law and policy could actually obscure the true reasons for the development of law in a particular way within a jurisdiction.³¹

When applying these considerations to the current study examining water law and policy in each jurisdiction is not just to look for patterns based on a common legal heritage. The common legal heritage of each country means that there are points of congruence between each country but there are also important contextual differences that become apparent in the analysis. The common patterns include the transplant of common law which will be detailed below. The transplant of common law is linked to the history of British settlement, common language, common development of the legal profession and legal education. The actual context of legal development is important and is relevant to the next factor considered in comparative legal method. Hence the purpose of the comparison undertaken in this

²⁸ Konrad Zweigert and Hein Kötz *An Introduction to Comparative Law* (3rd ed, Oxford University Press, Oxford, 1998).

²⁹ Above. Zweigert and Kotz note the earlier positivist approach in comparative legal method took the position that the same law could be applied to legal problems in different jurisdictions. Later this developed into a greater focus on understanding the context and reasons why the law was different in each jurisdiction.

³⁰ Esin Orucu *The Enigma of Comparative Law :Variations on a theme for the twenty-first century* (Martinus Nijhoff Publishers, Leiden ;Boston, 2004) at 42

³¹ Above.

thesis is not just to look for similar patterns of legal development but to understand why they have occurred by examining relevant policy documents. To that end there are even some some policy overlaps where the same terminology is used but the meaning will depend on the context of the jurisdiction.

One of the fields in comparative law which has direct relevance to New Zealand and Australia is the concept of “transplanting” law.³² Watson examined how ideas from foreign legal systems are incorporated into other jurisdictions.³³ Examples of legal transplants include the adoption of Roman law up until the middle ages, codifications of law in Europe³⁴ and the spread of common law across legal systems such as New Zealand and Australia. Watson stated that one persistent trend observed in the countries receiving legal transplants was the desire to hold on to the foreign legal system. He provided that example that despite acquiring independence the English legal heritage remained influential in former colonies.³⁵ It may even be possible that “transplanted” legal concepts become more entrenched in the country that transplants the foreign law.³⁶ In developing this concept further, De Cruz stated that despite independence these Commonwealth countries maintain their link with the common law by their method of interpreting law “in accordance with typical English legal methods, doctrines and legal conventions”.³⁷ The main problem with holding on to English legal heritage is that when it comes to environmental problems the underlying differences in climate will impact on the problem itself. Law and geography literature states that a comparative analysis of jurisdictions should take into account differences in geography because different geographical

³² Michele Graziadei "Comparative Law as the Study of Transplants and Receptions" in Reinhard Zimmerman and Mathias Reimann (eds) *The Oxford Handbook of Comparative Law* (New York, Oxford University Press, 2008) at 441.

³³ Above at 442.

³⁴ Above at 448. ‘The most influential codification in Europe was the French civil code enacted in 1804. Its model was widely imitated throughout the world.’

³⁵ Above at 452-453

³⁶ Ugo Mattei, Teemu Ruskola and Antonio Gidi. *Schlesinger's Comparative Law: Cases, Text, Materials* (Foundation Press; Thomson Reuters, 2009) at 67.

³⁷ Peter De Cruz *Comparative Law in a Changing World* (3rd ed, Routledge-Cavendish, London, 2007) at 101.

conditions will also influence the creation of law.³⁸ In other words, law and geography literature recognised that geographical conditions are unique to each jurisdiction and a part of the context of comparative legal analysis.

Related to the idea of legal transplants is problems associated with policy transplants. A policy transplant is defined as the transfer of policies and administrative arrangements of one political system from the past or present to another.³⁹ In the policy transfer literature, much like the legal transplant literature, there is support for the idea that policy transfers are not successful just by replicating policies that have been successful in other political systems. Much like the legal transplant literature, the importance of context is emphasised in analysing the water policy transfer. In particular it is the political and institutional context that is most relevant to an analysis of water policy transplant.⁴⁰

As has been shown above, contextual or “extra-legal” factors are relevant to comparative legal method. Contextual factors are important because “they widen one’s knowledge of the social and economic *milieu* within which a legal systems and legal rules operate”.⁴¹ These may be obvious such as large social movements. Or they maybe events that are more “momentous” such as “changes in government that prompt radical shifts in economic and legal policy, widespread unemployment, the introduction of wide-ranging technological change” and so on.⁴² The most significant effect is considered to be international instruments and their effect on domestic jurisdictions as they are implemented by governments because they have to be incorporated into legislation and as a result affect legal practice.⁴³ These contextual considerations are the most important in the comparative legal analysis

³⁸ Bernhard Grossfeld *The Strengths and Weakness of Comparative Law* (Oxford University Press, Oxford, 1990)

³⁹ Rebecca Swainson and Rob C. de Loe (2011) “The importance of context in relation to policy transfer: a case study of environmental water allocation in Australia” *Environmental Policy and Governance* 21(1) 58-69 at 58.

⁴⁰ Above.

⁴¹ Peter De Cruz *Comparative Law in a Changing World* (3rd ed, Routledge-Cavendish, London, 2007) at 230.

⁴² Above at 230.

⁴³ Above at 230.

method because the changes to water law have occurred in a particular context. As will be shown in this thesis the dramatic shift in economic policy changed how natural resources were viewed in Australia and New Zealand. However, for some reason the recognition of water as a valuable economic resource is incomplete.

The comparison shows the different approaches taken in each country to allocating water. As Australia has embarked upon the policy of implementing water markets, and New Zealand has not, the comparison provides insight into the factors that should be considered when undertaking water law reform to allocate water via markets.

4.1 Reasons for selecting Australia as a point of comparison

Australia has been selected at a comparative jurisdiction because of its extensive experience in water law reform over the last 20 years gained from implementing the National Water Initiative 2004 and the Water Act 2007 (Cth) and for a number of reasons.

First, comparative studies on the topic of water law have already been undertaken between Australia and other countries, including the United States, South Africa and Chile.⁴⁴ These studies show that comparisons with Australia are a sound method for developing our understanding of water law and policy. For example, water market development in Australia and the United States has been defined as a “reallocation” problem with demand increasing from various sectors.⁴⁵ Lessons

⁴⁴ Thomas Garry “Water Markets and Water Lessons in the United States: Lessons from Australia” (2007) 4(2) *MqJICEL* 23; Peter Davis “Australian and American Water Allocation Systems Compared” (1968) 9 *Boston College L. Rev.* 647; Lee Godden “Water Law Reform in Australia and South Africa: Sustainability, Efficiency and Social Justice” (2005) 17(2) *J. Environ. Law* 181; Erin O’Donnell and Elizabeth MacPherson “Challenges and Opportunities for Environmental Water Management in Chile: An Australian Perspective” (2011) 23 *Water Law* 24; Kenneth M Murchison “Environmental Law in Australia and the United States: A Comparative Overview: (1995) 22 *Boston College of Environmental Affairs Law Review* 503; Lin Crase and Bethany Cooper. “The Political Economy of Drought: Legacy and Lessons from Australia’s Millennium Drought” (2017) 36(3) *Economic Papers: A Journal of Applied Economics and Policy* 289.

⁴⁵ Garry, above at 23.

drawn from the comparison between the United States and Australia presume that Australia provides a extensive example of water law reform that other countries can learn from. In previous studies the lessons from the Australian experience are categorised as the process of unbundling rights, eliminating ambiguity in the property associated with water rights and transparency in allocating risk.⁴⁶ To date, comparative studies between New Zealand and Australia have addressed the implementation of natural resource management plans and public participation, but not specifically water allocation.⁴⁷ Comparative studies on New Zealand water law include studies undertaken with the American water allocation system based on the beneficial use doctrine.⁴⁸ This research, therefore, contributes to the current comparative research on water allocation.

Second, Australia provides a significant example of water law reform implementation as it implemented the legal framework for regulating water markets. As part of the reforms, states were required to shift from land-based water entitlements to separate or “unbundled” water entitlements. States had started the unbundling process as part of state water reform. The National Water Initiative 2004 and Water Act 2007(Cth) consolidated the earlier unbundling by greatly extending the ability to achieve environmental water recovery through market based and sustainability reforms.

This research examines the implementation of water law reform in selected Australian states. Victoria, New South Wales and South Australia provide examples of states that are in the Murray Darling Basin.

Victoria is the most advanced in implementing the water law reforms. Victoria provides an example of environmental water allocations and the establishment of the Office of the Environmental Water Holder, which other states have not

⁴⁶ Garry, above at 23.

⁴⁷ Alan Curtis and others “The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s” (2014) 21(2) *Australasian Journal of Environmental Management* 175.

⁴⁸ Mike Walmsley (2016). *Would a water market system coupled with a beneficial use doctrine similar to that of the western United States help foster sustainability of water resource allocation in New Zealand?* (Doctor of Philosophy Dissertation, University of Waikato, 2016).

implemented. It provides a working example of how decisions about environmental water are made in a market based water allocation system. Victoria does have more use of irrigation for agriculture and horticulture and can show how pressure from increased demand for water can be managed.

The political tensions that have become apparent between New South Wales and South Australia are very relevant to the long-term success of the reforms and can provide insight for New Zealand water allocation compliance issues. The issues relating to the implementation of the reforms in New South Wales and South Australia are the strongest examples of problems that can arise with the water reform process. It may even be an example of potential policy failure if the issues of water theft cannot be adequately dealt with. There are similar compliance related issues that exist in New Zealand already with the monitoring of water takes. The example of these two Australian states shows the path that minor water theft can lead to for water allocation.

Western Australia provides an example of a state that relies on groundwater irrigation. The use of irrigated agriculture is not as extensive as some of the eastern states. However, the higher dependence on groundwater provides a useful case study when comparing with similar regions in New Zealand, such as the Canterbury Plains. The high demand for groundwater in Canterbury means that a comparison with another groundwater dependant state may provide useful alternative approaches that can be used in regions like Canterbury.

Queensland, Northern Territory and Tasmania are not included as part of the state by state analysis although reference is made to relevant law and policy from those other states within the research.

Third, water allocation in Australia based on the model following the National Water Initiative 2004 and National Water Act 2007(Cth) categorises water allocation into degrees of reliability. Under this model the final allocation delivered will depend on the share that is allocated within that particular catchment or water source. Generally, the share allocated to each water licence holder will be determined at the catchment level so that the same percentage of risk is taken by all

water users. The model of allocation followed in non-National Water Initiative states is generally more similar to the current New Zealand model of water permits where the water permit is issued with to individual water users. However, it is noted that market based systems are being gradually implemented in some states including Western Australia. Water allocation in Australia is based upon a “nominal value” of water; however, the actual amount will vary “depending on the water available”⁴⁹ which means that the Australian water allocation framework is structured to spread the risk of water scarcity broadly across users. In comparison, other water entitlement systems may spread the risk according to the seniority of the water entitlement.⁵⁰

Fourth, neither Australia nor New Zealand has a “beneficial use” doctrine as part of the current water allocation framework. Historically, although New Zealand did have a beneficial use test for the initial allocation of water⁵¹ and in Australia, the Water Act 1912 (NSW) did have provisions allowing the return of inactive licences, these provisions were not actively enforced.⁵² However, both Australia and New Zealand policy want to achieve the efficient allocation of water. In Australia, the 1994 COAG Meeting and subsequent reforms are focused on improving the ability of water to shift to those highest value uses. In New Zealand, the current National Policy Statement Freshwater Management 2014 states that the “efficient” allocation of water should be considered in regional plan rules relating to water allocation

Finally, any comparison between New Zealand and Australia needs to address the demand in both countries for water for agriculture:⁵³

⁴⁹ National Water Commission *Australia’s Water Blueprint: National Reform Assessment 2014* (Australian Government, Canberra, 2014); National Water Commission *National Water Commission 2009 Biennial Assessment* (Australian Government, Canberra, 2009) and HN Turrall and others “Water trading at the margin: The evolution of water markets in the Murray Darling Basin” (2005) 41 *Water Resour. Res.* 1 at 2.

⁵⁰ At 2.

⁵¹ See earlier discussion on water allocation under the Water and Soil Conservation Act 1967 in Chapter Three.

⁵² Turrall above n 46, at 2.

⁵³ Rick Fisher and Shona Russell “Water Policy and Regulatory Reform in New Zealand” (2011) 27(2) *Water Resour. D.* 387 at 397.

Australia exhibits water issues, which upon first impression appear somewhat similar to those in New Zealand. For example, agriculture remains the most expansive use of water in Australia, comprising about two thirds of all water used nationally. Water scarcity has prompted the implementation of a National Plan for Water Scarcity, which includes cap and trade allocation, money for engineering and infrastructure, and varying degrees of control over consumer use.

The Australian experience in implementing water law reform to improve the water allocation and re-allocation framework provides useful insights for other countries, including New Zealand.

The comparative legal method provides an evaluation of how two jurisdictions deal with a similar legal problem or issue. The New Zealand and Australian jurisdictions have a common legal heritage inherited from the United Kingdom. When applying the comparative legal method the law pertaining to the two jurisdictions which relates to the particular legal problem is compared.⁵⁴ While it is also important to note that the constitutional structure of both countries is different, it is, however, also important to acknowledge that both jurisdictions have “devolved significant environmental responsibilities to lower levels of government”.⁵⁵

When undertaking a comparative analysis, other contextual factors such as large social movements or changes in government that bring further radical change can also be included.⁵⁶ In this research the most relevant factor is international instruments and their effect on domestic jurisdictions as governments implement international treaties.⁵⁷ In the Australian context, international treaties have been significant in influencing the power of the Commonwealth to commit the states to act on specific environmental issues such as water allocation. In the New Zealand context, there is no influence of international law in the same manner as that found in Australia.

⁵⁴ Konrad Zweigert and Hein Kötz *An Introduction to Comparative Law* (3rd ed, Oxford University Press, Oxford, 1998) at 2.

⁵⁵ Cameron Holley “International Environmental Law and Australia and New Zealand” in Shawkat Alam, Jahid Hossain Bhuiyan, Tareq MR Chowdhury and Erika J Techera (eds) *Routledge Handbook of International Environmental Law* (Routledge, New, York, 2012).

⁵⁶ At 230.

⁵⁷ At 230.

5 Chapter Overview

Chapter One provides an overview of the research. It includes the research questions and overall research objective of comparing Australian and New Zealand water allocation.

Chapter Two defines key terms that are relevant when analysing water allocation law and policy such as the concept of water scarcity. The scope of the literature includes broader international reports on freshwater, a resource which is increasingly seen as scarce in some regions. The concept of water stress and the interdisciplinary nature of water allocation require the inclusion of literature that explores economic concepts related to water allocation. These concepts are often referred to in policy documents that emphasise the need to allocate water in the most efficient manner. The literature review shows that water allocation is not just defined in physical terms but also in economic terms. The limitations of an economic perspective are also addressed in this chapter because the thesis focuses on water allocation law and policy and for the reason not all the issues in this area are based in economics. There are also legal issues which need a legal solution. The concepts and terms defined in this chapter provide an overview of current thinking in water allocation.

Chapter Three provides the background of the research shows the change in public expectations regarding water allocation over time. At first, riparian rights were amended by statute to provide water for hydropower development and government projects. By the 1960s, New Zealand reached a point there was increasing public concern about water allocation. In response to concern about water allocation the Water and Soil Conservation Act 1967 was enacted, which included a “balancing test” for water allocation in *Keam v Minister of Works and Development*.⁵⁸ Then following an era of economic deregulation during the 1980s, the government took a significant step back from its role in control over water allocation. Following

⁵⁸ *Keam v Minister of Works and Development* [1982] 1 NZLR 319.

extensive environmental and economic reform the RMA was enacted with the purpose of achieving sustainable management of resources. Nonetheless, gaps in New Zealand water policy at a national level emerged under the RMA.

Chapter Four identifies a gap in national policy development for water allocation from 1991 until 2011. It shows that the gap in water allocation policy at a national level resulted in water allocation by “default” rather than by “design”. In the absence of national guidance water policy for irrigation and water for other purposes was also split in accordance with the Resource Management Law Reform Project of the 1980s. Chapter Four examines the outcome of the factors that have combined to influence water policy from 1991 to 2011. This section includes the common law interpretation of the nature of property rights in a water permit, determining the order of water permit applications via the “first come, first served” rule and a general lack of appreciation that water allocation limits have been reached across New Zealand catchments.

Chapter Five examines the development of water law and policy from 2011 onwards. It examines the four reports of the Land and Water Forum discussion and their contribution to water allocation. It shows how the government has made an effort to address water allocation problems from since 2011. By identifying the problems with New Zealand water allocation Chapter three provides the basis for the comparisons that are then made in Chapter five.

Chapter Six evaluates the Australian water law reform experience. The background to the Australian water law reform shows the impact of inter-state tensions in balancing competing water interests. This tension was reflected in the formation of the Australian Constitution. More recent developments in water law reform were only able to proceed once the COAG agreed in 1994 to advance the water law reform agenda and to place a cap on water extraction from the Murray-Darling Basin in 1997. The Murray-Darling Basin spans the states of Victoria, New South Wales, South Australia, Queensland and the Australian Capital Territory. The National Water Initiative 2004 confirmed the commitment to finding sustainable means to allocate water and to the implementation of water markets. The Water Act

2007 (Cth) is the regulatory framework for catchment-wide planning for the Murray-Darling River Basin. The Act effectively implements the 1994 COAG agreement across the states. In addition, this chapter documents the key points and contributing factors that influenced the final form of Australian water markets and documents its key features as contained in the regulation. It shows that Australia has advanced its implementation of water policy for markets through the use of regulation. For the purposes of comparison with New Zealand this chapter focuses on the states of Victoria, New South Wales, Western Australia and South Australia.

Chapter Seven compares the Australian and New Zealand approaches to developing water allocation law and policy. It is pivotal chapter in answer the key research question regarding lessons that can be learnt from the Australian experience in water law reform. The chapter is structured so that there is a Comparative Analysis Table followed by the explanation of the key lessons. The value of this chapter lies in its focus on addressing current water allocation law and policy problems specific to New Zealand. The thesis has carefully set out what the specific problems for New Zealand water allocation are and how they are influenced by and have influence on other related factors. The comparative analysis draws upon the experience of the selected Australian states and how they have made efforts to implement the Australian Commonwealth Government law reforms.

Chapter Eight concludes the research and summarises the key contributions of each chapter.

6 *Summary*

This chapter has explained how the thesis' answers the research questions. The focus of the thesis is squarely focused on the lessons for New Zealand from Australia regarding the development and implementation of water allocation law and policy. The next chapter provides a literature review of water allocation issues from an environmental and economic point of view. It is followed by chapters analysing New Zealand and Australian water law; these in turn form the basis of the comparative analysis and for the recommendations that are put forward in Chapter Seven.

CHAPTER TWO: ECONOMIC AND LEGAL CONCEPTS IN WATER ALLOCATION LAW AND POLICY

1. Introduction

This chapter addresses the research question by exploring environmental and economic concepts that are relevant to water allocation law and policy. First, it explores the definition and implications of water scarcity for water allocation. It is clear that growing populations, demand for irrigation water and climate change are potential factors influencing the projections of increasing global water scarcity. Relevant literature from a range of disciplines (science, agriculture, natural resources) contributes ideas to our overall understanding of water allocation. These ideas aid the critical analysis of New Zealand and Australian policy documents on water allocation in the subsequent chapters.

Second, the chapter examines relevant literature on the use of economic terms and concepts that are referred to in water allocation policy. Economic analysis of water allocation regulation is a prominent feature of the Australian experience of water law reform. While the reforms were based on both policy to improve productivity and sustainability at times there is less emphasis on this point in the literature. Literature focused on a particular economic question related to the function of the water markets may unintentionally obscure the original intent behind expanding the use of markets in water allocation in Australia. One of the themes that emerge from the economics literature is the emphasis on water markets being a solution to water allocation problems. The problem may be one of how research is contextualised. The cross disciplinary nature of water itself creates a challenge for researchers analysing water allocation. Holley states that there is a “considerable literature” on the topic of Australian water law reform and that it is “predominantly informed by

an economist lens”.¹ Economic concepts are relevant to explaining the issues around valuing water, allocating scarce resources between competing users and focusing on the efficient allocation of water. In some cases, economic modelling reclassifies water from a public good to an economic asset. This classification as an asset or a type of property has particular legal implications because the economic conceptualisation of water is different from the legal definition of water. Legally, water is a part of the commons or public property. Economic concepts and terms are relevant to water allocation law and policy because economic models, concepts, and interpretations are often a part of water allocation methods.

However, it is important to make the distinction that economic solutions such as water markets are established and operated through regulation. Consequently, the limitations of economic analysis are that it does not answer legal questions about the function of regulation relevant to water allocation. Legal questions require legal answers based on an analysis of relevant regulation using conventional legal analysis. To that end a set of legal questions are provided at the end of the chapter which are drawn from the key themes in the literature analysed.

2 Part I - Global Water Scarcity

2.1 Defining “Water Scarcity”

Water scarcity is a critical issue. A recent high profile example in early 2018 was the water scarcity issues experienced by Cape Town when it was predicted that the city would run out of water.² While the issues in Cape Town were intertwined with other infrastructure, social, political and environmental issues, there is sufficient

¹ Cameron Holley and Darren Sinclair “Water Markets and Regulation: Implementation, Success and Limitations” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) 141 at 143.

² Hugh Morris “Cape Town drought: What Happens When the City Runs Out of Water?” *The Telegraph* (5 February, 2018) states that Cape Town is a “water scarce region” and the six dams that provided water to the city were already at a low level due to a “historic dry spell”. Then demand also increased at the same time due to “a booming population”.

research to show that water scarcity is an impending problem for other cities too.³ As a starting point, it is important to understand that fresh water is a limited resource. Statistics show that of the total available amount of freshwater on Earth, approximately only 1 per cent of it is suitable for human use.⁴ Then of the 1 per cent that is suitable for human use there are further issues relating to water access and water quality. In addition, the distribution of water and rainfall patterns also contributes to water availability and scarcity. Projections of water scarcity referred to below confirm that the extent of water scarcity may vary but that this “wicked” problem will not resolve itself without policy interventions.⁵

As the discussion below will show it is generally accepted that not all the water physically available should be allocated. The definition of water scarcity is complex and includes taking into consideration when water is available, the location of water, ease of obtaining access to water and water quality.⁶ Water scarcity can be measured on a scale of water availability per capita. The Falkenmark Water Stress Indicator provides a threshold of 1,700 cubic metres of renewable water annually for each person in a country as a minimum requirement.⁷ According to the indicator, countries below this threshold are experiencing “water stress”, countries with a level below 1,000 cubic meters have “water scarcity” and finally countries below 500 cubic metres have “absolute scarcity”. The different measures are an indicator of physical water scarcity.

³ A further eleven cities have been identified as “most likely to run out of drinking water – like Cape Town” including Sao Paulo, Bangalore, Beijing, Cairo, Jakarta, Moscow, Istanbul, Mexico City, London, Tokyo and Miami. See BBC “The 11 cities most likely to run out of drinking water – like Cape Town” (11 February 2018): In 2019, reports emerged that the city of Chennai, India was also running out of water, Kate Wheeling “Chennai, India, is running out of water. Other cities will be next” *Pacific Standard* (24 June 2019).

⁴ Laurance Boisson de Chazournes and others “Introduction” in Laurance Boisson de Chazournes, and others (eds) *International Law and Freshwater. The Multiple Challenges* (Edward Elgar, Cheltenham, 2013).

⁵ Quentin R. Grafton “Responding to the ‘Wicked Problem’ of Water Insecurity” (2017) 31(10) *Water Resour. Manag.* 3023 and Junguo Liu and others “Water Scarcity Assessments in the Past, Present, And Future” (2017) 5(6) *Earth's Future* 545.

⁶ Hugh Morris, above n 1. Once the level of water in Cape Town dams falls below 10 per cent the water is not fit for human consumption and municipal water supply taps will be turned off on a designated “day zero”. The availability of water is impacted by its quality.

⁷ Falkenmark, MJ Lundquist and C Widstrand (1989). “Macro-scale water scarcity requires micro-scale approaches: Aspects of vulnerability in semi-arid development” (1989) 13(4) *Natural Resources Forum* 258.

Water scarcity defined from a hydrological perspective makes a clear connection with the water cycle. Hydrological studies assert that both surface water and groundwater supplies are placed under increased pressure as demand increases. They confirm that groundwater supplies are particularly vulnerable as groundwater storage “provides a natural buffer against water shortage”.⁸ However, groundwater depletion is more difficult to observe in comparison to surface water depletion and demand for groundwater increases when surface water supplies are inadequate.⁹

The more commonly used definitions of water scarcity in water allocation policy focus on economic water scarcity rather than the physical water scarcity discussed above. Even within the literature on economic water scarcity there is “no commonly accepted definition of water scarcity”; however, there are factors that can be taken into consideration to measure water scarcity.¹⁰ These include the human and environmental demand for water and whether there is adequate water available to meet those needs. Water availability also depends on the variable weather patterns. Economic concepts of water scarcity attempt to measure and model the demand and availability of water before it becomes physically scarce.

There are several economic water scarcity indicators or models which can include a number of the different factors within their measurement.¹¹ Some water scarcity indicators include the connection between water scarcity and climate change and are based on global climate models.¹² In addition, the elements involved in water

⁸ Inge de Graaf and others “A global-scale two-layer transient groundwater model: Development and application to groundwater depletion” (2017) 102 *Adv. Water Resour.* 53 at 53; and Stephanie L Castle, Brian F. Thomas, John T Reager, Matthew Rodell, Sean C. Swenson, and James S. Famiglietti “Groundwater depletion during drought threatens future water security of the Colorado River Basin” (2014) 41(16) *Geophys. Res. Lett.* 5904.

⁹ J Van der Gun *Groundwater and Global Change: Trends, Opportunity and Challenges* (UNESCO, Paris, 2012); T. Gleeson, S. Jasechko, E. Luijendijk, M. Cardenas “The global volume and distribution of modern groundwater” (2016) 9(2) *Nat. Geosci.* 161; and G.M. Zuppi “The Groundwater Challenge” in Corrado Clini, Ignazio Musu and Maria Lodovica Gullino (eds) *Sustainable Development and Environmental Management. Experiences and Case Studies* (Springer, Netherlands, 2008) at 52.

¹⁰ The material in this paragraph is drawn from Frank R. Rijsberman, “Water Scarcity: Fact or Fiction?” (2006) 80(1) *Agricultural Water Management* 5 at 5 where the author poses the question of “What is water scarcity?”.

¹¹ Junguo Liu, above n 4.

¹² Simon Gosling and Nigel W. Arnell. “A Global Assessment of the Impact of Climate Change on Water Scarcity” (2016) 134(3) *Clim. Change* 371.

scarcity make it challenging to define and so differences in the scale of water scarcity make it hard to develop solutions.

The definition and measurement of water scarcity are relevant to understanding the water law and policy of Australia and New Zealand as there are relative differences in the type of water scarcity experienced by each country. On the one hand, the Australian experience relates generally to physical water scarcity for the environment alongside economic water scarcity for irrigators and other users,¹³ whilst, on the other hand, urban demand for water would be an example of water scarcity in relation to basic human needs. In contrast, New Zealand is experiencing problems with over-allocation and limited means to reallocate water to higher value uses.¹⁴

2.2 What causes water scarcity?

Scientific analysis shows that water scarcity is increasing. However, the exact reasons proffered for this scarcity vary. One view is that water scarcity is increasing because of the growing demand for water that results from population pressure. More specifically, the argument is that the underlying factor driving demand for freshwater is global population growth and there is indeed some concern that population growth will exacerbate water policy challenges in the future:¹⁵

We conclude that impending global-scale changes in population and economic development over the next 25 years will dictate the future relation between water supply and demand to a much greater degree than will changes in mean climate...

¹³ See Water Act 2007 (Cth) and the Murray Darling Basin Plan which has a targeted reduction of water extractions in the Murray Darling Basin prompted in part by concerns about over-extraction and physical water scarcity.

¹⁴ See National Policy Statement Freshwater Management 2014 (revised 2017) which has put in place targets for regional councils to stop over-allocation.

¹⁵ Charles J. Vörösmarty, Pamela Green, Joseph Salisbury and Richard Lammers “Global Water Resources: Vulnerability from Climate Change and Population Growth” (2000) 5477 *Science* 284 at 287.

The extent of pressure from global population growth is apparent when considering the changes to water stress indicators. In the year 2000, research using water mapping projections estimated that 25 per cent of the world's population was experiencing water stress.¹⁶ In contrast, by 2010, further research based on a global geospatial framework estimated that water security issues existed for 80 per cent of the world's population.¹⁷ The degree of change between the statistics from the year 2000 to 2010 suggests that the actual problem of water allocation increased rapidly during this time.¹⁸ One of the problems with measuring global water security is, however, the lack of uniform measures.

The Food and Agriculture Organization of the United Nations identified agriculture as one of the “driving forces behind water scarcity”. “Unconstrained water use” in particular is linked to agricultural production:¹⁹

Of all economic sectors, agriculture is the sector where water scarcity has the greatest relevance. Currently, agriculture accounts for 70 percent of global freshwater withdrawals, and more than 90 percent of its consumptive use. Under the joint pressure of population growth and changes in dietary habits, food consumption is increasing in most regions of the world. It is expected that by 2050 an additional 1 billion tonnes of cereals and 200 million tonnes of meat will need to be produced annually to satisfy growing food demand.

The growing demand for food from an increasing population will test the ability of countries to respond with appropriate water allocation law and policy. The depletion of aquifers is of particular concern because of the potential effects on sustainable food production.²⁰ Water-stressed regions exporting crops irrigated by groundwater risk over-exploitation without careful management of their water

¹⁶ Above.

¹⁷ Charles J. Vörösmarty and others. “Global Threats to Human Water Security and River Biodiversity” (2010) 467 *Nature* 555.

¹⁸ M.M. Mekonnen & A. Y. Hoekstra A.Y. “Four Billion People Facing Severe Water Scarcity” (2016) 2(2) *Science Advances* e1500323. In this study it is estimated that two-thirds of the global population experience “water stress” for at least one month of the year.

¹⁹ Food and Agriculture Organization of the United Nations *Coping with water scarcity - an action framework for agriculture and food security* (United Nations, Rome, 2012).

²⁰ Carole Dalin, Yoshihide Wada, Thomas Kastner, and Michael J. Puma “Groundwater depletion embedded in international food trade” (2017) 543(7647) *Nature* 700.

supplies.²¹ Governments need to be aware of the volume of water that is exported through food production.

These studies linking population growth to increased demand for water for food production provide a more comprehensive and connected understanding of factors influencing water scarcity. The increased demand for water is not simply from the demands of a growing global population. By taking into account the wider context of water demand from a growing population, it becomes more evident that more water is in fact needed to irrigate crops to feed the Earth's growing population. As this population growth occurs, it will generally increase water scarcity if good water allocation law and policy do not exist.

2.3 The effect of water scarcity on water allocation

As water scarcity increases, freshwater allocation limits will be reached in some water-sensitive regions and so will pose problems for reaching sustainable development goals in those regions.²² The availability of water for human needs is a significant issue facing regions such as the Middle East and Africa.²³ The combination of growing populations and commitments to supply quality drinking water is a challenge in these regions. Despite the challenges of water scarcity, all countries must ensure that water quality standards are met because the lack of access to water also affects other aspects of human well-being including health.²⁴ The United Nations World Economic Social Survey has identified that the types of

²¹ Above.

²² Jeffrey D Sachs *The Age of Sustainable Development* (Columbia University Press, New York, 2015) at 189.

²³ World Bank World Bank Making Sustainable Commitments — *An Environment Strategy for the World Bank* (World Bank, Washington, 2011) at 112.

²⁴ United Nations Department of Economic and Social Affairs *World Economic and Social Survey 2013* at x states “About 1 billion people still live in slums lacking access to basic infrastructure and services such as freshwater, sanitation, electricity, health care and education”.

policies necessary to meet the human right to quality water should recognise the links between freshwater, food, energy, environment and the climate.²⁵

The scarcity of water lies at the core of any economic analysis of water allocation law and policy.²⁶ The question of water allocation can be reframed as a question of how to allocate water efficiently amongst competing users. Tietenburg and Lewis' economic analysis identifies the difference between surface and groundwater allocation because each water source raises a different set of issues about water allocation. For example, for efficient surface water allocation, there must be “a balance amongst a host of competing users” and “an acceptable means of handling the year-to-year variability in water flow”.²⁷ Within this criterion for efficient surface water allocation, there must also be regard for the consumptive and non-consumptive users. The most critical factor in efficient surface water allocation is having the tools to deal with the seasonal variability of water supplies:²⁸

With respect to allocating among competing users, the dictates of efficiency are quite clear – the water should be allocated so that the marginal net benefit is equalized for all uses.

Nevertheless, there cannot be efficiency in allocation until the scarce nature of water resources is addressed in water law and policy. Thus there are important decisions to be made about water allocation between sectors such as meeting the demands of competing needs of water for hydropower and irrigation.²⁹

²⁵ General Comment 15 issued by the United Nations Committee on Economic, Social and Cultural Rights recognised the human right to freshwater for drinking and sanitation in 2002. Takele Soboka Bulto “The Human Right to Water: Invention or Discovery” (2011) 12 MJIL 1; Ioanna Mouratiadou, Anne Biewald, Michaja Pehl, Markus Bonsch, Lavinia Baumstark, David Klein, Alexander Popp, Gunnar Luderer, and Elmar Kriegler “The impact of climate change mitigation on water demand for energy and food: An integrated analysis based on the Shared Socioeconomic Pathways” (2016) 64 Environmental Science & Policy 48.

²⁶ See discussion in Chapter Two on the scarcity of water and increasing demand.

²⁷ Tom Tietenburg & Lynne Lewis *Environmental & Natural Resource Economics* (10th ed) (New York: Routledge, 2016) at 205.

²⁸ At 205.

²⁹ Morgan Bazilian, and others “Considering the energy, water and food nexus: Towards an integrated modelling approach” (2011) 39(12) Energy Policy 7896 at 7899.

2.4 Global Response to Water Scarcity - The United Nations Sustainable Development Goal 6 - Water

International law is challenged in its ability to deal with increasing global scarcity of water as human demand increases. The challenges are identified as developing good freshwater management practice, changes in hydrology and growing demand for freshwater.³⁰ One solution put forward by the United Nations is to focus on water in the Sustainable Development Goals. In 2014, the United Nations released its revised goals for global development which include the sustainable use of water.³¹ The “water-energy-food nexus has become central to the discussions” on developing and implementing these goals.³² The United Nations Water branch provides support to countries implementing water reform and will monitor the goals.³³ In September 2016, the United Nations released an “Action Plan” for water based on Sustainable Development Goal 6 for the “availability and sustainable management of water and sanitation for all”.³⁴ Goal 6.4 measures the available quantity of water but it also needs to make a stronger link with water quality.³⁵ The High Level Panel responsible for delivering Sustainable Development Goal 6 includes political representatives, including the Prime Minister of Australia.³⁶ The inclusion of political representatives therefore shows that water allocation is also a political problem.

The High Level Plan on Water defined water needs broadly; these range from water for sanitation and safe drinking to planning for water for the future. The plan identified risks from adverse events such as droughts and floods that are more likely

³⁰ At 3.

³¹ United Nations *Introduction and Proposed Goals and Targets on Sustainable Development for the Post 2015 Development Agenda* (2014); Théa Bounfour “International Water Law and the Sustainable Development Goals” (2016) 46(6) EPIL 380.

³² Anik Bhaduri and others “Achieving Sustainable Development Goals from a Water Perspective” (2016) 4 *Front. Environ. Sci.* 64.

³³ “United Nations Water” is a United Nations inter-agency department for freshwater related issues established in 2003 by the United Nations High Level Committee on Programmes.

³⁴ United Nations *High Level Plan on Water* (United Nations, High Level Panel on Water, 2016).

³⁵ D. Vanham and others “Physical water scarcity metrics for monitoring progress towards SDG target 6.4: An evaluation of indicator 6.4.2 “Level of water stress” (2018) 613 *Sci. Total Environ.* 218.

³⁶ United Nations, above n 32, at 4.

to occur in the future. In addition, demographic changes and decisions about how water is allocated will contribute negatively to the problem of water scarcity on a global scale:³⁷

Changes in human populations and settlements, as well as increasing demand for agriculture purposes will exacerbate scarcity problems, as will poor decisions on water allocation and use. 45% of total GDP is projected to be at risk due to water stress by 2050.

This statistic on water allocation illustrates the extent to which freshwater allocation is a fundamental global issue. The United Nations is focused on finding solutions that rely upon good decision making to address water scarcity problems by taking into account the interrelationships in the water-energy-food nexus.

Despite international commitments to addressing water scarcity, problems with developing targeted water policy remain:³⁸

The political commitments acknowledge[d] the important role water plays in sustainable development. However, the discourse of water and sustainable development homogenises the problem of water scarcity, when in fact the causes of scarcity are not uniform and not simply a matter to be solved through mechanisms to deal with economic goods.

The water-energy-food nexus requires an analysis of factors such as the input of energy into water systems. A water system can be “energy intensive” in itself if water needs to be moved across long distances³⁹ and includes, for example, the use of desalination plants which are recognised as an “energy intensive approach to freshwater production”.⁴⁰

On the other hand, it is also important to recognise water inputs into energy systems. Any decision to establish an energy plant should take into account the “total amount

³⁷ At 6.

³⁸ Naho Mirumachi “Water and Sustainable Development” in Michael Redclift & Delyse Springett *Routledge International Handbook of Sustainable Development* (Routledge, London, 2015) at 137.

³⁹ Robert Wilkinson “The water-energy nexus methodologies, challenges and opportunities” in Douglas S. Kenney & Robert Wilkinson (eds) *The Water-Energy Nexus in the American West* (Edward Elgar, Cheltenham, 2011) at 5.

⁴⁰ Xuexia Jia and others “Analyzing the Energy Consumption, GHG Emission, and Cost of Seawater Desalination in China” (2019) 12(463) *Energies* 1.

of water, calculated on a whole-system basis”⁴¹ which, in practice, means that a commitment to increase biofuels should include the total amount of water used to grow the biofuel crop, if that is the source of the fuel.⁴² Many of these calculations are based on economic theory or models. The use of economics as a means to address water allocation issues is therefore examined in more detail in the next section.

2.5 Implementing Sustainable Water Allocation

New Zealand and Australia have both made efforts to introduce principles of sustainability to their environmental law.⁴³ Australian studies have identified continued improvement in sustainability outcomes in a multi-level governance framework which relies heavily on effective state cooperation.⁴⁴ An empirical study of principles of ecological sustainability in water plans shows that sustainability was an important factor in developing plans for the Murray-Darling River Basin in Australia.⁴⁵ New Zealand’s commitment to sustainability in the purpose section of the RMA, is well documented.⁴⁶ On the other hand there are also accounts of the challenges to implementing sustainable water allocation particularly from a governance perspective.⁴⁷ As in Australia, the implementation of water law

⁴¹ Wilkinson, above n 38, at 7.

⁴² At 7.

⁴³ Douglas E. Fisher *The Law and Governance of Water Resources: The Challenge of Sustainability* (Edward Elgar, Cheltenham, 2009) for an analysis of sustainability in Australian water law and policy.

⁴⁴ Ganesh Keremane, Jennifer McKay and Zhifang Wu “Achieving ecologically sustainable development in multi-level water governance regimes: the case of the Murray Darling Basin” 211 in Michael Kidd, Loretta Feris and Tumai Murombo (eds) *Water and the Law Towards Sustainability* (Edward Elgar, Cheltenham, 2014).

⁴⁵ Above.

⁴⁶ Hon Simon Upton, “Stace Hammond Grace Lecture: Purpose and Principle in the Resource Management Act” (1995) 3 Waikato L. Rev. 17; Caroline Miller *Implementing Sustainability. The New Zealand Experience* (Routledge, New York, 2011); Bret C. Birdsong “Adjudicating Sustainability. New Zealand’s Environment Court and the Resource Management Act” (2002) 29(1) Ecology L. Q. 1 and Nicola Wheen “The Resource Management Act 1991: A Greener Law for Water” (1997) 1 NZJ Env’tl. L. 165.

⁴⁷ Trevor Daya-Winterbottom “Sustainability, governance and water management in New Zealand” in Michael Kidd, Loretta Feris and Tumai Murombo (eds) *Water and the Law Towards Sustainability* (Edward Elgar, Cheltenham, 2014).

reform from the national to regional level are issues at the forefront of challenges to sustainable water allocation in New Zealand.

3 *Part II – Economic Concepts of Water*

3.1 Water as a Public Good

As described above, water allocation is a complex policy issue. Economic concepts are often used in water policy to discuss the nature of water allocation problems and potential solutions. One of the main problems of water allocation is that water is a common good or public resource. From an economic perspective, without restrictions on their use public resources are at risk of being over-exploited. Furthermore, once allocated those public goods take on private characteristics.

One of the factors that can lead to over-exploitation is that demand for water will often exceed natural flows as “modern societies are rarely prepared to accept limits imposed on population numbers, agricultural productivity or industrial activity by reliance on natural flows”.⁴⁸ The following sections will address some of the common concepts that are used to define the water allocation problem in economic terms and also consider how particular solutions are proposed using economic analysis.

3.2 Tietenburg’s Conceptual Framework for Analysing Environmental Problems

Tietenburg’s conceptual framework for examining environmental problems provides useful criteria for identifying environmental problems in natural resource allocation.⁴⁹ It distinguishes between the general understanding of natural resources and the economic understanding by emphasising that natural resources are reclassified or reconsidered from a public resource to an asset from an economic perspective. In other words, the environment provides assets or “raw materials” to

⁴⁸ Above at 241.

⁴⁹ Tietenberg, above n 26, at 15.

be used in the production process to create “consumer products”.⁵⁰ Further examples of direct or indirect benefits provided by the environment include breathing fresh air or drinking potable water. Within the ecological economics literature, these benefits are referred to as “ecosystem goods or services”.⁵¹ This economic approach to natural resource policy allows a discussion of the natural resource in terms of its contribution as an asset and gives it an economic value expressed in monetary terms.

The next problem that arises regarding water allocation is that water is both an asset and a public good depending on its use. The ownership of water becomes a central point in distinguishing rights of access to water that is being allocated from the commons or a private asset. Constructions of property from an economic perspective include the following three categories: government ownership, common or group ownership and open access. Most relevant to water allocation is the third category of property, open access. Open access resources “...can be exploited on a first-come, first-served basis” and have given rise to what has become known popularly as “the tragedy of the commons”.⁵² The tragedy is that open access “destroys the incentive to conserve” the public resource.⁵³

Allocating private access or entitlements to open access resources raises particular challenges with regard to conserving the natural resource. These challenges are addressed in the literature on the “commons” and associated issues relating to property rights to these common pool resources. Hardin explained the tragedy of the commons by using the example of open access to National Parks:⁵⁴

What shall we do? We have several options. We might sell them off as private property. We might keep them as public property, but allocate the right to enter them. The allocation might be on the basis of wealth, by the use of an auction system. It might be on the basis of merit, as defined by

⁵⁰ At 16.

⁵¹ At 17 states “One significant subclass of these, ecosystem goods and services, incorporate the benefits obtained directly from ecosystems, including biodiversity, breathable air, wetlands, water quality, carbon sequestration and recreation”.

⁵² At 28.

⁵³ At 30.

⁵⁴ Thomas Hardin “The Tragedy of the Commons” (1960) 162 (3859) *Science* 1243-1248 at 1245.

some agreed upon standards. It might be by lottery. Or it might be on a first-come, first-served basis, administered to long queues. These, I think, are all objectionable. But we must choose -- or acquiesce in the destruction of the commons that we call our National Parks

As the quote above shows, Hardin believed the allocation of some private property rights to natural resources was essential to protect the commons. Hardin argued that without private property rights common resources would be overused to the point of depletion.

3.3 *The Value of Water and Ecosystem Services*

A theme in the economic literature is the use of markets to determine both pricing and allocation of water. From a traditional economic perspective, market-based allocation “works best when the goods and services being traded are *private* in nature”.⁵⁵ For example, in a market that trades in private goods, the seller can control the distribution and availability of the good. The goods are considered to be “excludable” as owners exercise their exclusive rights over their control. Contemporary water-related policy documents will include a reference to the value of water to a particular sector or in a cost-benefit analysis for a project.⁵⁶ The values

⁵⁵ At 64.

⁵⁶ Ben Groom and Phoebe Koundouri “The Economics of Water Resource Allocation: Valuation Methods and Policy Implications” *Ideas Working Paper Series RePec* (Federal Reserve Bank of St Louis, St Louis, 2011). This paper is limited to focusing on the Kouris watershed in Cyprus. It provides an example of balancing competing demands through establishing value for water.

For an example of cost benefit approaches applied in New Zealand see Bill Kaye-Blake, Chris Schilling, Chris Nixon, and Killian Destremau *Water management in New Zealand: A road map for understanding water value. NZIER Public Discussion Paper, Working Paper 2014/01* (New Zealand Institute of Economic Research, Wellington, 2014). Section 32 of the Resource Management Act 1991 also requires a cost benefit analysis to be carried out as part of the resource management plan making process.

An Australian example is Lisa Brennan McKellar, Marta Monjardino, Rosalind Bark, Glyn Wittwer, Onil Banerjee, Andrew Higgins, Neil MacLeod, Neville Crossman, Di Prestwidge and Luis Laredo *Irrigation costs and benefits. A technical report to the Australian Government from the CSIRO Flinders and Gilbert Agricultural Resource Assessment, part of the North Queensland Irrigated Agriculture Strategy* (Australian Government Department of Infrastructure and Regional Development, Canberra, 2013).

are generally expressed as pricing options for the cost of water.⁵⁷ These traditional economic concepts do not take into account the nature of the resource itself.

Ecosystem services do recognise the connections between resources and their role as both a “good” and a part of the natural environment.⁵⁸

Ecosystem services are not like other goods and services that move through our economy. They cannot be easily separated from their ecosystem bases, or moved around and delivered the way that other raw materials or services are physically delivered. In short, ecosystem services, while clearly of tremendous value, are ecologically, geographically, and economically more complex than any other kind of commodity or service, which has made tapping into their value a challenge that has yet to be met.

Many of the complexities of how to allocate stem effectively from the nature of water as part of the commons or public good. Any policy that determines how water shall be allocated is effectively making a judgement between the value of the resource as a common good and as an economically productive unit. Applying the ecosystem services perspective shows the underlying distinction between and different role of water as a public resource and water as a private good or asset.

3.4 Economic Solutions for Water Allocation Problems

From an economic perspective, the efficient allocation of water requires transfer and pricing mechanisms. The ability to transfer water relies upon a “well-structured system of water property rights”.⁵⁹ There are three essential elements required for efficient property rights:⁶⁰

Exclusivity – All benefits and cost accrued as a result of owning and using the resource should accrue to the owner, and only to the owner, either directly or indirectly by sale to others.

Transferability – All property rights should be transferable from one owner to another in a voluntary exchange.

Enforceability – Property rights should be secure from involuntary seizure or encroachment by others.

⁵⁷ Ronald C Griffin *Water Resource Economics. The Analysis of Scarcity, Policies, and Projects* (MIT Press, Cambridge, 2016) at 303.

⁵⁸ J.H. Ruhl, Steven E. Kraft and Christopher L. Lant. *The Law and Policy of Ecosystem Services* (Island Press, Washington, 2007) at 13.

⁵⁹ Tietenburg, above n 26, at 210.

⁶⁰ At 22.

According to the classic economic approach, providing exclusive economic property rights increases the incentive to preserve the underlying resource. However, this is not the only possible construct of economic property rights. These structures provide the holders with certainty that they can transfer their water rights efficiently. In theory, those that receive a higher benefit from water would be able to purchase more rights from those that have a lower benefit. The ability to benefit from efficient water transfers is however hindered in practice by the pre-existing legal rights. Examples include the use of the prior appropriation doctrine in the United States.⁶¹

According to Horbulyk, there are three prerequisites from an economic perspective for the “successful implementation of [water] policy reforms”.⁶² The first is the definition of property rights.⁶³ Horbulyk states that where there is the potential to trade a water right the value of the right will depend on several factors including the security of those rights, transferability, and opportunity to bank water and whether there are further fees to pay. The second factor is separating revenue generation from improving water allocation outcomes. The example provided is that potentially water demand-sensitive pricing could be implemented for urban water users.⁶⁴ The third factor is the “monitoring, evaluation and measurement” of policy reform.

3.5 Limitations of Economic Solutions for Water Allocation

The limitations of economic-based solutions are that they cannot address the broad scope of other issues affecting water allocation that are not economic problems. Water allocation policy and law are included in natural resources literature more

⁶¹ At 211.

⁶² Theodore Horbulyk "Markets, Policy and the Allocation of Water Resources Among Sectors: Constraints and Opportunities" (2005) 30 (1) Can. Water Resour. J. 55-64.

⁶³ At 60.

⁶⁴ At 61.

generally and as specific texts on the subject.⁶⁵ Some of the other themes explored in water allocation literature include: conflict over freshwater management,⁶⁶ scoping the effects of market orientated efforts to manage natural resources from a governance perspective,⁶⁷ exploring the relationship between water demand and social justice,⁶⁸ the context of property rights in water allocation within indigenous cultures⁶⁹ and the effect of public and private interests in natural resources law.⁷⁰

Despite freshwater scarcity being a global issue, the literature from each jurisdiction focuses on particular challenges that arise in that region. For example, when Australia experienced the Millennium Drought from 2001-2009 that experience triggered the more recent water law reform that followed. The drought had the most substantial impact in the state of Victoria.⁷¹ Academics such as Godden draw on lessons from a case study on water law reform in the Australian state of Victoria to show the complexity of resolving water allocation issues in the context of strong rural-urban water demand.⁷² The Australian water law literature also includes issues

⁶⁵ See Douglas E. Fisher *Australian Environmental Law* (Lawbook, New South Wales, 2003); Douglas E. Fisher *Water Law* (LBC Information Services, North Ryde, 2000); Kate Stoeckel, Romany Webb, Luke Woodward and Amy Hankinson *Water Law* (Lawbook Co, Australia, 2012).

⁶⁶ Vandana Shiva *Water Wars. Privatization, Pollution and Profit* (South End Press, Cambridge, 2002).

⁶⁷ J.T. Scholz and B Stiftel, (eds) *Adaptive Governance and Water Conflict* (RFF Press, Washington, 2005).

⁶⁸ Lee Godden “Water law reform in Australia and South Africa: Sustainability, Efficiency and Social Justice” (2005) 17(2) *J. Environ. Law* 181 and P. Troy (ed) *Troubled Waters: Confronting the Water Crisis in Australia’s Cities* (ANU Press, Canberra, 2008).

⁶⁹ On the topic of water and indigenous people in Australia see Lee Godden “Realising capacity: Indigenous involvement in water policy and law reform in south-eastern Australia” (2010) 20 (5,6) *Water Law Special Issue – Contemporary Indigenous Peoples’ Legal Rights to Water in The Americas and Australasia* 243; For a discussion of co-governance in New Zealand see Linda Te Aho “Indigenous challenges to enhance freshwater governance and management in Aotearoa New Zealand — The Waikato River settlement” (2010) 20, (5,6) *Journal of Water Law Special Issue - Contemporary Indigenous Peoples’ Legal Rights to Water in The Americas and Australasia* 285.

⁷⁰ Lee Godden “Property in urban water: Private rights and public governance” in P. Troy (ed) *Troubled Waters: Confronting the Water Crisis in Australia’s Cities* (ANU Press, Canberra, 2008) 157 and V Thampapillai “The Murray-Darling River Basin. Sustainable Development and Water Trade” (2006) 36(1) *EPIL* 42.

⁷¹ Albert Dijk, and others “The Millennium Drought in southeast Australia (2001–2009): Natural and human causes and implications for water resources, ecosystems, economy, and society” (2013) 49(2) *Water Resour. Res.* 1040-1057.

⁷² Godden, above n 69.

relating to property rights in water entitlements. The issues examined there include the question of whether the change of existing water access rights to a type of water licence was effective “property acquisition” from a constitutional perspective.⁷³ Fisher observes that these questions of property involve balancing public rights and private interests.⁷⁴ Gray questions the presumption that strong property rights are needed for a market-based system of water allocation.⁷⁵ These particular legal problems must have regard to the law and how it functions to allocate water. They cannot be solved by economics alone.

In United States literature, Rose has identified that the right to water may be viewed as a constitutional right to property and that this right could potentially be eroded through various means.⁷⁶ Rose observes that encroachment is challenged by water entitlement holders as an erosion of constitutional rights. However, these challenges may not arise in the same way in other countries where there is no constitutional right to property. Other United States-based literature includes precautionary lessons in balancing rights to freshwater resources which draw on the experience of the western United States.⁷⁷ These discussions relating to water and the nature of property in water access entitlements show the tensions between the identification of water as a public resource and how that needs to be balanced with private access to use water. However, care needs to be taken when interpreting the application of particular concepts, such as property rights, in different jurisdictions such as Australia and New Zealand that do not provide for constitutional property rights in resource consents.

⁷³ Francine Rochford “Compensation for Regulation of Water Use – a Comparative Constitutional Perspective” (paper presented to New Zealand Centre for Environmental Law Conference, Auckland, April 2009); and *ICM Agriculture Pty Ltd v Commonwealth* (2009) 84 ALJR 87.

⁷⁴ Douglas E. Fisher “Water law, the High Court and techniques of judicial reasoning” (2010) 27 (2) EPLJ 85.

⁷⁵ Janice Gray and Louise Lee “Water Entitlements as Property: A Work in Progress or Watertight Now?” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018).

⁷⁶ Carol M. Rose “Property and expropriation: themes and variations in American law” (2000) Utah Law Review 1.

⁷⁷ Joseph Sax “Our Precious Water Resources: Learning from the Past, Securing the Future” in Trevor Daya-Winterbottom (ed) *Resource Management Theory & Practice* (Resource Management Law Association of New Zealand, Auckland, 2009).

Academics have examined Australian water law and policy reform within both legal and non-legal disciplines. Within the non-legal disciplines there is a greater contribution from economic studies which have explored the potential benefits of water markets to reallocate water in catchments such as the Murray-Darling Basin.⁷⁸ The economic literature examines the triggers for policy reform and provides a useful discussion on the background to the reforms.

Again, within the category of legal analysis there are different perspectives and levels of analysis. These different levels relate directly to the structure of the legal system. Holley and Gunningham provide a clear statement of these levels. In particular, they state there has been a “shift” in the literature on water reform from traditional legal analysis of statutory law, to a broader consideration of regulations affecting water law, and finally to considering the effect of new institutional arrangements.⁷⁹ These levels are presented as being on a spectrum. As regards these three levels, the focus of this thesis is on the first and second levels of analysis.

⁷⁸ Lin Crase (ed) *Water Policy in Australia. The impact of Change and Uncertainty* (Routledge, Washington, 2008); Lin Crase, Leo O’Reilly and Brian Dollery “Water markets as a vehicle for water reform: the case of New South Wales” *Aust. J. Agric. Resour. Econ.*44(2) 299; Tim Cummins and Alistair Watson. “A hundred-year policy experiment: The Murray-Darling Basin in Australia” in John Quiggin, Thilak Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray Darling Basin* (Edward Elgar, Cheltenham, 2012); Edwyna Harris “Institutional Change and Economic Growth: The Evolution of Water Rights in Victoria, Australia 1850-1886” (2007) 26(2) *Economic Papers* 118; John Quiggin, J. and Poh Ling Tan *Sustainable Management of the Great Artesian Basin: an analysis based on Environmental Economics and Law* Murray Darling Program Working Paper3/M04 (University of Queensland, 2004); John Quiggin and others “Climate change, uncertainty, and adaptation: the case of irrigated agriculture in the Murray–Darling Basin in Australia” (2010) 58(4) *Canadian Journal of Agricultural Economics/Revue canadienne d’agroeconomie* 531; and Mac Kirby and others “Sustainable irrigation: How did irrigated agriculture in Australia’s Murray–Darling Basin adapt in the Millennium Drought?” (2014) 145 *Agricultural Water Management* 154.

⁷⁹ Cameron Holley and Neil Gunningham “Next Generation Environmental Regulation: Law, Regulation and Governance” (2016) 12 *Annu. Law Rev.* 273 at 274. Holley has contributed extensively to the literature on water law and policy reform. Particularly in the area of water governance. For an examination of environmental governance in Australia see Cameron Holley, Neil. Gunningham and Clifford D. Shearing. *The New Environmental Governance* (Earthscan, New York, 2012); Janice Gray, Cameron Holley, and Rosemary Gail Rayfuse *Trans-jurisdictional Water Law and Governance* (Earthscan, New York, 2016); Cameron Holley and Darren. Sinclair *Reforming Water Law and Governance From Stagnation to Innovation in Australia.* (Springer, Singapore, 2018); Riyanti Djalante, Cameron Holley and Frank Thomalla “Adaptive governance and managing resilience to natural hazards” (2011) 2(4) *International Journal of Disaster Risk Science* 1-14. In relation to the connection between governance and collaboration in the New Zealand context see Cameron Holley and Neil Gunningham “Natural resources, new governance and legal regulation: When does collaboration work?” (2011) 24 *New Zealand Universities Law Review* 309.

It draws also upon the third level of institutional arrangements and governance, as appropriate.

The method of analysing the water law and policy of each jurisdiction begins with a statutory analysis of “highly specific state-based law, that which is promulgated by parliament, implemented by agencies, and interpreted by the courts”.⁸⁰ The regulatory analysis approach is as follows:⁸¹

Regulation is a broader category and includes much more flexible and innovative forms of social control. For example, it may involve persuasion, self-regulation, and coregulation; it may use both commercial interests and nongovernmental organizations (NGOs); and it may invoke surrogates for direct government regulation—mechanisms that are only partially or indirectly related to state law. But it still involves the state as a central player because even mechanisms that are not reliant on legislation for their authority are negotiated directly with the state and operate in the shadow of the state. For example, Australia’s tradeable water permits, an economic instrument that relies heavily on market forces, nevertheless must operate according to statutorily defined caps and trading rules that are underpinned by agency enforcement.

The analysis of water regulation in each state follows the definition above. The implementation of markets considers the policy drivers for reform. Water allocation methods are defined in statute and administered through planning regulation. The analysis includes the following: evaluation of the process of implementing water reforms through unbundling water take and use; methods for collecting water-related information and data; the regulation of environmental water and the setting of limits on water allocation.⁸² In this regard much of the focus of the thesis accords with the definition of the regulatory approach defined by Holley and Gunningham in the quote above. The focus on statute and regulation is appropriate when examining water allocation law and policy in New Zealand which significantly remains behind Australia in terms of progress towards improved water allocation practice. The inclusion of materials that relate to water law and policy institutions and governance is more relevant in the chapter on Australia as the country has

⁸⁰ At 274.

⁸¹ At 274.

⁸² For example, the Water Act 2007 (Cth) contains extensive regulation of matters relating to water allocation in what has been described as a top-down legal framework. Australian states are required to implement this regulation through their own promulgation of laws at state level.

implemented markets for water allocation, legally recognised environmental water and developed water accounting standards as part of its law reform process.

4 *Analysing Water Allocation Law and Policy in Australia and New Zealand*

The analysis of the water law and policy in New Zealand and Australia is summarised in the table below. The contents of the table draw upon the literature reviewed in this chapter.

Comparison	Description
Statutory Framework	<ul style="list-style-type: none"> ▪ What is the legal promulgation of requirements by Parliament? ▪ Which specific Act or Acts of Parliament included provisions related to water allocation? (Including water for irrigation) ▪ What is the intention of Parliament in passing the Act (as stated in the purpose of the Act and related Hansard and policy material)? ▪ Is there a devolution of power included in the Act to make decisions regarding water allocation? ▪ Which institutions have responsibility for administering and enforcing the Act? ▪ How is power devolved and which areas of decision making are devolved?
Unbundling	<ul style="list-style-type: none"> ▪ At what stage of unbundling is the legal system? For example, has the separation of water from land occurred in the form of a statutory system of water allocation? ▪ Then related to the first question, how has water take and use unbundled? For example, is there a legal separation between water take permits and water use entitlement? ▪ Has unbundling progressed to the stage where the final water allocation in a unbundled system is based on a share of overall water available in a catchment? ▪ What kind of water products have been created by Parliament?

Water Information	<ul style="list-style-type: none"> ▪ Which Acts contain provisions relating to the storing of water information? (not just hydraulic information) ▪ Is there a Water Register to record information regarding the legal definition of water rights, their ownership, the volume of water, transfer of water and related financial information such as security or collateral? ▪ Is there a record of the amount of water actually taken as part of the collection of hydrometric information? ▪ Which body is responsible for storing this information? ▪ What kind of information is required for the water allocation method that operates in the jurisdiction? ▪ If there are water markets, how is market-related information collected and disseminated?
Water Planning	<ul style="list-style-type: none"> ▪ How are plans for water allocation meant to be developed as promulgated in Acts of Parliament? ▪ How is the creation, administration and enforcement of rules in plans meant to be carried as stated in relevant Acts and regulations? ▪ How is water planning actually carried out?
Water Accounting	<ul style="list-style-type: none"> ▪ How is information from the legal processes of establishing markets commutated?

5 *Summary*

This chapter has explored concepts referred to in water allocation law and policy. It sought to establish an understanding of those concepts by drawing upon current literature in relevant fields. The literature on water scarcity shows that some regions will experience greater water scarcity than others. However, the explanations of which regions are water scarce are hampered by the lack of comparable measures of water scarcity. The significance of this finding from the literature raises the question of whether water scarcity has been accurately measured on a global scale. The implications are that references to water scarcity in Australian and New Zealand policy documents are referring to very different types of physical versus

economic water scarcity. These differences are taken into account in the comparative analysis undertaken in the thesis.

The chapter also showed that a considerable contribution to the understanding of water allocation problems and solutions is derived from studies based on economic theory. Economic theory has developed from the traditional approach to ecological economics which acknowledges the contribution of water as an ecosystem service. However, a major criticism of economic studies was raised in this chapter. That is, that while the economic studies make a valuable contribution to water allocation, a major drawback is that they cannot provide solutions to legal problems such as how to draft and implement law for water allocation.

In order to answer the research question, the chapter shifted its focus to regulatory analysis. Based on the analysis of relevant literature it provided a set of questions which form the basis of the comparative analysis in this research. The questions are used to provide a standardised approach to the comparative analysis. The next chapter examines New Zealand water allocation law and policy using conventional legal analysis and is informed by the water allocation concepts which come from other disciplines.

CHAPTER THREE - BACKGROUND TO NEW ZEALAND WATER ALLOCATION 1967- 1991

1 *The Government as Developer of the Settler Economy*

A key theme in this chapter is the changing role of the government from a high degree of centralised control to embracing deregulation and devolution. This background is essential in terms of understanding the social and political context of water allocation in New Zealand, as historical events moulded the public perception of water allocation in contemporary New Zealand. This information also shows that New Zealand did have a sound water allocation law and policy before the RMA. It begins by examining the introduction of riparian rights at the time of settlement.

The New Zealand government initially had significant control over water allocation because of its role as developer of the country's infrastructure. There was a settler expectation that the government would have a crucial role in development. However, these public expectations of resource development changed over an extended period. The expectation of government development began in the early 1800s when settlers were encouraged to emigrate to New Zealand with its abundant natural resources.¹ Settlers arrived with expectations that the country's natural resources provided opportunities for development and wealth.² In this context, the settler government of New Zealand took on the role of developer of essential infrastructure to support industries such as mining, energy and agriculture.

At first, riparian rights to take and use water applied in New Zealand. Riparian rights were based on owning or accessing the land adjoining the waterway.³

¹ Rebecca Durrer "Propogating the New Zealand Ideal" (2006) 43 *The Social Science Journal* 173.

² Tom Brooking and Vaughan Wood "The Grasslands Revolution Reconsidered" in Eric Pawson and Tom Brooking (eds) *Making a New Land. Environmental Histories of New Zealand* (Dunedin, Otago University Press, 2013) states at 194 that New Zealand ranked from fifth to third highest in the world for its standard of living during the 1920s-1970s influenced by the promotion of pastoral farming practices; Donald Garden *Australia, New Zealand and the Pacific. An Environmental History Nature and Human Societies* (ABC-CLIO Inc, California, 2005).

³ FM Brookfield *Laws of New Zealand Water* (online ed). Brookfield introduces the background of New Zealand water law and the effect of legislative changes; and Joshua Getzler *A History of Water Rights at Common Law* (Oxford University Press, Oxford, 2004). Rights based on prior

However, riparian rights were inadequate for securing the rights the New Zealand government needed for large-scale water power projects.⁴ Thus there was a gradual “displacement” of riparian rights in New Zealand as the government increased its control over water allocation.⁵ This displacement occurred through the enactment of ad hoc legislation to control water as needed for various industries or projects.⁶ As the developer of essential infrastructure the New Zealand government maintained unhindered access to water for power generation, irrigation, or other bulk water projects for a significant period.

2 Weakening Government Control of Water Allocation in New Zealand and the Manapouri-Te Anau Development Act 1960

Government control of access to water remained strong until the 1960s. A change occurred after public dissatisfaction with government control over water for a project proposed at Lake Manapouri.⁷ The Manapouri-Te Anau Development Act 1960 gave extensive powers to the government to allocate water unilaterally for the project. The Act provided Consolidated Zinc Proprietary Limited with the power to raise lake levels based on an agreement signed with the New Zealand government. The Company needed the power for a proposed aluminium smelter. Eventually, the

appropriation did not apply under the British common law system. Effectively water flowing by or through property provided a right to take and use water. The right to take or use water had no absolute limit, except that downstream users must not be greatly disadvantaged by the water take.

⁴ John E Martin *People, Politics and Power Stations* (Electricity Corporation of New Zealand and Historical Branch (Department of Internal Affairs, Wellington, 1991).

⁵ Nicola Wheen “A Natural Flow - A History of Water Law in New Zealand”, above n 1, at 72. For example, Highways and Watercourses Diversion Act 1858; The Goldfields Act 1862; The Mines Act 1877 and The Public Works Act 1882.

⁶ Robert Ogilvie Buchanan “Hydro-electric power development in New Zealand” (1930) 75(5) Geogr. J. 444 at 450. The Electric Motive Power Act 1896, Water Power Act 1903, Public Works Act 1908 and the Water Power Works Act 1910 “progressively defined the attitude of the state to water power resources” and their development.

⁷ Nicola Wheen “An Updated History of New Zealand Environmental Law” in Eric Pawson and Tom Brooking (eds) *Making a New Land: Environmental Histories of New Zealand* (Dunedin, University of Otago Press, 2013). Wheen traces the Save Lake Manapouri Campaign and its impact on New Zealand environmental law and policy in terms of increased public concern about environmental matters. This paragraph draws on material in her account.

government bowed to public pressure and a national petition not to raise the lake levels. The level of public protest showed increased public concern over the government's control of water allocation. The turnaround in public opinion was also referred to by the Prime Minister in a letter to the Vice Chairman of the company stating that there will "almost certainly be agitation and pressure about the establishment of a major engineering project in one of New Zealand's most attractive scenic resorts".⁸

There was further evidence of concern over government control of water allocation from within government departments during the 1960s. A 1963 interdepartmental report recommended establishing an independent national water authority and a licensing system for water users based on the best use of water.⁹ However, the recommendation was met with opposition from the New Zealand Electricity Department because it would erode its ease of access to water allocations required for dam building.¹⁰ In contrast, the other government departments supported the change and emphasised the need for statutory water allocation that balanced the needs of all water users. It was decided that change was needed and new legislation enacted by Parliament was introduced to change New Zealand water allocation from riparian rights to a system of statutory licences, as discussed below.

⁸ Manapouri-Te Anau Development Act 1960 Schedule. Clause 28. (*Repealed*).

⁹ Ministry of Works Law and Administration in Respect of Water. Report to Cabinet by the Interdepartmental Committee on Water (Ministry of Works, Wellington, 1963). The Minister for Works noted that the report was substantial and involved 10 government departments working over two years. It advised that responsibility for water under the Waters Pollution Act 1953, Mining Act 1926 and Public Works Act 1928 amongst others should come under a national water authority.

¹⁰ At 14 stated the ease of access to water for "electricity production was built up on powers conferred by the Water Power Act 1903, now reproduced in PXIII of the Public Works Act 1928". The importance of these Acts was they they "vested in the Crown the sole right to use or license the use of water resources for the generation of electricity". The significance of the government use of their ease of access to water was that on that the value of the investment in hydropower was estimated to be around \$300 million.

3 *The Introduction of Statutory Water Allocation under the Water and Soil Conservation Act 1967*

The Water and Soil Conservation Act 1967 introduced a statutory scheme of water allocation in New Zealand replacing riparian rights and vesting the power to allocate water with the Crown. It established an independent body, the National Water and Soil Conservation Authority, to oversee water allocation. Importantly, the Act introduced a test for the beneficial use of water that would apply to all water users, including government departments wanting water for large scale projects.¹¹ Statutory rights to water under the Water and Soil Conservation Act 1967 were classified as “natural rights” or “acquired rights”. Natural rights to water for reasonable domestic use could continue without needing a licence.¹² Only the second version of the Water and Soil Conservation Bill 1966 included domestic or “natural” rights to water.¹³

Acquired rights, to dam or divert water, required a licence from the local catchment authority. The terms of the licence were, however, not treated the same as real

¹¹ Ministry of Works *Law and Administration in Respect of Water. Report to Cabinet by the Interdepartmental Committee on Water* (Ministry of Works, Wellington, 1963). The Minister for Works stated that the report was substantial and involved ten government departments working over two years. It advised that responsibility for water under the Waters Pollution Act 1953, Mining Act 1926 and Public Works Act 1928 amongst others should come under a national water authority and water should be put to its “best” use. When enacted the test became the “beneficial” use test to show that there was some benefit from using the water as requested by the applicant. See also *Keam v Minister of Works and Development* [1982] 1 NZLR 319 and *Stanley v South Canterbury Catchment Board* (1971) Planning Tribunal 463,68.

One of the functions of the National Water and Soil Conservation Authority under s 14(m) of the Act was “To promote the best uses of natural water, including multiple uses, and to allocate natural water between competing demands”. Some of the functions relating to water allocation could be delegated to the Water Allocation Council under s15(c) of the Act. The Water Allocation Council was a statutory body set up under the Act.

¹² BH Davis “New Control Over Natural Water” (1968) NZLJ 105.

¹³ See (9 September 1966) 348 New Zealand Parliamentary Debates 2593 Mr Kirk (Leader of the Opposition). Domestic or natural rights to water were not specifically identified in the first version of the Water and Soil Conservation Bill 1966. It is only in the second version of the Bill that the rights to domestic water first appear. When the Bill was first introduced to Parliament, the Opposition questioned the lack of a provision for domestic water and specifically for those people who lived in rural areas and who used groundwater wells for domestic water supply. A related question was whether a licence would be required for domestic water takes “because this opens up the possibility that they may have to pay some fee for water that comes from a common source?”. Changes to the second version of the Bill confirmed that domestic water takes did not require a licence.

property and were not notified on Certificates of Title. Brookfield identified the lack of notification as a weakness within the water allocation regulation because water licences would not need to be under the Torrens system and registered on the Land Register.¹⁴ Brookfield emphasised that the dangers of this omission for conveyancing were that: “In theory at least, *no* search of title to land will be complete without a search of the Board’s records”.¹⁵ The significance was that that records relating to land and water were not in one place. New Zealand water permit information continues to be recorded at a regional level and is still not linked to the Land Register. Under the RMA, security interests may be recorded on the Personal Property Security Register.¹⁶ Under current water allocation law it is fair to say that in theory no search of land title is complete without a search of regional council records and the Personal Property Security Register.

4 *National Water and Soil Conservation Authority*

The National Water and Soil Conservation Authority had a significant statutory role in overseeing water allocation in New Zealand. It was a national body and included representatives from government, industry and non-governmental organisations. The Authority replaced regional catchment authorities responsible for freshwater planning under the Soil Conservation and Rivers Control Act 1941.

The Act brought back tiers of centralised control of water administration overseeing the growing body of statutory bodies established under various water-related statutes: these included the Municipal Corporations Act 1954, Counties Act 1956, Water Pollution Act 1953 and the Soil Conservation and Rivers Control Act 1941.¹⁷

¹⁴ FM Brookfield “The Water and Soil Conservation Act 1967 and its Application: An Attempted Guide for the Practitioner” (1969-1972) 2 Otago L. Rev. 21 at 26.

¹⁵ At 26.

¹⁶ Personal Property Securities Act 1999 and Resource Management Act 1991, s 122(3).

¹⁷ Davis, above n 27.

Section 14 of the Act also provided further guidance on the administrative role of the Authority. The Authority could maintain records relating to water availability and volume, compile a record of water takes across the country to forecast future demand, and “and of such other matters as may seem useful as a basis for allocation of natural water between competing demands”.¹⁸ Part of the Authority’s role under section 14(4)(a) was to “ensure that information was made available to interested local authorities”. These duties are relevant to the current discussion of water allocation problems which are elaborated in Chapter Three – Part II as concerns about the demise of long-term hydrological data collection. An analysis of key sections of the Water and Soil Conservation Act 1967 shows the Authority was a specialised decision-making body with responsibility for New Zealand freshwater and it played an essential role in determining water allocation applications of national significance.

5 *Government Efforts to Control Water Allocation*

5.1 *The National Development Act 1979*

Political and economic events affected the course of New Zealand water policy and law during the 1970s as New Zealand embarked upon deregulating the economy. The changes were introduced in response to the reduction in traditional export markets in Europe¹⁹ and international oil shocks.²⁰ In 1973, New Zealand’s energy forecasting body identified a potential energy “capacity shortfall” problem.²¹ New Zealand committed to developing domestic energy resources to reduce reliance on energy imports and the risk of an energy capacity shortfall. However, the projected

¹⁸ Water and Soil Conservation Act 1967, s 14(4)(a).

¹⁹ Brian Easton *The Commercialisation of New Zealand* (Auckland University Press, Auckland 1997) at 4-5.

²⁰ Barry Barton “From Public Service to Market Commodity: Electricity and Gas Law in New Zealand” (1998) 16(4) JERL 351-388. Improving security of domestic energy supply was precipitated by the oil shocks of 1970s which “triggered a period of enormous dislocation of the provision of energy worldwide”.

²¹ Aynsley Kellow *Transforming Power. The Politics of Electricity Planning* (Cambridge University Press Melbourne, 1996) at 67. The demand projection was based on expansion potential that would require more power by 1978 for the Comalco smelter to operate.

energy shortfall did not eventuate, which meant New Zealand had an energy surplus.²² One solution to the energy surplus problem was to use the surplus in a series of large-scale, “Think-Big”, projects announced in 1980 by the third National-led government.²³ One of the incentives offered to potential private investors was easing the consents process for large-scale developments through the use of empowering legislation such as The National Development Act 1979 and the Clutha Development (Clyde Dam) Empowering Act 1982. The use of empowering acts was, however, unpopular with the public and the National Development Bill 1979 was opposed on environmental and constitutional grounds, as will be discussed below.²⁴

5.2 The Clutha Development (Clyde Dam) Empowering Act 1982

The political and economic events during the 1980s provided not only the background to the RMA but also aspirations to move away from government control over resource allocation. It is, therefore, important to also examine the domestic policy factors that influenced the push back against government involvement in water allocation. The introduction of the “Think Big” policy solidified the government’s commitment to a hydropower dam on the Clutha River.²⁵ The government choose to apply for a water allocation for the project under

²² At 69.

²³ WR Derrick Sewell “The Politics of Hydro-Megaprojects: Damming with Faint Praise in Australia, New Zealand and British Columbia” (1987) 27 NRJ 497 at 498 states “The desire to create “mega-projects” was greater in situations where there is a perception of abundant resources coupled with an intention to develop those resources for economic benefit”.

²⁴ See Geoffrey Palmer “The Resource Management Act-How we got it and what changes are being made to it” *Address to Resource Management Law Association* Devon Hotel, New Plymouth 27 September 2013 for a first-hand account of the Parliamentary Debate and public opposition to empowering legislation.

²⁵ For a discussion of the investigations into hydro-power development in the Clutha Valley see *Environmental Defence Society Incorporated v National Water and Soil Conservation Authority* (1979) 7 NZTPA 385; P A Memon “Decision making for multiple utilization of water resources in New Zealand” (1989) 13 Environmental Management 553 at 555 stated that there was an assumption that demand for power would grow and the New Zealand Electricity Department began to consider the potential for a hydroelectric dam in the Clutha valley in 1963. The Department investigations “established in the minds of the officials involved the relative superiority, from a financial perspective, of the upper Clutha compared with other rivers and oil- or nuclear-fired thermal plants.”

the Water and Soil Conservation Act 1967 instead of using provisions in section 23(7) of the Act that would have provided the government with a clearer path to the water allocation by declaring that the project involved water of “national importance”. Initially, the National Water and Soil Conservation Authority granted water rights for the Clyde Dam.²⁶

However, on appeal, the High Court reversed the decision as the National Water and Soil Conservation Authority had erred in their decision. The Authority should have taken into account the end use of the electricity which had changed from the original proposal. Nevertheless, Parliament passed the Clutha Development (Clyde Dam) Empowering Act 1982 to obtain water rights for the project. From a legal perspective, the Act raised serious constitutional issues as Parliament had effectively passed legislation “to reverse an adverse decision *in proceedings to which* itself was a party”.²⁷ The use of empowering legislation raised constitutional issues as the government sought to regain control of water allocation. The public reaction was to push back against the use of empowering legislation, leading to its becoming a campaign issue during the 1984 general election.

6 *The Resource Management Law Reform Project*

In 1984, Labour won the general election and embarked upon extensive social, economic and environmental reform.²⁸ Labour’s environmental law reform policy, the Resource Management Law Reform Project, was supported by environmental groups wary of central government involvement in natural resource planning.²⁹ In

²⁶ *Annan v National Water & Soil Conservation Authority & Minister of Energy* (No2) (1982) 8 NZTPA 369. The final recommendation of the Otago Catchment Board was for a low dam, not a high dam as desired by the government.

²⁷ FM Brookfield “High Courts, High Dam, High Policy: the Clutha River and the Constitution” (1983) *New Zealand Recent Law* 62 at 64; see also When above n 19 for a discussion of the “Save Lake Manapouri Campaign”.

²⁸ Jane Kelsey *The New Zealand Experiment: A World Model for Structural Adjustment* (Auckland University Press with Bridget Williams Books, Auckland, 1995) at 2.

²⁹ Jon Barnett and Jonathan Pauling “The Environmental Effects of New Zealand’s Free-Market Reforms” (2005) 7(2) *Environ Dev Sustain.* 271.

the context of deregulation, the principle of sustainability was a check and balance on the exercise of power in managing natural resources.³⁰ Early commentary on the RMA and water allocation predicted a “greener” approach for water law under the RMA, including the expectation that water allocation decisions would involve more substantive analysis.³¹ However, these predictions did not take into account the long-term effect of the features of the Water and Soil Conservation Act 1967 disestablished during the RMLR. The next section describes these features.

7 The Abolition of the National Water and Soil Conservation Authority and Water Allocation Council

During the 1980s’ reforms, the National Water and Soil Conservation Authority was disestablished. Its previous role of resolving conflicts was handed over to local water boards.³² There was a requirement for the Authority to act in the “public interest” and to take leadership when guiding the settlement of competing demands for water.³³ The Authority was to “promote the adequacy of natural water at all times”³⁴ in addition to its role of educating the public about the efficient use of water supplies³⁵ and being an advisory body for local authorities.³⁶ It is fair to say that the Authority represented an independent voice in water management matters. It was responsible for having oversight over all water resources, regardless of how the various government departments had developed water policy within their areas. Upon its abolition, there was no precise equivalent of a national water authority in

³⁰ Upton, “Stace Hammond Grace Lecture: Purpose and Principle in the Resource Management Act”, above n 1 at 17; Miller above n 1; Geoffrey Palmer *Environmental Politics. A Greenprint for New Zealand*, above n 1.

³¹ When “The Resource Management Act 1991: A Greener Law for Water”, above n 2.

³² (24 February 1988) 486 New Zealand Parliamentary Debates 2217. Speaker Dr Bill Sutton.

³³ Water and Soil Conservation Act 1967, s 14(4)(b) To supervise and guide, as to it seems best in the public interest, the settlement of competing demands in respect of natural water:

³⁴ Water and Soil Conservation Act 1967, s 14(4)(c).

³⁵ Water and Soil Conservation Act 1967, s 14(4)(i).

³⁶ Water and Soil Conservation Act 1967, s 14(4) (t) To advise public authorities and public bodies for the purpose of co-ordinating the policies and activities of any such authorities and bodies in respect of the maintenance or improvement of the quality of natural water.

New Zealand. The Authority did have the ability to delegate its function relating to water allocation to the Water Allocation Council. But the Water Allocation Council was also a statutory body set up under the Act and it was disestablished at the same time.

8 *The Ministry of Works and Development and the New Zealand Electricity Department's Role in Water Policy*

The Ministry of Works and Development was responsible for a wide range of infrastructure development within New Zealand, including irrigation schemes and electricity generation. The Ministry constructed and operated government irrigation schemes by investing \$700 million from 1912 to 1987.³⁷ The rationale for constructing irrigation schemes during this era was “similar to that of the United States of America and Australia” in that it took the view that long-term investment in irrigation would be unattractive to private investors.³⁸

The Ministry of Works and Development was abolished in 1988 because its role as a developer did not fit with the economic deregulation that was occurring during the 1980s. As stated above, government control over the economy was strongly contested at this time. Given that the Ministry had clearly been influential in guiding the use of water allocation in large scale projects in the past, its abolition raised the question of how its functions would be reallocated across other government departments. From an analysis of policy influencing the change it is apparent that deregulation policy guided the reallocation of the Ministry's functions as New Zealand moved from a “pioneering phase” in its development to a “service economy”.³⁹ While the achievements of the Ministry's programme of infrastructure

³⁷ Peter Farley *Irrigation Scheming. A History of Government Irrigation in New Zealand*, (Peter Farley, Waikanae, 2013) at 51 citing Audit Office, Report on Ministry of Works and Development Irrigation Schemes April 1987 (Audit Office, Wellington, 1987).

³⁸ Peter Farley and Benjamin M Simon “Privatizing Government Irrigation Projects in New Zealand” (1996) 32(3) J. Am. Water Res. Assoc. 585 at 586.

³⁹ (24 February 1988) 486 New Zealand Parliamentary Debates 2219 Speaker Ken Shirley.

development were significant the government control over development was no longer seen as progressive economic policy. The Ministry had played an important role in developing water infrastructure for irrigation and hydropower the effect of its abolition on water resource is critically evaluated next.

9 The Split of Water Policy – Water for Irrigation

Upon the abolition of the Ministry of Works and Development in 1988, responsibility for water policy was divided up amongst other government departments. This reallocation of responsibility for water allocation was based on the grounds of the function of water in the economy. As a result of this economic categorisation, the responsibility for water for irrigation was split off from water for the environment. Consequently, the Ministry of Agriculture and Fisheries became responsible for managing water for irrigation:⁴⁰

Part XIX of the Public Works Act relates to irrigation. The proposal is to transfer irrigation to the Ministry of Agriculture and Fisheries. Irrigation requirements are vital to the economy and are still based on the land and pastoral and horticultural production. The expertise lies with the Ministry of Agriculture and Fisheries and it is only sensible that irrigation...which is as much part of production as fertilisation, and any other aspect of horticulture and agriculture...should come within the one umbrella organisation, rather than be fragmented as has often been the case in the past.

As a result of these institutional changes, irrigation policy development was separated from all other forms of water with the separation of irrigation water being an economic split, not an environmental one. The separation of water for irrigation from other water was the beginning of the fracturing of New Zealand water policy development. Nevertheless, the separation of water for irrigation still did not address issues that irrigators were concerned about. These issues related to water allocation within schemes and irrigation scheme operation to improve water transfers.⁴¹

⁴⁰ (24 February 1988) 486 New Zealand Parliamentary Debates 2219 Speaker Ken Shirley.

⁴¹ (24 February 1988) 486 New Zealand Parliamentary Debates 2221 Speaker Jenny Shipley.

10 *The Irrigation Schemes Act 1990 and Government Divestment from Irrigation Schemes*

In 1990, further significant changes occurred to water allocation law in New Zealand with the privatisation of all irrigation schemes. The Irrigation Schemes Act 1990 provided the government with the right to sell irrigation schemes to “to any person, including any local authority or other public or statutory body”. In this sense, New Zealand was an “unusual” example where the government passed specific laws allowing it to completely privatise and sell all assets in an irrigation scheme.⁴² To sell the schemes to farmers, the government needed to address “significant liabilities” attached to “many” of the schemes regarding ongoing maintenance. The government determined that “for some schemes the liabilities are so large that we will be making substantial payments to the new owners”.⁴³ A review of the performance of irrigation schemes in 2013 concluded that farmers were better able to manage the schemes than the Ministry of Works and Development.⁴⁴

Government investment in irrigation schemes was heavily criticised.⁴⁵ The Audit Office urged government divestment as necessary to mitigate and avoid the cost of future maintenance work associated with irrigation scheme infrastructure. Both Labour and National supported the rationale for passing the Irrigation Schemes Act 1990 and accepted that state divestment would bring benefits for both taxpayers and irrigators:⁴⁶

The irrigators were seen as the party with the strongest incentives to improve the efficiency of the operation of the schemes, and to make appropriate decisions on future investments. By selling the schemes to the users, not only

⁴² Peter J Farley Short Report Series on Locally Managed Irrigation Report No.2. Privatization of Irrigation Schemes in New Zealand (International Irrigation Management Institute, 1994).

⁴³ Above.

⁴⁴ Farley, above n 50.

⁴⁵ (28 June 1990) 508, New Zealand Parliamentary Debates, Speaker Hon. Clive Mathewson (Associate Minister for State Owned Enterprises).

⁴⁶ (28 June 1990) 508, New Zealand Parliamentary Debates, 2510 Speaker Hon Clive Mathewson (Associate Minister for State Owned Enterprises).

will a substantial burden be removed from taxpayers but also several benefits will accrue to the users. For the first time they will have full responsibility and accountability for the operation and future of the scheme, and debt levels will be reduced. They will make their own decision on the timing and level of future investments.

The Maniototo irrigation scheme provides an example which illustrates the lack of efficiency in government-owned irrigation schemes. According to its supporters, the Maniototo scheme was to “bring progress and prosperity to a large area”.⁴⁷ However, Treasury questioned the reliability of cost estimates used in promoting the scheme to farmers and stated that the project appeared to be uneconomic based on their own analysis.⁴⁸ Despite this concern the Ministry of Works and Development insisted on continuing with the scheme and “decided that the increased stock-carrying capacity of the land would encourage growth in rural communities.”⁴⁹ The Ministry believed that land use change and intensification would solve the problem of increased water costs. The Ministry’s perspective was challenged when in August 1983 the actual project cost was revealed to be much higher than initial estimates at \$43.9 million, with a full cost for water charges at \$143 per irrigated hectare.⁵⁰ The problem was that most farmers could only afford to pay a maximum of \$40 per irrigated hectare. The large gap between actual the actual project cost and what farmer could afford led to the demise of the project and the scheme was stopped. When the scheme ended those farmers who had already committed to joining it were compensated \$1.5 million. Eventually, farmers then completed the scheme at the cost of \$1.75 million, which was much lower than it would have cost to complete the scheme as a government project.⁵¹ The example of the Maniototo irrigation scheme supported the proposition for the privatisation of

⁴⁷ *Otago Daily Times*, (27 October 1976) original reproduced in Farley, above n 45 at 1.

⁴⁸ G Watson “Ministerial Responsibility and the Maniototo Irrigation Scheme” (1985) 6(1) *Otago L. Rev.* 158-74.

⁴⁹ Above.

⁵⁰ Above.

⁵¹ Farley, above n 50 at 3.

all irrigation schemes, showing that farmers could run the schemes with greater efficiency than the government.

A regulation which privatised government irrigation water schemes could also have gone further so as to detail the transfer of water permits within a scheme and provide greater certainty for irrigators in terms of their basic rights.⁵² Moreover, although within irrigation schemes water markets may have existed in a limited form, the account of water markets has been mostly left out of the literature of New Zealand water law, as this literature tends to focus on sustainability and the implementation of the RMA.⁵³

11 New Zealand Political Context and the Resource Management Law Reform Project of the 1980s

The New Zealand political and economic context is important in terms of understanding the enactment of the RMA and its inclusion of sustainability principles.⁵⁴ Sustainability was a concept that was internationally prominent at the time when New Zealand was undertaking extensive environmental reform. During the 1980s, two independent reports identified shortfalls in New Zealand's environmental administration. These reports were significant to environmental politics of the time because they brought attention to the ongoing issues associated with the government's having a high degree of control over natural resource allocation. The first report was an international report by the Organisation for Economic Cooperation and Development (OECD) and the second was a report published by the Nature Conservation Council based in New Zealand. The OECD

⁵² Irrigation Schemes Act 1990.

⁵³ Miller, above n 1; Palmer, above n 1; Wheen, above n 2.

⁵⁴ Miller, above n 1; Geoffrey Palmer *Environmental Politics. A Greenprint for New Zealand*, above n 1 at 19 notes the political context of the RMA is an important part of understanding the main policy drivers of the legislation: "As such it is impossible to understand the RMA without understanding the reform context from which it emerged".

report identified the lack of an independent body to audit the environmental functions of the government.⁵⁵ The New Zealand government had become increasingly active in controlling environmental decision making. Initially, the OECD report's concerns were not acted upon by the incumbent National government.⁵⁶ Then, during the 1984 election, Labour listened to public concern about government control of resource allocation by campaigning for a change to environmental law amongst other notable policies.⁵⁷ In particular, Labour's promise to repeal the National Development Act 1979 influenced the mood for widespread environmental reform.⁵⁸

The National Development Act was designed to provide a fast track and normal procedures would be suspended. The Labour Party in Opposition promised to repeal it, and this was done in 1986. Having accomplished the repeal we were faced still with the policy problem of what to put in its place-how to make sense of the many statutes and procedures governing the issuing of consents.

Upon winning the general election, Labour "acted quickly to ensure that these promises [to abolish the National Development Act 1979 and other empowering legislation] were upheld".⁵⁹ However, as pointed out in the quote above, a type of policy vacuum emerged in its place. The subsequent speed and extent of reform was notable as an extensive reform process was undertaken not just in environmental law but also in economic policy. This level of law reform was not something that had not been signalled during election campaigning. In essence, there was a dramatic shift regarding allocating natural resources, underpinned by

⁵⁵ OECD Organisation for Economic Co-operation and Development Environmental policies in New Zealand: a review / by the OECD and its Environment Committee; undertaken in 1980 at the request of the Government of New Zealand. (Organisation for Economic Co-operation and Development, Paris, 1981).

⁵⁶ Lloyd Burton and Chris Cocklin "Water Resource Management and Environmental Policy Reform in New Zealand: Regionalism, Allocation, and Indigenous Relations." (1996) CJLP at 81.

⁵⁷ The fourth Labour government committed New Zealand to a nuclear free zone as a signatory of the South Pacific Nuclear Free Zone Treaty 1985 and New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act 1987.

⁵⁸ Geoffrey Palmer "The Resource Management Act-How we got it and what changes are being made to it" (paper presented to Address to Resource Management Law Association 27 September 2013, New Plymouth, 2013).

⁵⁹ Burton and Cocklin above n 69 at 81.

the strong public desire that the government refrained from acting in many policy areas.

The reforms of the fourth Labour government made changes to the economic and social structures of New Zealand. These wide-ranging free-market reforms were seen as somewhat of an experiment by political observers:⁶⁰

Export and domestic subsidies were eliminated. Import licences were abolished and dramatic tariff reductions imposed. The Closer Economic Relations (DER) free trade agreement with Australia, first signed in 1983, was expanded. Both Labour and National governments urged other members of the General Agreement on Tariffs and Trade (GATT) to open up their economies and create a level playing-field of free trade...New laws for business competition dispensed with considerations of employment and consumer well-being and focused on competitive efficiency within the deregulated marketplace.

There was a definite shift away from central government involvement in economic policies, a move which had a broader effect on the economic and social well-being of New Zealanders.

As we have seen, there is no doubt that the free market reforms affected New Zealand's environmental policy during the 1980s.⁶¹ The changes to environmental policy occurred in the context of deregulation. The state sector was in the process of stepping back from its extensive control of many policy areas, including resource allocation. There was support from both environmentalists and the business sector for a devolution of power to the regions. Environmental groups were wary of central government involvement in natural resource planning and considered a devolution of power to regional levels as a means to address excessive government control. On the other hand, those supporting economic deregulation considered that the power of the market was enough to fulfil the allocative function that the government had exercised. Deregulation and removing government involvement from environmental decision making was a strong point that had the support of

⁶⁰ Kelsey, *The New Zealand Experiment. A World Model for Structural Adjustment*, above n 37, at 2.

⁶¹ Above; and Barnett and Pauling, "The Environmental Effect of New Zealand's Free-Market Reforms" above n 42.

developers and environmentalists alike, however, there was some concern that the reforms may have been skewed in favour of developers:⁶²

The “New Right” reforms, including the Resource Management Act, were primarily intended to facilitate “efficient” development driven by market forces and do not guarantee sufficient environmental protection. Rather, they have shifted the battleground from the national level (notably between the government and environmentalists) to the local government level and, especially, the Environment Court. In the latter arenas, the playing field tends to be tilted in favour of development interests, possibly even more so than at the national level.

Under the RMA, government control over resource allocation would be replaced by market-based allocation, while the inclusion of sustainability objectives ensured the protection of natural resources.

11.1 The Resource Management Bill 1989

The Bill was introduced to Parliament on 5 December 1989 by Rt Hon Geoffrey Palmer, Minister for the Environment. He stated that the objectives of the Bill were to introduce a system that “will promote sustainable management of natural and physical resources, and with that will provide for considerable greater efficiency in the planning and consent processes”.⁶³ He made specific reference to water and the fact that water management would be subject to regional planning.⁶⁴ These references to water show that at the early stages of the Bill water was a key consideration.

Labour, however, was not able to pass the Resource Management Bill 1989 before the 1990 General Election. The defeat of Labour and the delay in passing the Bill

⁶² Ton Bührs and Peter Christoff “Greening the Antipodes? Environmental policy and politics in Australia and New Zealand” (2006) 41 AJPS at 236.

⁶³ (5 December 1989) 503 New Zealand Parliamentary Debates 14166 Speaker Rt Hon Geoffrey Palmer.

⁶⁴ (5 December 1989) 503 New Zealand Parliamentary Debates 14166 Speaker Rt Hon Geoffrey Palmer.

allowed pressure groups an opportunity to provide more input into the creation of the Bill.⁶⁵

Because of the lack of time and internal dissention within its ranks during the final days in office in 1990, Labour was unable to pass the RMA. The Business Roundtable and the Maruia Society (an environmental group) appear to have influenced to a very significant extent the approach of the incoming National government to the bill.

Pressure groups played an influential role in the creation of the RMA and the inclusion of sustainability.⁶⁶ Their role at the Select Committee stage of public consultation was “clearly most dominant”.⁶⁷ The submission from the Maruia Society emphasised the need to include sustainable development as a concept that should be “paramount” in the Bill.⁶⁸

11.2 A Commitment to Sustainability

Sustainable management of resources became the guiding principle of the RMA.⁶⁹ and an increasing awareness of environmental issues was also being promoted by the United Nations around the same time.⁷⁰ In 1987, the concept of “sustainable

⁶⁵ P Memon and B Gleeson “Towards a New Planning Paradigm? Reflections on New Zealand’s Resource Management Act” (1995) 22 Environment and Planning B: Environment and Design 109 at 115.

⁶⁶ At 116. Two members of the Society attended and reported back on the proceedings of the Canadian Institute of Resources Law Conference held in Ottawa during May 1989. The submission from the Maruia Society emphasised the need to include sustainable development as a concept that should be ‘paramount’ in the Bill.

⁶⁷ At 116. The Maruia Society was comprised of the former Native Forests Action Committee and the Environmental Defence Society.

⁶⁸ Constance D Hunt, Peter A Bobeff and Kenneth A Palmer “Legal Issues arising from the Principle of Sustainable Development: Australia, Canada and New Zealand” (1991) 9 (1) JERL 1.

⁶⁹ Bret C Birdsong “Adjudicating Sustainability. New Zealand’s Environment Court and the Resource Management Act” (2002) 29(1) Ecology L. Q. 1.

⁷⁰ World Commission on Environment and Development *Report of the World Commission on Environment and Development: Our Common Future* (United Nations, Oslo, 1987); see also Nicholas A Robinson “Origins and Implications of “sustainable development” in International Law” in Trevor Daya-Winterbottom (ed) *Frontiers of Resource Management Law* (Wellington, Brookers Ltd, 2012) at 71 for a discussion of the development of the World Charter for Nature as part of United Nation and International Union for the Conservation of Nature and Natural Resources (IUCN) initiatives; for a discussion on other international instruments relating to the

development” gained international attention with the publication of the Brundtland Report, “Our Common Future”, which recognised the deteriorating state of the natural resources while emphasising the public nature of these global commons.⁷¹ The Brundtland Report advanced the notion of “sustainable development” to address the scarcity of natural resources. The Brundtland Report stated that sustainable development is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.⁷² This concept of sustainable development envisioned the need to manage natural resources, so they remain available for future generations.

Upon the enactment of the RMA, New Zealand became one of the first countries to implement sustainable management of natural resources in domestic law.⁷³ Part II of the Act contains provisions relating to the overall purpose of the Act and its commitment to “sustainable management” and draws on the intergenerational aspects of the Brundtland definition in s5(2)(a):

Section 5

- (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.
- (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—
 - (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
 - (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
 - (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

concept of sustainability, see Peter Salmon and David Grinlinton (eds) *Environmental Law in New Zealand* (Thompson Reuters, Wellington, 2015) at 81-91.

⁷¹ World Commission on Environment and Development, above n 82.

While the Commission did not “coin the term” it had a higher public profile than earlier work undertaken by the International Union for the Conservation of Nature; See Hunt, Bobeff and Palmer, above n 77 at 2.

⁷² World Commission on Environment and Development, above n 79 at 41. This extensive report documents the issues facing the world with regards to the effects of economic development and how to balance these with environmental degradation.

⁷³ (5 December 1989) 503 New Zealand Parliamentary Debates 14166 Speaker Rt Hon Geoffrey Palmer.

The introduction of sustainability into New Zealand environmental law occurred in a particular political context, that of deregulation, and it influenced the interpretation and application of sustainability in the RMA. As has been shown earlier, during the 1980s the New Zealand public had reacted against extensive government control of natural resource development and allocation. During subsequent changes to environmental law public pressure groups were consequently instrumental in advocating for the inclusion of sustainability in environmental law reform.

11.3 Water Markets during the Resource Management Law Reform Project

In light of the extensive nature of environmental law reform undertaken during the 1980s the question of whether water markets were considered for water allocation is a pertinent one, particularly with regard to the context of environmental law reform in a country moving quickly towards a deregulated economy. There is evidence that water markets were considered to be of importance in the lead up to the RMA. The National government commissioned its report, chaired by Anthony Randerson (Randerson Report), upon coming into office following the 1990 general election.⁷⁴ The report considered the “effect of the Bill” and whether it provided for the introduction of “economic instruments” for future resource management. The Randerson Report identified “water allocation” as being an area where economic instruments were of “particular importance”.⁷⁵ It stated that key issues to be considered in a transferable water rights system included setting minimum flows for quality of water; maintaining instream flow for uses such as conservation and equity issues for groups who “currently hold no rights whatsoever; security of tenure and marketability”.⁷⁶ The Randerson Report stated that these issues were of

⁷⁴ The Review was announced on 16 November 1990 by the Minister for the Environment. The Review was published on 11 February 1991. Anthony Randerson and others Report of the Review Group on the Resource Management Bill (Ministry for the Environment, Wellington, 1991).

⁷⁵ At 95.

⁷⁶ At 96.

such “magnitude” that they could not be resolved within their review timeframe. Instead, the group recommended that “the issue [of economic instruments for water transfer] warrants full consideration at an early stage”.⁷⁷ Despite this statement, these concerns were not acted upon and market instruments are not a part of water allocation under the RMA.

11.4 Expectations of Improved Resource Management Outcomes Thwarted by the “Policy Gap”

Expectations of improved resource management outcomes were influenced by broad policy statements on the interpretation and application of Part II’s commitment to “sustainable management”.⁷⁸ However, one of the factors contributing to water allocation issues in New Zealand is that inadequate regulatory settings have hampered these expectations. Originally, resource allocation under the RMA was thought to be “permissive” and would work by limiting negative environmental effects.⁷⁹ However, these predictions were made before the “first come, first served” rule took precedence for determining competing claims for water. Once *Fleetwing Farms v Marlborough District Council* was decided in 1997 it was firmly established that substantive analysis of competing applications for water would not be undertaken.

Later observations of the Act and the effect of the “first come, first served” rule for determining the priority of water allocation applications did not support the earlier optimistic view. Peart’s comparison of New Zealand’s situation with that in South Africa identified that “there are serious conflicts” with regard to how to allocate water across competing applicants in the regional planning processes.⁸⁰ Barnett and

⁷⁷ At 96.

⁷⁸ Upton, above n 1.

⁷⁹ At 400.

⁸⁰ Raewyn Peart “Innovative approaches to water resource management: a comparison of the New Zealand and South African approaches” (2001) 5 NZJEL 127 at 132.

Pauling linked the RMA reforms to the context of economic deregulation and the effect of these reforms on the environment. They identified an “inadequate implementation of reformed environmental legislation”, which led to a negative effect on the environment combined with a growth in the dairy industry.⁸¹ The growth of the dairy industry increased demand for water for irrigation. Furthermore, the lack of a national policy statement created a gap in national policy guidance at the highest level. These factors will be detailed further in Chapter three of the thesis in order to show that New Zealand embarked upon a path of over-allocation following the enactment of the RMA.

The RMA replaced the water management and allocation functions that had previously existed under the Water and Soil Conservation Act 1967. While the RMA’s water allocation provisions included rights under s14 to ensure access to individuals for domestic water without the need for a consent, those requiring a consent would be subject to rules according to a hierarchy of planning instruments. National policy statements would guide the planning instruments and the first National Policy Statement for Freshwater Management was issued in 2011.⁸²

12 *Summary*

This chapter introduced the background to the thesis. It addressed relevant developments in New Zealand water allocation and changing public perceptions of government control over water. Water allocation under the Water and Soil Conservation Act 1967 incorporated tests relating to the wise use of water before approving water permits. New Zealand also had a national Water and Soil Conservation Authority that had the power to decide on water permit applications. The repeal of this Act and subsequent enactment of the RMA occurred in the context of improving economic performance in a free-market economy. However,

⁸¹ Barnett and Pauling, “The Environmental Effect of New Zealand’s Free-Market Reforms” above n 42 at 285.

⁸² The second *National Policy Statement for Freshwater Management* was issued in 2014 and revised in 2017.

current water allocation problems stem from the change to water allocation under the RMA. In fact, it demonstrates that the situation would have been better if the Water and Soil Conservation Act 1967 had not been repealed. The significance of the policy gap under the RMA is examined in the next chapter to show its impact on current water allocation problems in New Zealand.

CHAPTER FOUR- THE WATER ALLOCATION POLICY GAP IN NEW ZEALAND 1991-2011

1 *Introduction*

This chapter evaluates the New Zealand water allocation framework under the RMA.¹ The purpose of the RMA is to allocate natural resources, including water, based on a tiered hierarchy of policies and plans at the national and regional level.² At the top of the hierarchy, central government was “expected”, but not obliged, to prepare national policies in the form of National Policy Statements.³ However, a National Policy Statement for freshwater management was not prepared until 2011.⁴ The lack of a National Policy Statement resulted in what can be termed a water allocation “policy gap” that existed from 1991, the date the RMA was enacted, to 2011. In addition, the policy gap was exacerbated because, at the local government levels of the framework, the regional councils responsible for regional plans—and who relied on the provisions of the RMA when embarking upon water allocation planning—either did not prepare them or failed to provide adequate

¹ For the purpose of this thesis the RMA does not have a water allocation framework stated in the traditional sense. The reference to the framework encapsulates the collective water policies and plans that were meant to be prepared following the provisions within the RMA. It has been described as both a “framework” and an “umbrella” statute. See Ceri Warnock and Maree Galloway *Focus on Resource Management Law* (LexisNexis, Wellington, 2015) at 145.

² Resource Management Act 1991, Part 4 of the Act states the “Functions, powers and duties of central and local government”.

³ David Grinlinton “Legitimate planning guidance or potential constitutional vandalism? National Policy Statements after *King Salmon*.” (2015) 11 BRMB 83 at 83.

⁴ National Policy Statement for Freshwater Management 2011. Revised in 2014 and reviewed in 2017.

guidance on water allocation.⁵ These policy gaps at both the national and regional level form the context for water allocation in New Zealand under the RMA.⁶

As a consequence of the failure to implement a comprehensive water allocation policy the “first come, first served” method of water has become the default method for competing water permit applications.⁷ However, as will be shown in this chapter, a problem with the “first come, first served” method of water allocation is that it is inherently unsustainable in that it gives “preference to current rather than potential users” of water.⁸ In addition, despite the development of a national policy for water allocation in 2011, the “first come, first served” method continues to apply when determining priority between competing water permit applications.⁹

This chapter introduces the national water policy gap, how it originated and its consequences for water allocation in New Zealand from 1991 until 2011. It describes how some regions reached water allocation limits and details the absence of long-term hydrological data. The chapter then provides an account of the water allocation provisions and case law under the RMA. It includes an account of relevant water allocation rules and policies in regional plans and the application of the “first come, first served” rule.¹⁰

⁵ Establishing Regional Plans is one of the “functions” of regional councils under section 30 of the RMA. A key distinction in the New Zealand context is that a “function” does not confer a legal obligation to create the Regional Plan. District plans must have regard to regional policy and not be inconsistent with national policy statements. See Resource Management Act s 73(4).

Christina Robb *Water Allocation a Strategic Overview* (Ministry for the Environment, Wellington, 2001) at 12 states the weakness of regional plans as follows: Regional plans did not exist in all regions, if a regional plan was prepared they “varied “considerably in their form and scope”, that the values and objectives in regional plans are “unclear”, that there was a lack of “linkages between objectives, policies and methods”, monitoring issues were “often not addressed and that the regional plans focus more on the regulatory aspects of resource consent decision making.

⁶ Robb, above at 12.

⁷ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA). An evaluation of the development of the “first come, first served” precedent is provided later in this chapter.

⁸ Robb, above n 5, at 9.

⁹ National Policy Statement for Freshwater Management 2011. Revised in 2014 and reviewed in 2017.

¹⁰ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA).

2 *Water Policy - A Gap in National Guidance on Water Allocation Policies*

2.1 *Water Allocation Limits*

Water allocation limits in New Zealand are set by regional councils within regional plans under section 30 of the RMA.¹¹ Section 2 of the RMA defines water as “water in all its physical forms” including fresh water. Surface water allocation from rivers and lakes is based on environmental flow regimes which determine how much water can be allocated. The amount of water in a water body that can be allocated for take or use is also referred to as the allocable flow.¹² The setting of environmental flows involves the consideration of several factors under the RMA.¹³

Decisions on the setting of environmental flows and water levels involve consideration of natural, community and development values associated with a water body and how these relate to flow and/or level. Environmental flow decisions determine how much water will stay in a water body, but that decision is influenced by existing and potential demands for water. Decisions are made within the framework of the RMA, national and regional policy statements, and the objectives and policies of relevant regional plans.

Setting minimum flows relies upon information about the volume of water abstracted and monitoring data enables regional councils to predict how a

¹¹ Ministry for the Environment *Water Programme of Action. Water Allocation and Use Technical Working Paper June 2004* (Ministry for the Environment, Wellington, 2004) at 6.

¹² Brisbane Declaration “The Brisbane Declaration: Environmental Flows Are Essential for Freshwater Ecosystem Health and Human Well-Being” (2007) *Declaration of the 10th International River Symposium and International Environmental Flows Conference*, 3–6 September 2007, Brisbane, Australia defined “Environmental Flows” as “the quantity, timing, and quality of water flows required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems”.

¹³ In Ministry for the Environment *Proposed National Environmental Standard on Ecological Flows and Water Levels* (Ministry for the Environment, Wellington, 2008) at 7 the term “environmental flow” is used as an alternative to “minimum flow” to recognise the range of “values” that contribute to setting of environmental flows.

catchment may respond to changes in abstraction.¹⁴ This information is then used to set allocation limits.

Government policy documents on water allocation during the 2000s focused on how to manage increasing demand for water.¹⁵ Full allocation and over-allocation were recognised as issues in specific regions.¹⁶ Consultation on the Sustainable Water Programme of Action (SWOPA) identified problems with the setting of environmental flows such as not all water bodies having environmental flow limits.¹⁷

The Sustainable Water Programme of Action (SWOPA) was a policy initiative to address the policy gap at the national level.¹⁸ It was one of four “priority work areas

¹⁴ See Ministry for the Environment, above for the effect on surface water allocation. For the specific effect on groundwater abstraction and the monitoring of bores see AD Fenemor and CA Robb “Groundwater Management in New Zealand in MR Rosen and PA White (eds) *Groundwaters of New Zealand* (New Zealand Hydrological Society Inc., Wellington, 2001) 273 at 279.

¹⁵ Ministry for the Environment and Ministry of Agriculture and Fisheries *Wai Ora: Report of the Sustainable Water Programme of Action Consultation Hui* (Ministry for the Environment, Wellington, 2005) at 2 provides the background to the policy process for the Sustainable Water Programme of Action which was established in 2003 as the start of a process of public consultation and “creating partnerships between central government, local government, Maori, communities and key stakeholders”. A series of meetings were held as part of the public consultations process. The Wai Ora report was a collation of the minutes from the consultation meetings or “hui”.

Ministry for the Environment “Sustainable Water Program of Action – An Implementation Package” (n.d.) <www.mfe.govt.nz/more/cabinet-papers-and-related-material-search/cabinet-papers/freshwater/sustainable-water-0> discussed the need to address the growing demand for water; Cabinet Paper “Regulatory impact statement for draft National Environmental Standard on Measuring Water Takes” (February 2008) CAB POL (08) 16 states the “overarching policy objective, of the Sustainable Water Programme of Action was to “provide for increasing demands on water resources and encourage efficient water management”.

¹⁶ Lincoln Environmental *Information on Water Allocation in New Zealand Report No 4375/1* (Ministry for the Environment, Wellington, 2000) at 35.

¹⁷ Ministry for the Environment above n 13 at 15-17 identified the problems with environmental flow setting as “3.1.1 Resource consent decisions are being made on water bodies for which there is no environmental flow or water level in place”; “3.1.2 Existing environmental flows and water levels do not always clearly define the available water” and “3.1.3 Existing process for setting ecological flows for water levels is costly and contentious”.

¹⁸ The SWOPA was released in 2004 with “extensive discussion” in 2005. Cabinet Paper *Appendix 1 Background on Sustainable Water Program of Action in New Start for Freshwater* (n.d.).

Other initiatives to improve water quality included The Dairying and Clean Streams Accord 2003; see Fonterra Co-operative Group, Local Government New Zealand, Ministry for the Environment and Ministry of Agriculture and Forestry *Dairying and Clean Streams Accord* (Ministry for the Environment, Ministry of Agriculture and Fisheries, Wellington, 2003).

under the Sustainable Programme of Action” introduced by the Labour-led government in 2003.¹⁹ In order to fully understand the national policy gap the purpose of the SWOPA was to investigate “some of the constraints of the current first in, first served system, particularly in situations where there is significant tension between competing uses and values for water”.²⁰ The SWOPA Cabinet papers stated the “first come, first served” water allocation method was appropriate for regions where “security of supply was not affected”.²¹ On the other hand, it stated water scare areas experienced problems associated with the “first come, first served” method of water allocation, which was described as follows.²² First, regional councils were constrained by the “first come, first served” rule even at times where there was a “goldrush” of applications for water. Second, applicants for water allocation applied for their water permits before water was needed in order to secure supply. Third, the rule did not include a reasonable water use requirement. Fourth, once water was allocated, there were limited means or provisions to transfer the allocation to another use for the duration of the consent. Finally, SWOPA was also intended to investigate whether water permits should be unbundled and consider the introduction of water pricing.²³ The objective of the SWOPA included the development of “national direction” in the form of a:²⁴

- National Policy Statement on managing increasing demands for water;
- National Environmental Standard for methods and devices for measuring water takes and use
- National Environmental Standard on methods for establishing water flows.

¹⁹ Department of Prime Minister and Cabinet *Sustainable Development for New Zealand Programme of Action* (Department of Prime Minister and Cabinet, Wellington, 2003) at 3 stated the priority work areas were Quality and Allocation of Freshwater, Energy, Sustainable Cities and Investing in Child and Youth Development.

²⁰ Cabinet Paper Appendix 1 Background on Sustainable Water Program of Action in New Start for Freshwater (n.d.) at 5.

²¹ Above at 28.

²² Above at 28. The following points are a summary of points raised at 28.

²³ Above.

²⁴ Ministry for the Environment, Minister of Agriculture *Sustainable Water Programme of Action – Implementation Package* above n 15. The term “national direction” is used to describe the formation of National Policy Statements, National Environmental Standards and New Zealand Coastal Policy Statements in Resource Management Act 1991, Part 5, Subpart 1. In 2017, the RMA was amended to include National Planning Standards to “national direction” instruments. These statutory provisions for “national direction” are discussed below in this chapter.

SWOPA policy initiatives from 2003 until 2008 identified “gaps in current policy” and were only able to develop some “soft options” in the form of policy advice to regional councils.²⁵ The SWOPA “failed”²⁶ as it was unsuccessful in implementing a National Policy Statement for Freshwater or a National Environmental Standard for establishing water flows.²⁷ A proposed National Environmental Standard for setting environmental flows was notified in 2008 but did not proceed further towards implemented.²⁸ The RMA does not include legal consequences for governments or government departments that fail to prepare national direction.

Effectively the SWOPA failed to be implemented because of a change of government in 2008, when the National party won the 2008 general election and

²⁵ Rick M Fisher and Shona Russell “Water Policy and Regulatory Reform in New Zealand” (2011) 27(2) *International Journal of Water Resources Development* 387 at 388; and Andrew Hayward “Freshwater Management: Water Markets and Novel Pricing Regimes” (2006) 10 *NZJEL* 215 at 220 describes the outcome of the SWOPA as providing only “vague” proposals

²⁶ Gary Taylor “Environmental Policy-Making in New Zealand, 1978-2013” (2013) 9(3) *Policy Quarterly* 18 at 21.

²⁷ The implementation of national policy was outlined in Ministry for the Environment, Minister of Agriculture *Sustainable Water Programme of Action – Implementation Package* above n 15.

The failure of implementation meant that water allocation issues remained unresolved. For example, Ministry for the Environment Environmental Stewardship for a Prosperous New Zealand. Briefing for Incoming Minister for the Environment November 2008 (Ministry for the Environment, Wellington, 2008) at 11 stated “Further economic development will require re-allocation to higher value uses and/or more water storage and distribution systems to deal with variability in when and where water is available”.

²⁸ Instead, the setting of environmental flows was transferred to “A New Start for Freshwater” policy programme introduced in 2008; see Cabinet Paper “Implementing the New Start for Fresh Water: Proposed Official’s Work Plan” (n.d.) states:

The proposed officials’ work programme consists of 10 priority projects. These have been chosen as they are needed either to ensure the Government can respond to the Forum’s proposals or to tackle pressing issues with the current management system. Agreement is sought for the ten priority projects, which include a mixture of new and partially completed work:

- a) environmental flows and water measuring
- b) water quality limits
- c) proposed National Policy Statement for Freshwater Management
- d) allocation of water to maximise value
- e) over-allocation baseline and possible interim interventions
- f) supporting measures
- g) rural water infrastructure
- h) dependable monitoring and reporting
- i) aligning investment and improving uptake of water research
- j) best practice water governance.

appointed the Hon Nick Smith as Minister for the Environment.²⁹ The incoming briefing for the Minister stated the problems with water allocation.³⁰ The SWOPA lost momentum and instead an agreement was developed between environmental groups and non-government organisations interested in water, the Sustainable Land Use Forum.³¹ This Forum secured the support of the newly elected National-led government and led to the formation of the Land and Water Forum.³² By this time the National-led government had moved on to a new policy programme to address the water policy gap, “A New Start for Freshwater”.³³ This programme and the Land and Water Forum followed the failure of the SWOPA, both are discussed in the next chapter.

2.2 Lack of historical hydrological information

During the time in which the RMA has been in force, long-term hydrological data collection has occurred only irregularly.³⁴ The lack of systematic data collection should have been addressed by the implementation of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010.³⁵ However, evidence shows that the implementation of the 2010 Regulations fell short in some regions. For example, a lack of monitoring of water takes was reported in the

²⁹ Hon Nick Smith held the Environment portfolio from 2008 until 2012 when he was replaced by Amy Adams. New Zealand Parliament “Hon Dr Nick Smith”
<<https://www.parliament.nz/en/mps-and-electoralates/members-of-parliament/smith-nick/>>

³⁰ Ministry for the Environment “Environmental Stewardship for a Prosperous New Zealand. Briefing for Incoming Minister for the Environment November 2008” (Ministry for the Environment, Wellington, 2008) stated that freshwater demand was increasing and further attention was needed to address water quality and allocation issues.

³¹ Taylor, above n 26. This agreement was reached at the 2008 Environmental Defence Society Conference.

³² Cabinet Paper, above n 28. National won the 2008 general election which ended nine years of Labour-led government in New Zealand.

³³ Cabinet Paper New Start for Fresh Water Cabinet Paper (2010)

³⁴ AD Fenemor, T Davie and S Markham “Hydrological Information in Water Law and Policy: New Zealand’s Devolved Approach to Water Management” in J Wallace and P Wouters (eds) *Hydrology and Water Law: Bridging the Gap* (IWA Publishing, London, 2006).

³⁵ Resource Management (Measurement and Reporting of Water Takes) Regulations 2010, s 4 states that takes above 5 cubic meters per second should be recorded and reported to the regional council. Under section 6 water permit holders must keep records of water taken on daily or weekly basis that can be consolidated into an annual amount.

Canterbury region. This region had the highest number of water take consents because the conversion of pastures to dairy farming has increased demand for irrigation.³⁶ Lack of data and the absence of monitoring meant that potentially millions of litres of water have been taken illegally.³⁷ Mitchell appeared critical of the lack of enforcement of water metering rules when he reported that:³⁸

Information obtained by the environmental organisation Forest and Bird showed 376 serious breaches of water consents in the year to July, 2014, with another 23 requiring enforcement action. It said there have been cases where streams have run dry and in one case a farmer took 31 million litres more water than permitted in a six-week period. Other breaches were for either taking water while a river was restricted, taking more than the allocated amount, faulty water-measuring devices or not submitting data to the council.

A lack of regional council data collection on actual use was confirmed in national hydrological data reporting. In their first joint report on freshwater statistics based on regional council hydrological data, the Ministry for the Environment and Statistics New Zealand³⁹ reported that, although over half of water allocation consents were for irrigation, there was a lack of data on water use.⁴⁰ The implications of the lack of data collection for water allocation policy and planning are that regional councils are hampered by not knowing how much water is taken under each consent.

More recently, New Zealand's water allocation, and in particular the lack of data on water takes, has gained international attention. For example, in its 2015 environmental performance report on New Zealand, the Organisation for Economic

³⁶ Erwin Corong, Mike Henson and Phil Journeaux *Value of Irrigation to New Zealand. Economy-wide Assessment* (NZIER, AgFirst, Wellington, 2014) at 3.

³⁷ New Zealand Herald "Large-scale water theft in Canterbury – but no prosecutions" *New Zealand Herald* (20 June 2016); Charlie Mitchell "Over the line: Rivers being whittled away" www.stuff.co.nz (6 February 2017).

³⁸ Charlie Mitchell "Millions of litres of water illegally taken: Is Ecan doing enough?" *NZ Farmer* (20 June 2016).

³⁹ Ministry for the Environment & Statistics NZ (2017) *New Zealand's Environmental Reporting Series: Our fresh water 2017*. (Ministry for the Environment, Statistics New Zealand, Wellington, 2017). Prior to 2017 both the Ministry and the Statistics Department published separate reports. The Environmental Reporting Act 2015 s 10(1)(c) requires the joint publication of a report in specific areas including "the freshwater domain".

⁴⁰ At 59.

Co-operation and Development (OECD) pointed out the lack of groundwater information stating: “No mapping exercise has been done to identify areas where scarcity of groundwater is becoming a problem”.⁴¹ The 2017 OECD report also raised concerns stating “rising freshwater pollution and scarcity in some areas” was one of the environmental challenges faced by New Zealand.⁴² The 2017 OECD report also recommended the use of economic instruments to manage water quantity and quality.⁴³ Recommendations relevant to water allocation included: introducing “volumetric pricing to recover costs of water management and reflect environment impacts... and expand water markets”;⁴⁴ and “experiment[ation] with natural capital accounting to provide a basis for valuing water resources and freshwater ecosystems, and quantifying costs and benefits of freshwater policy and management decisions”.⁴⁵

The points in relation to water markets have also been stated in more recent New Zealand policy from the Land and Water Forum, a subject which is discussed in more detail in the next chapter. It is important to recognise that introducing water markets would require the collection of historical water take information, not just information about how much water was consented to be taken. The Resource Management (Measurement and Reporting of Water Takes) Regulations 2010, therefore, need to be implemented and enforced successfully before water markets could be considered for New Zealand.

⁴¹ OECD, above at 2.

⁴² OECD *Environmental Performance Review* (OECD Publishing, Paris, 2017) at 3. Media Release: EDS commends OECD Environmental Performance Review of New Zealand (21 March 2017) states The Director of the OECD Environment Directorate at the time the Report was published was Hon Simon Upton. He was “one of the architects of the Resource Management Act (along with Sir Geoffrey Palmer)”.

Later, Simon Upton was sworn in as New Zealand’s Parliamentary Commissioner for the Environment on 16 October 2017. Refer Parliamentary Commissioner for the Environment “About us. The Commissioner”.

⁴³ Above.

⁴⁴ Above at 195.

⁴⁵ Above at 195.

3 *Statutory Framework - Water Allocation under the RMA*

As stated above, the absence of a national water allocation policy between 1991 and 2011 contributed to the water allocation problems that existed in New Zealand during this period. At central government level the failure to create national policy “has left the RMA operating in a partial vacuum”.⁴⁶ This policy gap is an example of the “failure of the RMA”.⁴⁷

The provisions within the RMA were intended to establish a regulatory framework for resource allocation, including water allocation. The following analysis of statutory provisions relevant to water allocation shows that the RMA is not designed to regulate a market-based system of water allocation. This point has great significance in light of any proposal to introduce market-based allocation in the future, as is discussed in the next chapter. The RMA provides the regulatory basis for various bodies that have administrative, judicial and decision-making roles relevant to water allocation.⁴⁸ For this reason the following sections provide an account of the functions, powers and duties of central and local government under the relevant provisions of the RMA. Each section contributes to the understanding that the RMA does not include any foundation for market-based water allocation in its current form. At times this point is secondary to the perception that the RMA has failed to be implemented as intended.

⁴⁶ IH Williams “The Resource Management Act 1991: Well Meant But Hardly Done” (2000) 9 (4) *The Otago L. Rev.* 673 at 674.

⁴⁷ Geoffrey Palmer, QC “The Resource Legislation Amendment Bill, the Productivity Commission Report and the future of Planning for the Environment in New Zealand” (2018) 12(4) *Policy Quarterly* 71 at 72. Refers to the “failure” of the RMA in terms of the failure of central government and regional government to “make policy statements, set environmental standards that the Act provides for...”. Without the policy statements at both levels the inference is that the RMA resource allocation framework is incomplete. This is particularly a problem for water allocation planning as discussed in this chapter with policy gaps at both the central government and some regional government levels.

⁴⁸ Robb *Water Allocation a Strategic Overview*, above n 5, at 6.

4 *The RMA and the Allocation of Water*

4.1 *The Functions, Powers and Duties of Central Government*

The provisions of the RMA establish a hierarchical structure of policy guidance for resource allocation at the national and regional level.⁴⁹ Within this regulatory framework, the responsibility for resource allocation is split between local and central government (as stated in Part 4 of the Act) with devolution of power to the regional level.⁵⁰ The Ministry for the Environment (which administers the RMA) is primarily responsible for developing national environmental policy. Adding complexity to matters is the fact that in addition to the Minister for the Environment, the Ministers of Conservation and Aquaculture also have roles in policy development. For example, the Minister of Conservation is responsible for the preparation of the New Zealand coastal policy statement under section 57 of the RMA. The Environmental Protection Authority and the Environment Court also have decision-making role.⁵¹ For example, The Environmental Protection Authority has jurisdiction over projects of “national significance”.⁵² The Environment Court can hold the first judicial hearing relating to Regional Plans and Policy Statements, resource consent applications, enforcement proceedings and declarations.⁵³

The RMA states the statutory process for setting “national direction” in the promulgation of National Environmental Standards, National Policy Statements and the New Zealand Coastal Policy Statement.⁵⁴ RMA amendments to set

⁴⁹ The hierarchical structure was more of a “framework” than a “blueprint” because the details would be formed through the policy making process characterised as a “political struggle within a loose legal framework”. See I. H. Williams above n 46 at 674.

⁵⁰ Devolution of power was to address the pre-existing problems with “ad hoc” government intervention in environmental planning. Hon Simon Upton stated the problems with environmental law prior to the RMA as a “plethora of rules” with “conflicting objectives”. (4 July 1991) 516 NZPD 3018, Hon Simon Upton.

⁵¹ Resource Management Act 1991, s 42C states the functions of the Environmental Protection Agency. The current EPA was established by the Environmental Protection Authority Act 2011 which replaced the EPA established under the RMA. The EPA decision on the Tukituku Catchment is discussed later in this chapter.

⁵² Resource Management Act 1991 s 42C(c).

⁵³ Resource Management Act 1991, Part 11.

⁵⁴ Resource Management Act 1991, Part 5, Subpart I “National direction”.

“national direction” reflect the ongoing tension between balancing the needs of development while at the same time protecting the environment.⁵⁵ For example, section 46A of the RMA was amended in 2017 to allow a “single consultation process” when developing “national direction” concurrently for the same environmental issue.⁵⁶ The amendment means that National Policy Statements and National Environmental standards can be developed at the same time without requiring separate processes for public consultation. In theory, the change should “increase flexibility in the development of national direction”.⁵⁷ Once the subject of “national direction” is determined the Minister may either follow the process in the RMA (sections 47 to 51) that sets out a board of inquiry process, or follow the method described in section 46A(4).⁵⁸ Section 46A(4) outlines the steps required to prepare national direction. These include providing public notice of the proposed national direction and the reason “why the Minister considers that the proposed national direction is consistent with the purpose of the Act”.⁵⁹

The Minister may appoint a board of inquiry to “inquire into, and report on, the proposed national direction”.⁶⁰ The Minister has the power to set the “terms of reference” for the board of inquiry⁶¹ and also has the power to suspend the board of inquiry “at any time” subject to providing public notice for the reasons for the

⁵⁵ For example The Resource Management Amendment Act 2005 was directly relevant to water allocation as it amended section 30 to add section 30(1)(fa) to amend the function of regional councils to make rules to allocate water; Amendments to planning such as The Resource Management (Simplifying and Streamlining) Amendment Act 2009 objective were specifically to address issues affecting the processing of resource consent applications from “vexatious and anti-competitive objections” to “improving the decision-making process for proposals of national significance and establishing an Environmental Protection Authority”. This amendment was to address criticism that resource consent processing took too long in some circumstances. See Resource Management (Simplifying and Streamlining) Amendment Act 2009 *Regulatory Impact Statement*. at 2.

The implication of amendments which aim to streamline decision making have been criticised by Palmer above at n 47 on the basis that the process results in an encroachment of central government in regional environmental decision making.

⁵⁶ Ministry for the Environment *Resource Legislation Amendments 2017 – Factsheet 1* (Ministry for the Environment, Wellington, 2017) at 9.

⁵⁷ Above at 9.

⁵⁸ Resource Management Act 1991, s 46A(3).

⁵⁹ Section 46A(4)(a)(ii).

⁶⁰ Section 47(1).

⁶¹ Section 47(2)(a).

suspension.⁶² The purpose of the public notification phase is to invite submissions on the proposed national direction.⁶³ The role of the board of inquiry is to provide recommendations for the Minister on the proposed national direction.⁶⁴

In addition to these changes to the setting of national direction the 2017 amendments also introduced provisions to allow national planning templates for regional planning.⁶⁵ However, not all of these changes to the setting of national direction were welcomed by commentators. For example, Palmer is critical of amendments which dilute features of the RMA planning process, resulting in increased central government control over planning and encroachment on regional planning.⁶⁶ In the past, without adequate national direction “New Zealand overshot the mark in terms of decentralization and local decision making”.⁶⁷ The “balance of power” between the central government and regional government “did not come into fruition as planned”.⁶⁸ Palmer’s analysis attributes the failure of local government to adequately plan as follows: “Too often local government did not appreciate its duties under the Act and there was too much political interference”.⁶⁹ The duties that Palmer refers to includes having regard to the principles of sustainable management when formulating rules in regional plans.⁷⁰ It remains to be seen whether the latest changes to the setting of national direction can address the pressing issues facing New Zealand water allocation. What is striking, however,

⁶² Section 47A.

⁶³ Section 48.

⁶⁴ Section 51 outlines matters to be considered in the report.

⁶⁵ Sections 58B-58J.

⁶⁶ Geoffrey Palmer *Protecting New Zealand’s Environment. An Analysis of the Governments Proposed Freshwater Management and Resource Management Act 1991 Reforms* (New Zealand Fish and Game Council, Wellington, 2013) at 24 states the 2005 Amendments “expanded the function of the Minister for the Environment creating a new power for the Minister to direct plan changes” which was “universally opposed by all sectors”.

⁶⁷ Andrea P Sumits and Jason I Morrison *Creating a Framework for Sustainability in California: Lessons Learned from the New Zealand Experience. A Report of the Pacific Institute for Studies in Development, Environment and Security* (Pacific Institute, California, 2001) at v.

⁶⁸ Above.

⁶⁹ Palmer, above n 47, at 72: He goes on to observe “Political reactions that have led to numerous amending acts for the RMA over the years have made the legislation worse, not better. Constant fiddling debilitates both the act and administration”.

⁷⁰ Resource Management Act 1991, s 5.

is that there remain no legal consequences for government departments which fail to prepare national direction under the RMA.

4.2 *The Functions, Powers and Duties of Regional Government*

The “functions” of regional councils are to prepare plans with policies and objectives that further the purpose of the RMA.⁷¹ These statutory “functions” do not confer an obligation to create a regional plan⁷². Regional plans may address any of the functions stated in section 30.⁷³ Section 30(1)(e) to (fa) states that regional councils may specify maximum or minimum flows and prepare rules for taking or using water. The water allocation function of regional councils was amended in 2005 within a broader context to streamline environmental planning.⁷⁴ These sections provide regional councils with the means to develop rules in regional plans to allocate water.⁷⁵ Examples illustrating how rules may be formulated in regional plans are discussed later in this chapter.

Regional councils determine how much water can be allocated by setting limits on the amount of water that can be taken from a body of water.⁷⁶ Environmental flow

⁷¹ Resource Management Act 1991, s 30, 63. The RMA was meant to implement sustainable management through the regional planning function of councils. See Trevor Daya-Winterbottom “Sustainability, Governance and Water Management in New Zealand” in Michael Kidd, Loretta Feris and Tumai Murombo (eds) *Water and the Law Towards Sustainability* (Edward Elgar, Cheltenham, 2014).

⁷² Robb *Water Allocation a Strategic Overview* above, n 5, at 12.

⁷³ Resource Management Act 1991, s 65 states that “A regional council may prepare a regional plan for the whole or part of its region for any function specified in section 30(1)(c), (ca), (e), (f), (fa), (fb), (g), or (ga)”.

⁷⁴ These changes were contained in s30(1)(fa) and s30(4) of the RMA. The Amendment began as a Bill focusing on Energy and Resources. It was formerly a part of the Resource Management and Electricity Legislation Amendment Bill 2005. Later the Bill was split into two; Resource Management Amendment Bill (No. 5) and the Electricity Amendment Bill (No. 3).

⁷⁵ Regional councils may classify a particular activity such as the taking of a set volume of water as a permitted, controlled, restricted discretionary, discretionary, non-complying or prohibited activity under Resource Management Act 1991, s 77A. Under section 123 of the RMA a water permit may be issued for a maximum term of 35 years. However, in practice regional councils are setting shorter terms. For a review of relevant permit and planning provisions refer to Bal Matheson and Daniel Minhinnick “Water” in Derek Nolan QC (ed) *Environmental and Resource Management Law* (LexisNexis, Wellington, 2018).

⁷⁶ TH Snelder, HL Rouse, P. Franklin, DJ Booker, N Norton, and J Diettrich. "The role of science in setting water resource use limits: case studies from New Zealand." (2014) 59 (3.4)

limits are placed on surface water bodies. In 2006, the Ministry for the Environment identified problems with the minimum flows, including that there were still some freshwater bodies for which “no specific environmental flows and water levels have been determined”.⁷⁷

Generally, regional plans do not “pre-allocate” water to specific uses.⁷⁸ One exception to this rule is the Waitaki Regional Water Allocation Plan (Waitaki Plan), which was established under a special Act. The Waitaki Plan is not the norm; rather, it is an example of ad hoc central government intervention in regional water allocation planning.⁷⁹ The central government intervention in the Waitaki region occurred through the establishment of a statutory Water Allocation Board to “develop and approve a regional plan for water allocation”.⁸⁰ The reasons used to justify the intervention cited the seriousness of water allocation issues in the region and the claim that any delay in waiting for changes in national water allocation policy would “sacrifice the interest of the people of the Waitaki catchment”.⁸¹ This type of ad hoc intervention is reminiscent of the previous “command and control” approach to water allocation which existed prior to the RMA.⁸² A further example

Hydrological Sciences Journal 844 at 885 states these limits set “regulatory criteria that determine how water resources are allocated to environmental flow and out-of-channel use”.

⁷⁷ Ministry for the Environment Discussion Document on the Proposed National Environmental Standard on Ecological Flows and Water Levels (Ministry for the Environment, Wellington, 2006).

⁷⁸ Sinclair Knight Merz “Alternatives to the “first in, first served” approach to water allocation” *Options to Improve Water Allocation Outcomes* (Ministry for the Environment, Ministry for Economic Development and Ministry of Agriculture and Fisheries, Wellington, 2005) at 3.

⁷⁹ Above at 3.

⁸⁰ Resource Management (Waitaki Catchment) Amendment Act 2004, s 3, s 8; Resource Management Waitaki Catchment Amendment Bill 2004 (Select Committee Report 2002-2005 Vol XIV) at 1011 states “There is currently no regional plan for the allocation of water in the Waitaki Catchment, nor is there a minimum flow regime for the river”.

⁸¹ Above at 1012. Above at 1023 the Opposition Party strongly objected to the Bill on grounds “that the rules are being rewritten for a huge state owned enterprise project”. The Opposition stated that “These consents should be considered against the Part II provisions of the RMA unaltered”; For an academic analysis of Project Aqua see Claire Kilner “The RMA Under Review: A Case Study of Project Aqua” (2006) 58(2) Political Science 29 which states Project Aqua was regionally important but later abandoned due to concerns over access to water rights and rising costs.

⁸² For a discussion of water allocation pre-RMA see the background section of Chapter One. It outlines the extent of control that government departments such as the Ministry of Works and Development had over water allocation. While there is no suggestion here that the intention of the government is to take full control over regional water allocation decisions, the need for intervention shows the failure of the RMA framework for water allocation in such regions.

of ad hoc or “unprecedented” government intervention was the appointment of Commissioners in the Canterbury region, which is described later in this chapter.⁸³

One of the features of the water allocation plan in Waitaki is the use of sector-based allocation. Sector-based allocation in the Waitaki region reduces “reliance” on the “first come, first served” method of water allocation.⁸⁴ Sector-based water allocation is described as “*planned* allocation”.⁸⁵ The downside of the “*planned* allocation” approach lies in how to determine which sector gains an initial allocation and the volume of water to be allocated to each sector.⁸⁶ The positive feature of “*planned* allocation” is that priorities for water allocation can be determined with a greater level of “sophistication” by varying sector allocations across seasonal demand patterns.⁸⁷ Central government intervention in the Waitaki region raises the question of why the method of “*planned* allocation” for water sectors cannot be implemented in other regions.

The preparation of regional plans requires a cost-benefit evaluation to be undertaken. The evaluation report forms part of the public consultation required under the RMA and is an important step in the plan making process.⁸⁸ It is required under section 32 of the RMA for a proposed plan, plan change or variation in order to assess how the proposal meets the overall objective of the RMA. The evaluation should also consider alternatives to address the particular environmental issue and the efficiency of each option.⁸⁹ The cost-benefit analysis includes a consideration

⁸³Christine Cheyne “Changing Urban Governance in New Zealand: Public Participation and Democratic Legitimacy in Local Authority Planning and Decision Making 1989-2014. (2015) 33(4) *Urban Policy and Research* 416 at 426.

⁸⁴ Sinclair Knight Merz, above n 78, at 3.

⁸⁵ Above at 3.

⁸⁶ Above at 3.

⁸⁷ Sinclair Knight Merz, above n 78, at 3.

⁸⁸ For best practice guide on preparing a section 32 analysis see Ministry for the Environment A guide to section 32 of the Resource Management Act 1991. Incorporating changes as a result of the Resource Legislation Amendment Act 2017 (Ministry for the Environment, Wellington, 2017); Ann Winstanley, Annabel Ahuriri-Driscoll Maria Hepi Virginia Baker and Jeffrey Foote "Understanding the impact of democratic logics on participatory resource decision-making in New Zealand." (2016) 21(10) *Local Environment* 1171.

⁸⁹ Resource Management Act 1991, s 32 (1).

of financial and non-financial values.⁹⁰ The resulting evaluation report should “identify and assess the benefits and costs of the environmental, economic, social, and cultural effects” including economic growth and employment.⁹¹ Examples of costs include administrative costs, compliance costs, broader economic costs, social costs and environmental costs.⁹² Amendments to section 32 requirements in 2013 added the consideration of “economic growth” and “employment”.⁹³ However, such changes have been criticised as going too far in attempting to follow central government’s business and economic growth agenda.⁹⁴

Part 3 of the RMA details statutory restrictions on the use of resources. Section 14 details the restrictions relating to the take and use of water, which specifically allow the “take” and “use” of water for personal use.⁹⁵ Section 14(3)(b) allows water to be taken for the “reasonable” needs of people for “domestic needs” or “of a person’s animals for drinking water”. All other water allocations are restricted and subject to provisions in regional plans and may require a resource consent.⁹⁶ Other statutory control over water takes in the RMA includes regional council power to issue a “Water Shortage Direction” for up to 14 days for any water body.⁹⁷

From a legal perspective there is no inherent right to access water and the granting of a water permit is a lifting of this general restriction to take water from the commons. Section 122(1) of the RMA states a resource consent is “neither real nor

⁹⁰ Ross Wilson *Cost Benefit Approaches to Valuing Nature: Case Studies in New Zealand* (Auckland Council, Auckland, 2012) at 5.

⁹¹ Resource Management Act 1991, s 32 (2).

⁹² Quality Planning “Quality Planning Website Note on Section 32 Analysis”

< <http://www.qualityplanning.org.nz/index.php/35-plan-development/74-guidancenote-onsec32> >

⁹³ Resource Management Act 1991, s 32(2).

⁹⁴ Klaus Bosselman “Sustainability Alternatives: A German-New Zealand Perspective” (2015) 13 *New Zealand Journal of Public and International Law* 25 at 32.

⁹⁵ Resource Management Act 1991, s 14; *Laws of New Zealand Water* (online ed). These provisions are considered to be similar to rights to take water for domestic use that existed under the Water and Soil Conservation Act 1967

⁹⁶ Section 14(3)(a) allows the taking of water that has been “expressly allowed by a resource consent”.

⁹⁷ Statutory rights to suspend water takes during a shortage were carried through from the Water and Soil Conservation Act 1967 into the RMA under s329. The Water and Soil Conservation Act 1967, s 23E gave specific powers to water boards to suspend water takes, “if, in the opinion of the Board, there is at any time a serious temporary shortage of water...”.

personal property”. However, there are exceptions to this general rule. Under section 122(2) there are three situations where the resource consent may vest as personal property. The first is when the resource consent holder dies and the resource consent vests with the “personal representative of the holder”. The second is if the consent holder becomes bankrupt and the resource consent is vested with the Official Assignee “as if it were personal property”. The third situation is where the resource consent is listed as property under the Protection of Personal Properties and Property Rights Act 1998. These situations show that there are a number of practical situations where a resource consent is clearly recognised as property.

The RMA recognises property in a resource consent as “goods” in section 122(4) for the purpose of registration as collateral under the Personal Property Securities Act 1999. This section differs from the situations addressed under section 122(3) because it also allows a charge to be registered against the resource consent, which means that water permits can be provided as security for loans and the charge over the water permit can be registered as “goods”. Effectively water permit holders can deal with the permit as if it is property and there is a clear legal basis for them to do so. Barton supports the view that resource consents have been interpreted as a type of property by the Courts, but questions the correct use of property-related concepts.⁹⁸ There is a concern that the application of property-related concepts to legal issues relating to resource consents may have gone too far. It is important to remember that the general rule in section 122(1) does not support the view that a resource consent provides the consent holder with property—these concerns are discussed in more detail in the case law analysed in this chapter. It is clear that under the RMA water permits cannot be owned or traded as they are in other jurisdictions operating water allocation via market-based regulation.

⁹⁸ Barry Barton “Property Rights Created Under Statute in Common Law Legal Systems” in Aileen McHarg, Barry Barton, Adrian Bradbrook, and Lee Godden *Property and the Law in Energy and Natural Resources* (Oxford University Press, Oxford, 2010).

5 *The Transfer of Water Permits under the RMA*

5.1 *Statutory Criteria*

The rules for water transfers in regional plans must comply with the administrative requirements of section 136 of the RMA. Subject to complying with the relevant Regional Plan, section 136 allows for the permanent or temporary transfer of a water permit to another person or site within the same catchment or aquifer.⁹⁹ When transfers occur, regional plans may require notification details of transfers such as location, duration, volume transferred and details of parties involved in the transfer to be provided to the councils.¹⁰⁰ For example, in some regional plans, a water transfer may occur only if a portion of the allocation is surrendered in over-allocated catchments¹⁰¹ or there may be a requirement for a transfer to be efficient.¹⁰² Section 136 does not require the collection of information about the price of the transfer.

5.2 *Water Transfers in Irrigation Schemes*

Irrigation schemes are self-regulated in New Zealand.¹⁰³ The main water permit is held by the scheme operator while those accessing water does so by way of a contractual rather than a statutory entitlement.¹⁰⁴ In other words, the rights of

⁹⁹ Resource Management Act 1991, s 136(2).

¹⁰⁰ Waikato Regional Council *Waikato Regional Council Variation 6* (Waikato Regional Council, Hamilton, 2012). Policy 3.4.3 Transfer of Water Permits. Water transfers can assist with achieving the efficient use of water.

Environment Southland Regional Council Proposed Southland Water and Land Plan (Environment Southland Regional Council, Invercargill, 2016). Policy 43 allows transfers subject to minimum flow and allocation rules.

¹⁰¹ Bay of Plenty Regional Council *Region-wide Water Quantity – Proposed Plan Change 9 Version 3.8* (Bay of Plenty Regional Council, Tauranga, 2017). Policy WQ P13 states enabling transfers as a means to improve efficiency. WQ P23(e) requires a “portion of the allocated water to be surrendered” in over-allocated catchments.

¹⁰² Greater Wellington Regional Council *Proposed Natural Resources Plan For The Wellington Region 31 July 2015* (Greater Wellington Regional Council, Wellington, 2015). Policy P128 encourages the transfer of water permits in the same catchment management unit so long as the transfer is reasonable and meets efficient use criteria in Schedule Q of the Plan.

¹⁰³ Irrigation Schemes Act 1990 resulted in the sale of government irrigation schemes to water users. For an account of the effect of this change refer to Chapter One.

¹⁰⁴ Central Plains Water Limited, “Central Plains Water User Agreement 2015” at Clause 25.3. Available at < <http://www.cpwl.co.nz/wp-content/uploads/Central-Plains-Water-Limited-Water-Use-Agreement-2015.pdf>>

individuals taking water from the scheme are determined under contract and subject to a range of individual statutes. For example, the Central Plains Water Scheme Water User Agreement refers to a range of different Acts which are used to determine the terms and conditions for water users in the scheme. Shareholders in the Central Plains Water irrigation scheme are issued ordinary shares by the volume of water taken. Central Plains Water Limited takes security over water provided to the shareholders. Transfers of water shares between shareholders are subject to the approval of the board. The approval process for water transfers is based on conforming to the terms of the Central Plains Limited Water Use Agreement.

Under unregulated irrigation schemes irrigators are bound by contract with the irrigation scheme operator. Those contractual terms can limit the irrigator's ability to transfer water. For example, Central Plains Water Limited Water Use Agreement 2015 states "The Shareholder shall not be at liberty to assign, transfer, mortgage or charge the Shareholder's interest in this Agreement without the consent of the Company".^[1] If the Company agrees to the transfer, the irrigation water will remain within the irrigation scheme. The irrigation infrastructure operator will hold the statutory entitlement without the need to notify changes to the regional council because it is presumed that the conditions of the resource consent do not change.

5.3 Recording Water Transfers

Despite the lack of formal water registers in New Zealand, case law illustrates that regional councils have an important role in accurately recording information regarding water transfers. A case where negligence by the District Council was alleged was *The Favourite Ltd v Vavasour*.¹⁰⁵ Vavasour held a water permit for vineyard irrigation. When Vavasour transferred the water permit to another party, The Favourite Limited argued that the water permit was incorrectly transferred. Vavasour, The Favourite Limited and the third party had private dealings regarding the water permit. The Favourite Limited unsuccessfully argued that the Council had

¹⁰⁵ *The Favourite Ltd v Vavasour* [2005] NZRMA 461.

a duty of care in transferring the new water permit holder's details into its records because it disputed the validity of the transfer.

The Court held that a duty of care was not owed by the Council in this case because it was unaware of the private dealings between the parties. In these situations the role of the Council was more like that of a "postbox".¹⁰⁶

Section 136 therefore makes a distinction between the situation where the holder is transferring a permit to an owner or occupier and that where the holder is transferring the permit to another person on another site. Obviously (see s 136 (4)), the council does have a role in the second situation. It does not flow from that that there is any obligation on the council to determine which category a purported transfer is in. Rather, in terms of s 136(2)(a) the council is, as Mr Radich, put it, a postbox. The council receives the transfer and notes its register accordingly. That the council has no active role is supported by s 136(3) which indicates that the transfer is ineffective until "received" by the relevant consent authority.

This case confirmed that the role of councils is to receive and record the transfer, subject to the transfer being allowed in the regional plan.

However, negligence by a council in the recording of water permit information is possible. Negligence by a council was found in *Altimarloch Joint Venture Ltd v Moorhouse* where the Marlborough District Council was found liable in the High Court of incorrectly providing water permit information in a Land Information Memorandum (LIM).¹⁰⁷ The water permit information recorded in the LIM recorded a lower volume of water than the volume Altimarloch Joint Ventures Limited believed they were acquiring. It relied upon the information in the LIM when deciding to purchase the property and associated water permits. Damages of \$400,000 were awarded in the High Court. The value of damages was quantified on the financial loss to the plaintiffs as a result of relying upon incorrect water permit information supplied in the LIM.¹⁰⁸ The Court of Appeal dismissed an

¹⁰⁶ At [30].

¹⁰⁷ *Altimarloch Joint Venture Ltd v Moorhouse* HC Blenheim CIV-2005-406-91, 3 July 2008;

¹⁰⁸ *Altimarloch Joint Venture Ltd v Moorhouse* HC Blenheim CIV-2005-406-91, 23 March 2009 [recall judgment]. The vendors were also sued for misrepresentation under s6 (1) of the Contractual Remedies Act 1979. During the conveyancing process the vendors were not shown

appeal by the Council and maintained the equal apportionment of damages between the vendors and the Council.¹⁰⁹ The Court of Appeal also confirmed the duty of care owed by the Council to the purchasers when providing a LIM under section 44A of the Local Government Official Information and Meetings Act 1987. On appeal, the Supreme Court also confirmed that a duty is imposed on regional councils to provide correct information. The Supreme Court's decision focused on the issues of how to determine the appropriate apportionment of liability between the regional council and other parties involved in the case. The Court held that damages were based on the cost of finding another source of water, not the difference in the value of the property purchased based on the diminution of the water permits.¹¹⁰

This case shows that the recording of water permit information is subject to a high standard of care. Water permits are valuable assets. The value of water permits means that mistakes can be costly to remedy. Regional councils may be required to pay costs if negligence is proven on their behalf and they may not appreciate that they are the holders of information about increasingly valuable water assets. The issues described in this section are exacerbated by New Zealand's not having a water register. In light of the duty of care imposed on regional councils to maintain correct records, a national water register, similar to the water register in Australia, should be considered. The feasibility of implementing a national water register will be discussed later in this thesis.

the water permit documents which had been signed on their behalf. It was not until after settlement that the discrepancy regarding the extent of water rights emerged.

¹⁰⁹ *Vining Realty Group Ltd v Moorhouse* [2010] NZCA 104.

¹¹⁰ *Marlborough District Council v Vining Realty Group* [2012] NZSC 11. The RMA does not include provisions in relation to royalties or the pricing of water. In comparison other resources, such as geothermal do have provisions that allow regional councils to charge a royalty but these are not currently put into effect. Hence in practice there is also no royalty on geothermal allocations either. See Katherine Luketina and Phoebe Parson "New Zealand's Public Participation in Geothermal Resource Development" in Adele Manzella, Agnes Allansdottir and Anna Pellizzone (eds) *Geothermal Energy and Society* (Springer, Italy, 2019) at 211.

6 *Setting Minimum Flows - From National Direction to Regional Responsibility*

Regional councils can create rules to specify minimum flows (which are based on the quantity, level or flow of water) under section 30(1)(e) of the RMA. This section preserves the provisions for fixing minimum water flows originally contained in the Water and Soil Conservation Act 1967.¹¹¹ A significant change to set minimum flows under the RMA was the devolution of this function to regional councils. Before the RMA, the National Water and Soil Conservation Authority set minimum flow levels. The Authority was required to consult “all interested bodies and persons known to the Authority”, but there was no right of appeal to the Authority’s decision on minimum flow levels.¹¹² The most noteworthy cases relating to the setting of minimum flows under the Water and Soil Conservation Act 1967 and the RMA are discussed below. These cases show a shift in factors that are taken into consideration when setting minimum flows.

6.1 Electricity Corporation of New Zealand Ltd v Manawatu-Wanganui Regional Council

This case provides an insight into the relevant factors that were considered when setting minimum flow levels under the Water and Soil Conservation Act 1967. This case dealt with the question of whether the minimum flow set for the Wanganui River was fixed at an appropriate level by the regional water board. It is a significant case because of its timing, context and precedent value. A summary of the relevant features follows.¹¹³

¹¹¹ The National Water and Soil Conservation Authority had the power to set permitted flow levels under the Water and Soil Conservation Act 1967, s 14(3)(o).

¹¹² Water and Soil Conservation Act 1967, s 14(3)(a).

¹¹³ *Electricity Corporation of New Zealand Ltd v Manawatu-Wanganui Regional Council* W70/90 NZPT at 4.

In 1965, the Electricity Corporation reached an agreement with the local council to ensure that a minimum river flow was maintained and that water temperature would remain safe for fish. In 1977, (following a request from the NZ Canoeing Association), the National Water and Soil Conservation Authority was asked to fix a minimum flow for the river. The Authority had the statutory right to do so under section 14(3)(o) of the Water and Soil Conservation Act 1967.

The Authority then referred the request to the regional catchment board and requested a report under section 20(5)(b) of the Act. The report (with 17 public submissions) was received four years later. On 1 November 1983, the Authority fixed the minimum flow for five years, with an expiry date of 31 October 1988. The role, function and processes followed by the Authority in setting the minimum flow had a statutory basis in the Act.

In March 1987, the catchment board again began the process to fix the minimum flow. A call for public submissions was made in February 1988. Twelve hundred and fifty submissions were received from around New Zealand. A month later, on 31 March 1988, the Water and Soil Conservation Authority was abolished and the Rangitikei-Wanganui Catchment Board became responsible for setting the minimum flows on the Wanganui River.

When the catchment board fixed the minimum flow on 18 October 1988, unlike the Authority, its decision was subject to appeal. The right of appeal was emphasised in the case as there was no precedent for setting minimum flows:¹¹⁴

As a right of appeal from such decisions has only existed since April 1988, there has not yet built up any body of appeal decisions from which general criteria might be derived. Nor is there any judgment of a superior Court which bears directly on those questions.

The Electricity Corporation appealed the decision on the basis that the minimum flow should be varied at particular points along the river to accommodate the electricity generation needs of its network. The Corporation also wanted to include provisions that would allow it to depart from the minimum flow where there was a

¹¹⁴ At 22.

power shortage to “avert serious consequences for the nation”.¹¹⁵ Had the Authority not been abolished, it could have set the minimum flow based on the report of the catchment board, and there would have been no right of appeal. The Planning Tribunal was faced with a mammoth task of setting the minimum flow without the benefit of precedents or statutory criteria.¹¹⁶ The Planning Tribunal examined the relevant case law under the Water and Soil Conservation Act 1967 to determine the criteria by which to determine the appropriate minimum flow. Following an extensive assessment of relevant case law, the Court found that a balancing test applied:¹¹⁷

It was generally accepted by the parties that in setting minimum acceptable flow, the decision-maker is to follow a process similar to that approved in Keam’s case of evaluating and balancing all the relevant considerations.

In determining an acceptable flow, future potential uses were not trumped by existing uses.¹¹⁸ The Court found that on balance the minimum flow that had been set could be adjusted at some points. These concessions were made only after careful consideration of the extensive arguments put forward by both sides. The Court was influenced more by arguments and evidence relating to the effect on fisheries and was less concerned with mitigating the business effect on the Electricity Corporation. This case confirmed that arguments based on legitimate expectation were not suitable for fixing minimum flow and that the ability to be granted a water consent was more of a privilege than a right. It also considered whether issues relating to claims under the Treaty of Waitangi that were before the Waitangi Tribunal required a stay in proceedings. However, on advice from the government, the Court was advised to continue with the case as the proceedings in the Waitangi Tribunal were to be determined as a separate matter. On appeal, the High Court affirmed the Planning Tribunal’s decision.

¹¹⁵ At 11.

¹¹⁶ At 22. “The Act does not state the criteria by which the minimum acceptable flows of rivers and streams are fixed”.

¹¹⁷ At 68.

¹¹⁸ At 81.

This case showed the process when setting minimum flow levels under the Water and Soil Conservation Act 1967. The procedural elements of fixing a minimum flow are important because they show that national guidance on water allocation policies was lost when the Water and Soil Conservation Authority was disestablished. By 1990, the relevant factors in fixing the minimum flow for the Wanganui River were: the law, Maori cultural and spiritual values, natural features, recreation and tourism, electricity generation, climate change and ways in which to balance these factors.

7 The Setting of Minimum Flows under the RMA

Under the RMA minimum flows are subject to appeal. One of the earliest cases involved the setting of flows in the Otago Regional Water Plan. The plan was appealed on issues relating to minimum flow, mining rights and setting supplementary flow.¹¹⁹ In these cases, the reduction in minimum flow was considered to “have the most immediate and critical importance to the irrigation groups before the Court”.¹²⁰

7.1 Minister of Conservation v Otago Regional Council 2003

The key issue, in this case, was the setting of minimum flows in the Otago Water Plan.¹²¹

In considering the minimum flow provisions of Schedule 2A the ORC has either reduced or maintained the minimum flows originally set in its notified water plan or deleted them in some cases altogether. For all other catchments not included in Schedule 2A the ORC has adopted a default minimum flow of the natural 7 day minimum flow occurring once in a 10 year period

¹¹⁹ See *Otago Water Resource Users Group v Otago Regional Council* C88/2003, (4 July 2003) C21/2002 on mining privileges; *Minister of Conservation v Otago Regional Council* C71/2002, (25 June 2002) on minimum flows and *Fish and Game New Zealand (Central South Island Region) v Otago Regional Council* C79/2002, EnvC, (28 June 2002), the Kakanui Flows case will be discussed further below.

¹²⁰ *Minister of Conservation v Otago Regional Council* C71/2002, (25 June 2002) at [19].

¹²¹ At [8].

The existence of mining privileges that were deemed to be permits under the RMA was a significant issue.¹²² Mining privileges had “dominated” water use in Otago and over time were used to take irrigation water.¹²³ However, the Otago Regional Council lacked information regarding the abstractions based on mining privileges. Under section 414 of the RMA mining privileges were transferred to become “deemed permits”, which could become subject to regional plans if the permit holder “requests the regional council to make such a rule”. The Court acknowledged that this factor restricted the regional council’s ability to regulate deemed permits.¹²⁴

There are cases where the combined effect of mining privileges is to provide for an instantaneous abstraction of up to twice the mean annual flow (which is significantly higher than MALF). It is quite clear that if all mining privileges were exercised at once then certain water courses would be dry at least at various points along their lengths. The reason we stress this point is because it was accepted by all of the parties and it is clear to the Court that the water plan could not and will not by regulatory methods control mining privileges. We note specifically that section 414 of the RMA does not apply in these circumstances because the water plan provisions have not been included at the request of the [mining privilege] holder. The only control in such circumstances is section 329 of the RMA which enables short term control in extreme situations. We understand this provision has not been used in Otago to date.

In this context, the ability of the Otago Regional Council to fix minimum flows across the catchment was an important means of controlling water allocation. Those catchments that had no minimum flow would effectively have uncapped water allocation.

The Otago region catchments and sub-catchments were found to have unique characteristics. The Court was, therefore, reluctant to rely upon the information from one catchment and use it as a basis for setting minimum flows in another catchment. The minimum flows in the Otago Regional Water Plan were based on points where the flow was measured in particular catchments. The measurements

¹²² At [18].

¹²³ At [8].

¹²⁴ At [23].

included data from the 1999 drought in Otago and influenced the setting of minimum flows as follows:¹²⁵

The water plan Schedule 2A minimum flow figures have been included as a result of the ORC's analysis of those measurements over a period of time relying particularly on the flows during the 1999 drought. In respect of some of the smaller catchments, for example the Shag at the Goodward Pump with a flow of 28 l/s, flow levels are so low that questions of accuracy become critical.

Later in the decision, under the heading "Effect of Minimum Flow Regimes on Farmers", the Court found that the concerns of the farming community were that "a very finely balanced system for water allocation cannot cope with the significant retention of water for instream values".¹²⁶ The value of water to the farming community in Otago was tied to the potential to improve financial outcomes. The Court heard evidence from witnesses supporting the view that the minimum flow should equate to the levels of the 1999 drought because these levels "indicated that the system could survive extreme conditions of low flows".¹²⁷ This view was supported by the Otago Regional Council "on the basis of the evidence from the 1999 drought".¹²⁸ The Court also acknowledged the collaborative approach of farmers outside the Otago Regional Plan. The farming community appeared to have a strong sense of ownership of the resource and decision making on how to share in times of scarcity, without regulation. It was put to the Court that "unreasonable minimum flows could simply lead to people utilising mining privileges or the like to their full extent".¹²⁹ This possibility put the Otago Regional Council in a difficult situation. The allocating authority was restricted in its ability to use regulatory tools to implement a water allocation plan under the RMA. While legally the Otago Regional Council could plan to increase minimum flows, in fact in practice, doing so could have exacerbated water allocation issues. In light of these circumstances, the Court concluded that "we accept that the ORC [Otago Regional Council] has

¹²⁵ At [43].

¹²⁶ At [164].

¹²⁷ At [164].

¹²⁸ At [164].

¹²⁹ At [169].

adopted a methodology of seeking to co-operate with rather than directly regulate farmers”.¹³⁰

The Court held that the setting of minimum flows in the Schedule 2A catchments at the 1999 drought levels was acceptable. The Court agreed that this level was the lowest that the catchments could sustain. There were measuring stations in these catchments to record the minimum flows. However, the default minimum flows for other catchments was unacceptable and the Court required that measurement must be undertaken for these other catchments to determine the appropriate minimum flow. The unscheduled catchments would have a minimum flow regime established once they had been reviewed. The setting of minimum flows, in this case, should be distinguished on its specific facts because of the existence and effect of mining privileges as deemed permits under the RMA, a situation which may not exist or may not affect the setting of minimum flows in other regions.

7.2 Fish and Game New Zealand (Central South Island Region) v Otago Regional Council

This case involved the setting of a minimum flow for the Kakanui River as part of the Otago Regional Water Plan. The Fish and Game Council and the Kakanui Ratepayers Improvement Society Ltd challenged the level of flow that was set. In setting the minimum flow, the Environment Court was guided by Part II of the RMA and the section 32 analysis required under the Act. The Environment Court noted the consensus between parties on particular points so that the “concerns relate more to the precise flow to be set at the appropriate measuring point, rather than the matters of principle underlying that”.¹³¹ As a result, rulings were sought on supplementary flows and the Court was not asked to comment on the fact that the primary allocation of the river was already over-allocated.¹³² The Court expressed

¹³⁰ At [172].

¹³¹ *Fish and Game New Zealand (Central South Island Region) v Otago Regional Council* C79/2002, EnvC (28 June 2002), the Kakanui Flows at [27].

¹³² At [28].

concern over the apparent lack of policing of the previous minimum flows regime under the Kakanui Catchment Management Plan.

The Court found that applications for supplementary flow in the Regional Policy Statement should be amended to be a discretionary activity because the public-interest element in making water allocations was of importance in the overall context of the catchment. One of the issues of concern raised by the Court was the “policing” of the earlier minimum flow by the Otago Regional Council. The final determination took into consideration the balancing of interests in the catchment, which included the fish habitat and concerns of landowners who used water for irrigation. A minimum flow level of 250 litres per second was set. However, if the flow fell below the minimum, the flow needed to revert to a higher level of 400 litres per second before returning to the minimum flow level. This novel approach to fixing the minimum flow was presented as a self-monitoring mechanism to encourage water users to ensure that the minimum flow was maintained.

7.3 Amendments to the Otago Regional Council Water Plan

The Otago Regional Water Plan has been revised since it became operative on 1 January 2004.¹³³ The changes focused on improving the connections between groundwater and surface water and addressed governance and water quality issues.¹³⁴ The connections between groundwater and surface water in Policy 6.4 affirm the importance of integrated water management for the Otago region. There is an additional requirement for those renewing groundwater takes. The groundwater takes will be renewed only for the volume of water that had been taken in the preceding five years. A further distinction in the Otago Region is that rationing rules are included in the Plan. For example, Policy 6.4.12C states: “Where

¹³³ Otago Regional Council *Regional Plan: Water for Otago* (Otago Regional Council, Otago, 2004). There have been 14 plan changes since the plan became operative in 2004. A list of the plan changes is available at Otago Regional Council “Regional Plan: Water” <<https://www.orc.govt.nz/plans-policies-reports/regional-plans/water>>

¹³⁴ At iii.

appropriate, to include in water permits to take water a condition that consent holders comply with any Council approved rationing regime”.

7.4 The Setting of Minimum Flows by the Waikato Regional Council

Another example of setting minimum flows under the RMA is Waikato Regional Council’s Variation 6 to its Regional Plan. The plan change was necessary because water allocation was potentially going beyond sustainable limits.¹³⁵ Variation 6 included a range of changes to improve water allocation including the setting of minimum flows.¹³⁶ The setting of minimum flows was challenged in Court as discussed below.

Carter Holt Harvey v Waikato Regional Council related to Variation 6 which was appealed by 26 parties.¹³⁷ The issue before the Court was whether the minimum flow at points of the Waikato River was fixed at an appropriate level. The Waikato River has several hydroelectric dams; thus, balancing the needs of electricity generation with other demands for water was a key issue. In particular, the minimum flow setting upstream of the Karapiro Dam to maintain minimum flows for the Waikato Hydro Electricity Scheme was a contentious issues between the

¹³⁵ *Carter Holt Harvey v Waikato Regional Council* [2011] EnvC 380 at [3] stated:

“Because of the demand for water for different uses within many parts of the Waikato region, the point has been reached where demand for water has the potential to exceed the sustainable supply. In some catchments the consents to take water already exceed the allocation limits. This has given rise to growing competition amongst present and prospective users of the region’s freshwater resources. Variation 6 is the Council’s attempt to meet this worsening situation”.

¹³⁶ Examples include improving environmental education in Rule 3.3.4.1. Voluntary water user groups are also encouraged with support from the Regional Council. The promotion of water groups under Rule 3.3.4.3 is to allow the groups to reach a point where they can be active in making decisions about allocation too. Rules, such as 3.3.4.9, are focused on establishing minimum flow levels and determining allocable flows. Rule 3.3.4.10 was important because it stated the methods over-allocation of water bodies would be phased out. The methods included stopping new allocations, encouraging voluntary reductions in water take or water harvesting, reviewing conditions of existing consents to gain efficiency, shared reductions across catchments, rostering water users, temporary restrictions under section 329 of the RMA, encouraging catchment groups to work on voluntary water take reductions and some further methods relating specifically to the dairy sector.

¹³⁷ *Carter Holt Harvey v Waikato Regional Council* [2011] EnvC 380.

hydroelectric company and other water users. The Environment Court stated that the setting of the minimum flow was effectively a decision between the existing allocation for the Waikato Hydro Electric Scheme to continue and irrigation. Those seeking more water for any use faced the prospect that further applications for water takes depended upon the ability to apply for a water permit. The chance of a water permit's being issued increased if there was more water available in the catchment. In the absence of a transfer mechanism between competing users, the fixing of minimum flows, therefore, determined the flow allocation for the Waikato River and how much water was available for other economic activities relying on access to water.

In setting the minimum flow for the Waikato River, the Environment Court considered a number of statutory requirements. Section 66(2) of the RMA required the regional council to take into consideration any proposed policy statements and relevant plans under other Acts. Section 67(3) required giving effect to any National Policy Statements. At this point, the relevant Acts included both the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010, including Schedule 2 containing the Vision and Strategy for the Waikato River and the Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010. This Act was part of a settlement process with the tribes of the Waikato region.¹³⁸ The relevant National Policy Statements issued under s52 of the RMA were the National Policy Statement for Renewable Electricity Generation 2011 and the National Policy Statement for Freshwater Management 2011.

The National Policy Statement on Freshwater Management 2011 directed regional councils to develop policies and plans to stop the over-allocation of freshwater. Variation 6 contained rules regarding the setting of minimum flows that took into account the needs of energy generation and irrigation. This decision considered the cost-benefit analysis of increasing the allocable flow above Karapiro, a point on the

¹³⁸ For further information on the Act and the settlement process see Linda Te Aho "Indigenous Challenges to Enhance Freshwater Governance and Management in Aotearoa New Zealand – The Waikato River Settlement" (2010) *The Journal of Water Law* 20; Jacinta Ruru "Indigenous restitution in settling water claims: the developing cultural and commercial redress opportunities in Aotearoa, New Zealand" (2013) 22 *Pacific Rim Law and Policy Journal* 311.

Waikato River. The Court held the allocable flow above Karapiro could be increased. Horticulture water users (represented by Horticulture New Zealand) had concerns about maintaining access to water at times when minimum flows were reached and sought priority in Variation 6 addressing minimum flows and water allocation. The key argument was that horticultural crops were less likely to be tolerant of drought conditions, which meant their water take should be prioritised. However, the arguments for priority were not accepted.

The setting of a minimum flow can vary across catchments. Each regional council can determine the method and minimum flow for different water bodies. The challenge to the Waikato Regional Council illustrated the lack of precedent for setting minimum flow levels under the RMA.

8 *Minor and Major Water Allocation in Regional Plans*

As explained above regional plans should include specific rules on water allocation such as rules for setting minimum flows. This section examines the other objectives, policies and rules that determine how water is allocated in regional plans. For the purpose of discussion in this section, the rules for water allocation in regional plans are categorised into those for minor and major water takes.¹³⁹ A comparable concept is that of “*planned* allocation” across different water sectors, as has been implemented in the Waitaki region.¹⁴⁰ In the New Zealand context, the major water takes are a more significant part of the water allocation story and for that reason they deserve greater attention. Two major themes that emerge from analysing regional plans are the variation in water allocation policies and the lack of comprehensive rules for major water takes such as irrigation or municipal water

¹³⁹ In Australian water law major water takes are referred to as “bulk water” takes.

¹⁴⁰ Sinclair Knight Merz “Alternatives to the “first in, first served” approach to water allocation” *Options to Improve Water Allocation Outcomes* (Ministry for the Environment, Ministry for Economic Development and Ministry of Agriculture and Fisheries, Wellington, 2005).

supply.¹⁴¹ It is also evident that some regions may not have prepared water allocation rules to prevent over-allocation.¹⁴²

Minor water takes include those takes permitted by Regional Plans and the RMA. Domestic water takes are one category of water take. However, minor water takes are not a significant part of water allocation in New Zealand.¹⁴³ Domestic water takes are allowed under section 14(3)(b) of the RMA for an “individual’s reasonable domestic needs”. Domestic takes do not require a water allocation application to be made. Regional Plans have addressed domestic water takes by defining the domestic water needs in section 14(3)(b) in a number of ways. This includes varying interpretations of “reasonable” needs for domestic water use. For example, Horizon’s Regional Council has placed a daily limit of 300 litres per person for domestic water takes.¹⁴⁴ In comparison, other regional councils have domestic water takes based on property or landholding, rather than a personal limit.¹⁴⁵ A further example of a minor take is dairy-shed washdown water.

¹⁴¹ The Canterbury region is discussed below as an example of a region where water allocation plans were not prepared. The Bay of Plenty Regional Council *Region-wide Water Quantity – Proposed Plan Change 9 Version 3.8* (Bay of Plenty Regional Council, Tauranga, 2017) It is under appeal from a number of parties including the Tauranga City Council. The Council is concerned about the potential effect of the proposed Plan affecting the ability for the Council to provide water for urban use into the future. It is arguing that the Proposed Plan is inconsistent with obligations as a future urban growth area under the National Policy Statement for Urban Development Capacity 2016. There are also concerns over the inconsistencies with Council obligations to provide safe drinking water under the Health Act 1956 and the Local Government Act 2002. See *Tauranga City Council v Bay of Plenty Regional Council* Notice of Appeal on behalf of Tauranga City Council Against Decision on Proposed Plan Change 9 (Region-Wide Water Quantity) (15 November 2018).

¹⁴² Cabinet Paper “Improving the Resource Management Act 1991” (CAB Min (04) 30/10) at [26]. Cabinet Papers also stated that there was “uncertainty over water allocation issues in the absence of regional plans” in some areas. Examples discussed in this chapter include the Waitaki and Canterbury regions.

¹⁴³ Ministry for the Environment & Statistics NZ (2017) *New Zealand’s Environmental Reporting Series: Our fresh water 2017*. (Ministry for the Environment, Statistics New Zealand, Wellington, 2017) at 61 states the greatest “consented” use of water is from irrigation and hydro-electricity.

¹⁴⁴ Manawatu-Wanganui Regional Council *One Plan 2014* (Horizons Regional Council, Palmerstone North, 2014) at 5-2.

¹⁴⁵ Bay of Plenty Regional Council *Region-wide Water Quantity – Proposed Plan Change 9 Version 3.8* (Bay of Plenty Regional Council, Tauranga, 2017). Water Quality Rule 1 defines reasonable domestic needs as a restriction on property size to 5 hectares and the take is not more than 15 cubic metres per day.

Environment Southland Regional Council Proposed Southland Water and Land Plan (Environment Southland Regional Council, Invercargill, 2016). sets the restrictions on surface

Previously, dairy-shed washdown water was not subject to the level of control and information collection that is now being included in some regional plans.¹⁴⁶

9 Major Water Takes and Irrigation in Regional Plans

Some water takes which are actually minor in nature have a higher profile than the cumulative effect of water takes that are from a major water use sector.¹⁴⁷ Regional council statistics show that water for irrigation accounts for over half of all consented water allocations in New Zealand.¹⁴⁸ The lack of actual data on water takes has affected the perception of sector-based water use. In 2018, the Auditor General audited how freshwater is measured and recommended that central government must guide regional councils towards the more efficient use of water.¹⁴⁹

water takes at not more than 2000 liters daily and 250 liters per hectare daily, up to a total limit of 40 cubic meters daily per “landholding” under Rule 49(a)(i).

Greater Wellington Regional Council *Proposed Natural Resources Plan For The Wellington Region 31 July 2015* (Greater Wellington Regional Council, Wellington, 2015) at Rule 136. For example, for a property greater than 20 hectares the limit on the volume per day is 20 cubic metres. On the other hand, properties less than 20 hectares have a daily limit of 10 cubic meters.

The current Canterbury Land and Water Regional Plan allows “small and community water takes” for surface water at specified volumes according to the flow of the waterbody in Rule 5.111. Groundwater takes are permitted if the take is less than 100 cubic meters daily if the property is more than 20 hectares and the bore is less than 20 metres away from the property boundary under Rule 5.113.

The Hawkes Bay Regional Management Plan republished in 2015 includes amendments for the Tukituki catchment. The take and use rules in the Plan in Rule 6.7.1 allows for domestic water take not exceeding 20 cubic meters daily per property.

¹⁴⁶ Regional Plans that have separate rules for dairymshed washdown water include Waikato Regional Council Regional Plan Variation 6 and the Bay of Plenty Regional Council Proposed Plan Change 9.

¹⁴⁷ Dominic Harris “Ecan accused of ‘bending the law’ over consents for water bottling plants” *stuff.co.nz* (16 March 2018) states that a water take consent by two companies in Canterbury is being challenged by campaigners, Aotearoa Water Action, in court. The companies had consents granted to take “8.8 billion litres of water a year” or “24 million litres a day”. The concerns raised relate to the sustainability of the consents and their potential to affect municipal water supply. However, in terms of volumetric comparison to consents for irrigation in regions. Concerns have also been raised about water permits being sold to overseas investors see Patrick Gower “Government ‘not concerned’ over massive water consent sale” *Newshub* (15 March 2017).

¹⁴⁸ Ministry for the Environment & Statistics NZ (2017) *New Zealand’s Environmental Reporting Series: Our fresh water 2017*, above n 36, at 59 stated “More than half the water allocated (or consented) by councils is for irrigation, but we do not know how much of this is actually used”.

¹⁴⁹ Auditor General *Monitoring How Water is Used for Irrigation* (Auditor General, Wellington, 2018). It confirmed that water meters had largely been installed in the six regional councils they

Water for irrigation has been a problem in some regions such as the Manawatu-Wanganui and Canterbury regions. The following analysis draws upon specific examples of regional plans that address water takes with reference to irrigation.

9.1 Horizons Regional Council's One Plan

The Horizons Regional Council Regional Plan, entitled One Plan, stated that while the Horizons Region has usually maintained adequate access to water for people's needs water still needs to be managed in response to dairy farming intensification:¹⁵⁰

There has been a substantial intensification within the agricultural sector in recent years. This has contributed to a vibrant and booming regional economy but has also increased pressure on the Region's water resources. There has been a significant increase in irrigation demand and the amount of nutrients leaching to surface water and groundwater. Although the impacts of agricultural intensification are less obvious than those caused by the major point source discharges and abstractions mentioned above, they have increased progressively over time.

The intensification of agriculture was linked to both water quality and water quantity in the quote above. Water quality was a particular issue in the region.¹⁵¹ The Horizons Regional Council has a policy of "reasonable and justifiable need for water" that must be met by applicants for certain water uses in Policy 5-12. Water for irrigation is subject a "reasonable use test" for their daily abstraction. In setting the reasonable use limit the Council can consider "consider land use, crop water use requirements, on-site physical factors such as soil water-holding capacity, and climatic factors such as rainfall variability and potential evapo-transpiration".

audited. The collection and use of data was the next step in improving the outcomes for water management based on that data.

¹⁵⁰ Manawatu-Wanganui Regional Council *One Plan 2014* (Horizons Regional Council, Palmerston North, 2014) at 5-2; Decision of the Environment Court Manawatu-Wanganui Proposed One Plan Appeals, Part 5 Surface Water Quality – Non Point Source Discharges; *Andrew Day v Manawatu-Wanganui District Council* 31 August 2012 [2012] EnvC 182.

¹⁵¹ *Horticulture New Zealand v Manawatu-Wanganui Regional Council* [2013] NZHC 2942 [24 September 2013] at [20].

These rules are linked the justification for water use to the characteristics of the soil. The basis for the Regional Council decision includes objective scientific measures and estimates. Objective scientific measures may assist in preventing speculative applications for irrigation water that go beyond the applicant's reasonable needs.

Further issues arose with the One Plan in 2017 when it was alleged that the Horizons Regional Council failed to implement water quality rules 14.2 and 14.4.¹⁵² The decision set a precedent for all regional councils to fully implement regional plan rules.

9.2 Environment Canterbury

Water allocation in Canterbury is a practical example of the failure of the RMA. Problems with Canterbury's regional planning for water allocation were identified in 2007.¹⁵³ Environment Canterbury had not developed a regional water allocation plan. Instead, Canterbury had "a long history of experimenting with CG [collaborative governance] approaches as a complement to its traditional regulatory role".¹⁵⁴ The collaborative governance processes worked with non-government groups outside the statutory processes of the RMA and usually involved farmers voluntarily forming an irrigation collective.¹⁵⁵ The first benefit of this approach is that such groups provide a means to encourage greater involvement in water allocation with benefits such as "greater flexibility to informally trade water amongst members".¹⁵⁶ The other benefit put to farmers in the Canterbury region

¹⁵² *Wellington Fish and Game Council v Manawatu Wanganui Regional Council* [2017] NZEnvC 37. Wellington Fish and Game Council, sought a declaration under section 310 of the RMA for the Court to investigate if a "power or function" under the Act was omitted or contravened.

¹⁵³ Minister for the Environment, Minister of Agriculture Appendix 1 Background on Sustainable Water Program of Action in New Start for Freshwater Cabinet Paper (n.d.).

These problems were "contrary" to the expectations of central government. See Ministry for the Environment *Briefing Paper: Joint Ministers meeting with MAF and MfE Reference 08-B-0260* (Ministry for the Environment, Wellington, 2008).

¹⁵⁴ Cameron Holly and Andrew Lawson. "Implementing environmental law and collaborative governance." (2015) *Implementing Environmental Law 238*; The Canterbury Water Management Strategy was an example of collaborative governance developed with the guidance of the Canterbury Mayoral Forum and published in November 2009.

¹⁵⁵ Above at 244.

¹⁵⁶ Above at 245.

was to “stave off regulation”.¹⁵⁷ In theory, collaborative governance provides more “flexible and cheaper regulations”, can bring together divided communities, “offers environmental outcomes that are as good as or better than top down regulation” and can expand democratic participation.¹⁵⁸ However, the experience in Canterbury challenges these theoretical assertions.

In 2010, the Minister for the Environment and Minister of Local Government initiated the review of Environment Canterbury.¹⁵⁹ The review found problems with the implementation of the RMA by Environment Canterbury. It found “a significant gap, characterised as “enormous and unprecedented”, between what needs to be done in Canterbury to appropriately manage water and ECan’s ability to do so”.¹⁶⁰

One of the key omissions was that Environment Canterbury did not have a statutory plan for water management:¹⁶¹

It is not compulsory under the RMA for regional councils to develop statutory plans for the management of fresh water. However, it is surprising, given the complexity of Canterbury’s ground and surface water resources and the degree of demand for access to these resources, that ECan [Environment Canterbury] does not have an operative first-generation plan for managing water in the region.

A possible reason for the lack of progress was stated in another research paper, published before the Review Group Report, identifying a policy gridlock on water modelling.¹⁶² The gridlock involved perceived differences between water allocation models. “The centre of Canterbury’s struggle over water management is

¹⁵⁷ Above at 245 citing interview NZI, Government.

¹⁵⁸ Ann Brower "Is collaboration good for the environment? Or, what’s wrong with the Land and Water Forum?" (2016) 40(3) NZJE 390.

¹⁵⁹ Rt Hon Wyatt Creech (Chair), Doug Martin Greg Hill and Doug Low. *Investigation of the Performance of Environment Canterbury under the Resource Management Act and Local Government Act* (prepared for Ministry for the Environment, Wellington, 2010).

¹⁶⁰ At [6].

¹⁶¹ Above.

¹⁶² Edward P Weber, Ali Memon and Brett Painter “Science, Society, and Water Resources in New Zealand: Recognizing and Overcoming A Societal Impasse” (2011) 13 J. Environ. Pol. Plann.49-6. Quotes used in this paragraph are at 50.

the science that maps the hydrological characteristics of the region”.¹⁶³ On the one hand, the “Aqualinc” model “supports the continuing withdrawal of groundwater”.¹⁶⁴ On the other hand, Environment Canterbury, environmentalists and urban residents tended to find greater validity in the computer modelling, i.e. the “bathtub” model. The “bathtub” model supported the idea that water takes in one aquifer impacted regional water availability. Consequently, the different scientific models resulted in a “science impasse” with each side “convinced that their respective approach should guide water management decisions and policies”.¹⁶⁵ The Review Group report did not go into detail regarding the scientific debate between Environment Canterbury and development interests, nor the negative impact it was having by stalling water allocation planning.¹⁶⁶

The Review Group report also identified the slow processing of resource consents.¹⁶⁷ First, the expansion of the dairy industry in the region increased the number of resource consent applications. Second, when Environment Canterbury notified the Natural Resources Regional Plan in 2004 the Plan contained “sustainable take limits” which increased the number of water consent applications. Third, as water allocations reached sustainable limits in some areas the “first-come first-served” rule created a “gold rush” effect. For Environment Canterbury the “first come, first served” priority rule led to applicants wanting to ensure they had access to water by applying for consents first. The demand for water “was exacerbated by the boom in dairy farming and other rural production (which required irrigated land), and the competing demands of energy generators” and as a result “water became a very valuable resource”.¹⁶⁸ Environment Canterbury should have anticipated the land use changes to dairy conversion and the “gold

¹⁶³ At 50.

¹⁶⁴ At 50.

¹⁶⁵ At 50.

¹⁶⁶ At 36 states that policy development was restricted by a conservative approach and the processing of resource consent applications was influenced by the perception that “the organisation (resource consenting) is science led rather than science informed”.

¹⁶⁷ At 27.

¹⁶⁸ At 27.

rush” effect that followed.¹⁶⁹ Due to the increased numbers of consent applications, consents were “bundled” but without using s37A(2) of the RMA that allows for an extension of processing time where applicants agree to an extension.

Staffing issues also hindered the processing of water allocation applications. Incomplete or substandard applications under section 88 of the RMA were accepted to help facilitate “improvement without formally seeking additional information via s92 of the RMA”.¹⁷⁰ While this practice showed an effort to work with applicants, it also slowed the processing of applications. The lack of qualified staff in planning and resource management was recognised as “not unique to ECan but was being experienced across the country”.¹⁷¹ The Review Group report described planning and policy development within Environment Canterbury as “narrow and conservative”.¹⁷² While the Review Group report was critical of staffing issues and the lack of a wider planning approach, it did not delve into the scientific “impasse” affecting water allocation planning.

9.3 Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010

These problems with Canterbury water planning and consent processing resulted in direct central government intervention. The purpose section of the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 in section 3(a) was to “provide for the replacement of the elected members of the Canterbury Regional Council with commissioners who will act as the Council’s governing body”. The role of the Commission was stated in section 3(b) of the Act as addressing “issues relevant to the efficient, effective, and sustainable management of fresh water in the Canterbury region”. The Act gave central

¹⁶⁹ At 27.

¹⁷⁰ Creech and others above n 154.

¹⁷¹ At 27 Fn 10.

¹⁷² At 36. The views of external parties are cited in stating “officers” reports on plans are poor – generally low-quality analysis, pedantic, follow the letter of the law (very narrow) and risk averse”

government power to control the situation. Section 10 allowed the Minister for the Environment to appoint between four and seven Commissioners to replace the elected board of Environment Canterbury. Section 22 suspended the 2010 and 2013 election of Commissioners to the board. The nature of central government's ad hoc intervention in Canterbury resonates with the concerns that Palmer raised over a return to centralised planning for water allocation, something that the RMA was designed to mitigate.¹⁷³ Had national direction and regional plans in place, the Canterbury experience would have been the antithesis of water allocation under the RMA framework. Without the complete water allocation framework, Canterbury became a prime example of water over-allocation under the RMA. Over-allocation and water for irrigation are intertwined in the Canterbury region.

9.4 Taranaki Regional Council Freshwater Plan and the “first come, first served” rule

The current Regional Freshwater Plan prepared by the Taranaki Regional Council implements the requirements of the National Policy Statement Freshwater Management 2014 through a Progressive Implementation Programme for a Draft Freshwater Land and Management Plan.¹⁷⁴ The Progressive Implementation Plan details the progress that has been made on planning for water allocation and water quality issues. Taranaki Regional Council has also prepared further plans that address aspects of the National Policy Statement Freshwater Management 2014. In 2017, the Regional Council released the Taranaki Regional Requirements for Good Farm Management, which addressed issues relating to dairy effluent, wetland protection and riparian management. The Regional Council aims to fully implement the National Policy Statement Freshwater Management by the year 2025, or 2030.

¹⁷³ See Palmer, above n 42.

¹⁷⁴ First released in 2015 as the Taranaki Regional Council *Implementation Programme for the National Policy Statement Freshwater Management* (Taranaki Regional Council, New Plymouth, 2015). The Implementation Program was revised in 2018 in response to the review of the National Policy Statement Freshwater Management 2014. Taranaki Regional Council *Progressive Implementation Programme for the National Policy Statement Freshwater Management* (Taranaki Regional Council, New Plymouth, 2018).

The current Regional Freshwater Plan is extensive and includes the method and reasoning for adopting a particular policy approach. In Chapter 5 of the Plan, “The Use and Development of Freshwater”, the contextual summary acknowledges the various industries that rely upon water in the region including municipal water supply, hydroelectric power generation, water used in primary production industries such as freezing works, dairy and petroleum.¹⁷⁵ While the document does not specifically mention water takes for irrigation, the summary does provide a detailed view of freshwater issues facing the region. However, there is no ranking of the issues in terms of their importance. In comparison, some of the other Regional Plans lack a detailed context such as the one provided by Taranaki.¹⁷⁶ Policy 6.1.5(b) is unique in that it attempts to deal with competing demands for surface water as follows: b) where there are competing uses for water, or in catchments identified in Policy 6.1.2, the degree of community or regional benefit from the taking, use, damming or diversion as distinct from private or individual benefit needs to be taken into account.

The case law on competing claims to water clearly does not allow for a comparative assessment of competing applications.¹⁷⁷ However, in the Taranaki Council Regional Freshwater Plan there is a specific rule allowing the consideration of competing use when processing an application for surface water takes.

The “Explanation” for Policy 6.1.5 is reproduced in full below because it is such a departure from rules in other regional plans, which generally do not focus on competing applications in such a direct manner. This section is also included because of the case law regarding competing applications and the emphasis on the priority rule for applications to be determined under the “first-come, first-served” precedent.¹⁷⁸

Policy 6.1.5 sets out a number of specific matters which the Taranaki Regional Council will take into account in assessing resource consent applications for the taking, use, damming or diversion of water. These matters in the main relate to determining water allocation priorities among competing users and means whereby water users can avoid, remedy or mitigate any adverse environmental effects of the activity. The Taranaki Regional Council will consider the need to ensure that surface water is available for reasonable domestic needs, and for stock watering and

¹⁷⁵ Taranaki Regional Council *Regional Freshwater Plan* (Taranaki Regional Council, New Plymouth, 2001) at 37.

¹⁷⁶ For example, the Northland Regional Council decided not to take this approach as indicated in the introduction to its Regional Plan. In terms of specific water allocation issues the Water Resources Plan states the “potential for conflict between competing users” at times when there are lower flow levels.

¹⁷⁷ See discussion below in this Chapter at “10 Determining Priorities for Freshwater Allocation”.

¹⁷⁸ Above. A full account of the “first-come, first-served” included below.

firefighting purposes. Where there are competing uses for water, the Taranaki Regional Council will consider the degree of community or regional benefit from the activity as distinct from private benefits or benefits that arise primarily to individuals. Where there are no competing uses, the Taranaki Regional Council will allocate water on a ‘first-come, first-served’ basis. In either event, water allocated may be transferred to other water users in accordance with Policy 6.1.9. Policy 6.1.5 requires further, that applicants justify the need for the water sought, ie, that the volumes sought are reasonable having regard to the intended use and local conditions, and that water be used efficiently with a minimum of waste. The Taranaki Regional Council will also take into account what alternative water supplies, or water collection or storage methods have been considered.

The policy statement above maintains that where there are no competing applications for water take the “first-come, first-served” rule applies. However, if the surface water body is approaching a situation where granting one application may exclude another, then wider community benefits can be taken into consideration ¹⁷⁹ However, the “first-come first-served” precedent does not distinguish between applications in the manner that the rule has on the basis of competing uses ¹⁸⁰ The “first-come, first-served” precedent requires regional councils to process applications in the order that they are received, without making comparisons with other potential applications. Making comparisons with other water permit applications conflicts with the “first-come, first-served” precedent. From a legal perspective, such a conflict is problematic.

10 Determining priorities for water allocation

New Zealand does not have a specific list of priorities that determine the outcome of water allocation applications. As explained above, regional councils set the guidelines for water allocation. These rules specify when water allocations are allowed or require an application for a resource consent to be lodged with the regional council. Regional councils are not required to provide a list of priorities

¹⁷⁹ The taking and use of groundwater is addressed separately in the Water Resources Plan. Groundwater availability is under less stress than surface water. The take and use of groundwater is regulated to ensure that its take and use remains within the sustainable extraction limit for the aquifer. Rule 46 of the Plan permits the take of water of up to 50 cubic metres per day. The Taranaki Regional Council has not included the competing water takes rule (used for surface water allocation) in the groundwater allocation rules.

¹⁸⁰ See discussion below in this chapter “How does New Zealand determine priorities for water allocation and why is it important?”

for water allocation. As a result of the lack of guidance on priority, the issue of priority between competing applications may be litigated in court. This section examines how the court determines issues of priority between competing applications. It shows that ultimately, the court is not considering the merits of one application against another because the RMA does not allow for this type of comparison to occur. The analysis also shows the development of precedent with its reliance on property-type concepts.

10.1 Fleetwing Farms v Marlborough District Council and the “first-come, first-served” Precedent

Fleetwing Farms v Marlborough District Council was the first case under the RMA to consider the treatment of competing applications for the same resource.¹⁸¹ In this case, the Marlborough District Council received two competing applications for mussel farming in the same area of seabed. Granting one application would exclude the other. Initially, Aqua King filed a resource consent application in September 1992 to establish a marine farm in Port Underwood. The Marlborough District Council requested further information from Aqua King before the application could be processed.¹⁸² Then, in November 1992, Fleetwing Farms’ application for a mussel farming in the same area of Port Underwood was also accepted by the Council.¹⁸³ Later, the Council advised Fleetwing Farms it made an error in accepting both applications for the same area of water. Eventually, both applications were heard and declined on the same day.

In the litigation history of this case, it proceeded on appeal to the Environment Court, High Court and Court of Appeal before being reconsidered by the Environment Court. The Court of Appeal directed the Environment Court to reconsider the applications to determine which applicant had priority under the

¹⁸¹ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA).

¹⁸² *Fleetwing Farms Ltd v Marlborough District Council* W101/97 [1997] EnvC 362 (26 November 1997) at 3.

¹⁸³ *Fleetwing Farms Ltd v Marlborough District Council* [1996] NZRMA 369 (HC).

relevant administrative provisions of the RMA.¹⁸⁴ The Court of Appeal found that the statute provided timetabled requirements for resource consent processing and provided a careful analysis of relevant sections to show that a comparative analysis is not allowed under the RMA.¹⁸⁵ This assessment guided the Environment Court in determining which applicant had priority where the applications were for the same resource and similar activity.

The Environment Court considered the role of sustainable management in determining which applicant had priority:¹⁸⁶

The **purpose** of the Act is the promotion of sustainable management of natural resources – in this case the coastal marine area of Jerdens Bay. So what is required of a consent authority in processing applications for the allocation of natural resources is prompt advancement of, or active support for, the form of management set out in the timetabling provisions.

The Environment Court also considered whether the merits of one application should be compared to those of another potential applicant. The Court considered the previous law, the Marine Farming Act 1971, where the likelihood of financial success of an applicant's proposal was relevant in deciding whether or not to grant a resource consent.¹⁸⁷ However, the Environment Court found that the RMA did not contain a similar requirement to consider the financial success of an application. The Court concluded that there was “nothing in the Act to warrant refusing an application on the ground that another applicant would or might meet a higher standard than the Act specified”.¹⁸⁸ Specifically, the RMA “does not regulate competing applications”.¹⁸⁹ In the absence of a statutory rule for determining

¹⁸⁴ *Fleetwing Farms Limited v Marlborough District Council* W101/97 [1997] EnvC 362 (26 November 1997) at 3. The decision as to priority between Fleetwing Farms and Aqua King was referred back to the Environment Court following the Court of Appeal decision in *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA).

¹⁸⁵ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA).

¹⁸⁶ *Fleetwing Farms Limited v Marlborough District Council* W101/97 [1997] EnvC 362 (26 November 1997) at 8.

¹⁸⁷ Marine Farming Act 1971, s 8(3).

¹⁸⁸ At 8.

¹⁸⁹ *Fleetwing Farms Limited v Marlborough District Council* W101/97 [1997] EnvC 362 (26 November 1997) at 8.

priority between competing uses for water allocation, priority by time emerged as the method by which priority between competing applications for a resource consent would be determined. Thus, the first applicant to have a complete application ready to be accepted for lodgement by the regional council should be the first to be heard, a situation which is referred to as the “first-come, first-served” rule for water allocation. In subsequent cases, the Court has applied this precedent as parties focus on the administrative aspects of the RMA. The following decisions show the development of this priority rule for water allocation and its implications.

10.2 Geotherm Group Limited v Waikato Regional Council

On 29 March 2001, Geotherm Group applied for a resource consent to develop a geothermal power station. Contact Energy, the second respondent, applied the next day for a resource consent to access geothermal fluids in a different location but from the same resource, the Wairakei geothermal field. Both applicants were asked for further information. Contact Energy’s application was the first to be ready for public notification, while Geotherm Group was the first to meet the requests for further information. The Waikato Regional Council followed the precedent in *Fleetwing Farms v Marlborough District Council* in determining that Contact Energy’s application was the first to be ready for public notification, which meant it should be heard first. The Environment Court confirmed that Contact Energy had priority.¹⁹⁰ The High Court confirmed that priority should be given to the application that is first in time ready for notification. The High Court declined to make the declarations sought by Geotherm Group that it had priority because it had responded to the request for further information first.¹⁹¹

¹⁹⁰ *Geotherm Group Ltd v Waikato Regional Council* (2002) 9 ELRNZ 75 (EnvC).

¹⁹¹ *Geotherm Group Ltd v Waikato Regional Council* (2003) 9 ELRNZ 335 (HC).

10.3 *Aoraki Water Trust v Meridian Energy*

The Court applied the non-derogation principle in determining the outcome of this case. An existing water permit allocating all the water in the catchment to Meridian Energy, a power generation company, was challenged by a later applicant wanting water for an irrigation scheme. The plaintiff, Aoraki Water Trust, effectively challenged the “first-come, first-served” precedent established in *Fleetwing Farms v Marlborough District Council*, as discussed above. In March 2003, Aoraki Water Trust lodged an application to take water from Lake Tekapo for an irrigation scheme.¹⁹² Meridian Energy already held a consent to take all the water from Lake Tekapo for electricity generation. On 31 March 2003, Meridian Energy sought a declaration under s 311 of the RMA to provide certainty regarding the extent of rights granted under the water permit it held.

The legal arguments from both parties were based on the nature of property rights in a water permit. On the one hand, Aoraki argued that the nature of rights in Meridian’s water permit did not prevent it from applying for water from Lake Tekapo too. Aoraki argued that the nature of the rights held by Meridian Energy were “no more than a privilege and permission” subject to “natural events” and “any later grant of permits to others”.¹⁹³ Aoraki argued there was a distinction between a “water right” and “water permit” and a “water permit” issued under the RMA was “not a property right”.¹⁹⁴

A water permit is not a property right because, although it carries a valuable economic right, it is not freely transferable, does not usually give an exclusive right to the water specified in the permit, and cannot guarantee its availability. Its economic value and limited transferability does not thereby convert the permit into a property right because, as noted, the effect of a grant to take natural water is to make lawful what would otherwise be unlawful. In this context s 122, which declares that a resource consent is neither real nor personal property except in limited circumstances, is relevant...

¹⁹² *Aoraki Water Trust v Meridian Energy* [2005] 2 NZLR 268 (HC).

¹⁹³ At [22].

¹⁹⁴ At [22].

In response, Meridian submitted that a water permit was a “legal determination” allocating all the water flowing through the catchment into Lake Tekapo.¹⁹⁵ Meridian’s contention of an exclusive right to water under the water permit was also based on property rights arguments. It argued that once the Council issued the water permit, the permit holder was “immune from enforcement procedures relating to the permitted activity”.¹⁹⁶

The Court decided against Aoraki. From a practical perspective, the Court found that accepting Aoraki’s position, to reject the “first-come, first-served” priority rule, would place limits on councils’ ability to manage water allocation.¹⁹⁷ The Court’s second line of reasoning examined the status of a water permit in property law. However, section 122(1) of the RMA expressly states that “A resource consent is neither real nor personal property”. In applying property law concepts to a water permit, the Court determined that a further allocation of a water permit to Aoraki would derogate from the water permit held by Meridian Energy.¹⁹⁸ The Court applied the property law principle of “non-derogation” from a grant in determining Meridian Energy’s position as the exclusive holder of water in Lake Tekapo, which confirmed its rights under its water permit. Lake Tekapo was fully allocated by the water permit held by Meridian Energy. The Court’s decision confirmed the exclusive nature of Meridian Energy’s access to the water allocated under the permit.

The decision was later critiqued by Barton for confusing property rights in a resource consent with the water itself and conflicting with the requirement under section 122 of the RMA.¹⁹⁹ There were sufficient administrative provisions that would have resulted in the same legal outcome without relying upon property

¹⁹⁵ At [23].

¹⁹⁶ At [25].

¹⁹⁷ At [28].

¹⁹⁸ At [34].

¹⁹⁹ Barry Barton “The Nature of Resource Consents: Statutory Permits or Property Rights” paper presented to New Zealand Law Society Environmental Law: National Issues Intensive Conference, July 2001, 51.

rights.²⁰⁰ It is important to understand that the non-derogation principle would not be followed in later cases, as discussed in *Hampton v Canterbury Regional Council* below. In *Aoraki Water Trust v Meridian Energy* it is evident that the Courts were taking an approach which was not a part of the RMA water allocation framework. The evidence supporting the fact that there was a divergence from the RMA each time property law concepts were applied is the link with transferability. The inclusion of property-related concepts in allocation water would only have made sense from legal policy development if there was a concurrent development of transferability mechanisms for water permits.²⁰¹ Under the RMA, transferability of water permits has limited statutory recognition. Hence, it was always the administrative provisions of the RMA that underpinned water allocation, not property law-related concepts.

10.4 Southern Alps Air Ltd v Queenstown Lakes District Council

The principle of non-derogation was also considered in *Southern Alps Air Ltd v Queenstown Lakes District Council*.²⁰² The facts of this case are summarised as follows. Southern Alps Air Limited, a commercial jet boat operator, applied for a resource consent to operate on Lake Wanaka and the Wilkin River. The regional council declined the application. The Environment Court decision also denied Southern Alps Air the resource consent. The Environment Court decision was based on two grounds: safety principles and non-derogation of the water permit.²⁰³ The High Court reversed the Environment Court ruling on two grounds: the nature of rights in a resource consent and the application of maritime rules that could assist in addressing safety issues. In the High Court, River Jet argued that legal acceptance

²⁰⁰ Barry Barton “Different kinds of argument for applying property law to resource consents” (2016) RMJ 1 at 1.

²⁰¹ Above at 2:

The grant of these incidents of property recognised the advantages of private ordering. Transferability might have its benefits, but Parliament did not try to create a world in which consents can be freely traded independently of the site for which they were granted. Transferability is to be evaluated against the public law criteria of the Act, not in protection of the economic interests of the consent holder.

²⁰² *Southern Alps Air Ltd v Queenstown Lakes District Council* (2007) 13 ELRNZ 221; [2008] NZRMA 47 (HC).

²⁰³ *Southern Alps Air Ltd v Queenstown Lakes District Council* [2007] NZRMA 119 (EnvC).

of the non-derogation argument “was not a question of law, but rather one of fact and degree”.²⁰⁴ The grant of a further consent would inhibit the river jet from being able to operate without any restrictions on the timing of activities. The High Court held there would be no significant derogation if a further resource consent were granted.²⁰⁵ In reaching this decision, the Court considered *Dart River Safaris v Kemp* but distinguished it on its facts, concluding that it had limited precedent value because it did not have a “derogation assessment”.²⁰⁶ However, the decision in *Aoraki Water Trust v Meridian Energy* was found to be relevant and the High Court found that a derogation needs to be significant. The case was then referred back to the Environment Court for reconsideration. The Environment Court declined Southern Alps Air’s resource consent again on the basis that the aggregate effect on amenity values would be too high. The Environment Court also observed the following:²⁰⁷

If the Queenstown Lakes District Council wishes to increase competition on the Wilkin River, the remedy is at least partly in its hands — for future applications on other rivers anyway. It should give single operators fewer trips and make them both for limited terms and non-aggregative.

In this instance, an initial application for a resource consent was lodged in 2005 and the final decision of the Environment Court was received in 2010. The extensive litigation history gave rise to significant costs for both the parties. Nevertheless, the principle of non-derogation was confirmed. This case advanced the non-derogation principle by clarifying that for derogation of a water permit to occur there must be a significant derogation.

²⁰⁴ *Southern Alps Air Ltd v Queenstown Lakes District Council* (2007) 13 ELRNZ 221: [2008] NZRMA 47 (HC) at [33].

²⁰⁵ At [47].

²⁰⁶ *Dart River Safaris v Kemp & Anor* [2000] NZRMA 440 (HC).

Southern Alps Air Ltd v Queenstown Lakes District Council (2007) 13 ELRNZ 221[2008]: NZRMA 47 (HC).at [37].

²⁰⁷ *Southern Alps Air Ltd v Queenstown Lakes District Council* [2010] EnvC 381: ENV-2006-CHC-7, 8 November 2010 at [102].

10.5 Central Plains Water Trust v Ngai Tahu Properties

This case concerned competing applications for water from the Waimakariri and Rakaia Rivers. Central Plains Water Trust had applied to take water in 2001, an act which the Canterbury Regional Council later determined required notification. However, the Trust could not proceed with the notification until a further resource consent for the proposed water use was filed. In 2005, Ngai Tahu Properties filed a complete water take and use application to irrigate 5700 ha of land to convert forestry to pasture.²⁰⁸ The Environment Court granted Ngai Tahu preliminary consent in a decision issued on 20 April 2006, which acknowledged that if Central Plains Water Trust had priority, then Ngai Tahu's conditions of consent would limit their access to water.²⁰⁹ Ngai Tahu then filed for a declaration from the Environment Court that it had priority.²¹⁰ The key issue before the Courts was which application had priority on the basis of being the first to file or the first application ready for public notification. The Environment Court followed *Geotherm v Waikato Regional Council* in holding that the notification stage was a trigger for determining priority between the parties. The Environment Court found that when Central Plains Water Trust's application was put on hold by the Canterbury Regional Council that meant Ngai Tahu was first in reaching the notification stage and had priority over Central Plains Water Trust:²¹¹

The notion of "first come first served" was claimed in argument to favour the approach to priority espoused on each side. For CPWT, a modest proposal was said to be likely to require less research and preparation time, thus enabling an applicant to submit its consent applications relatively speedily, by contrast with an applicant seeking to promote a relatively large and complex scheme. We accept that that may appear unfair from a level playing field perspective, but it may also be argued that a large project is likely to generate greater effects, so that priority should not attach merely because the proposal is large in scope. An element of "unfairness" might be thought to arise were such an applicant allowed to proceed without the consent authority having an appropriate understanding of the nature of the proposal in question.

²⁰⁸ *Re Ngai Tahu Property Ltd Christchurch C104/06*, (EnvC) (21 August 2006) at [2].

²⁰⁹ At [6].

²¹⁰ Above.

²¹¹ At [80].

The Environment Court granted the declaration confirming Ngai Tahu had priority. The subsequent appeal by Central Plains Water Trust in the Environment Court was unsuccessful. The High Court also found in favour of Ngai Tahu.²¹² However, the issue of a larger development being trumped by a later less complex proposal continued to be of relevance. Leave to appeal to the Court of Appeal was granted with the acknowledgement that not only were matters of law requiring confirmation but also because the scale of the proposed development meant many parties would be affected by the outcome of the decision.²¹³

In the Court of Appeal, counsel for both sides accepted the “first-come, first-served” rule and presented arguments based on procedural issues.²¹⁴ It was confirmed that “priority is on a first come, first served basis” and the Court held that the priority rule by the earlier time of application is “subject to exception”.²¹⁵ However, as neither party made submissions challenging the appropriateness of the “first-come, first-served” rule this point was not addressed further by the Court. Consideration of larger developments was perceived as being in the public interest, which should not be “trumped or significantly interfered with by later small, simpler inconsistent proposals that can be made comprehensively without needing to proceed in stages”.²¹⁶ Central Plains Water Trust was part of a larger irrigation development that would proceed in stages. Similar constraints did not bind the later applicant regarding the size and scale of its resource consent application. The Court of Appeal found in favour of Central Plains Water Trust reversing the decision of the lower courts because of factors relating to the scale of its proposal.

²¹² *Central Plains Water Trust v Ngai Tahu Properties Ltd* (2006) 13 ELRNZ 63 (HC).

²¹³ *Central Plains Water Trust v Ngai Tahu Properties Ltd* Christchurch CIV-2006-409-2116, 8 February 2007 (HC).

²¹⁴ *Central Plains Water Trust v Ngai Tahu Properties Ltd* [2008] NZCA 71; (2008) 14 ELRNZ 61; [2008] NZRMA 200 at [7].

²¹⁵ At [26] and [27] per Baragwanath J.

²¹⁶ At [59].

10.6 The Legal Implications of the “first-come, first-served” Rule

The Court has expressed that it considers the “first-come, first-served” principle as a “working solution” to the legal problem of how to determine priority between competing water allocation applications:²¹⁷

[89] There can scarcely be a more difficult and important issue in this day and age than the allocation of priority to water rights as applications are made for resource consents. As matters stand in New Zealand, because there is not a distinct statutory solution our courts have had to step in “interstitially” and come up with a working solution. As a very general proposition, the issue is presently determined by a “first come first served” approach. What has caused difficulty in this particular case is the application of that formula, which was evolved in a relatively simple context in *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257, to a vastly more complex context.

The “simple context” referred to in the quote above in *Fleetwing Farms v Marlborough District Council* was that both applicants were commercial competitors applying for a resource consent for essentially the same type of activity, marine farming. As both applicants were applying for similar purposes, it would not be correct to compare one application with another because the effects of granting a permit to either applicant would be the same or similar. However, in *Central Plains Water Trust v Ngai Tahu Properties* the applicants were not taking water for the same use and it is “arguable that *Fleetwing* does not deal with the situation where the applicants are not similar commercial competitors”.²¹⁸

The Supreme Court issued an interim judgment advising that the Court wished to hear arguments on whether the *Fleetwing Farms v Marlborough District Council* principle applied the grounds a consent authority should decide priority between competing applications.²¹⁹ However, before the decision was issued, the parties reached an agreement.

²¹⁷ *Central Plains Water Trust v Ngai Tahu Properties Ltd* [2008] NZCA 71; (2008) 14 ELRNZ 61; [2008] NZRMA 200 at [89].

²¹⁸ At [37].

²¹⁹ *Ngai Tahu Property Ltd v Central Plains Water Trust* [2008] NZSC 24. An amicus curiae was also to be appointed in order to address these issues.

10.7 *Hampton v Canterbury Regional Council*

Simon Hampton (Simon) held a resource consent (granted in 2004) to take water to irrigate his land. An initial application made by Simon was amended to include his cousin's, Robert Hampton's (Robert), neighbouring farm. In 2008, Simon applied for a portion of the resource consent to be transferred to a third party. Initial documents showed that Robert's land would no longer receive irrigation water.²²⁰ However, Robert was later granted a servient consent that allowed him to take water when Simon was not irrigating his land. The consent granted to Robert meant that Simon was no longer able to transfer the water to the third party. Simon applied for a judicial review of the decision.

In the High Court, Simon argued that the grant of the second consent to Robert had affected his rights under s136 of the RMA to transfer his consent to another site. On this point, the Court found that there was no guarantee that the consent would be transferred and that any transfer was still subject to meeting the requirements in the relevant regional plan.²²¹ Simon's main argument was that there was a derogation from his grant under the resource consent. The Court distinguished the facts of *Aoraki v Meridian Energy* on the basis that it was dealing with a situation where the resource was already fully allocated and where the grant of another consent would reduce the amount available to Meridian Energy.²²² In this case, Simon's ability to take water was not affected by the fact that Robert was able to take water as a servient consent. At all times Simon would be able to take the full amount of water as specified in his resource consent:²²³

Intrinsically the water is not owned by anyone let alone the consent holder, it is managed by the respondent through the Act, and the relevant water plan. Upper limits are put on what can be taken by each permit holder. The respondent's role throughout is to ensure that the amount of water granted in a consent is reasonable and meets the reasonable irrigation needs of the recipient property or properties specified in the application. In this case there is no limit placed on Simon's consent, nor is it in effect varied by Robert's consent which is a pure back-stop and subservient right. The two for

²²⁰ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2013] NZRMA 482 (HC) at [13].

²²¹ At [71].

²²² At [80].

²²³ At [84].

example cannot operate simultaneously, and Simon’s right to draw water for use clearly takes priority. There has been no derogation from Simon’s grant here.

The High Court dismissed Simon’s appeal for a judicial review of Environment Canterbury’s decision. Simon appealed the High Court’s decision in the Court of Appeal.

In the Court of Appeal, the two issues of the ability of Simon to transfer the consent to a third party and non-derogation from a resource consent were put before the Court. The Court of Appeal confirmed the discretionary nature of regional council decision-making powers. Simon could not expect that the transfer would occur because “any right of transfer was clearly contingent on the grant of a consent to do so”.²²⁴ On the point of non-derogation, the Court addressed the decision in *Aoraki v Meridian Energy*, as discussed above, confirming that the decision was correct in the circumstances of a fully allocated catchment. The Court went on to astutely distinguish the facts of Simon’s consent. In addressing the non-derogation argument, the Court focused first on the question of the nature of property rights in the resource consent by referring to s122(1) of the RMA. The Court stated that a claim to property would only exist where the facts show that “contrary to s 122(1) of the Act, Simon’s resource consent is seen as conferring a property right”.²²⁵ A further observation was that Simon had not agreed to charge Robert for the water linked to Robert’s land:²²⁶

Accepting, as he must, that under CRC042233.3 the water taken could only be used to irrigate Robert’s land, any detriment he suffered by the grant of CRC11062 was simply an inability to charge Robert for any water taken from the bore on Simon’s land and used on Robert’s land.

It is relevant that Simon was unable to secure payment for the water that would be used by Robert. An alternative option for Simon was to enter into a contract with Robert, instead of a third party, to sell the water.

²²⁴ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369 at [86].

²²⁵ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369 at [89]

²²⁶ At [89].

The Court of Appeal looked closely into the findings in *Aoraki Water Trust v Meridian Energy* focusing on the arguments around the concept of property and non-derogation. Meridian Energy argued its consents should be retained on the grounds of legitimate expectation. The application of legitimate expectation was declined by the Court of Appeal with regard to Simon’s circumstances, as explained above. *Hampton v Canterbury Regional Council* (Environment Canterbury) stated that the application of property law concepts and non-derogation to resource consents were “problematic” to rely upon.²²⁷ The Court made several observations about the development of rights to water allocation. It confirmed that natural water could not be “owned as property” and recognised that s21 of the Water and Soil Conservation Act 1967 vested the right to use natural water with the Crown. Finally, it traced the right of the Crown control of natural water in s354(1)(b) of the RMA. The Court of Appeal goes further to identify that reasoning relating to the nature of property in a resource consent in *Aoraki v Meridian Energy* was incorrect:²²⁸

In the circumstances, the statement made in *Aoraki* (drawing a parallel with profits à prendre) that a water permit allows the holder to remove “property”, even though “owned by the Crown”, is incorrect. For the same reason it was not correct to rely on the non-derogation principle on the basis it was common to all relationships which confer a “right in property”.

The Court of Appeal turned to statutory provisions including s122 of the RMA that declares there is neither real nor personal property under the Act except for circumstance where the Act provides these rights in limited circumstances.²²⁹ The analysis of the Court showed that the Act provides for situations where a resource consent holder may exercise property-like rights, but that these are limited to those situations where the statute defines the rights. An application for leave to appeal the decision in the Supreme Court by Simon was dismissed. The matter was not of

²²⁷ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369 at [99] – [103].

²²⁸ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369 at [103] Citing *Aoraki Water Trust v Meridian Energy* [2005] 2 NZLR 268 (HC) at [35]-[36].

²²⁹ *Hampton v Canterbury Regional Council* (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369 at [105].

“general importance” and the arguments raised against the *Aoraki* judgement “criticisms do not undermine the *Aoraki* decision itself”.²³⁰

10.8 The Use of Property Concepts and Water Permits

The question of property in a resource consent has generated debate. The debate centres on the question of the interpretation of Section 122 of the RMA. This section states that a resource consent is “neither real nor personal property”. Fraser focused on the use of economic concepts to understand the apparent disconnect between a resource consent which has value to the holder and how the holder of that resource consent can protect his or her interests within the consent.²³¹ Barton’s analysis of property rights in a resource consent focuses more closely on s122 and its interpretation by the Court in order to show that property law-related concepts are not always appropriate when determining the nature of a resource consent.²³² These commentaries certainly illustrate the problems that affect water allocation in New Zealand. It has been suggested that *Hampton v Canterbury Regional Council* (Environment Canterbury) was a “missed opportunity to nudge informed debate about them”.²³³ The Court made several important observations about the public nature of rights in natural water. It also confirmed that the principle of “first-come, first-served” did apply to comparable applications with similar effects.

Other resource consent applications are defined by the purpose of the activity. The difference with water allocation, however, is that while the water take may be the same for competing applications the use of that water take may be different. New Zealand has bundled water permits and this is a relevant factor in considering how to allocate water to competing applications. *Hampton v Canterbury Regional*

²³⁰ *Simon Hampton v Canterbury Regional Council* [2016] NZSC 50 at [7].

²³¹ Laura Fraser “Property Rights in Environmental Management: The Nature of Resource Consents in the Resource Management Act 1991” (2008) NZJEL 12.

²³² Barry Barton “The Nature of Resource Consents: Statutory Permits or Property Rights” (paper presented to New Zealand Law Society Environmental Law: National Issues Intensive Conference, July 2009) 51.

²³³ Trevor Daya-Winterbottom “New Zealand-freshwater allocation: Property rights, non-derogation from grant and legitimate expectation” (2015) 25(1) *Journal of Water Law* 38 at 40.

Council (Environment Canterbury) clarified this point. The Court could not go beyond and look into the substantive reasoning for the ordering of priority because the statute does not allow it to do so. Just as Simon Hampton should have provided for a contract to charge Robert for the water applied to Robert's land, it is the role of regional councils to provide the substantive guidance on priority for water allocation.

11 *Summary*

This chapter has contributed to the thesis by providing the key elements of water allocation law and policy under the RMA. It has shown that the “architects” of the RMA envisioned a structure for resource allocation in New Zealand that was devolved to the regional level and complete in its formation. The reality was something quite different. The regional council responsibility to formulate rules and policy in regional resource allocation plans was a “function” of the councils under section 30 of the RMA. This meant that there was no legal obligation on regional councils to prepare plans within a set time limit, or even at all. At the top of the tiered hierarchy of plans contained within the RMA, it was national policy that would have provided guidance for regional councils. However, the national policy for water management was not promulgated until 2011 and the lack of a national policy led to a significant policy gap at the highest level from 1991 until 2011. Consequently, the inability to provide national guidance has significantly hampered the setting of priorities for water allocation in New Zealand.

In light of the policy gap, the administrative provisions within the RMA gained greater importance in guiding regional council decision making. The interpretation of these administrative provisions in the case of *Fleetwing Farms v Marlborough District Council* established the “first come, first served” precedent. The precedent is problematic in situations where regional water allocation is close to full allocation or over-allocated. It is challenged on the basis of being a method of water allocation that is inherently unsustainable because it does not allow regional councils to consider alternative uses for water. It also does not allow regional councils to

compare one application to another. As a result, it is highly questionable whether New Zealand has achieved a method of sustainable or good water allocation because potential future use and demand for water cannot be taken into account in regional council decision making.

The analysis of regional plans also showed the level of variability and lack of adequate planning for water allocation. In some regions where water allocation plans were not formulated central government has intervened. The most spectacular intervention has occurred in the Canterbury region. The case study of the Canterbury region illustrated problems with the current system of water allocation under the “first come, first served” precedent. It remains to be seen whether the National Planning Templates introduced through amendments to the RMA in 2017 will improve the guidance for regional water planning and thus to achieve a greater consistency where appropriate.

Finally, the legal implications of continuing to apply the “first come, first served” precedent is that a property rights approach has been applied to address competing claims for water allocation. In comparison, section 122 of the RMA does not convey property rights in the issuing of water permits. In reconciling these conflicting legal positions, the common law has been required to address the appropriateness of applying property law concepts to determining water allocation applications. Over time the Court has moved towards reinstating the common law position that water is not property of the water permit holder in New Zealand. Rather the water permit conveys a right to access water which is a public good.

This chapter provided a detailed account of the problems facing New Zealand water allocation under the RMA, with a focus on the legal context. The next chapter will build upon the understanding of New Zealand water allocation law and policy by assessing more recent attempts to address the water allocation problems identified in this chapter. The distinguishing point for the next chapter is that efforts to address water allocation problems from 1991 onwards take place once the national level policy gap has been filled by the National Policy Statement for Freshwater Management 2011 (revised in 2014 and reviewed in 2017).

CHAPTER FIVE - NEW ZEALAND WATER ALLOCATION LAW AND POLICY 2011 – 2018

1 *Introduction*

This chapter focuses on the government response to water allocation problems identified in the previous chapter. The overarching problem was the consequences of the water allocation policy gap at the national and regional level from 1991 to 2011.¹ During the period of the policy gap “limited guidance” on water allocation policy came from central government putting regional councils under pressure to make “almost all the most technically and politically difficult decisions on water management”.² The previous chapter showed that the policy gap, together with water allocation under a “first come, first served” method³ contributed to further over-allocation in some catchments.⁴ Central government responded with policy programmes to address these water allocation issues; these are the focus of this chapter.⁵ Thereafter further policy programmes including the Land and Water

¹ See Christina Robb *Water Allocation a Strategic Overview* (Ministry for the Environment, Wellington, 2001) which identified the problems with the lack of adequate regional planning for water allocation; Lincoln Environmental *Information on Water Allocation in New Zealand Report No 4375/1* (Ministry for the Environment, Wellington, 2000) for a more general discussion of water allocation issues; Department of Prime Minister and Cabinet *Sustainable Development for New Zealand Program of Action* (Department of Prime Minister and Cabinet, Wellington, 2003) for a policy program for sustainable development in New Zealand which addressed freshwater allocation.

² New Start for Freshwater Cabinet Paper at [16]

<<https://www.mfe.govt.nz/sites/default/files/new-start-for-fresh-water-paper.pdf>>

³ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA) established the “first come, first served” precedent. It was followed in *Geotherm Group Ltd v Waikato Regional Council* (2003) 9 ELRNZ 335 (HC) and *Central Plains Water Trust v Ngai Tahu Properties Ltd* [2008] NZCA 71; (2008) 14 ELRNZ 61; [2008] NZRMA 200, where both parties accepted the application of the “first come, first served” rule.

⁴ Cabinet Paper *Appendix 1 Background on Sustainable Water Program of Action in New Start for Freshwater* (n.d.) at 28 outlined the limitations of the “first come, first served” method of water allocation particularly in regions where there was increased competition for water.

⁵ The formation of “national direction” under the RMA can occur in the form of National Policy Statements, National Environmental Standards, and the New Zealand Coastal Policy Statement. See Resource Management Act 1991, Part 5, Subpart I “National direction”. In 2017, the Act

Forum were developed.⁶ Eventually, in 2011 the first national policy instrument to address water allocation was promulgated, the National Policy Statement Freshwater Management 2011.⁷ These policy initiatives are now examined in further detail to measure their level of success in addressing New Zealand's water allocation problems. This chapter will argue that sufficient steps have not been taken to address water allocation problems that emerged during the policy gap. The starting point of this analysis is the Land and Water Forum.

2 *The Land and Water Forum*

The Land and Water Forum (the Forum) was the most promising and high profile water policy programme put forward by the government.⁸ The Forum was established in 2008; it was based on collaborative governance principles to encourage participation in policy making from government and non-government stakeholders.⁹ Collaborative governance is environmental decision making

was amended to introduce national planning templates. However, national planning templates have not been used yet to implement water allocation planning on a national level.

An initial policy programme, the Sustainable Water Programme of Action (SWOPA), was released in 2004 with "extensive discussion" in 2005. Cabinet Paper *Appendix 1 Background on Sustainable Water Programme of Action in New Start for Freshwater* (n.d.).

Russell. M Fisher and Shona Russell "Water Policy and Regulatory Reform in New Zealand" (2011) 27(2) *International Journal of Water Resources Development* 387 at 388 noted the SWOPA was only able to develop some "soft options" for addressing water allocation issues in New Zealand; Andrew Hayward "Freshwater Management: Water Markets and Novel Pricing Regimes" (2006) 10 *NZJEL* 215 at 220 described the SWOPA as providing only "vague" proposals.

⁶ The Forum has produced five reports since 2008. Each of these reports is discussed in this chapter.

⁷ Central government guidance on the national direction for water allocation was contained in the National Policy Statement for Freshwater Management 2011. (Revised in 2014 and reviewed in 2017).

⁸ Ann L Brower "Is collaboration good for the environment? Or, what's wrong with the Land and Water Forum?" (2016) 40(3) *NZJE* 390. In 2018, the Labour coalition government asked the Land and Water Forum to prepare a fifth report to respond to water quality issues. Land and Water Forum *Land and Water Forum advice on improving water quality: preventing degradation and addressing sediment and nitrogen – May 2018* (Land and Water Forum, Wellington, 2018) at 4.

⁹ The policy programmes prior to the establishment of the Forum are detailed in the previous chapter Land and Water Forum *Terms of Reference for Land and Water Forum Project* (Land and Water Forum, Wellington, 2009). The Forum was established in 2008, initially under the name the Sustainable Land Use Forum as part of the New Start for Freshwater Programme and

involving a broad range of stakeholders using processes that encourage greater consensus between the parties.¹⁰ The National-led government adopted a collaborative governance approach to water policy development after “increasing difficulty in establishing a consensus” across the government and non-government stakeholders involved in water policy development.¹¹ One of the barriers to establishing a consensus between parties was that “adversarial processes” were dominant in the administration of water permit and allocation processes.¹² The adversarial stance influenced the level and tone of initial mistrust amongst stakeholders.¹³ The Forum began with building trust between the participants before embarking on policy development.¹⁴ The Forum published recommendations in a series of reports discussed below. From a legal perspective, the Forum recommendations do not bind government because the Forum fell outside the processes for establishing “national direction” under the RMA.¹⁵ The lack of legal status is a significant drawback of the Forum in terms of influencing changes to water management.

later renamed the Land and Water Forum; Guy Salmon and others (2008) “Collaborative governance on environmental policies affecting rural land owners: comparing Nordic and New Zealand practices” paper presented at the Yale University UNITAR conference on environmental governance.

¹⁰ Elizabeth Eppel “Collaborative Governance Case Studies: The Land and Water Forum” (2013) Working Paper 13/05 Institute for Governance and Policy Studies, School of Government, Victoria University of Wellington at 27.

¹¹ Above.

¹² Melissa Robson and others “The Collaboration Lab: The Transformative Role of Collaboration in Managing our Land and Water” in L. D. Currie and M. J. Hedley (eds) *Scient and policy: nutrient management challenges for the next generation. Occasional report No. 30.* (Fertilizer and Lime Research Centre, Massey University, Palmerston North) at 2.

¹³ Eppel, above n 10, at 7.

¹⁴ Above.

¹⁵ Resource Management Act 1991, Part 5, Subpart I “National direction”.

3 First Report of the Land and Water Forum – Identifying Problems with Freshwater Allocation

The First Report of the Land and Water Forum, *A Fresh Start for Fresh Water* (the First Report) focused on water law and policy problems stemming from a lack of national guidance and deficiencies in regional policy and planning.¹⁶ For example, the First Report stated that there was an “absence of strategic process” in managing water and issues such as “agriculture, tourism, energy, biodiversity, landscape and land use”.¹⁷

The lack of “strategic processes” can be traced back to New Zealand’s institutional reforms of government departments responsible for water allocation during the 1980s. For example, two critical institutional changes occurred. First, the government divided water policy development across departments. It was divided as follows: The Ministry of Agriculture and Fisheries was responsible for irrigation water,¹⁸ while the Department of Conservation had responsibility for freshwater fisheries¹⁹ and the Ministry of the Environment had overall responsibility for national water policy development under the RMA. Second, national oversight was lost when the National Water and Soil Conservation Authority was abolished in 1988 and its functions regionalised to water boards.²⁰ Together these two factors have led to the lack of strategic oversight as stated in the First Report because the national leadership in water allocation was lost.

¹⁶ Land and Water Forum *Report of the Land and Water Forum: A Fresh Start for Fresh Water* (Land and Water Trust, Wellington, 2010) at vi.

¹⁷ At viii.

¹⁸ Ministry of Works and Development Abolition Act 1988. See discussion on the abolition of the Ministry of Works and the redistribution of its functions across government departments in Chapter Three.

¹⁹ Conservation Act 1986, s 6(ab). Section 6(ab) was inserted, on 10 April 1990, by section 4 of the Conservation Law Reform Act 1990. The Conservation Law Reform Act 1990 also established the New Zealand Fish and Game Council.

²⁰ Water and Soil Conservation Amendment Act 1988.

3.1 The Consequences of a Lack of Long-Term Hydrological Data

The First Report stated there were “inconsistencies in our data collection, monitoring and analysis” stemming from the lack of hydrological information.²¹ One of the causal factors was that “scientific research on water has fallen by about one third since the late 1990s” and “no single organisation is tasked with providing leadership” in this area.²² Before the promulgation of the RMA, the National Water and Soil Conservation Authority collected national hydrological data.²³ Following the abolition of the National Water and Soil Conservation Authority in 1988 its water-related research functions were spread across eight Crown Research Institutes.²⁴ A competitive funding model diverted research resources away from the collection of long-term hydrological data resulting in a “smaller” hydrometric network “with a more variable distribution of sites, less commitment to QA and incomplete national archiving of data”.²⁵ Problems also exist with measuring freshwater quality; moreover, the use of averages across different water bodies did not fairly represent the true state of water quality in New Zealand.²⁶ These gaps in water information contributed to a situation in which there is “no complete, up-to-date picture of what proportion of water bodies is allocated”.²⁷ Ultimately the scale of over-allocation across catchments is not known “and there is no clear baseline from which to measure future progress”.²⁸

²¹ First Report of the Land and Water Forum, above n 16, at viii.

²² Above.

²³ Water and Soil Conservation Act 1967 s 14(k).

²⁴ AD Fenemor, T Davie and S Markham “Hydrological Information in Water Law and Policy: New Zealand's Devolved Approach to Water Management” in J Wallace and P Wouters (eds). *Hydrology and Water Law Bridging the Gap* (London, IWA Publishing) at 11.

²⁵ At 11

²⁶ Mike Joy (2014, June). *The Demise of New Zealand's Freshwater; Politics and Science*. At Hamilton Branch of the Royal Society. Also presented at; Christchurch Branch of the Royal Society; Wanaka Branch of the Royal Society; Invercargill Branch of the Royal Society and Rotorua Branch of the Royal Society.

²⁷ Cabinet Economic Growth and Infrastructure Committee “Implementing the New Start for Fresh Water: Proposed Officials' Work Programme” (n.d.).

²⁸ Above.

3.2 The “first-in, first-served” Rule and over-allocation

Recommendation 28 of the First Report of the Land and Water Forum stated that “economic opportunities are lost” due to the lack of direction in water allocation when applying the “first come, first served” method of allocation. Furthermore, “an absence of limits has resulted in a “water rush” in some catchments as applicants seek more water than they need”. The result is that combined with a “inflexible water permit transfer system” there is a reduction in water availability for “future uses”. It continued by emphasising a lack of transparency in the lack of application of water allocation rules by councils in water permit application decision making. The “first-in, first-served” method of water allocation contributes to the problem of over-allocated catchments with calls for “A more flexible system for transferring water permits should be put in place only once over-allocation of water has been managed”.²⁹ The First Report proposed changes; these included changes to conditions of consents as they expire so that consents are issued for a shorter duration, changing regional plan criteria for allocation decisions to include “efficiency and community consideration” or establishing a payment system for tendering or auctions of scarce water supplies.³⁰ The third option would mean significant changes to water allocation in New Zealand as it is essentially a recommendation for market-based water allocation.

Following the publication of the First Report, the government responded with national direction on water policy and a significant commitment to funding irrigation projects. The purpose of the close examination of national policy here is to show that there was not a close alignment between the recommendations of the First Report and national direction provided.

²⁹ Land and Water Forum Report of the Land and Water Forum: A Fresh Start for Fresh Water, above n 16, at 3.

³⁰ Land and Water Forum, above n 16, at xi.

4 *National Policy Statement for Freshwater Management 2014*

In 2011, the National Policy Statement for Freshwater Management was promulgated. It was revised in 2014 and amended in 2017. Its statutory role is providing “national direction” on water policy issues relating to water quality and water allocation as follows.³¹ Objectives B1 to B4 require regional councils to phase out over-allocation.³² Policy B3 and B4 require regional councils to encourage efficient allocation and use. Objective B5 states communities can provide for their “economic well-being, including productive economic opportunities”. Policy B6 is most relevant to over-allocation by requiring “every regional council [to] set [ting] a defined timeframe and methods in regional plans by which overallocation must be phased out”.³³ The methods that may be used to phase out over-allocation include “reviewing water permits and consents to help ensure the total amount of water allocated in the freshwater management unit” does not exceed the limit or cap. However, these examples of “national direction” do not address the concerns raised in the First Report regarding the reallocation of water and easing the water transfer process. As a result, gaps remain in the national direction of water allocation law and policy in New Zealand at the highest level.

³¹ Resource Management Act 1991, ss 45-55.

³² Policy B1 requires implement the National Policy Statement by having regard to climate change and connections between water bodies. Under Policy B2 regional councils making or amending regional plans should ensure they “provide for the efficient allocation of fresh water to activities, within the limits set to give effect to Policy B1”.

³³ The National Policy Statement for Freshwater Management 2014 also requires addressing over allocation to manage water quality too. National Policy Statement for Freshwater Management 2014 (Amended 2017) at 5.

5 *Funding for Freshwater ‘Clean Up’ and Irrigation after the First Report*

The government established two funds following the Land and Water Forum’s First Report. These funds were the Fresh Start for Freshwater Clean-Up Fund and the Irrigation Acceleration Fund (IAF).³⁴

The purpose of the IAF was to support irrigation projects. The \$35 million Irrigation Acceleration Fund (IAF) was established on 1 July 2011 with the potential to increase to \$400 million.³⁵ The IAF was projected to increase farm production on irrigated land in Canterbury, Otago and Marlborough by 64.1%, 12.2% and 6.8% respectively. In comparison, the benefits to other regions were projected to range from 0.4% to 3.6%.³⁶ The projected benefits for Canterbury far outweighed those for any other region. The rationale for the IAF was the anticipated economic benefits of irrigation and the perception that private investors would not invest in irrigation schemes without government support.³⁷

However, statistics refute the perception that privately funded irrigation was declining. Agricultural production statistics compiled by Statistics New Zealand showed that total irrigated land increased significantly from 2007 to 2012.³⁸

The total irrigated land in New Zealand increased by 102,000 hectares between June 2007 and 2012, new information from the 2012 Agricultural

³⁴ Land and Water Forum Second Report of the Land and Water Forum. Setting Limits for Water Quality and Quantity (Land and Water Trust, Wellington, 2012) at xii; For access to policy documents leading to the implementation of the Clean Up Fund and the Irrigation Acceleration Fund see the Ministry of Environment (2014) Funded projects for Fresh Start for Fresh Water Clean-up Fund <<http://www.mfe.govt.nz/issues/water/freshwater/fresh-start-for-fresh-water/cleanup-fund.html>>

³⁵ Office of the Minister for the Environment. Office of the Minister of Agriculture *Fresh Start for Fresh Water. – High Level Government Response to the Land and Water Forum Report* CAB; David Carter 9 May, 2011 Budget 2011: Lifting investment in irrigation <<http://www.beehive.govt.nz/release/budget-2011-lifting-investment-irrigation>>

³⁶ NZ Institute of Economic Research Inc and AgFirst Consultants NZ Ltd *Value of irrigation in New Zealand: An economy-wide assessment final report to the Ministry for Primary Industries* (Ministry for Primary Industries, Wellington, 2014) at 8.

³⁷ Above.

³⁸ Statistics New Zealand (2013) “Big increase in irrigated land supports more agricultural production” *Agricultural Production Statistics: June 2012* (final) – Media Release.

Production Census shows. “Canterbury had the biggest increase in irrigated area, with an extra 60,000 hectares since 2007...”.

The justification of the IAF relied upon an economic analysis to support the need for a fund. Statistics on the growth of irrigation challenge the assertion that government-funded irrigation was necessary.

Furthermore, there was negligible support for irrigation funding for new dams in the First Report. It stated that the financing of irrigation schemes should ultimately be self-sufficient because “there is no magic bullet for financing rural water infrastructure projects that should sustain themselves on their own expected rate of return”.³⁹ The report acknowledged problems with dam development and recommended policy changes focused on early collaboration to avoid the problems of “litigious and slow” dam development.⁴⁰ Improved allocation decisions were meant to create “new water” in rural infrastructure:⁴¹

Improved rural infrastructure can provide a range of advantages for the economy, including through energy production and irrigation – and also for the environment. More reliable access to water can substantially increase primary production, including on dry-land farms. It can lead to more efficient and diverse use of water (higher value crops, for example) and reduce contamination of water bodies. It can produce energy savings and may allow the replenishment of aquifers and the restoration of streams

Clearly “improved” rural irrigation infrastructure is entirely different from the IAF funding proposals for building new dams. The IAF was also meant to improve energy production and irrigation in existing irrigation schemes.

Under the IAF, Crown investment was limited to being a “minority partner” investing on “commercial terms”.⁴² Private investors would take over half of the risk in a proposed irrigation scheme. However, there were schemes where the public funding threshold of 50% was exceeded as local government bodies also began investing in IAF schemes. The Ruataniwha Water Storage Scheme provides an

³⁹ First Report of the Land and Water Forum, above n 15, at 42.

⁴⁰ Land and Water Forum Report, above n 15, at ix.

⁴¹ At xii.

⁴² Ministry for Primary Industries *Irrigation Acceleration Fund (IAF) Guidelines for Applicants* (Ministry for Primary Industries, Wellington, 2010) at 8.

example of the limitation on public investment. The Hawkes Bay Regional Council (HBRC) wanted to invest \$80 million in the Ruataniwha Dam project, with the total cost estimated at \$275 million.⁴³ Project success depended upon securing resource consents for the dam in its proposed form, including a land swap involving conservation land.⁴⁴ The Tukituki Catchment Proposal Board of Inquiry's Draft Report and Decision was issued on 15 April 2014.⁴⁵ It granted resource consents needed for the project to continue, subject to maintaining key water quality parameters.⁴⁶ As already noted, a land swap proposal involving conservation land was part of the scheme. The Department of Conservation had agreed to trade 22 hectares of the Ruahine Forest Park which had conservation park status. Initially, the land swap decision made by the Director-General of the Department of Conservation was upheld in the High Court.⁴⁷ However, in the Court of Appeal and Supreme Court, the High Court ruling was overturned by majority decisions.⁴⁸ In response to the ruling, the Hawkes Bay Regional Council decided to write off its investment in the scheme and not to proceed further.⁴⁹

5.1 The End of State Funded Irrigation.

As discussed above the IAF projects could be controversial political issues. Public interest in water issues and proposed irrigation schemes was also high. In the 2017

⁴³ Hawkes Bay Regional Council Ruataniwha Water Scheme HB Today Public Meeting 6 August 2015 at slide 13. Available at <<http://www.hbrc.govt.nz/assets/Document-Library/RWSS-Documents/Ruataniwha-slides-6-August-public-meeting.pdf>>

⁴⁴ Deloitte Peer Review of the Ruataniwha Water Storage Scheme Business Case (Hawkes Bay Regional Council, May 2014).

⁴⁵ Radio New Zealand "Final dam submission decided by officials" *Radio New Zealand News* (17 September 2013)

⁴⁶ Board of Inquiry into the Tukituki Catchment Proposal Final Report and Decision of the Board of Inquiry into the Tukituki Catchment Proposal In Relation to Matters Referred Back by the High Court June 2015.

⁴⁷ *Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation* [2016] NZHC 220, (2016) 19 ELRNZ 370

⁴⁸ *Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation* [2016] NZCA 411, [2016] 3 NZLR 828; *Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation* [2017] NZSC 106.

⁴⁹ Simon Hendery "Council writes off \$14m investment in failed Ruataniwha dam project" *NZ Farmer* (30 August 2017).

general election water issues became one of the major voting concerns.⁵⁰ A water royalty was proposed by the Labour party, while the National opposed the royalty.⁵¹ Farmers were particularly concerned about the possibility of a levy on their water use with some farmers asserting that it might be an extra unaffordable cost.⁵² In October 2017, upon coming to power, the Labour-led coalition government committed to ending irrigation funding. No further new agreements for irrigation schemes would be entered into and funded by Crown Irrigation Investments Limited.⁵³

6 *The Second and Third Reports of the Land and Water Forum*

The Second Report of the Land and Water Forum focused on water quality issues while the Third Report focused on water allocation more specifically and how to transfer water to “highest value use” for the benefit of society.⁵⁴ Proposals for the strengthening of water rights were put forward in Recommendation 25 of the Third Report in order to improve the transfer of water permits.⁵⁵ The Third Report also states that freshwater reallocation requires the establishment of “clear limits” to prevent over-allocation.⁵⁶ Limits would encourage users to be more efficient so that

⁵⁰ Charlie Mitchell “Political parties sense opportunity on water issues” *Stuff NZ* (14 July 2017).

⁵¹ Nicole Sharp “Election 2017: Water royalty point of divergence” *Otago Daily Times* (8 September 2017); Patrick Gower “Public, politicians divided over water tax” *Newshub* (7 September 2017).

⁵² Anusha Bradley “Pressure on Labour’s water tax” *RadioNZ* (13 September 2017).

⁵³ Labour, New Zealand First, New Zealand Labour Party & New Zealand First Coalition Agreement 52nd Parliament (2017).

⁵⁴ Land and Water Forum *Second Report of the Land and Water Forum. Setting Limits for Water Quality and Quantity* (Land and Water Trust, Wellington, 2012); Land and Water Forum *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water* (Land and Water Trust, Wellington, 2012) at 36.

⁵⁵ At 36. Recommendation 25 states “The design of the allocation system should remove administrative barriers to transfer and trading”.

⁵⁶ At 95.

2. Initial allocation will be important in some under-allocated catchments, and where new water is created. However, it is likely that many catchments will be fully- or over-allocated once all use is accounted for within the allocable quantum. The goal of achieving efficiency in the allocation regime in this case will focus on the ability for the water to move between uses over time.

water is “set free” to allow further expansion, or “involve consideration of storage and other related infrastructure”.⁵⁷

155. A regime based on limits requires easily transferable water consents to allow users to make investment decisions and to adjust their use to maximise profitability. To achieve this, users’ authorisations need to be clear, secure and enforced. This will support investment certainty and will allow users to manage more effectively within a limit. Clear, secure and enforced consents will also protect users from their entitlements being undermined by over-allocation.

These statements set out a pathway to improvements in water allocation that involve changes to property rights and methods of market-based water allocation.

7 Fourth Report of the Land and Water Forum – Water Markets

In November 2015, the Land and Water Forum published its Fourth Report. It stated that improving water transfers “is important for minimising the costs of reducing over-allocation” and for shifting water to “the best economic uses”.⁵⁸ It recommended a cap on water allocations by setting extraction limits. This “limits based regime provides a framework that will allow markets to develop, and provide signals about when to invest in infrastructure” regarding investment viability.⁵⁹ Recommendation 57 addressed the issue of water markets for water allocation as follows:

Recommendation 57 The Government should:

- a) monitor the emergence of markets for the transfer of water and discharge consents
- b) consider whether any market dominance or efficiency problems arise
- c) address them through the provisions of the Commerce Act where possible
- d) develop a specific response that targets the problems that arise if they are not able to be dealt with by the Commerce Act.

⁵⁷ At 95.

⁵⁸ Land and Water Forum *Fourth Report of the Land and Water Forum* (Land and Water Forum Trust, Wellington, 2015) at x.

⁵⁹ Above at [92]. Ministry for the Environment *Next steps for fresh water: Summary of submissions*. (Wellington: Ministry for the Environment). ME1248 June 2016 at 4

While these statements are succinct, the policies and regulations required to implement water markets are complex. Recommendation 57 represents a clear indication that New Zealand’s central government should consider how to implement water markets. The amendments to the National Policy Statement in 2017 did not specifically include a focus on water markets despite the recommendations to do so in the Fourth Report of the Land and Water Forum. As a result, the disconnect between the Land and Water Forum recommendations and national direction in government policy mean that gaps remain in addressing problems with New Zealand’s water allocation framework.

8 National Policy Statement for Freshwater Management 2017 Amendments

Amendments to the National Policy Statement in 2017 can be traced back to 2016, that is to the Next Steps for Freshwater proposals.⁶⁰ The Next Steps for Freshwater public consultation document asked for public submissions on “technical efficiency standards” and “good management practice standards” (Proposal 2.5) to reduce over-allocation.⁶¹ Proposal 2.4 in the Next Steps for Freshwater consultation document provided a range of options to improve water transfer including unbundling consents, establishing a public register of consents and “model plan provisions specifying where and in what circumstances transfers are permitted”. The document then focused on the benefits of water transfers, rather than elaborating on methods to achieve those transfers.⁶² The Submission Summary Report stated that Proposal 2.4 was based on recommendations from the Fourth

⁶⁰ The 2017 Amendments were preceded by the Clean Start for Freshwater policy programme undertaken in 2016.

⁶¹ At 25.

⁶² At 24.

...Enabling such transfers will increase incentives for existing users to invest in efficiency improvements beyond those specified in the technical efficiency standards, and transfer excess water or discharge allowances to others. It will also provide incentives for existing users to temporarily transfer water or discharge allowances if they do not need them for a while. Doing so would increase the economic value that we get from the available resource.

Report.⁶³ The public submissions separating water take and use were split in terms of their support for or against the proposal. Some public submissions questioned the capability of the market to deliver on water transfers. There was general support for a public water register. While in general there was support for the use of markets to allocate water, submitters had reservations about pricing mechanisms and potential market failure.⁶⁴ Clearly, in this instance, the government has consulted on the establishment of water markets and some of the associated changes that would be required to implement change.

The Clean Water document issued in February 2017 then sought public submissions on proposed changes to the National Policy Statement.⁶⁵ Most of the changes addressed water quality issues. Objective B5 and Policy B8 discussed below were the key changes in the water quantity area. Amendments made in 2017 added Objective B5:

Objective B5 To enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quantity, within limits

As a result, the 2017 Amendments to the National Policy Statement Freshwater Management do not address water allocation.

⁶³ At 27.

The proposals were originally built on recommendations presented by LAWF in the group's third and fourth reports. Recommendation 25 from LAWF's third report stated that "water...needs to be easily transferable between users, to allow it to move to its highest valued use...The design of the allocation system should remove administrative barriers to transfer and trading". The discussion of this recommendation also describes that consents should be standardised, making provisions for trading these consents. LAWF's fourth report also discusses how to facilitate transfers, saying that lack of access to information creates a barrier to transfers

⁶⁴ At 28.

⁶⁵ Ministry for the Environment *Clean Water 90% of Rivers and Lakes Swimmable by 2040* (Ministry for the Environment, Wellington, 2017) ME1293.

9 *The Fifth Report of the Land and Water Forum*

At the request of the Labour-led coalition government the Fifth Report focused on specific issues related to water quality.⁶⁶ The report specifies the “steps members of the Land and Water Forum assert are needed to manage [water] within limits and avoid further degradation”.⁶⁷ The focus of the Fifth Report is to improve water quality. It stated that a Land and Water Commissioner office should be established to oversee the implementation of steps to improve water quality. A Land and Water Commissioner could also potentially have a role in implementing water allocation policy in the future. Overall, the Fifth Report makes a strong argument for greater direction at the national level.

Further environmental policy analysis with relevance to water allocation was released in 2019 by the Environmental Defence Society.⁶⁸ The Reform of the Resource Management System Synthesis Report provides a non-government analysis of environmental law and policy development in New Zealand. It proposes four different models for future environmental law reform. One of the models proposed includes the enactment of an Allocation Act that would include allocation of water and other natural resources.⁶⁹ The difference would be that the allocation function of the RMA would be transferred to a new Act.

⁶⁶ Land and Water Forum Land and Water Forum advice on improving water quality: preventing degradation and addressing sediment and nitrogen – May 2018 (Land and Water Forum, Wellington, 2018) at 4.

⁶⁷ At 1.

⁶⁸ Greg Severinsen and Raewyn Peart *Reform of the Resource Management System The Next Generation Synthesis Report* (Environmental Defence Society, Auckland, 2019).

⁶⁹ At 21.

10 *National Policy Statement Freshwater Management* *Implementation*

Regional councils are still in the process of implementing the National Policy Statement Freshwater Management 2014.⁷⁰ Regional councils must give effect to National Policy Statements by implementing them in regional plans.⁷¹ The National Policy Statement Freshwater Management 2014 has been referred to as relevant policy in the following cases. In *Li v Auckland Council* the Court referred to the National Policy Statement as one of the relevant policies in determining that a rezoning application for land in the Okura catchment should be declined.⁷² In *Pierau v Auckland Council* an application to stage a music festival at Te Arai Point, a coastal area, was declined after taking into consideration statutory planning documents including The New Zealand Coastal Policy Statement 2010, the National Policy Statement Freshwater Management 2014, the *Hauraki Gulf Marine Park Act 2002* and relevant provisions of the regional and district plan.⁷³ The proposal was assessed under the National Policy Statement Freshwater Management 2014 to determine if there were any water quality issues; both parties agreed there were none.⁷⁴ The National Policy Statement Freshwater Management 2014 is at the top of the planning framework for determining applications relating to water quality. However, it has little policy guidance that is directly relevant to water allocation.⁷⁵ Furthermore, there are no cases which show the application of

⁷⁰ Regional councils that have not already implemented the National Policy Statement Freshwater Management 2014 were required to prepare implementation plans. See Ministry for the Environment *National Policy Statement for Freshwater Management Implementation Review: National Themes Report* (Ministry for the Environment, Wellington, 2017). See also Ministry for the Environment *Briefing for the Incoming Minister. Water*. (Ministry for the Environment, Wellington, 2017) at 10 states “That there has been some public criticism that progress has been slow in some regions”.

⁷¹ *Environmental Defence Society Incorporated v New Zealand King Salmon Co Ltd* [2014] NZSC 38.

⁷² *Li v Auckland Council* [2018] NZEnvC 87.

⁷³ *Pierau v Auckland Council* [2017] NZEnvC 90.

⁷⁴ At [50].

⁷⁵ See *Hokio Trusts v Manawatu-Wanganui Regional Council* [2017] NZHC 1355 [2017] NZRMA 543; *Eyre Community Environmental Safety Society Inc v Christchurch Regional Council* [2016] NZEnvC 178 was focused on dam safety management, not water allocation; *Sustainable Matata v Whakatane District Council* [2016] NZEnvC 16; *Creswick Valley Residents Association Inc v Wellington City Council* [2015] NZEnvC 149 stated that the National Policy Statement

water allocation methods being affected by the national direction in the National Policy Statement Freshwater Management 2014.

11 *Summary*

The previous chapter examined the lack of guidance in water allocation which created a water allocation policy gap for almost 20 years. This chapter argued that the government did not implement water policy recommendations from the Land and Water Forum Reports to address the problem of water allocation. While the work of the Land and Water Forum has influenced national direction on water management in the National Policy for Statement Freshwater Management 2014, the National Policy Statement has not gone far enough to address the issues that were raised. Other initiatives such as the funding for irrigation have been unsuccessful in providing an answer to the problems of increased demand and how to reallocate water. Clearly, gaps remain in the area of water allocation law and policy.

Currently, national policy direction does not provide a clear mandate for contemplating water markets or payment for access to water. In comparison, Australia has embraced water markets as a critical part of its water law reform. The Land and Water Forum Report recommendations which support the introduction of water markets to improve water allocation place New Zealand at a crossroads. For this reason, Australia is a prime example of how to implement water reform in terms of how to introduce markets and improve water allocation. New Zealand can learn from the Australian experience. To that end, the following chapter will examine how Australia dealt with its water scarcity problems by improving the ability to transfer water rights through water markets.

Freshwater Management 2014 was a relevant consideration when addressing the issue of water contamination from earthworks but there was no evidence presented on the Policy Statement.

CHAPTER SIX - AUSTRALIAN WATER ALLOCATION LAW AND POLICY

1 *Introduction*

This chapter examines Australian water allocation law and policy. Australia has undertaken extensive and complex water law reform in the last 20 years. In order to fully understand the Australian water law reform experience, this chapter, therefore, begins by examining the historical legacy of separate colonies which exercised a high degree of control over water allocation within their respective state boundaries. Some colonies preferred irrigation based settlement but it was not until Federation that it became more viable. The late 1800s drought was a important factor influencing the support for irrigation to be developed further.

The policy of irrigated settlement was promoted by the colonies despite the challenges of a drier climate during the 1800s. The research begins by explaining the limitations of riparian rights to allocate water in irrigated settlements and the process of replacing riparian rights with statutory water allocation.

In 1901, with the formation of the Commonwealth Government of Australia, colonies were reluctant to relinquish their control over valuable water resources. An analysis of constitutional powers shows the Commonwealth lacked overt authority to allocate water. Consequently, it had to rely upon other constitutional powers to implement water law reform. Ultimately, the lack of a clear constitutional authority for the Commonwealth to allocate water led to tensions between the states and the Commonwealth. Hence, the implementation of water reform across all states by the Federation was somewhat hindered by constitutional issues. The states preferred to develop their water resources according to the policy context of each state. The progress in implementing water allocation policy from a Federal level has been complex and tied closely to the idea of “cooperative federalism” where policy actions are tied to grants from the Commonwealth.

The incentive for the more recent reform was due to the recognition that the Murray-Darling Basin, in particular, was experiencing problems with over-allocation and water scarcity. The nature and severity of the Millennium drought exacerbated the problem of over-allocation. The Commonwealth responded by formulating water policy objectives at the Council of Australian Governments (COAG) meeting in 1994. The meeting was a milestone for water law reform as all Australian states began to work collectively to address water allocation problems. Following the 1994 COAG meeting, the National Water Initiative 2004 supported the adoption of water markets for water allocation in the form of a cap and trade model. Ultimately, water policy indicated that water trading would facilitate the return of increased environmental water flows to the Murray-Darling Basin in order to improve the health of the catchment. The Water Act 2007 (Cth) implemented the objectives of the National Water Initiative 2004. This chapter critically evaluates the implementation of the Act to measure the effectiveness of implementation against stated water allocation law and policy objectives.

There has been some concern raised about the effectiveness and implementation of the water reforms and, in particular, whether the Water Act 2007 (Cth) achieves its statutory objectives. One of the contentious issues is whether buying back water from irrigators has been successful in delivering the volumes of water needed to improve the health of the Murray-Darling Basin. The buybacks were necessary because the cap and trade model alone was clearly not on track to deliver the environmental water needed to improve the health of the Basin alone.¹

Finally, the implementation of the wider package of reforms including the NWI, Water Act 2007 (Cth) and the Murray-Darling Basin Plan are analysed with regards to the changes that they brought about in unbundling, water planning, water transfers through markets, The changes in the Basin states of Victoria, New South

¹ Cameron Holley and Darren Sinclair “Rethinking Australian Water Law and Governance: Success, Challenges and Future Directions” (2016) 33(4) EPLJ 275; Cameron Holley and Darren Sinclair “Governing regulatory markets: Achievements, limitations and the need for reform” (2016) 33(4) EPLJ 301; Kate Owens “Reimagining water buybacks in Australia: Non-governmental organisations, complimentary initiatives and private capital” (2016) 33(4) EPLJ 342 and Rebecca Nelson “Broadening regulatory concepts and responses to cumulative impacts: Considering the trajectory and future of groundwater law and policy” (2016) 33(4) EPLJ 132

Wales, South Australia, Queensland are analysed as a model against the Western Australia context. The analysis shows the regulatory processes followed in each state to implement law reform. The analysis of how the Act has been implemented is core to the comparative analysis in the next chapter.

2 *Water Policy Development in the Murray-Darling Basin*

2.1 *Irrigated Settlement Schemes Established*

British settlers in Australia had to adapt to the arid and variable climate that confronted them when they arrived.² Despite the arid conditions, Australian colonies nevertheless encouraged irrigation-based settlement during the 1880s because it made unproductive land suitable for farming.³ Consequently, schemes based on irrigated settlement increased the demand for and rate of irrigation.⁴ In theory, the positive aspect of irrigated settlement was that it would result in a systematic settlement in rural areas.⁵ However, in practice, obstacles to irrigated settlement emerged in the form of introduced weeds, drought and settlers' lack of experience of farming on irrigated land.⁶ Despite the drawbacks of irrigated settlement, it remained an important feature of early colonial development and the

² James Beattie, Emily O’Gorman and Matthew Henry “Climate, Science, and Colonization: Histories from Australia and New Zealand” in James Beattie, Emily O’Gorman and Matthew Henry (eds) *Climate, Science, and Colonization: Histories from Australia and New Zealand* (Palgrave, New York, 2014). Settlers had to replace their expectations of a regular seasonal climate with the more variable climate patterns of Australia. See Martin Mahony and Georgina Endfield. “Climate and colonialism” (2018) 9.2 *Wiley Interdisciplinary Reviews: Climate Change* 510.

³ Lin Crase, Suzanne O’Keefe and Brian E Dollery. “The fluctuating political appeal of water engineering in Australia” (2009) 2(3) *Water Alternatives* 440 at 441-442.

⁴ Leonie Seabrook, Clive McAlpine and Rod Fensham “Cattle, crops and clearing: Regional drivers of landscape change in the Brigalow Belt, Queensland, Australia, 1840–2004” (2006) 78 *Landscape and Urban Planning* at 373.

⁵ RT Kingsford “Ecological Impacts and Institutional and Economic Drivers for Water Resource Development--a Case Study of the Murrumbidgee River, Australia” (2003) 6 *Aquatic Ecosystem Health & Management* at 75.

⁶ Seabrook and others, above n 4.

colonies to irrigation from the early 1900s even though it only became more viable after Federation.⁷

2.2 Common Law Riparian Rights

One obstacle to irrigated settlement was the application of common law riparian rights to water allocation. The riparian doctrine was inherited from the British common law.⁸ Under the riparian doctrine, surface water was a public resource and landowners adjoining a stream or river could establish rights to access water.⁹ Riparian rights were use-based rights and did not confer ownership of water.¹⁰ From 1840 to 1860 there were no changes made to the doctrine because the price of water was low due to low population density.¹¹ However, as demand grew, it became apparent that the variable Australian rainfall patterns combined with riparian rights

⁷ Lin Crase “An introduction to Australian water policy” in Lin Crase (ed) *Water Policy in Australia. The impact of Change and Uncertainty* (Routledge, Washington, 2008) at 4. States pushed beyond environmental limits to encourage irrigated settlement. See Donald W. Meinig “Goyder's Line of Rainfall: The Role of a Geographic Concept in South Australian Land Policy and Agricultural Settlement” (1961) 34(4) *Agricultural History* 207 and Alex Gardner, et. al. *Water Resources Law*. (LexisNexis Butterworths, Chatswood, NSW, 2018)

⁸ Australian Courts Act 1828 (Imp) s 24.

⁹ *Mason v Hill* (1833) 5 B. & Ad. 1 110 ER 114; for a comprehensive account of the development of the riparian doctrine in common law see Joshua Getzler *A History of Water Rights at Common Law. Oxford Studies in Modern Legal History* (Oxford University Press, New York, 2004); John Tisdell “The evolution of water legislation in Australia” in K William Easter and Qiuqiong Huang (eds) *Water Markets for the 21st Century* (Springer, Dordrecht, 2014) (pp. 163-178) at 164.

¹⁰ Under the riparian doctrine water was part of the “commons” or common property. Landowners beside a waterway could only use the water if there was not negative effect on downstream users. *Dunn v Collins* (1867) 1 SALR 126.

¹¹ Edwyna Harris “Institutional Change and Economic Growth: The Evolution of Water Rights in Victoria, Australia 1850-1886” (2007) 26(2) *Economic Papers* 118 at 121.

were inadequate to secure irrigators reliable access to water.¹² In *Gardner v Kidman*, the Court stated:¹³

These rules are very old. They have been applied in England in innumerable cases to determine and define rights and obligations in relation to streams along the banks of which men have been settled for centuries, using the waters and enjoying the benefits of their flow. The conditions of settlement, of climate and of geography in which this body of customary law developed are very different from those prevailing in many parts of Australia. And this is to be borne in mind when particular decisions of English courts are brought forward as analogies. But it is beyond doubt that these rules are a part, and an important part, of the common law that Australia has inherited

The riparian doctrine did not apply to groundwater unless it was known to flow in a defined channel, which seldom occurred naturally.¹⁴ Hence, landowners had unrestricted rights to exploit groundwater if there was no legally defined channel.¹⁵ The absence of common law on the groundwater resources of the Great Artesian Basin means that it, however, was not subject to the riparian doctrine.¹⁶

In the Australian context, having only use-based rights to surface water was important because it facilitated wider water distribution in irrigation schemes.¹⁷ Accordingly, the needs of downstream users were not relevant. As the riparian doctrine developed further to include rights for *potential* users of water, its

¹² Above at 121 states that demand after the Victorian goldrush ended. The gold rush has effectively doubled the population resulting in a labour surplus when the gold rush ended. At first land reform was undertaken to increase the population density in rural areas. The reform allowed any person to claim up to 320 acres of land except for freehold land. As a result of the land reform there was a shift to the dominant use of land being intensive crop farming which replaced grazing; Tim Cummins and Alistair Watson. "A hundred-year policy experiment: The Murray-Darling Basin in Australia" in John Quiggin, Thilak Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray Darling Basin* (Edward Elgar, Cheltenham, 2012) at 12.

¹³ *Gardner v Kidman* [1962] HCA 27; 108 CLR 12.

¹⁴ *Dunn v Collins* (1867) 1 SALR 126 and John Quiggin. and Poh Ling Tan *Sustainable Management of the Great Artesian Basin: an analysis based on Environmental Economics and Law* Murray Darling Program Working Paper3/M04 (University of Queensland, 2004).

¹⁵ Jennifer McKay, *J Groundwater as the Cinderella of water laws, policies, and institutions in Australia* (2006) International Symposium on Groundwater Sustainability 322 at 324.

¹⁶ Quiggin and Tan, above n 14, at 9.

¹⁷ Sanford D. Clark and Ian A Renard "The Riparian Doctrine in Australian Legislation" (1970) 7 MULR at 477; Poh-Ling Tan *Legal Issues Relating to Water Use. In Property: Rights and Responsibilities Current Australian Thinking* (Land and Water Australia, Canberra, 2002).

limitations in Australian irrigation schemes became apparent.¹⁸ Having regard for potential downstream users of water had negative implications for irrigated settlements because such consideration could potentially restrict how much water upstream users could take. For example, the English case *Mason v Hill* held the “natural flow” of surface water should be maintained irrespective of actual use by downstream landowners. The level of concern over the potential effect of the precedent limiting irrigated settlement helped trigger water law reform in Australia.¹⁹

The colony of Victoria established a Royal Commission on Water Supply 1884-1886 (Vic) to investigate alternatives to the riparian doctrine.²⁰ It was chaired by Alfred Deakin who drew upon the experience of the Western United States, Egypt, India and Italy.²¹ The Royal Commission recommended abolishing the riparian doctrine and replacing it with state control over water with a formal licensing system.²² Subsequently, the Victorian government reformed water law by establishing licences which linked water allocations to land.²³ As a result of reform, the riparian doctrine was replaced with a statutory system of water allocation which provided greater certainty to irrigators and vested water rights with the Crown.

The reform also included institutional changes. These changes included the establishment of irrigation trusts, rules for the irrigation trust administration and collection of rates to invest in irrigation infrastructure.²⁴ Other Australian states

¹⁸ Peter Davis “Australian and American Water Allocation Systems Compared” (1968) 9 Boston College L. Rev. 647 at 649.

¹⁹ Clark and Renard, above n 17, at 479.

²⁰ Harris, above n 11. There was also extensive lobbying from farmers clubs and irrigation leagues for irrigation reform which put the government under pressure to respond with the Royal Commission.

²¹ John Tisdell “The evolution of water legislation in Australia” in K. William Easter and Qiuqiong Huang (eds) *Water Markets for the 21st Century* (Springer, Dordrecht, 2014) (pp. 163-178) at 164.

²² At 165-166. A Royal Commission appointed in New South Wales also recommended vesting water rights with the state and abolishing the riparian doctrine.

²³ Lee Godden “Water Law Reform in Australia and South Africa: Sustainability, Efficiency and Social Justice” (2005) 17(2) J. Environ. Law 181-205. The linking of water rights to land was to ensure that water speculation was limited. See Edwyna at 123.

²⁴ Harris, above n 11, at 125.

soon followed Victoria's example with water reform and the vesting of the water rights in the Crown. The move was a fundamental change to water law in Australia because, while improving the planning for water allocation, problems with the riparian doctrine were addressed.²⁵ States considered it imperative to have water law and policy to support irrigation and building their state economies.

The connection between land settlement and irrigation in the colonies is more than just an interesting point in Australian environmental history. The connection set the context for Australian problems with water allocation law and policy. Within states, economic progress was linked to the successful implementation of irrigated settlement schemes. Laws were reviewed and amended to support the expansion of irrigated settlement schemes. Arguably, these early concessions to support irrigation are slowly being pulled back to align with restoring the environmental health of the Murray-Darling Basin. For instance, one of the positive aspects of water law reform is that the state of Victoria was an early leader in responding to calls for change in water allocation. As the subsequent discussion in this chapter will show, Victoria retains its advantageous position as being a leader in water allocation law reform in Australia.

2.3 Water and the Drafting of the Australian Constitution

One of the "legacies" of colonial water policy is that the states "continue to hold sway over national water policy formulation today".²⁶ States indeed continue to dominate policy development at the national level. The discussion that follows reflects the legacy of colonial water policy as it was then, and remains today, closely tied to the economic output of each state. Within this policy context, the states must ensure that they do not push their demand for water beyond environmental limits. How the states balance their demand for water against each other, and the

²⁵ Rights in Water Conservation and Utilization Act 1910 (Qld); Water Act 1917 (NSW);

²⁶ Lin Crase "An introduction to Australian water policy" in Lin Crase (ed) *Water Policy in Australia. The impact of Change and Uncertainty* (Routledge, Washington, 2008) at 4.

environment, is reflected in the constitutional tug-of-war over water allocation issues.

The drafting of the Australian Constitution raised concerns about the availability of water and the potential effect on individual colonies. Following the Federation Drought of 1895-1902 water would have been a high priority for colonies. The topic of control over water management was debated for weeks and showed the importance of water to states.²⁷ The debate addressed how existing navigation and irrigation rights might be affected if a Commonwealth government was formed. State access to water for irrigation was crucial for development and states were reluctant to relinquish control of water resources to the Commonwealth. The Australian Constitution 1901 records the final concessions made by the states.

The states kept as much control as possible over the use of water resources. As a result, the Australian Constitution directly refers to water or natural resources only in sections 98 and 100.²⁸ Section 98 of the Australian Constitution states:

The power of the Parliament to make laws with respect to trade and commerce extends to navigation and shipping, and to railways the property of any State.

Section 100 states:

The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the water of rivers for conservation or irrigation.

Section 98 extends the scope of section 51(i) with regard to trade and commerce to include navigable rivers and rail. Section 100 was included to appease states' concerns about the extent of Commonwealth power over navigable rivers.²⁹ The states were concerned about the growing importance of irrigation and whether section 98 of the Constitution could override state interest in other uses of water.³⁰

²⁷ Paul Kildea and George Williams "The Constitution and the Management of Water in Australia's Rivers" (2010) 32 Sydney L. Rev. 595 at 601.

²⁸ Jacqueline Peel and Lee Godden "Australian Environmental Management: A 'Dams' Story" (2005) 28 University of New South Wales Law Journal 668 at 670.

²⁹ Kildea and Williams, above n 27, at 601.

³⁰ At 601.

Their concerns were unfounded. As the use of rivers changed from navigation to irrigation, the power under section 98 became irrelevant.³¹ In effect, the states retained a great deal of control over water resources and the Commonwealth did not have the direct power to implement water allocation policy across Australia.

Indigenous Australians have been excluded from water law and policy development because the legal recognition of indigenous rights did not occur until the 1990s.³² Nevertheless, the decision in *Mabo v Queensland* confirmed that the indigenous rights of Aboriginals to land and water were not abolished by the colonial acquisition of sovereignty and could be recognised in common law.³³ The Murray-Darling Basin Authority guided the inclusion of indigenous communities in water planning³⁴ and there has been a slow progression in the inclusion of indigenous values in water planning. During the more recent reforms, indigenous communities were rarely included in water planning;³⁵ Although, consultation with indigenous communities has improved much more work needs to be done to include indigenous communities in water allocation strategy.³⁶

³¹ At 601.

³² Elizabeth Macpherson and others “Lessons from Australian Water Reforms: Indigenous and Environmental Values in Market-Based Water Regulation” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance*. (Springer, Singapore, 2018).

³³ *Mabo v Queensland* [No 2] (1992) 175 CLR 1, 36 at 59-60. Confirmed that the legal doctrine of *terra nullius* could not apply where the land was already inhabited. As a result, customary law could apply and indigenous land entitlements remained. In order to prove customary claim to water a connection with the water as per traditional custom must be proven before a claim is successful.

³⁴ Murray-Darling Basin Authority A yarn on the river – getting Aboriginal voices into the Basin Plan. Murray-Darling Basin Authority (MDBA, Canberra, 2011).

³⁵ National Water Commission *National Water Commission 2009 Biennial Assessment* (NWC, Canberra, 2009). It also commissioned a further report in 2013 *NWC A review of Indigenous Involvement in Water Planning* (National Water Commission, Canberra, 2014)

³⁶ Australian Government A Module To Support Water Planners And Managers Develop And Implement National Water Initiative Consistent, Inclusive Water Planning And Management Processes That Support Indigenous Social, Spiritual and Customary Objectives. (National Water Commission, Canberra, 2017).

3 *Early water-sharing agreements between states*

Tension has existed between federal and state systems for allocating water from the time of the Australian colonies. There are “long-standing tensions between the two layers of government that go much wider than water policy and management”.³⁷ This tension has been most evident in the Murray-Darling River catchment.³⁸ Many communities and farms are dependent on the water in the Murray-Darling Basin.³⁹ Indeed, the Murray Darling Basin contains 65% of irrigated land in Australia and produces 39% of total agricultural production.⁴⁰ Consequently, the greatest demand for Basin water is from irrigation.⁴¹ Tension arises from the fact that the Murray-Darling Basin is an important source of agricultural production and also that there is a need to balance these demands with environmental, cultural and social factors too.⁴²

Prior to the more recent water law reforms, there were earlier attempts to address this tension by encouraging greater co-operation between Murray-Darling Basin states.⁴³ The first attempts to manage the political tension were via inter-government agreements for water sharing between states in the early 1900s. The Inter-State Royal Commission 1902 examined the legal basis for water rights

³⁷ Daniel Connell and Quentin Grafton “Water Reform in the Murray Darling Basin” (2011) 47(12) *Water Resour. Res.* 1.

³⁸ Above.

³⁹ For an overview of the history of the Basin and its development see Murray Darling Basin Authority *Guide to the Proposed Basin Plan* (MDBA, Canberra, 2010).

⁴⁰ At 13.

⁴¹ Australian Bureau of Statistics *4610.0—Water account, Australia, 2015–16* (ABS, Canberra, 2016); Australian Bureau of Statistics *4618.0—Water use on Australian farms, 2015–16* (ABS, Canberra, 2017).

⁴² John Quiggin and others “Climate change, uncertainty, and adaptation: the case of irrigated agriculture in the Murray–Darling Basin in Australia” (2010) 58(4) *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie* 531; Mac Kirby and others “Sustainable irrigation: How did irrigated agriculture in Australia's Murray–Darling Basin adapt in the Millennium Drought?” (2014) 145 *Agricultural Water Management* 154; Australian Bureau of Statistics *Gross Value of Irrigated Agricultural Production, 2015-16* (ABS, Canberra, 2017).

⁴³ Daniel Connell and R Quentin Grafton “Planning for water security in the Murray-Darling Basin” (2008) 3(1) *Public Policy* 67 at 69.

exercised by New South Wales, Victoria and South Australia.⁴⁴ In doing so it considered the application of the riparian doctrine to surface water takes by states. It soon became clear that the states preferred a political solution to water sharing rather than debating points of law on the application of riparian rights.⁴⁵ The River Murray Waters Agreement (RMWA) 1914 between New South Wales, Victoria and South Australia resulted in the creation of the River Murray Commission in 1917 (RMC) which would oversee the water sharing agreement.⁴⁶ The RMC managed water sharing (and the associated costs) between states in the Murray-Darling Basin.⁴⁷ The Agreement focused on the development of infrastructure for water storage.⁴⁸ One shortcoming of the Commission was that its commissioners acted in the interest of the state governments that appointed them.⁴⁹ Even today balancing the collective needs of the Murray-Darling Basin catchment and individual state interests remains one of the problems facing water allocation law and policy in Australia.

3.1 The State-Sponsored Construction of Dams

The state commitment to the RMWA was put under pressure by developments, which increased demand for water. The period from 1917 to the early 1970s saw the expansion of Australian water infrastructure.⁵⁰ In particular, the development of

⁴⁴ Sandford Clark “The River Murray Question: Part II Federation, Agreement and Future Alternatives” (1971) 8 MULR 215 at 217.

⁴⁵ At 224.

⁴⁶ River Murray Waters Act 1915 (Cth).

⁴⁷ Kildea and Williams, Williams “The Constitution and the Management of Water in Australia's Rivers” above n 27, at 598. The agreement was implemented the following year by New South Wales, South Australia and Victoria by passing legislation in 1915.

⁴⁸ Connell and Grafton, “Water Reform in the Murray Darling Basin” above n 37, at [10] states “Like all subsequent intergovernmental agreements, including the most recent reforms in 2007, it excluded land use issues, which remain the preserve of the states”.

⁴⁹ Paul Kildea and George Williams “The Constitution and the Management of Water in Australia's Rivers” (2010) 32 Sydney L. Rev. 595 at 598.

⁵⁰ John Williams “Water reform in the Murray-Darling Basin: a challenge in complexity in balancing social, economic and environmental perspectives” (2017) 150(1) J. Proc. R. Soc. NSW 68–92.

further irrigation infrastructure increased the demand for water in Australia.⁵¹ Unfortunately, irrigation investment after World War II was based on erroneous environmental assumptions about soil and hydrology.⁵² These irrigation schemes lacked regulatory guidance⁵³ and the financial viability of irrigation schemes was also an issue. Private investors often initiated irrigation schemes, but public funds were spent on water supply infrastructure.⁵⁴ During the 1940s some states cooperated to construct large dams.⁵⁵ The downside of this construction was that water allocation within these schemes became increasingly complex to manage. There was broad discretion in the application of administrative criteria for managing the dams,⁵⁶ with the result that dams became oversubscribed and that dam managers exercised their discretion when making complex water decisions during water shortages.⁵⁷ These factors exacerbated problems with over-allocation within the larger schemes.

3.2 Evidence of Over-Allocation in the Murray-Darling Catchment

The failure of the existing water-sharing agreements between states (such as the RMWA) became apparent as more evidence of over-allocation in the Murray-

⁵¹ The River Murray Waters Agreement 1915 was amended in 1934 to reflect the use of water for irrigation and the construction of water infrastructure. See River Murray Waters Agreement Amendment Act 1934; John Pigram *Australia's Water Resources: from Use to Management* (CSIRO Publishing, Collingwood, 2007) at 128; M Leah and LM Gibbs, "Just add water: Colonisation, water governance, and the Australian Inland" (2009) 41 *Environ. Plan. A* 2964–2983; Jason Alexandra "Evolving governance and contested water reforms in Australia's Murray Darling Basin" (2018) 10(2) *Water* 113.

⁵² Trevor Langford-Smith and John Rutherford *Water and Land; Two Case Studies in Irrigation* (Australia National University Press, Canberra, 1966) at 3; Bruce Thom "Professor Trevor Langford-Smith, 1916–2011" (2012) 43 *Australian Geographer* 93.

⁵³ Poh-Ling Tan *Legal Issues Relating to Water Use. In Property: Rights and Responsibilities Current Australian Thinking* (Land and Water Australia, Canberra, 2002) at 18.

⁵⁴ At 18.

⁵⁵ Examples include the 1946 New South Wales and Queensland Border Rivers Agreement Snowy Mountains Hydro-Electric Power Act 1949 (Cth). This era was described as "cooperative federalism" particularly in writing that discusses the constitutional issues associated with passing of Commonwealth Acts affecting state activities for resource development. See James Crawford "The Constitution and the Environment" (1991) 13 *Sydney L. Rev.* 11-30.

⁵⁶ Tan, above n 53, at 19.

⁵⁷ At 19.

Darling Basin emerged, with over-allocation becoming increasingly apparent in the 1970s and 1980s as the Murray-Darling catchment began to show the environmental effects of over-allocation. Tan explains that there was “significant” over-allocation in some states which had not been measured accurately.⁵⁸ The actual over-allocation was worse than anticipated because not all water takes were fully utilised, which meant that if the full volumes of water allocated in permits were actually taken, then water demand would have exceeded water supply to a far greater extent than was the case.

The environmental effects of over-allocation became increasingly apparent in the Murray-Darling Basin during the 1980s. In 1981, the mouth of the Murray River closed for the first time since water flow records had been maintained.⁵⁹ The closing of the Murray symbolised the failure of water allocation policy to provide sustainable allocation. By the early 1980s, the pressure from growing development and demand for water in the Murray-Darling Basin contributed to the failure of the RMWA.⁶⁰ In response, the River Murray Commission was replaced by the Murray Darling Basin Ministerial Council, the Community Advisory Committee and the Murray-Darling Basin Commission.⁶¹

4 *Commonwealth Utilisation of ‘External Affairs’ Power*

The Commonwealth government responded to over-allocation by encouraging increased co-operation between the states within its limited formal powers under the Constitution.⁶² This section begins by discussing the Commonwealth heads of

⁵⁸ At 20.

⁵⁹ Australian Government, Murray Darling Basin Authority *A Path to Water Reform. Timeline of Water Resource Management in the Murray-Darling Basin* (Murray Darling Basin Authority, Canberra, n.d.).

⁶⁰ Daniel Connell and Quentin Grafton “Planning for water security in the Murray-Darling Basin” above, n 43 at 68.

⁶¹ At 68. The River Murray Commission was originally established as part of the River Murray Waters Agreement.

⁶² Douglas E Fisher *Australian Environmental Law Norms Principles and Rules* (3rd ed, Lawbook Co, Sydney, 2014).

power in the Constitution.⁶³ The Commonwealth government faced the problem of coordinating a response to over-allocation within the constitutional framework. The policy response needed to cover state and natural catchment boundaries. The Tasmanian Dam case discussed below is relevant to understanding the use of constitutional power to address environmental issues. The analysis in this section shows that the lack of a clear constitutional mandate at a Commonwealth level has been a problem in Australian water allocation law.

Australian water law reform at the Commonwealth level relied upon the implementation of international law through the “external affairs” power in s51(xxix).⁶⁴ It was used to implement international treaties and agreements into domestic law. The “external affairs” power is defined in broad terms and as a result “the range of topics the Commonwealth can regulate via the external affairs power has expanded considerably”.⁶⁵ The expansion of the external affairs power includes international agreements such as the World Heritage Convention signed in 1974 and the Ramsar Convention signed in 1975.⁶⁶

The Ramsar Convention required signatories to identify and list significant wetlands. These wetlands must then be protected to encourage their “wise use”, as stated in Article 3 of the Convention. The implementation of the Convention has been through the provision of the Murray-Darling Basin Plan discussed below. The legal requirement to implement the Convention is found in section 20(a) of the Water Act 2007 (Cth), which requires the Act to give effect to “relevant international agreements”. Failure to give effect to international agreements would

⁶³ These powers include the overseas and interstate trade power, the trading corporations’ power, race power and the external affairs power; see George Williams, Sean Brennan and Andrew Lynch *Blackshield, & Williams Australian Constitutional Law and Theory Commentary and Materials* (6th ed, The Federation Press, Sydney, 2014).

⁶⁴ The legal status of the Water Act 2007 (Cth) and the use of constitutional powers was reviewed by the Australian Government Solicitor. See Australian Government Solicitor AGS, *Swimming in New Waters: Recent Reforms to Australian Water Law*, Legal Briefing No. 90, 21 July 2009.

⁶⁵ Patrick Keyzer *Principles of Australian Constitutional Law 4th ed* (LexisNexis, Chatswood, 2013) at 198.

⁶⁶ *Convention Concerning the Protection of the World Cultural and Natural Heritage Treaty* Series No. 1037 (1972); and *Convention on Wetlands of International Importance especially as Waterfowl Habitat*. Ramsar (Iran) Treaty Series No. 14583 (1971) and Jonathan La Nauze and Emma Carmody “Will the Basin Plan Uphold Australia’s Ramsar Convention obligations?” (2012) *Australian Environment Review* 311.

violate the Murray-Darling Basin Plan itself in accordance with constitutional law.⁶⁷

The World Heritage Committee accepted nominations of heritage sites from each government. In the case of Australia, this was the Commonwealth government. The implementation of the Convention was subject to political debate and created divisions between Commonwealth and state-level governments as they pursued the green vote.⁶⁸

4.1 “External Affairs” Power and The Tasmanian Dam Case

The *Tasmanian Dam* case was a high-profile case which illustrated these political tensions and how they raised constitutional points of law.⁶⁹ In particular, the legal question was whether the Commonwealth government had the power to rely upon its “external affairs” constitutional power to implement international environmental conventions within states. The Hydro-Electric Commission of Tasmania followed a policy of “hydro-industrialisation” to improve state development.⁷⁰ In 1967, the Commission proposed the first stage of a dam which included flooding Lake Pedder. Although the proposal was met with strong public resistance, the first stage of the dam was constructed.⁷¹

In 1979, the Hydro-Electric Commission tabled the second part of its dam proposal for the Franklin River. Again, there was public resistance to the proposal. In 1983, the incoming Commonwealth government pledged to stop dam construction if

⁶⁷ Confirmed in *Victoria v Commonwealth* (1996) 187 CLR 416; 138 ALR 129; 70 ALJR 680; BC9603985. Confirmed the precedent in *Commonwealth v Tasmania* [1983] HCA 21; 158 CLR 1; 57 ALJR 450; 46 ALR 625.

⁶⁸ Peel and Godden “Australian Environmental Management: A 'Dams' Story”, above n 28, at 672.

⁶⁹ *Commonwealth v Tasmania* [1983] HCA 21; 158 CLR 1; 57 ALJR 450; 46 ALR 625.

⁷⁰ Bruce Davis “Adaption and Deregulation in Government Business Enterprise: The Hydro-Electric Commission of Tasmania 1945-1994” (1995) 54(2) AJPA 252-261 at 254; and Ben Boer “World Heritage Disputes in Australia” (1992) 7 J. Environ. Law Litig 248.

⁷¹ Pamela F. Walker 1987. *The United Tasmania Group* (Honours dissertation, University of Tasmania). The world’s first green party was formed to lobby against the dam proposal.

elected.⁷² The new government passed the World Heritage Properties Conservation Act 1983 (Cth) overriding state power to approve the dam project.⁷³ The Act was based on the Convention Concerning the Protection of the World Cultural and Natural Heritage, which was ratified by Australia in 1974.⁷⁴ In passing the Act, the Commonwealth relied upon s51(xxvi) to make rules for people “of any race, for whom it is deemed necessary to make special laws” and the power to govern “external affairs” under section 51(xxix) of the Constitution. Before the *Tasmanian Dam* case, the extent of the Commonwealth’s external affairs power was unclear.⁷⁵ The *Tasmanian Dam* case, therefore, confirmed the wide powers of the Commonwealth.⁷⁶ Further decisions also confirmed the “external affairs” power and its use to implement international treaties.⁷⁷

The legal status of the Commonwealth government to implement water law reform was reviewed early in the reform process. The Senate Legal and Constitutional Affairs References Committee confirmed that greater transparency was required on

⁷² Peel and Godden “Australian Environmental Management: A 'Dams' Story”, above n 28, at 672.

⁷³ Barry Cohen, Minister for Home Affairs and Environment, Parliamentary Debates (Parliament of Australia 21 April 1983) at 42 Discussing the “World Heritage Properties Conservation Bill 1983”:

My concern has been increased following a conversation with Mr Peter Waterman, formerly the Head of the South West Tasmania Resources Survey...who has just returned from the World Heritage area on the Franklin River, evidenced large amounts of grading equipment being brought into the World Heritage area to speed up road and associated construction. Of greater concern than even this physical damage is the biological damage which is resulting from this movement of unwashed equipment. Mr Waterman says that a plant disease known as *Phytophthora cinnamomi* has been introduced to the area and is already wreaking savage effect on the plant life.

⁷⁴ Adopted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) General Conference at its 17th session in Paris on 16 November 1972. Convention Concerning the Protection of the World Cultural and Natural Heritage UNTS. 1037 (1972).

⁷⁵ Fisher, above n 62, at 109.

⁷⁶ The earlier case of *Koowarta v Bjelke-Petersen* (1982) 153 CLR 168 had confirmed that laws passed by the Commonwealth to implement international treaties must be reasonable and appropriate. See also Keyzer, above n 29, at 210:

However, any notion that there was an additional requirement of international concern as suggested by Stephen J in *Koowarta v Bjelke-Petersen* (1982) 153 CLR 168 was removed by the *Tasmanian Dam* case (1983) CLR 1.

⁷⁷ *Richardson v Forestry Commission of Tasmania* (1988) 164 CLR 261; *Queensland v Commonwealth* (1989) 167 CLR 232; *Victoria v Commonwealth* [1996] HCA 56; 187 CLR 416; 138 ALR 129; 66 IR 392 considered in relation to the application of international labour conventions being implemented at state level; Also cited in *JT International SA v Commonwealth of Australia*; *British American Tobacco Australasia Limited v The Commonwealth* [2012] HCA 43; 250 CLR 1 in relation to the acquisition of property in trademarks.

the development of water law reform. With regard to the exercise of constitutional power by the Commonwealth government it stated:⁷⁸

4.11 The committee agrees that the ambiguities in the provisions of the Water Act, in relation to the development of the Basin Plan, have largely resulted from the absence of a clear constitutional power for the Commonwealth over water regulation in Australia. In the committee's view, the basis upon which the Water Act is established is unsound: there are clear question marks over the adequacy of the constitutional heads of power (namely, the external affairs power), as well as the limited state referral powers, upon which the Act relies.

The lack of clear constitutional power and its effect on the law reform process are detailed in the section below which evaluates the implementation of the Water Act 2007 (Cth) and the creation of the Murray-Darling Basin Plan.

There is strong evidence to suggest that drought also drives the development of water reform policy. Many studies link the law reform initiatives in Australia to preceding droughts.⁷⁹ The current water reforms “have their parallels to reform in the early twentieth century” as both reform processes had to respond to extreme droughts.⁸⁰ The common factor is that in drought conditions states are more willing to co-operate on water policy.⁸¹ During the 1990s drought and evidence of further environmental problems in the Murray-Darling catchment showed that more urgent action was needed to address over-allocation. During the “Millennium Drought” from 1997 -2009 precipitation in Australia was recorded at its lowest level since the 1900s.⁸² Prior to the Millennium Drought, drought was considered a “climatic

⁷⁸ *Senate Legal and Constitutional Affairs References Committee A Balancing Act: provisions of the Water Act 2007* (Australian Commonwealth Government, Canberra, 2011) at 63.

⁷⁹ Wilson Sousa Júnior and others “Water: Drought, crisis and governance in Australia and Brazil” (2016) 8(11) *Water* 493; Amir Aghakouchak and others “Australia's drought: lessons for California” (2014) 343(6718) *Science* 1430; Mac Kirby “Sustainable irrigation: How did irrigated agriculture in Australia's Murray-Darling Basin adapt in the Millennium Drought?.” (2014) 145 *Agricultural Water Management* 154; Anthony S Kiem “Drought and water policy in Australia: Challenges for the future illustrated by the issues associated with water trading and climate change adaptation in the Murray–Darling Basin” (2013) 23(6) *Global Environ. Chang.* 1615; Matt Kendall “Drought and its Role in Shaping Water Policy in Australia” in Kurt Schwabe and others (eds) *Drought in Arid and Semi-Arid Regions* (Springer, Dordrecht, 2013) 451.

⁸⁰ Daniel Connell and Quentin Grafton “Water Reform in the Murray Darling Basin”, above n 37, at 2.

⁸¹ At 2.

⁸² Albert van Dijk and others “The Millennium Drought In Southeast Australia (2001–2009): Natural and Human Causes and Implications for Water Resources, Ecosystems, Economy, and

abnormality” from a policy perspective and responses to drought were managed as part of disaster relief policies and funds.⁸³ However, the use of disaster relief policy soon changed with the more prolonged drought, issues with the drought support payments and the perception that the government should develop a strategic response to the problem of droughts that were extreme.⁸⁴

The Millennium Drought placed the Commonwealth government under pressure to respond to water allocation in a coordinated manner. A strong policy response was required to address the problems with water allocation exacerbated by drought. The Millennium Drought was so severe that individual state responses alone could not solve the water allocation problems of the Murray-Darling Basin.⁸⁵ Although states were more willing to work together to address water allocation problems under drought conditions, water policy implementation had to start at the Commonwealth level and permeate down to state and regional levels.⁸⁶ This approach was different from the previous efforts to address water allocation problems through water sharing agreements described above.

Despite the severity of drought, the Commonwealth government remained reluctant to make full use of its external affairs power as upheld in the Tasmanian Dam case.

Society” (2013) 49 *Water Resour. Res.* 1040. See also Murray Darling Basin Authority “Developing the Basin Plan. History of Water Management in the Basin” <<https://www.mdba.gov.au/basin-plan-roll-out/basin-plan/developing-basin-plan>>

It took the severe federation drought (1895 to 1902) to bring the states together to start to agree on the management of the Murray. A conference in Corowa in 1902 provided the catalyst, eventually resulting in the River Murray Waters Agreement commenced in 1915 by the governments of NSW, Victoria, South Australia and the Australian Government.

⁸³ LC Botterill, DA Wilhite (eds), *From Disaster Response to Risk Management: Australia's National Drought Policy* (Springer, Dordrecht, 2005).

⁸⁴ See Anthony Kiem “Drought and water policy in Australia: Challenges for the future illustrated by the issues associated with water trading and climate change adaptation in the Murray–Darling Basin” (2013) 23(6) *Global Environ. Chang.* 1615 for a discussion of the historical drivers of water policy responses to drought.

⁸⁵ Matthew Heberger “Australia’s Millennium drought: Impacts and responses” in Peter Gleick (ed) *The World’s Water Volume 7. The Biennial Report on Freshwater Resources* (Island Press, Washington, 2012) 97.

⁸⁶ In 1993, the Council of Australian Governments commissioned a report chaired by Sir Eric Neal to consider water resource issues. See Policy Council of Australian Governments Sir Eric Neal Report of the Working Group on Water Resource Policy to the Council of Australian Governments (Australian Government, Canberra, 1994).

Instead, it opted to follow a policy of “cooperative federalism” which meant working with states to implement environmental policy.⁸⁷ While, on the one hand, cooperative federalism may have been a tactical response to gain state support to implement much-needed water reform.⁸⁸ On the other hand, consensus between states was critical to ensure the progress of such extensive environmental reform. Cooperative federalism was thus best for the long-term success of implementing water allocation law reform because it established a foundation of mutual respect and trust.

5 *The COAG Water Reform Framework 1994 and “cooperative federalism”*

In 1993, the COAG commissioned The Working Group Report on Water Resources Policy to investigate water resource problems.⁸⁹ The Report stated that problems existed in the water industry in terms of the unsustainable use of water, inefficient service delivery, inadequate provision for upgrading infrastructure in rural areas, barriers to moving water to higher-value uses and the need for clarity around the role of water industry institutions.⁹⁰ The Working Group Report on Water Resources Policy’s recommendations were incorporated into the COAG Water Reform Framework 1994.⁹¹

⁸⁷ Gerry Bates *Environmental Law in Australia* (5th ed, New South Wales, LexisNexis, 2002) at 73.

⁸⁸ Crawford “The Constitution and the Environment”, above n 55, at 27.

⁸⁹ Policy Council of Australian Governments Sir Eric Neal Report of the Working Group on Water Resource Policy to the Council of Australian Governments (Australian Government, Canberra, 1994).

⁹⁰ Above. The Report’s concerns were summarised in The Council of Australian Governments. Water Reform Framework 1994 at 2.

⁹¹ The Council of Australian Government (COAG) *COAG Water Reform Framework 1994- Attachment A: Water Resource Policy* (Communique, 25 February 1994) at 1:

The key objectives of the Council’s deliberations were to assist in bringing about a more competitive and integrated national market and more efficient and effective arrangements for the delivery of services in areas of shared responsibility.

Another critical factor influencing Australia's water law and policy reform was concurrent competition policy reform. An Independent Committee of Inquiry examined National Competition Policy in 1993 resulting in National Competition Reforms.⁹² The committee focused on developing a national competition policy in areas where traditionally the public sector had maintained ownership and control; the committee was also critical of public monopolies such as in the gas, electricity and water industries.⁹³ The National Competition Reforms drove the changes to water markets and states were given three "tranche" payments to meet obligations relating to implementing gas, electricity and water reforms.⁹⁴

6 *The COAG Water Reform Framework 1994 Objectives*

The COAG Water Reform Framework 1994 objectives stated that a Water Framework was required to ensure "an efficient and sustainable water industry". It stated that the framework should include pricing, based upon "full-cost recovery" and that future water schemes should be assessed for their economic and ecological sustainability. Unbundling of property rights, in the sense of a fully unbundled water allocation system, was also a significant objective as unbundling would change how water entitlements were defined so that the risk of the final water allocation would be spread across all water users.⁹⁵

⁹² Commonwealth of Australia *National Competition Policy Review Report* (the Hilmer Report) August 1993. Following the Inquiry three intergovernmental agreements were signed in 1995: the Competition Principles Agreement, the Conduct Code Agreement and the Agreement to Implement the National Competition Policy and Related Reforms.

⁹³ At 5.

⁹⁴ Productivity Commission *Impact of Competition Policy Reforms on Rural and Regional Australia*, Report No. 8 (Productivity Commission, Canberra, 1999) at 94.

Implementation of the NCP programme is split into three tranches. At the end of each tranche — in July of 1997, 1999 and 2001 the Commonwealth makes the competition grants available to the States and Territories if they are viewed as having made satisfactory progress with the reforms. Assessments are undertaken by the NCC, which monitors each jurisdiction's progress and makes recommendations to the Commonwealth Treasurer. The Commonwealth Government, not the NCC, decides the amounts of competition grants actually paid

⁹⁵ Objective 4(a) stated a "separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality...".

The “Environmental Water Holder” in Objective 4(b) was a novel concept, effectively giving legal rights to the environment in order to participate in the water market. This chapter assesses the role of the Environmental Water Holder in further detail as part of the Victorian case study discussed below. Objective 4(d) addressed water quality based on “scientific information” to determine the “health and viability” of water catchments.

The effects of over-allocation were recognised in Objective 4(d) which required “substantial progress made by 1998 to provide a better balance in water resource use including appropriate allocations to the environment in order to enhance/restore the health of river systems”. Further measures to prevent over-allocation included specific reference to “significant future irrigation” in Objective 4(f). Such irrigation projects would require “appropriate assessments” in order for “natural resource managers to satisfy themselves that the environmental requirements of the river systems would be adequately met before any harvesting of the water resource occurs”.

The creation of water markets was stated in Objective 5 of the COAG Water Reform Framework 1994 which required states to implement markets within catchments and across political boundaries. Water trading arrangements would begin with the “necessary institutional arrangements...no later than 1998” as stated in Objective 5(b). Water trading and the commitment to institutional arrangements for water markets to operate in each state were a significant requirement of the COAG Water Reform Framework 1994.

The significance of the National Competition Reforms in the context of water reform was that this approach emphasised the market value of water. These market-based concepts were reflected in water policy and conversely water policy was included in the competition policy. For example, the COAG Water Reform Framework 1994 objectives were incorporated into the 1995 National Competition

Policy agreements.⁹⁶ States were required to implement water, competition and other policy as required. The competition reforms supported the marketisation of water. Hussey and Dovers state the importance of competition reform as follows:⁹⁷

National Competition Policy drove reform in many policy domains, and the “Council of Australian Governments water reform” of the 1990s, were a leading example. These reforms focused on productivity, reduction of state subsidies, user-pays, separation of policy and provision, privatization and corporatization of functions, break-up to allow competition, use of market and property right mechanisms and importantly provision of flows to the environment.

The competition reform context also provided an additional level of accountability as state progress in implementing the reforms was monitored.⁹⁸

7 The Establishment of the National Water Commission

7.1 Background to the Establishment of the National Water Commission - A Commitment to Water Markets in the National Water Initiative

The 1994 COAG reforms and Water Reform Framework 1994 indicated a change in water policy towards greater use of markets for reallocation. Fully-allocated catchments need to manage water to shift water use from low-value to high-value use. Thus, the Australian water policy included the use of water markets as a solution to the problem of over-allocation. However, obstacles to the establishment of water markets included political opposition from those holding existing allocations and the complexity of regulating market rules for trading water.⁹⁹

⁹⁶National Competition Council “Assessment of government’s progress in implementing the National Competition Policy and related reforms 2005 (Commonwealth Government of Australia, Melbourne, 2005) at xvi.

⁹⁷ Karen Hussey and Steven Dovers “Trajectories in Australian Water Policy” (2006) 135 *Journal of Contemporary Water Resources and Education* 36 at 39.

⁹⁸ Cameron Holley and Darren Sinclair “Australia’s Water Reform Journey – from Stagnation to Innovation” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) at 11. The implementation of the reforms was overseen by the National Competition Council.

⁹⁹ Thomas Garry “Water Markets and Water Lessons in the United States: Lessons from Australia” (2007) 4(2) *MqJICEL* 23.

Institutional changes were required to overcome these problems.¹⁰⁰ The establishment of the National Water Commission in 2004 was, therefore, one of the most important policy contributions of the National Water Initiative 2004.¹⁰¹ Before examining the role of the Commission in more detail other aspects of the National Water Initiative are also relevant to fully understanding the role of the Commission.

The NWI was instrumental in addressing the imbalance between surface water and groundwater allocation. Prior to the NWI, there was a far greater emphasis on surface water rights. The NWI addressed the imbalance by providing for the recognition of and planning for groundwater at the same level as surface water. The extent of groundwater inclusion in the NWI leads to the observation that “What is most notable about the NWI is not that groundwater is mentioned, but that its mention is pervasive”.¹⁰² The NWI sought to recognise the connection between groundwater and surface water as a single source in clause 23(x), which indicates that the NWI had a clear focus on both surface water and groundwater.

The NWI also needed to address the historical legacy of water allocation regulation that had resulted in “the complexity of current water property rights”.¹⁰³ More specifically, Australia’s historical water allocation policy had resulted in different licences, permits and irrigation rights to water between states, which needed to be addressed as part of reform.¹⁰⁴ The different approaches taken by states to defining water rights created variations in entitlements to water as these approaches depended upon state water allocation policy. The practices taken by different states

¹⁰⁰ Rowan Roberts, Nicole Mitchell and Justin Douglas “Water and Australia’s Future Economic Growth” (2006) 1 Economic Round-Up 53 at 65.

¹⁰¹ K Stoeckel and H Abrahams (2007) “Water reform in Australia: The National Water Initiative and the role of the National Water Commission” in K Hussey and S Dovers (eds) *Managing Water For Australia: The Social and Institutional Challenges*. (CSIRO Publishing, Melbourne, 2007).

¹⁰² Barbara Cosens “Governing the Freshwater Commons: Lessons from Application of the Trilogy of Governance Tools in Australia and the Western United States” in Cameron Holley and Darren Sinclair (2018) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) at 289.

¹⁰³ At 65.

¹⁰⁴ At 65.

in regulating property rights in water were a barrier to the implementation of the NWI,¹⁰⁵ given that the NWI was attempting to standardise water allocation methods and policy as far as practicable to operate a mature water market.¹⁰⁶ One of the first steps to achieve standardised water policy was set out in the COAG Water Framework 1994 and the NWI which both stated that water rights should be unbundled.¹⁰⁷ In order to facilitate unbundling states were encouraged to follow the NWI directive to separate water take and use. However, the directive did not prescribe the method for states to unbundle. As a result, different types of water property entitlements exist across states. Unbundling was controversial because it “marked a significant change in the governance of water as a common pool resource within Australia”.¹⁰⁸

As shown above the NWI was attempting to bring about ambitious change to water allocation in Australia. In light of the constitutional barriers to state co-operation discussed earlier in the chapter, it was important that there was independent oversight of the water reform implementation. It is in this context that the role of the National Water Commission should be considered.

The National Water Commission was one of the most important institutions to emerge from the National Water Initiative 2004.¹⁰⁹ It was a strong element of

¹⁰⁵ *ICM Agriculture Pty Ltd v The Commonwealth* [2009] HCA 51 (9 December 2009) challenged the replacement of existing water rights with a water licence under the Water Management Act 2000 (NSW). The Court held that the change to the water right was not an acquisition of property from original water right holders and did not necessitate any payment in compensation for the loss of water.

¹⁰⁶ Connell and Grafton, above n 80, at 5. The NWI reform needs to be considered in light of the broader competition reforms which sought to make the Australian economy more competitive.

¹⁰⁷ The NWI also required water metering requirements in paragraphs 87-89 which required a consistent approach to metering. Water meter requirements in the Australian Government *National Framework for Non-Urban Water Metering Policy Paper* (Department of Sustainability, Environment, Water, Population and Communities, Canberra, 2009) provided for annual government audits in addition to self-audits. An audit could review meter details, installation, maintenance, verification and compliance.

¹⁰⁸ Lee Godden “Environmental Markets and Property in Water” in Aileen McHarg, Barry Barton, Adrian Bradbrook and Lee Godden (eds) *Property and the Law in Energy and Natural Resources* (Oxford University Press, Oxford, 2010) at 427.

¹⁰⁹ Cameron Holley and Darren Sinclair “Introduction to this Special Issue. Rethinking Australian water law and governance: Success, challenges and future directions” (2016) 33 EPLJ 275 at 279.

Australian water law reforms, which was tied to its role as an “independent watchdog” and the ability to provide advice to both the COAG and Commonwealth Government on water issues.¹¹⁰ Section 7 of the National Water Commission Act 2004 stated the Commission’s functions, including undertaking audits requested by the COAG to determine “whether parties to the NWI are implementing their commitments under the NWI”.¹¹¹ Every three years the National Water Commission had the statutory power to “assess the progress of parties to the NWI towards achieving the objectives and outcomes of, and within the timelines required by, the NWI” and report these to the COAG with recommendations on how to improve outcomes.¹¹² There was a further function to “monitor areas that are significant for achieving the objectives and outcomes of the NWI”¹¹³ The National Water Commission could research water policy related matters including the sustainable management of water.¹¹⁴ These functions consolidated the responsibility for the implementation of the National Water Initiative and the water policy direction contained within it.

The independent review function of the Commission, contained in the National Water Commission Act 2004, is a distinctive feature of the Australian water reforms that New Zealand does not have. As part of carrying out their statutory review function, the National Water Commission reviewed the implementation of the National Water Initiative several times.¹¹⁵ In its final report in 2014, it provided an account of a decade of water law reform concluding that substantial work remained

¹¹⁰ Poh-Ling Tan (2007), “How do water markets function in droughts and other hard questions: Learning from law reform in Australia” presented at Legal Aspects of Water Sector Reforms Geneva, International Environmental Law Research Centre at 8.

¹¹¹ Water Commission Act 2004 (Cth) s, 7 (1)(a) Repealed.

¹¹² Water Commission Act 2004 (Cth) s, 7 (1)(b) Repealed.

¹¹³ Water Commission Act 2004 (Cth) s, 7 (1)(d) Repealed.

¹¹⁴ Water Commission Act 2004 (Cth) s, 7 (1)(i) Repealed.

¹¹⁵ These reports include National Water Commission *Australian Water Markets Report 2010-11* (Australian Government, Canberra, 2011); National Water Commission *Murray Darling Basin Plan Implementation: Initial Report. Report No 1 Part 3 of the Water Act 2007(Cwth)* (Australian Government, Canberra, 2007); and National Water Commission *The National Water Initiative - securing Australia's water future: 2011 Assessment* (Australian Government, Canberra, 2011).

outstanding in implementing the reforms.¹¹⁶ One of the areas of concern was that the Commonwealth was that “the Commonwealth is drawing back from its leadership role to a significant extent”.¹¹⁷

The abolition of the National Water Commission was announced in the 2014 budget, initially without clear guidelines on the redistribution of its functions.¹¹⁸ The Commission’s audit and three-year assessment function were transferred to the Productivity Commission. The National Irrigators Council supported the abolition of the National Water Commission “on the basis that it would reduce the number of government agencies that are involved in the process of water reform”.¹¹⁹ Arguments in favour of abolishing the National Water Commission included budget constraints and efficiency in government

The Opposition was highly critical of the decision to abolish the Commission. It stated the Commission had an important role to play in auditing, monitoring, indigenous rights that have goodwill and institutional knowledge.¹²⁰ It was an “independent voice on often very difficult, controversial, and highly contested policy areas”.¹²¹ The Opposition was concerned that the expertise and experience of National Water Commission in water reform would be lost when abolished.¹²² . Despite these concerns the in 2015, the Commonwealth disestablished the National Water Commission citing concerns related to the cost of having a separate body to carry out the monitoring function of the Commission.¹²³

¹¹⁶ National Water Commission *Australia’s Water Blueprint: National Reform Assessment 2014* (Australian Government, Canberra, 2014) at [5.1].

¹¹⁷ At [5.1].

¹¹⁸ Parliamentary Debates (26 May 2015) above n 26 at 4496.

¹¹⁹ At 4496.

¹²⁰ At 4504.

¹²¹ Parliamentary Debates (26 May 2015) National Water Commission (Abolition) Bill 2015 Butler at 4493.

¹²² At 4496.

¹²³ National Water Commission (Abolition) Act 2015 (Cth); Parliamentary Debates (26 May 2015) National Water Commission (Abolition) Bill 2015 Butler at 4491.

The reasoning behind the disestablishment of the National Water Commission illustrated that the water policy rhetoric in Australia had shifted. It shifted from focusing on the restoration of the Murray-Darling River Basin through a collective approach (as indicated in the National Water Initiative) to a greater focus on costs of providing government services. This shift in the implementation of the reforms has been described as a transition from “innovation to stagnation”.¹²⁴ In support of this view, the Wentworth Group of Concerned Scientists was also critical stating that Australian governments were taking a step back in water reform. In their opinion moving away from the water reform agenda initiated a decade earlier was a mistake.¹²⁵

It appears that our Australian governments are walking away from strategic water reform at the very time when we should be preparing for the next inevitable drought

It was shortsighted to abandon strategic water reform by abolishing the Commission. The Commonwealth Government invested significant funds and effort to implement water law reform. Overcoming constitutional barriers to water law was very difficult. Then independent voice of the National Water Commission was instrumental in bringing transparency to implementing reform across states, and also reviewing progress. Australia should not have abolished the National Water Commission.

Once the review function of the National Water Commission was transferred to the Productivity Commission. The Productivity Commission released its first review report in 2018.¹²⁶ A notable submission to the review was from academics and practitioners working in the water law and policy area.¹²⁷ They collectively

¹²⁴ Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018).

¹²⁵ Wentworth Group of Concerned Scientists *Statement on the Future of Australia's Water Reform* (Wentworth Group, Online, 2014). The Wentworth Group is an independent group of scientists, economists and business people. One of its programs is focussed on national water reform.

¹²⁶ Productivity Commission *Murray Darling Basin Plan: Five-year assessment. Productivity Commission Inquiry Report No.90* (Australian Government, Canberra, 2018).

¹²⁷ The submitters included Dr Emma Carmody, EDO NSW, Professor Barbara Cosens, University of Idaho, Professor Alex Gardner, University of Western Australia, Professor Lee Godden, University of Melbourne, Dr Janice Gray, UNSW Sydney, Associate Professor Cameron Holley, UNSW Sydney, Dr Bruce Lindsay, Environmental Justice Australia, Dr Liz Macpherson,

expressed concern regarding the progress of the reforms citing the end of the Millennium drought and the abolition of the NWC as two factors contributing to the perception that the government was no longer interested in water law reform.

7.2 The Living Murray

In addition to the NWI discussed above, a further policy initiative undertaken in 2004 was the Living Murray. The Living Murray First Step confirmed that a more systematic approach was needed to address over-allocation and environmental degradation of the Murray-Darling Basin.¹²⁸ The Murray Darling Basin Commission proposed several initiatives to improve the health of the Murray-Darling Basin as part of the Living Murray policy.¹²⁹ It put forward proposals to increase environmental flows to levels to the Murray-Darling Basin and ranked the proposals in terms of whether they had a low, moderate or high chance of success. The proposals were developed with the input of a scientific reference panel which found that an increase of 1630GL of environmental flows had a moderate chance of improving the environmental health of Murray-Darling Basin. Overall, the Living Murray was a significant improvement in terms of the level of coordination, investment and commitment to environmental health of the Murray-Darling Basin.¹³⁰ The difference between the Living Murray and the NWI was that the Living Murray was developed as part of the Murray-Darling Basin Commission policy, while the NWI was developed at the state level.

University of Canterbury and University of Melbourne, Dr Rebecca Nelson, University of Melbourne and Stanford University, Erin O'Donnell, University of Melbourne, Dr Lily O'Neill, University of Melbourne, Dr Kate Owens, University of Sydney, Dr Darren Sinclair, Australian National University. See Emma Carmody and others *Submission To The Inquiry Into The Reform Of Australia's Water Resources Sector 17 April 2017*

¹²⁸ Murray-Darling Basin Commission *The Living Murray Environmental Watering Plan 2006–2007* (MDBC, Canberra, 2006).

¹²⁹ Scientific Reference Panel for the Living Murray Initiative Cooperative Ecology *Ecological Assessment of Environmental Flow Reference Points for the River Murray System (Interim Report)* (Murray–Darling Basin Commission, Canberra, 2003).

¹³⁰ Daniel Connell and Quentin Grafton “Water Reform in the Murray Darling Basin”, above n 37 at 3.

7.3 *The Significance of a Water Cap on Water Extraction*

The implementation of a cap on water extraction was an important step in addressing the over-allocation problem in the Murray-Darling Basin. The cap was also critical in establishing water markets in Australia because it indicated that the catchment was fully allocated.¹³¹ The process of establishing a cap on water extraction from the Murray-Darling Basin began in 1995 with the Murray-Darling Ministerial Council limiting surface water diversion in response to over-allocation.¹³² At first, the cap was temporary. However, it became permanent in July 1997.

On the one hand, the cap is viewed positively as the most important decision of the Ministerial Council because all states agreed to it voluntarily.¹³³ On the other hand, there was criticism that the cap would not be an effective policy to address over-allocation because the extraction limits were based only on prior use when they should have been based on sustainable limits that took into account environmental needs.¹³⁴ Connell and Grafton conclude the cap failed because it was not fully implemented.¹³⁵ The cap depended on the states' willingness to implement it in order for it to be successful; however, the Commonwealth had no legal mandate for

¹³¹ Viki Wayne and Christina Son "Regulating the Australian Water Market" (2010) 22 J. Environ. Law 431 at 437; John Quiggin "Why the Guide to the Proposed Basin Plan failed, and what can be done to fix it" in John Quiggin, Thilak Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray Darling Basin* (Edward Elgar, Cheltenham, 2012).

¹³² The Ministerial Council commissioned an audit of the Basin in 1995. Following the audit, it put in place a temporary cap on water extraction.

¹³³ John Scanlon "A hundred years of negotiations with no end in sight: Where is the Murray Darling Basin Initiative leading us?" (2006) 23 EPLJ 1 at 6.

¹³⁴ At 6.

¹³⁵ Connell and Grafton "Planning for water security in the Murray-Darling Basin", above n 47, at 69

“states to resource the necessary compliance work”.¹³⁶ In support of this position, Connell and Grafton give the example of the cap’s not being extended to include groundwater, even though there was a policy to do so. Connell and Grafton contend that the failure of the cap was symptomatic of the “general failure” of the Murray-Darling Ministerial Council to implement policy to improve the environmental health of the Murray-Darling Basin.¹³⁷ By the early 2000s, there was growing concern that the initial momentum in water policy from the early 1990s was declining.

The voluntary cap transitioned into mandatory sustainable limits under the Water Act 2007 (Cth). The Act required the establishment of “environmentally sustainable limits” as part of the Murray-Darling Basin Plan.¹³⁸ The policy incentives for capping surface water diversions were to improve the overall environmental health of the Murray-Darling River Basin and encourage water trading.¹³⁹ The move to mandatory sustainable limits was part of a broader Commonwealth response to encourage states to renew their commitments to advancing water policy. The provisions of the Water Act 2007 (Cth) reflect a desire to make improvements to the allocation of water in the Murray-Darling Basin. The Water Act introduced a range of new policy measures that states were required to implement in accordance with the Act.

The Water Act 2007 (Cth) required states to legally recognise the environmental water.¹⁴⁰ While states such as Victoria have embraced the concept and established the Victorian Environmental Water Holder as a separate entity, other states have not followed through in the same manner as is discussed in the case studies that

¹³⁶ Jennifer McKay, (2008) “The Legal Frameworks of Australian Water: Progression from Common Law Rights to Sustainable Shares” in Lin Crase (ed) *Water Policy in Australia. The Impact of Change and Uncertainty* (RFF Press, Washington, 2008) at 48.

¹³⁷ Connell and Grafton “Planning for water security in the Murray-Darling Basin”, above n 47, at 69 and Daniel Connell *Water Politics in the Murray-Darling Basin*. (Federation Press, Sydney 2007).

¹³⁸ Water Act 2007 (Cth), s 20(b).

¹³⁹ A Horne, J Freebairn and E O’Donnell “Establishment of environmental water in the Murray Darling Basin: An analysis of two key policy initiatives” (2011) 15(1) *AJWR* 7 at 8.

¹⁴⁰ At 8.

follow in this chapter. In this regard, Australia is a leader in water policy development. Environmental water is not a feature of New Zealand water law. Comparative studies on water law show there is a “greater acceptance” of the concept of environmental water by the Australian government than in other countries such as the United States.¹⁴¹

8 *Commonwealth Water Law and Policy - The Water Act 2007 (Cth)*

The Commonwealth’s national policy programme included the enactment of the Water Act 2007¹⁴² The regulation and implementation of Australian water reforms deserve closer attention and the Act is central to the recent reforms.¹⁴³ The Act has a national rather than state focus in that it takes a top-down approach to implement the reforms. From a constitutional perspective, the Act gives effect to international agreements while reducing over-allocation and protecting ecological values.¹⁴⁴ The objects of the Act emphasise economic interests, water security and cost-effective policy development. These objects form the basis of the Commonwealth’s direction to states on water allocation law and policy development. The enactment of the

¹⁴¹ Benjamin Docker and Ian Robinson “Environmental water management in Australia: experience from the Murray-Darling Basin” (2014) 30 Int. J. Water Resour D. 164 at 168. This observation was made specifically in relation to America.

¹⁴² Department of the Environment Water Heritage and the Arts (DEWHA), *Water for the Future Policy Program* (Canberra, Australian Commonwealth Government, 2010); Operational aspects of the Act are contained in *Intergovernmental Agreement on Murray–Darling Basin Reform 2008* and the 2013 *Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin* 2013. The Act incorporates the *Murray-Darling Basin Agreement* in terms of its reference to water sharing and inter-state water transfers in Schedule D of the Act.

¹⁴³ Cameron Holley and Darren Sinclair “Water Markets and Regulation: Implementation, Successes and Limitations” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) 101; Cameron Holley and Darren Sinclair “Compliance and enforcement of water licences in NSW. Limitations in law, policy and institutions. (2012) 15(2) Australian Journal of Natural Resources Law and Policy 149. David Mercer, Linda Christesen and Michael Buxton “Squandering the future—Climate change, policy failure and the water crisis in Australia” (2007) 39(2-3) *Futures* 272.

¹⁴⁴ Water Act 2007 (Cth), Part 1 Section 3.

Water Act 2007 (Cth) was designed to revive state commitment and interest in implementing the water law reforms initiated in the early 1990s.

8.1 Establishment of the Murray-Darling Basin Authority and Sustainable Diversion Limits

The Murray-Darling Basin Authority was established under the Water Act 2007 (Cth) to administer the Murray-Darling Basin Plan and ensure that states complied with sustainable diversion limits. It was expected that the sustainable diversion limits would improve the environmental health of the Murray-Darling Basin by increasing the volume of environmental water in the catchment, an expectation which is evaluated below. Amongst other functions, the Authority is responsible for preparing environmental watering plans.¹⁴⁵

Murray-Darling Basin Plan provides the overarching legal framework for water allocation in the Murray-Darling catchment and it works in conjunction with state level water resource plans to achieve Basin objectives.¹⁴⁶ Part 2 of the Act limits water extraction through the establishment of sustainable diversion limits. Part 2 states the core requirements regarding the contents of the Murray-Darling Basin Plan in order to reach the limits set down. These requirements include planning for environmental water to be returned to the Murray-Darling Basin. The Murray-Darling Basin Authority must accredit water resource plans within the catchment as evidence that states comply with the Act. Human needs for drinking water are also taken into consideration. The Murray-Darling Basin Plan must identify critical human water needs and how to meet them, issues which are important in the arid and variable Australian climate.

Limitations in the scope of the Murray-Darling Basin Plan mean that it only controls the management, allocation and trading of water. It does not control land use.

¹⁴⁵ Water Act 2007 (Cth), s 172 states the functions of the Authority.

¹⁴⁶ The Basin Plan 2012(Cth) is a legislative instrument made under the Water Act 2007 (Cth), s 44(3)(b)(i).

Section 22(10) states that the Murray-Darling Basin Plan has “no effect” on land use planning or the “control of pollution”. In effect, the Murray-Darling Basin Plan focuses on water allocation issues, not water quality and land use planning. In comparison to the New Zealand situation, these limitations on land use planning are a point of distinction. The Murray-Darling Basin Plan is administered by the Murray-Darling Basin Authority. The lack of control over land use planning represents one of the gaps in dealing with water allocation issues in the Basin.

Sustainable diversion limits aim to increase the volume of environmental water to the Murray-Darling Basin. The methods employed to reach these sustainable diversion limits have divided opinion in terms of whether the right balance is achieved between human consumptive needs and environmental needs. In particular, there are concerns that the sustainable diversion limits should be reformed to include consideration of climate change.¹⁴⁷ Returning water to the Murray-Darling Basin is contentious because of this “trade-off” between competing demands for water.¹⁴⁸

8.2.1 The return of 2750GL to the environment

An important question in the formulation of the Murray-Darling Basin Plan is how much water is needed to restore the Murray-Darling Basin to a healthy state. Estimates of how much water needs to be returned to the Murray-Darling Basin have changed over time. For example, initial research undertaken by the Wentworth Group stated that 4350GL were required to be returned to the Murray-Darling Basin in order for there to be a good chance of success in restoring its environmental

¹⁴⁷ James Pittock, John Williams and Quentin Grafton. “The Murray-Darling Basin plan fails to deal adequately with climate change” (2015) *Water* 26.

¹⁴⁸Kevin Goss “Environmental flows, river salinity and biodiversity conservation: managing trade-offs in the Murray–Darling Basin” (2003) *51(6) Aust. J. Bot.* 619.

health.¹⁴⁹ In 2010, the Wentworth Group provided a further detailed report stating that 440GL was the volume needed to restore the health of the Murray-Darling Basin.¹⁵⁰ In 2010, the Murray-Darling Basin Authority also provided a figure to restore Basin health, which differed from those of the Wentworth Group. The Authority stated that 3860GL were needed for there to be a reasonable likelihood of success in restoring the health of the Murray-Darling Basin. When this figure was released to the public in the first Basin Plan, there was shock in the irrigation community as it realised the degree of change that was needed to restore Basin health.¹⁵¹ Once sustainable diversion limits were adjusted to include social and environmental impacts, the final figure of targeted water to return to Murray-Darling Basin environment in 2012 was 2750GL. However, there was a lack of transparency in determining this final figure and, as a result, a 2013 Senate Inquiry into the management of the Murray-Darling Basin Authority recommended that a transparent explanation of the 2750GL figure should be given to the public.¹⁵² A further problem with the 2750GL figure is that it only applies to surface water and that there has been a fivefold rise in the volume of groundwater extraction.¹⁵³ In 2017, the Murray-Darling Basin Authority proposed revising the sustainable diversion limit.¹⁵⁴ The consultation Draft Determination Report stated that the

¹⁴⁹ Wentworth Group *Submission to the Senate Inquiry into the urgent provision of water to the Coorong and Lower Lakes* (Wentworth Group, Sydney 2008); The Australian Water Information Dictionary published by the Australian Government Bureau of Meteorology defines one gigalitre as “1,000 megalitres, which also is 1,000,000,000 litres (one billion litres)”.

¹⁵⁰ Wentworth Group *Sustainable diversions in the Murray–Darling Basin: an analysis of the options for achieving a sustainable diversion limit in the Murray–Darling Basin* (Wentworth Group, Sydney 2010).

¹⁵¹ John Williams “Water reform in the Murray–Darling Basin: a challenge in complexity in balancing social, economic and environmental perspectives” (2017) 150(1) *J. Proc. R. Soc. NSW* 68 at 79.

¹⁵² The Senate *Parliament of Australia, Rural and Regional Affairs and Transport References Committee: the management of the Murray–Darling Basin, March 2013* (Australian Commonwealth Government, Canberra 2013).
http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Rural_and_Regional_Affairs_and_Transport/Completed_inquiries/2012-13/mdb/report/index.

¹⁵³ James Pittock, John Williams and Quentin Grafton. “The Murray-Darling Basin plan fails to deal adequately with climate change” (2015) *Water* 26 at 27; Jason Alexandra “Risks, uncertainty and climate confusion in the Murray–Darling Basin reforms” (2017) 3(03) *Water Economics and Policy* 1650038; James Pittock “The Murray–Darling basin: climate change, infrastructure, and water” in Cecilia Tortajada *Increasing Resilience to Climate Variability and Change* (Springer, Singapore, 2016) at 41-59.

¹⁵⁴ Murray-Darling Basin Authority Sustainable Diversion Limit Adjustment Mechanism: Draft Determination Report (Australian Government, Canberra, 2017).

Murray-Darling Basin was on track to meet its target of 2750GL of water being recovered annually on average and effectively 605GL less water needed to be diverted to the environment. The basis for the determination was that the Authority was overseeing several projects that would deliver the 605GL to the environment. The decision of the Authority to change the sustainable diversion limits is highly questionable. In particular, the scientific basis of the Authority's Draft Determination Report was criticised in the South Australian Royal Commission into the Murray-Darling Basin Plan.¹⁵⁵

Moreover, in 2012 the Commonwealth government added a commitment that 450GL also to be returned to the environment, a figure which was agreed to by Basin states in 2018.¹⁵⁶ The 450GL was subject to ensuring that socioeconomic criteria were met before returning the water to the environment.¹⁵⁷ The situation outlined above shows the ongoing tension between balancing the needs of water for the environment and the community. The criteria state that projects must be made public, that they should not harm social or environmental outcomes and that there should be clear timing for project completion. However, of greater importance to the achievement of 450GL environmental water return are the criteria on irrigation. For example, criterion six states:

- Programs or projects do not have negative third party impacts on the irrigation system, water market or regional communities
- a. Where a proposed project is located within an irrigation network, the proponent must provide evidence that the relevant network operator or water corporation is involved in or aware of the project.
 - b. The relevant government or proponent must consult industry bodies, irrigation network operators/, local governments or regional development organisations, on a strategic regional approach which will focus on ensuring there is a mix of water efficiency projects in a region in ways that address industry, network/system and local/regional priorities, future needs and risks and may include research and extension services.

¹⁵⁵ Bret Walker *Murray-Darling Basin Royal Commission* (Government of South Australia, Adelaide, 2019).

¹⁵⁶ Murray-Darling Basin Authority "Murray-Darling Ministers Meet in Melbourne" *Communique* (14 December 2018).

¹⁵⁷ This paragraph draws on the material in "Efficiency Measures – Agreed Criteria" in the Murray-Darling Basin Authority's "Murray-Darling Ministers Meet in Melbourne" *Communique* (14 December 2018).

c. The socio-economic assessment of programs or projects must consider impacts not just on participants, but for broader regions

The requirements under criterion six, and other criteria requiring consultation with community and industry leaders, are challenging to navigate because projects need to be both efficient and to return water to the environment. Furthermore, the Ministerial Council's extra criteria pose a challenge to the legal basis of the Water Act 2007 (Cth) and the Commonwealth's power to implement its water allocation policy across states in a systematic manner. The criteria are damaging to the Commonwealth and state collaboration that was been undertaken to enable Australia to develop its Basin Plan in the first place.

The setting of sustainable diversion limits is subject to extensive complexity. The complexity arises not only from developing proper policy but also political interests.

8.3 Water Buy-Backs

While main method of meeting sustainable diversion limits is through planning instruments, another method of reaching targets is through the Commonwealth purchase of water entitlements. In the Murray-Darling Basin the Australian government has undertaken the "world's biggest buy-back of water rights" costing approximately 2.5 billion Australian dollars.¹⁵⁸ The buy-backs generally occurred through the government's purchasing of water allocations by entering the water market.¹⁵⁹ Water buy-backs were meant to assist with improving the environmental health of the Murray-Darling Basin. However, it has been difficult to measure the direct correlation between water entitlement buy-backs and the health of the Murray-Darling Basin.¹⁶⁰ Water buy-backs have been the most contentious issue for

¹⁵⁸ Quentin Grafton and Sarah Wheeler "Economics of water recovery in the Murray-Darling Basin, Australia." (2018) 10 Annu. Rev. Resour. Econ. 487 at 487.

¹⁵⁹ Above.

¹⁶⁰ Above.

the rural community.¹⁶¹ There were strong protests against the perceived effect of buy-backs on the rural economies where buy-backs occur.¹⁶² It is unlikely, therefore, that further water-backs will occur.¹⁶³

Instead, government policy has shifted towards acquiring environmental water by investing in infrastructure improvements to save environmental water.¹⁶⁴ However, the shift towards investing in infrastructure is now subject to criticism on a number of grounds.¹⁶⁵

An alternative non-government approach to water buy-backs is the Murray-Darling Basin Balanced Water Fund.¹⁶⁶ The Fund was established by the Nature Conservancy on a “counter cyclical” basis so that at times of scarcity more water is allocated to irrigators and in times when there is more water available it is allocated to wetlands.¹⁶⁷

8.4 Establishment of the Commonwealth Environmental Water Holder

If fully implemented the Murray-Darling Basin Plan would see an increase in the volume of water that is classified as environmental water. Successful implementation of the Plan is fraught with various challenges that are detailed in this chapter as states such as South Australia question the actions of upstream states and the commitment of those states to fully implementing the reforms including the Basin Plan. This section examines how the administration of environmental water

¹⁶¹ Katherine Owens “Reimagining Water buybacks in Australia: Non-governmental organisations, complementary initiatives and private capital” (2016) 33(4) EPLJ 342 at 343.

¹⁶² Above.

¹⁶³ Grafton and Wheeler (2018), above n 158.

¹⁶⁴ At 348.

¹⁶⁵ John Williams “Water reform in the Murray–Darling Basin: a challenge in complexity in balancing social, economic and environmental perspectives” (2017) 150(1) J. Proc. R. Soc. NSW 68.

¹⁶⁶ Information Memorandum *The Murray-Darling Basin Balanced Water Fund* (19 October 2015) 3 12.

¹⁶⁷ Ben Carr and others “The Murray-Darling Basin Balanced Water Fund and the Environmental Water Trust—using markets and innovative financing to restore wetlands and floodplains in the Murray-Darling Basin for financial, social and environmental outcomes” Proceedings of the 8th Australian Stream Management Conference, 31 July-3 August 2016. 2016.

was dealt with under the reforms. The issue of the administration of environmental water was carefully considered during the National Water Initiative and the Living Murray policy programme. As a result of these policy programmes the Water Act 2007 (Cth) established the Commonwealth Environmental Water Holder (CEWH) to be the repository of environmental water management. The CEWH is responsible for managing water acquired through water buy-backs and improvements to water infrastructure.

O'Donnell's research on the role of environmental water managers such as the Commonwealth Environmental Water Holder has provided interesting insight into their roles.¹⁶⁸ The research was based on interviews with staff at a range of environmental water bodies which had separate legal personality. Her findings confirmed that the role of the environmental water managers was constrained by their own interpretation of their rights and ability to be the "voice" of environmental water. In fact, the environmental water managers were unlikely to see their legal personhood as an opportunity to advocate for the environment in this manner. The role of environmental water managers was perceived as one where they were to deliver water to the environment, much like irrigators. O'Donnell stated that this interpretation of environmental water manager powers potentially prejudiced the ability of the environment to have an advocate for environmental water as Parliament intended. Further evaluation of environmental water is included in the case study of states within this chapter.

8.5 Water Charges

The Water Act 2007 (Cth) regulates water charges. Water charge rules are legislative instruments which may be created by the Minister under Part 4, Division 1, Section 92(2). Anti-competitive behaviour within the markets is addressed by the Australian Competition and Consumer Commission (ACCC). Section 99 states that

¹⁶⁸ Erin O'Donnell "Competition or Collaboration? Using Legal Persons to Manage Water for the Environment in Australia and the United States" (2017) 34(6) EPLJ 503.

the ACCC monitors and enforces the water market rules. The Minister for the Environment must consult the ACCC before making any rules.¹⁶⁹

Water charges and compliance issues related to market rules, under Part 4 and Part 4A of the Act, are monitored by the ACCC. Section 94 requires the ACCC to monitor and report on compliance with the water market rules. Section 137 reinforces the distinction between the market compliance function of the ACCC and the functions of the Murray-Darling Basin Water Authority. In comparison, the Authority is responsible for the enforcement of matters contained in Part 2 of the Act. Part 2 of the Act that relate to water management issues. The institutional split follows the market-based method of water allocation. For example, the higher-level management of water remains with the Authority. It is the role of the Authority to prepare the Murray-Darling Basin Plan as required by the Water Act 2007 (Cth). Unlike New Zealand, the institutional split of water for irrigation is not at the highest level of water management. Water allocation policy is developed in an integrated manner. The Authority prepares the Murray-Darling Basin Plan in consultation with Basin states, officials of the Murray-Darling Basin committee, the Murray-Darling Basin Community Committee and the ACCC.

New Zealand does not have policy or laws regarding the establishment of water markets, the definition of rights for water products, and the role of the Commerce Commission in water market. These issues will be considered in detail in the next chapter.

9 Property in Water Entitlements – ICM Agriculture v The Commonwealth

The *ICM Agriculture* case provided an opportunity for the High Court of Australia to examine the legal basis for water allocation by the Commonwealth

¹⁶⁹ Water Act 2007 (Cth), s 93.

government.¹⁷⁰ The main issue was whether there had been an acquisition of property under just terms under section 51(xxxi) of the Australian Constitution when irrigators were required to convert their water right to a water permit under the Water Management Act 2000 (NSW).¹⁷¹ The acquisition of property under just terms has a strong legal foundation.¹⁷² Four main requirements must be considered when determining whether section 51(xxxi) applies: first, whether what is acquired by the Commonwealth is classified as “property”; second, whether the property has been acquired; third, whether, if the property has been acquired, the compensation provided is on “just terms”; and fourth, whether the property has been acquired for a reason supported by the Commonwealth’s power to make laws in that particular area.¹⁷³ The first point was accepted in this decision. The second point on whether there had been an acquisition of property was the most pertinent in the case.

ICM Agriculture Pty Ltd (ICM) was an Australian agricultural company. It challenged the replacement of its existing water rights with a water licence under the Water Management Act 2000 (NSW) because the New South Wales government was changing the previous groundwater bore licences that had initially been issued to ICM under the Water Act 1912 (NSW). The change from the existing licence under the old legislation to the new licence under the new legislation effectively reduced the amount of water available to ICM. ICM was offered “structural adjustment payments” by the state acting through the National Water Commission.¹⁷⁴ The Schedule of the Water Management Act 2000 required the preparation of Water Sharing Plans. Thus the effect of the Water Sharing Plans was to reduce water entitlements over 10 years.¹⁷⁵ The Funding Agreement was entered into by the National Water Commission on behalf of the Commonwealth.¹⁷⁶ ICM

¹⁷⁰ D E Fisher “Water law, the High Court and techniques of judicial reasoning” (2010) 27(2) EPLJ at 85.

¹⁷¹ Section 51(xxxi) of the Australian Constitution states:

The acquisition of property on just terms from any State or person for any purpose in respect of which the Parliament has power to make laws.

¹⁷² Keyzer above n 29, at 217.

¹⁷³ Keyzer above n 29, at 218 identified these four points.

¹⁷⁴ ICM Agriculture v The Commonwealth at 1.

¹⁷⁵ At 2.

¹⁷⁶ National Water Commission Act 2004 (Cth).

argued that the payment amounts were inadequate and they “would not amount to ‘just terms’ within the meaning of s51(xxxi) of the Constitution”.¹⁷⁷ The majority judgment accepted the point that the state should not acquire property other than on “just terms”. This conclusion led to further examination of further legal issues. The Court then had to consider whether the change in the plaintiff’s bore licence involved an “acquisition of property other than on just terms within the meaning of s51(xxxi).¹⁷⁸

The plaintiffs argued that their existing bore licences issued under the Water Act 1912 (NSW) were property. The Court considered the reliance on arguments based on English common law and drew attention to the replacement of the riparian doctrine by the Irrigation Act 1886 (Vic). Because the riparian system did not cope well with the water scarcity experienced in the Australian climate, states used legislative power to vest the ownership of water with the Crown.¹⁷⁹ The importance of recognising the effect of these earlier Acts was that they vested the “right to “use” and “control” water with the Crown.¹⁸⁰ The vesting of water with the Crown had implications for the issue of whether or not property had been acquired on just terms.

The Court held that the change to the water right was not an acquisition of property. It disagreed with the plaintiffs who argued that the “property” they had acquired in their bore licences under the Water Act 1912 (NSW) had been eroded. The Court was effectively asked to consider whether those statutory water entitlements resulted in the creation of property.¹⁸¹ Then, if there was an element of property, whether this had been acquired by the State when it replaced the bore licences issued under the Water Act 1912(NSW).

¹⁷⁷ *ICM Agriculture v The Commonwealth* at 1.

¹⁷⁸ At 8.

¹⁷⁹ The Water Rights Act 1896 (NSW) section 1(1) and Water Act 1912 (NSW) s 6 used similar expression.

¹⁸⁰ *ICM Agriculture v The Commonwealth* at 10. Specific legislation on bores was also addressed in the Artesian Wells Act 1897 (NSW) and The Water and Drainage and Artesian Wells (Amending) Act 1906 (NSW).

¹⁸¹ Fisher n 70 at 91.

The Court held that the granting of a bore licence issued under the Water Act 1912 (NSW) and its replacement with water entitlements under the Water Management Act 2000 was not an “acquisition” of property by the State. The reasoning of the Court was based on the following assertions. First, the physical nature of groundwater makes it a public resource which meant the State did not gain anything from limiting the use of water.¹⁸² Second, since 1966, a licence had been required for the right to take water:¹⁸³

The rights the plaintiffs had under their bore licences (in particular, their right to extract certain volumes of water) did not in any sense “return” to the State upon cancellation of the licences. The State gained no larger or different right itself to extract or permit others to extract water from that system.

It was clear that the “State always had the power to limit the volume of water being taken from that resource”¹⁸⁴ The Court held that “there was no acquisition of property”. Nor had the State acquired anything by replacing bore licences. Fisher observes the strong position of the State in managing common resources on behalf of the community as follows:¹⁸⁵

The State was and always had been – certainly under the arrangements by which the State exercises its exclusive right to use and control of water resources – able to control the use of water resource as the common resources or common property of the community. This had probably been the position under the common law and certainly was the position under the legislation.

Fisher provides an important observation, particularly the fact that the underlying position of the common law was, in reality, the vesting of water in the State as a

¹⁸² *ICM Agriculture v The Commonwealth* 87 at [149] per Hayne, Kiefel and Bell. In paragraphs [142-148] the four points considered in reaching this conclusion are addressed. The first is that water is not like other minerals that can be depleted. The implication of this physical aspect of water is that water control is not just about extraction and use. Water control also includes “ensuring its continuing availability”. Secondly, bore licences are “creatures of statute” and none of the licences that was replaced were confirming a prior common law right. Hence these types of statutory licences were “inherently susceptible to change or termination”. Thirdly, it is somewhat misleading and legally incorrect to attach property-like terms to groundwater because the groundwater in the aquifer is not property in a legal sense until it is controlled by a water user in pipes and so on. In making this point the Court relied upon the precedent in *Embery v Owen and Blackstone*. The final point was to take into account the State’s rights over water. These rights are vested with the State.

¹⁸³ At [150] per Hayne, Kiefel and Bell.

¹⁸⁴ At [84] per French Gummow and Crennan.

¹⁸⁵ Fisher above n 70, at 93.

common resource. The starting point for a discussion on the nature of property in a water entitlement should be to acknowledge the status of water as a common resource.¹⁸⁶ This decision set a strong precedent for other licence holders in New South Wales. The decision confirmed that the government could reduce entitlements without this reduction's being an acquisition of property which would have otherwise triggered the requirement for "just compensation".

10 *Water Accounting*

The Australian water reforms addressed the issue of how to value water. To that end. Valuing water also required the development of reliable measurement of water takes and water accounting.¹⁸⁷ The National Water Initiative 2004 specifically required states to implement water accounting, which meant that water accounting was considered early on in the water reform process.¹⁸⁸ The purpose of water accounting was to facilitate benchmarking to create consolidated water accounts at state and national levels.¹⁸⁹ Water accounting would form the basis for measuring progress towards restoring the health of the Murray-Darling Basin. It was clear that to achieve the objective of comparable water accounts, the water accounting system needed to be standardised in that standardised water accounts would allow a

¹⁸⁶ See Janice Gray and Louise Lee "Water Entitlements as Property: A Work in Progress or Watertight Now?" in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) 101 for an examination of property theory and whether the National Water Reforms and the existence of water markets are dependent on ascribing property rights to water. The authors question whether it is possible to transfer water entitlements without secure property rights.

Spencer v Commonwealth of Australia [2015] FCA 754; 240 FCR 282 also followed *ICM Agriculture v The Commonwealth* confirming property rights were not acquired under the Natural Resources Management (Financial Assistance) Act 1992 (Cth) (the NRM Act) and the Natural Heritage Trust of Australia Act 1997 (Cth).

¹⁸⁷ Dustin Garrick and others "Valuing water for sustainable development" (2017) 358 *Science* 1003–1005.

¹⁸⁸ Australian Commonwealth Government *Intergovernmental Agreement on a National Water Initiative 2004* (Department of Environment and Energy (Cth), Canberra, 2004).

¹⁸⁹ Above at s (81).

credible comparison between states to measure compliance with water entitlements and contribute to water trading information.¹⁹⁰

In the Australian context, water accounting also had broader constitutional implications. As described above, each state was required to implement water law reform under the Water Act 2007 (Cth) and to reduce water allocation to sustainable limits. Compliance with sustainable limits of water allocation and the calculation of water savings needed to be measured in a comparable manner. Ultimately, it is the perception of the integrity of water accounting systems which is important for state support of water reforms. States need to be able to rely upon water accounting information to compare and measure their performance in collectively moving towards improving the health of the Murray-Darling Basin.

Specific provisions relating to environmental water accounting are also included. Environmental water is recorded in a register which includes information on “source, location, volume, security, use, environmental outcomes sought and type”.¹⁹¹ Environmental water as defined in paragraph 35 is given the same legal status and security as other water entitlements.¹⁹² The Australian water accounting system includes environmental water as part of its accounts.

Water accounting standards form the foundation for water accounting in Australia. In 2006, the National Water Accounting Development project established water accounting as a discipline.¹⁹³ The Water Accounting Standards Board (WASB) was established to guide the development of Australian Water Accounting Standards.¹⁹⁴ The WASB included experts from the fields of financial accounting, water management and policy.¹⁹⁵ In 2009, the Water Accounting Standards Board

¹⁹⁰ Above at s 82(2).

¹⁹¹ Above at s 85(i).

¹⁹² Above at s 35.

¹⁹³ Maryanne Slattery, Keryn Chalmers and Jayne M Godfrey “Beyond the Hydrographer’s Legacy: Water Accounting in Australia” in Jayne M Godfrey and Keryn Chalmers (eds) *Water Accounting International Approaches to Policy Decision-making* (Edward Elgar, Cheltenham, 2012) at 25.

¹⁹⁴ At Preamble.

¹⁹⁵ Slattery above n 91 at 25-26.

published the Water Accounting Conceptual Framework.¹⁹⁶ The Conceptual Framework informed the creation of the Australian Water Accounting Standards. In order to prepare accounts showing changes in the use of water this framework recognised concepts relating to the creation of water assets and liabilities for a water entity. The Conceptual Framework stated that a “water entity” was not defined in legislation:

12. Legislation does not define the concept of a water report entity; nor does it prescribe who shall prepare general purpose water accounting reports in most cases. However, the Water Act 2007 requires the Bureau of Meteorology (Bureau) to compile and maintain water accounts for Australia, including a set of water accounts to be known as the National Water Account even though the Bureau is not directly responsible for national water management and distribution. This requirement demonstrates that the preparer of general purpose water accounting reports does not need to be the water report entity for which those water accounting reports are prepared. This is most obvious where the water entity is physical in nature.

The water reporting entity could be an “irrigator” or an “environmental water holder”.¹⁹⁷

The communication of water information in the form of water accounts was a significant conceptual and practical progression from considering such information as hydrological data. The users of water information vary and so the Conceptual Framework emphasised standards and a standardised language that would allow different stakeholders in the water industry to communicate more effectively with each other.¹⁹⁸ Water information is not just for water management; it is also needed by those who participate in water markets. States implementing water reforms rely

¹⁹⁶ Water Accounting Standards Board Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports (Commonwealth of Australia, Canberra, 2009); Water Accounting Standards Board, Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports (Commonwealth of Australia, Canberra, 2014).

¹⁹⁷ Water Accounting Standards Board, Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports (Commonwealth of Australia, Canberra, 2014) at 16.

¹⁹⁸ Businesses can also use the information to assess the level of risk to their business operations. Katherine L. Christ and Roger Burritt “The role for transdisciplinarity in water accounting by business: reflections and opportunities” (2018) 25(3) Australasian Journal of Environmental Management 302.

on having comparable water accounting standards to measure and report on progress on their own water reform processes.

11 *Summary of Commonwealth Water Law and Policy Reform*

As we have seen, assessments of the Australian water reforms by academics and practitioners state that the reforms have been successful in addressing a number of problems that were facing Australian water allocation, but that, nevertheless, according to the Productivity Commission Review publically released during January 2019, further improvements can be made.¹⁹⁹

As stated earlier in this chapter, Australia has addressed constitutional barriers to implementing water law reform. The Water Initiative 2004 and the Water Act 2007 (Cth) have been central to the reform process and the establishment of water allocation through a market-based system. The Productivity Commission Review evaluated the effectiveness of implementing the National Water Initiative across Australia. It found that market-based water allocation has improved the ability to respond to droughts in a more flexible manner because the transfer of a range of water products creates another asset for businesses. Empirical research also confirms that markets have assisted with the “resilience” of agricultural enterprise in Australia and that water trading has had a positive effect on regional GDP of states in the Murray-Darling Basin.²⁰⁰

However, the regulation of markets is an ongoing point of contention during the water reform process. Regulation includes both compliance and enforcement and regulation of water markets should improve equity and efficiency for the environment. A key point that the Productivity Commission Review stated was the

¹⁹⁹ Productivity Commission Murray Darling Basin Plan: Five-year assessment. Productivity Commission Inquiry Report No.90 (Australian Government, Canberra, 2018).

²⁰⁰ Cameron Holley and Darren Sinclair “Governing water markets: Achievements, limitations and the need for regulatory reform” (2016) 33(4) EPLJ 301 at 310. In an extensive review of the law and empirical research involving over 4000 participant Holley and Sinclair provide insight into the operation of water markets.

need for states to take greater responsibility for implementing the reforms. The reasoning was that the Murray Darling Basin Authority had too many conflicting roles to implement and monitor compliance with the Basin Plan. These conflicting roles had the potential to affect the effectiveness of the Murray Darling Basin Authority to implement reform. Problems with ensuring compliance were also cited as an “overwhelming concern” at Chapter Twelve of the Review. These compliance issues focused on New South Wales and its “absence of a culture of compliance”.²⁰¹ The Review acknowledged the work that was being undertaken to address compliance problems and stated that a review of all states showed water take compliance was improving.²⁰²

The following section examines how the requirements of the Water Act 2007 (Cth) have been implemented in states. In this section the meaning of the term “water allocation” can vary. The term “licence” is also used to describe rights that are comparable to a water allocation that is tied to land. The Australian water law reform process has resulted in the creation of many more water products because a volumetric allocation does not represent a guaranteed amount of water that may be taken. In fact, it is the starting point or maximum amount that may be delivered on the basis of the water licence. The actual allocation is more likely to be made on a seasonal basis once the actual amount of water that can be allocated is ascertained. Consequently, the benefits of unbundling are that it assists in managing the risks of water allocation. The creation of many more water products in Australia also brings more complexity to its water law and policy.

A further issue that emerges when examining the different states is the lack of compliance with water regulations, a situation which could undermine the water law reform process that the Commonwealth has undertaken. Details such as accurate metering are required at state level to ensure that water theft does not

²⁰¹ Productivity Commission, above n 199 at 304; Cameron Holley and Darren Sinclair “Compliance and Enforcement of Water Licences in NSW: Limitations in Law, Policy and Institutions” (2012) 15(2) *Australasian Journal of Natural Resources Law and Policy* 149 found increased monitoring of water licences could assist in preventing unintended effects of a lack of compliance with water market regulation

²⁰²

occur.²⁰³ Hence, it appears that the accurate monitoring of water information relates to the integrity of the water market.

A further issue at the state level is the regional impact of water trading. For example, in some catchments, there may be more trade out of a catchment than is desired by the community. Markets do not address wider social concerns and impacts on communities.²⁰⁴ Nor do they always deliver the environmental outcomes that are desired. Moreover, water markets may still allow people to acquire a windfall gain. Finally, the water markets do not operate “equally” or in a standardised manner across Australia. The lack of standardised market practices, in turn, affects the cap and trade system of market implementation. The implementation of national water allocation law and policy at the state level is not uniform. The differences between states can be “profound” because of “the legacy of ostensibly independent state control”.²⁰⁵ These differences are evident in the evaluation of how the National Water Initiative 2004 and the Water Act 2007 (Cth) were implemented at state level.

12 *Water Allocation Law in Victoria*

As we have seen, each state was required to implement the water reforms. The state of Victoria is a leader in implementing water reforms that “most fully replicate[s] the goals of the National Water Initiative”.²⁰⁶ The system of creating new water products varied according to the reliability of supply, level of supply and duration and was described by Godden as part of the unbundling process. Furthermore, Godden also stated that the Victorian response to the National Water Initiative was “a best practice model”.²⁰⁷ The Water Act 1989 (Vic) is the primary source of water law in Victoria. The Act sets out the requirements for water allocation, water trading

²⁰³ Above.

²⁰⁴ At 319. This aspect was more prominent for indigenous communities.

²⁰⁵ Lin Crase “An introduction to Australian water policy” in Lin Crase (ed) *Water Policy in Australia. The impact of Change and Uncertainty* (Routledge, Washington, 2008) at 6.

²⁰⁶ Lee Godden “Environmental Markets and Property in Water above n 108, at 429.

²⁰⁷ At 309.

and the creation of sustainable water management plans. Water allocation categories in the Act are distinguished as bulk entitlements, environmental entitlements, water shares and water licences. A further significant development in Victoria was the establishment of the office of the Environmental Water Holder. While the previous section outlined the key aspects of water law in the Australian Commonwealth, this section will detail water allocation in the state of Victoria focusing on the Water Act 1989 (Vic).

12.1 Statutory Framework – Water Act 1989 (Vic)

The purpose section of the Water Act 1989 (Vic) focuses on the problem of over-allocation and water management.²⁰⁸ The Act provides “for integrated management of all elements of the terrestrial phase of the water cycle”. Hence integrated water management acknowledges the water cycle, and not just fresh water in a lake or under the ground. Section 1(c) requires the “orderly, equitable and efficient” use of water, which connotes a level of management required across the state. Section 1(d) requires water to be “properly managed for sustainable use for the benefit of present and future Victorians”. The rights of water holders and their entitlements and the needs of consumers are specifically indicated as key policy areas.²⁰⁹ The reference to consumers of water is extended to include “recourse for persons affected by administrative decisions”.²¹⁰ Environmental protection is described as requiring “formal means” to protect in-stream values and to “provide for the protection of catchment conditions”.²¹¹ The detailed purpose provisions also acknowledge the changing role of water governance as the Act will “replace many forms of detailed administrative supervision by the Authorities with general supervision by the Minister for Environment, Climate Change and Water, through approved corporate plans and express directions”.²¹² In these ways, the purpose section provides a clear

²⁰⁸ Water Act 1989 (Vic), s 1.

²⁰⁹ Section 1(g) and s 1(h).

²¹⁰ Section 1 (i).

²¹¹ Section 1(j) and s1(k).

²¹² Water Act 1989 (Vic), s 1 (l)

yet detailed indication of the regulatory role of the Water Act 1989 (Vic) in the management of water in the Victorian region.

12.2 Victorian Water Register

The Victorian Water Register contains the details of water-related entitlements and allocations of water in declared and non-declared systems.²¹³ The purpose of the Water Register is to “facilitate reporting in relation to records and information about water related entitlements” and to provide public records about ownership and use of those entitlements.²¹⁴ The Minister is responsible for “establishing and maintaining” the Water Register. The Water Register records water-use licences, water-use registrations, bulk entitlements, environmental entitlements [as described below], the amount of water allocated to water shares in declared systems and works licences.²¹⁵ Details recorded regarding water shares include the class of reliability of the share. Information regarding the transfer of water shares in s84J is supplemented by Market Rules which provide further guidance such as identification requirements for individuals applying to transfer water shares.²¹⁶ The Water Register is available online.²¹⁷

12.3 Unbundling – Water Shares and Water Licences

As part of fully unbundling water rights, distinctions were made between the right to take and use water and the delivery of water. These distinctions confirm the

²¹³ Water Act 1989 (Vic), s 84B.

²¹⁴ Water Act 1989 (Vic), s 84B.

²¹⁵ Water Act 1989 (Vic), s 84C(2).

²¹⁶ Victorian Water Register, “Trading Rules” Available at < <http://waterregister.vic.gov.au/water-trading/trading-rules>>

²¹⁷ Water Act 1989 (Vic), s 84C. Available online at Victorian Water Register

understanding of unbundling as being a compound process. The water allocations have been unbundled into bulk water takes, environmental water, water shares and water licences. To begin with this section examines water allocation in water shares and water licences. It will show that the fully unbundled methods of water allocation determined the final volume of water delivered at a higher level; not the level of the individual water licence holder.

An irrigator must hold a water use licence before taking water for irrigation.²¹⁸ A water licence records the details of the licence holder, a description of the land specified in the licence, any conditions on the licence and when the licence is valid.²¹⁹ The purpose of the licensing system is to reduce the adverse effects of irrigation on unsuitable land by controlling where irrigation can occur.

The relevant allocation principles in granting water licences include limiting the adverse effects of irrigation at the location of the water take. The adverse effects include reducing the effects of salinity, managing groundwater infiltration, protecting biodiversity and reducing the cumulative effects of water use.²²⁰ Delivery licences are also attached to the land but are separate from use licences. Delivery licences allow for the delivery of water to an irrigation area.²²¹ A delivery licence will give a degree of security to a landowner regarding the ability to have water delivered through infrastructure at times of high demand. Delivery shares are tied to the land.

“Water shares” determine the amount of water that can be taken from a “declared water system”.²²² Declared water systems are declared under section 6A of the Act and are a regulated water system. Section 33G requires water shares to be issued for a particular zone, state the maximum volume allowed to be taken and state the

²¹⁸ Section 64J.

²¹⁹ Section 64L(2).

²²⁰ Section 64U.

²²¹ Section Sch15(4).

²²² Section 33F. A declared water system is as declared by the Minister under s6A. There are approximately 134 Declared Water Supply Catchments in Victoria. Department of Economic Development, Jobs, Transport and Resources “Declared Water Supply Catchments” <<http://vro.depi.vic.gov.au/dpi/vro/vrosite.nsf/pages/landuse-water-supply-catchments>>

“class of reliability” of that water share. Other matters that must be stated are in section 33H(a) about whether the water share is held as joint tenants or tenants in common. Section 33H(b) states that it must be specified whether the water share is associated with land specified in a water use licence. Section 33AM provides further guidance on matters to be considered when a water share is associated with land based on the reasonable likelihood of water being able to be supplied to land. The requirements that must be included in a water share are comprehensive and include matters that go beyond recoding hydrological information to private arrangements as to how the water shares are held.

The Act also states the circumstances in which a water share must not be issued in section 33I. Of note is the provision in 33I(c) where a water share must not be issued if it “would be in conflict with any relevant bulk entitlement”. This provision clearly shows that bulk entitlements have priority over water shares. It forms one of the principles that must be taken into account when issuing water shares.

The principles of against which a water share is issued are contained in section 33J. This section is divided into two parts. First under section 33J(1), where there is a bulk entitlement in the zone or a “permissible consumptive volume has been declared” the Minister must ensure that the issue of a water share is “consistent” with the pre-existing bulk entitlement and it is “not likely to have” an effect on other water shares, environmental entitlements and “the needs of other potential applicants”. Again as shown above issuing of further water shares are constrained and subject to these other factors including bulk entitlements and future applicants.

The second category of principles in relation to issuing water shares focuses on situations where section 33J(1) does not apply. In other words, situations where there is not a pre-existing bulk entitlement or declaration of a permissive consumptive volume. Under section 33J(2)(a) to (k) the requirements for the second category of water shares is even more detailed than the first category. The Minister “must consider” the “existing and projected availability of water”, “existing and projected quality of water”, any potential “adverse effect” that is likely to occur on existing uses of water, waterways or aquifers and other water shares already owned

by the applicant. Environmental concerns that must also be considered include “the need to protect the environment”, “conservation policy of the government”, any adverse effect there could be on maintaining the environmental water reserve, “the needs of other potential applicants”, “any relevant report or statement prepared under any Act”, findings and submissions provided to relevant investigations or inquiries under any Act and other matters that the Minister “thinks fit to have regard to”. These detailed provisions show that the Minister has broad and extensive obligations to take into account these principles of allocation as the Act states these principles “must” be considered when issuing a water share.

Declared water systems are commonly water storage dams for irrigation. A “water share authorises the taking of water under the water allocation for the share during the season for which the water allocation is allowed”.²²³ A water share will specify the location and rate at which water is taken.²²⁴ Section 33S allows the transfer of water shares to another user.²²⁵ Section 33T allows for the partial or full transfer of a water share for a fixed period. Section 33U allows for the assignment of the full water share or a part of it to any person. Water shares are recorded on the Water Register and may be sold, mortgaged or leased. The Water Register is essential to provide accurate information to water market participants.

12.3 Bulk Water Entitlements (Major Water Takes)

The Act effectively provides the framework for various water products and makes a distinction for water takes that are of a higher volume. While accounts of Australian water allocation focus on the use of markets to reallocate water, it is equally important to understand how legislation defines water rights in a unbundled system.²²⁶ The example of bulk water entitlements shows how different categories

²²³ Water Act 1989 (Vic), s 33F(2). Provides specific guidance regarding shares owned by more than one person

²²⁴ Water Act 1989 (Vic), s 33F(2)(a) and s33F(2)(b).

²²⁵ Water Act 1989 (Vic), s 33S(2).

²²⁶ See Lee Godden “Environmental Markets and Property in Water, above n 108, at 413.

of water products can be developed in legislation. Section 34(1)(a) defines bulk entitlements as any water corporation holding licences for “water supply or irrigation”, a person holding a water licence, an electricity generation company or Minister for Conservation and Forest Lands.²²⁷ The bulk entitlement may be held by a company, the Environmental Water Holder, or another body.

Applications for bulk entitlements are made to the Minister for Environment, Climate Change and Water must satisfy the principles for bulk water allocation as stated in section 40.²²⁸ Under section 40(1) the Minister “must have regard to” the report of any panel that they appoint, submissions received, “the existing and projected availability of water in the area” and any “adverse effects” on existing water uses, waterways and aquifers. Further considerations that must be taken into account include drainage, maintaining environmental water and existing water allocations made to the applicant.

In terms of protecting the environment section 40(1)(g) requires the Minister to consider the “need to protect the environment, including the riverine and riparian environment”. Section 40(1)(i) requires the Minister to consider the “conservation policy of the government”. Section 40(1)(j) requires consideration of “government policies concerning the preferred allocation or use of water resources”. These sections provide a clear indication that decisions relating to bulk water applications are made once the Minister has taken these environmental matters into account.

The Minister must also consider “the purpose for which the water is to be used” and “the needs of other potential applicants”.²²⁹ These are part of statutory requirements for the Minister to follow which consider future as well as current applications for the same water. As a result there is a clear statutory power for bulk water applications to be compared with other potential applications. The matters outlined in section 40 allow the Minister to exercise broad discretion in considering other

²²⁷ Water Act 1989 (Vic), s 34(1) also makes provision for those holding licences under the Water Industry Act 1994, the Electricity Act 2000 and the Conservation, Forests and Lands Act 1987.

²²⁸ Formerly referred to as the Minister for Water.

²²⁹ Water Act 1989 (Vic), s 40 (l) and s40 (m).

hydrological factors and “any other matter that the Minister thinks fit to have regard to”.²³⁰ It is significant that the Minister for Environment, Climate Change and Water may consider other information related to the current application to judge whether the application is approved. Such extensive comparisons are not possible under the current “first come, first served” method of water allocation in New Zealand, which will be examined in the next chapter.

Once granted, bulk entitlements may be defined according to volume, stream flow or a share of the volume or stream flow.²³¹ Bulk entitlements measured as a share of storage should include the method for calculating the entitlement. The bulk entitlement may specify the “obligations of the storage manager, the resources manager and the environmental manager” associated with the bulk entitlement holder; these can include decisions about releasing flows for the environment.²³² The bulk entitlement can record information in relation to whether the entitlement can be transferred in addition to any financial obligations of the Water Authority which holds the bulk entitlement.²³³ The bulk entitlement may state the water accounting methods and whether credits are available to the Authority if water is returned to the water source. The conditions that may be specified with a bulk entitlement under section 43, as described above, provide the Minister for Environment, Climate Change and Water with statutory power to ensure that compliance with other water policies in water management, allocation and reporting are met by the bulk entitlement holder.

12.4 The Victorian Environmental Water

Environmental water in the state of Victoria is held by the Environmental Water Holder (Water Holder), which is a separate body corporate independent of any department. An application for environmental water may be made by the Minister

²³⁰ Water Act 1989 (Vic), s 40(o).

²³¹ Water Act 1989 (Vic), s 43(a).

²³² Water Act 1989 (Vic), s 43(c).

²³³ Water Act 1989 (Vic), s 43 (d) and s 43(e).

or the Water Holder.²³⁴ Allocations for environmental water have been changed to “environmental entitlements” so that environmental water is on a par with other water entitlements in the water market.²³⁵

Previously, environmental water in Victoria was held by the Victorian Department of Sustainability and Environment (DSE). O’Donnell’s review of the establishment of the Victorian Environmental Water Holder states that three key factors influenced the establishment of the independent office of the Victorian Environmental Water Holder.²³⁶ First, the increased “proPERTIZATION of water rights [which] began with the *Water Act 1989* establishing tradable water rights”.²³⁷ The proPERTISATION of water rights influenced the need to allocate water to the environment in order to participate in the water market. The creation of environmental water rights was based on the premise that water is a public good and “poorly adapted to participate in the market based system that allocates clear property rights to private goods”.²³⁸ This point was also recognised at the Commonwealth level by the NWI. The second policy driver was to improve the management outcomes of a larger pool of environmental water to be held together by the Water Holder. The third, and most influential policy driver, was the challenges posed to the concept of environmental water during the extreme drought Victoria experienced from 2006 to 2009. The drought and its challenge to the idea of environmental water deserves closer scrutiny.

12.5 Environmental Water at Times of Scarcity

²³⁴ Water Act 1989 (Vic), s 48C.

²³⁵ Water Act 1989 (Vic), Part 4, Division 1A.

²³⁶ This paragraph and the discussion on the Victorian Environmental Water Holder draws extensively on the work of Erin O’Donnell “Institutional Reform in Environmental Water Management: The New Victorian Environmental Water Holder” (2011) 22 *Journal of Water Law* 73 at 76 and Erin O’Donnell and Elizabeth MacPherson “Challenges And Opportunities for Environmental Water Management in Chile: An Australian Perspective” (2011) 23 *Water Law* 24.

²³⁷ O’Donnell (2011), above, at 76.

²³⁸ At 77.

Decisions about water allocation during the drought showed the subordinate position of environmental water compared to other water uses. In particular, its subordination illustrated the conflict of interest of government departments when allocating water in times of extreme scarcity. For example, the Victorian Minister for Water had the power to declare a water shortage and “qualify any rights to water whether or not they relate to the same area”.²³⁹ The term “qualify” is defined as “suspend, reduce, increase and otherwise alter”.²⁴⁰ O’Donnell states that the effect of the Minister for Water’s qualifying of 12 river basins effectively reduced the environmental flows.²⁴¹

In a democratic society, it is probably generally accepted that the role of the Minister for Environment is to present a balanced overall perspective from the Government on environmental matters. However, when that Minister holds environmental water, the question arises as to whether the Minister for Environment can represent environmental interests and concerns fairly?

At the time of low water flow, the Minister stated that the environment “needed to shoulder some of the burden during drought years” and that more water should be allocated for consumptive use.²⁴² At that time, the Yarra River was at 35 per cent of its normal flow.²⁴³ The Environmental Defenders Office of Victoria (EDO), a non-governmental organisation, reported on the potential to reform the environmental water reserve in light of this perceived conflict of interest.²⁴⁴ The EDO stated that, despite water reform, “environmental water in Victoria is still of insufficient volume and not properly accounted for, and the majority of it is not a secure entitlement”.²⁴⁵

While the environmental water reserve improved the legal framework for environmental water it had, however, “fallen short of expectation and the needs of

²³⁹ Water Act 1989 (Vic), s33AAA.

²⁴⁰ Water Act 1989 (Vic), s33.

²⁴¹ O’Donnell (2011). above n 126, at 80.

²⁴² At 80 citing Rachel Kleinman “Dead fish fear for the Yarra” *The Age* (13 November 2007).

²⁴³ At 80.

²⁴⁴ Environmental Defenders Office “Reforming the Environmental Water Reserve How amendments to Victoria’s Water Act could restore river health” (Environmental Defenders Office, Melbourne, 2010).

²⁴⁵ At 4.

the environment, particularly in light of climate change”.²⁴⁶ The Environmental Defenders Office recommended that environmental water should be converted to “environmental entitlements” to place environmental water on equal grounds with consumptive entitlements. In addition, it recommended that the ability to reduce environmental entitlements should be subject to a transparent process that included public notification. The EDO submitted that it was important for the office of the Victorian Environmental Water Holder to remain independent from the government in exercising powers to manage environmental water. Furthermore, the Report was critical of the lack of alignment with earlier policy objectives identified in the 2004 White Paper on Victoria’s water law reform to improve outcomes for environmental water.²⁴⁷

12.6 The Statutory Role of the Victorian Environmental Water Holder

As we have seen above, in response to the problems regarding environmental water, the Victorian government established an environmental water holder in 2010. It is a separate body corporate with “perpetual succession” and powers to “sue and be sued in its corporate name”.²⁴⁸ The Water Holder usually has three Commissioners with experience in environmental management, sustainable water management, economics or public administration.²⁴⁹ If the Minister recommends that a Commissioner should be removed for not fulfilling his or her duties, then reasons must be provided to the House of Parliament within five sitting days.²⁵⁰ This removal process assists in maintaining transparency in the appointment and removal of the Water Commissioners. Division 4 of the Act outlines the accountability of the Water Holder to the government. The Minister may give written directions to the Water Holder but must not direct the particular use of

²⁴⁶ At 4.

²⁴⁷ Above. The “White Paper” is Department of Sustainability and the Environment, *Securing Our Water Future Together: Victorian Government White Paper* (2004).

²⁴⁸ Water Act 1989 (Vic), s33DB(2)(a) and s33DB(2)(c).

²⁴⁹ Section 33DF(2).

²⁵⁰ Section 33DH(2).

water. By distinguishing the independence of the Water Holder, a higher level of accountability exists to improve the outcomes for environmental water. The Water Holder must actively plan how it will act to meet objectives in the next financial year.²⁵¹ This “corporate plan” should detail the governance, functions and reporting of the Water Holder.²⁵² The Minister retains discretion over the contents of the Water Holder’s corporate plan by having the legal ability to direct changes “to vary the plan as the environment Minister thinks fit”.²⁵³

12.7 Allocation of Environmental Water Entitlement.

The Environmental Water Holder may acquire water through a Ministerial allocation under the Act or by participating in the water market. The acquisition of water in the water market is discussed below. This section considers the situations where the Minister may declare that there is an environmental water entitlement or allocation. Under section 46C the Ministerial allocation may be initiated by the Minister or at the request of the Water Holder. In making the declaration the Minister must consider the following principles which are matters to be considered under section 48F. That is the report from any panel appointed by the Minister in relation to the environmental water allocation, the potential “adverse effect that the allocation or use of water” could have on existing uses, the “conservation policy of the government”, “government policies concerning the preferred allocation or use of water resources”, maintaining the environmental water reserve, whether the allocation is from a heritage river system, any relevant Sustainable Water Strategy developed under the Act, any other matter the Minister believes is relevant and ensuring that giving effect to relevant water management plans. This exhaustive list is comprehensive and gives broad discretionary power to the Minister in determining whether an environmental water entitlement should be declared under the Act.

²⁵¹ Section 33DY.

²⁵² Section 33DY(2)(b).

²⁵³ Section 33DY(4).

12.7 Environmental Water Allocation and the Water Market

The Victorian Environmental Water Holder is a participant in the water market and has a public trading strategy.²⁵⁴ It is important to note that s33DE states that the “Water Holder has the power to do all things necessary or convenient to be done for, or in connection with” the holder’s duties. However, there is no further specific guidance on the matters that the Water Holder should consider when making decisions under the Act. For example, while the Water Holder can sell water, high-volume sales could have a disproportionate effect on the water market. The Commissioner can manage this potential negative effect by adopting a plan to avoid “any significant adverse impacts on the market”.²⁵⁵ The requirements to consider the adverse effects on the market are not explicitly contained within the Water Act 1989 (Vic).

At the same time, the Water Holder has been criticised for not having the legal ability to sell excess water each season to irrigators.²⁵⁶ The Act requires that the money received from the sale of excess water is to meet the objectives of the Water Holder in section 33DC; this section states that the Water Holder should act to maintain environmental water and improve the overall health and condition of environmental water. These are broad objectives. A Liberal MP, Dr Sharman Stone, has advocated for the Water Holder to do more with proceeds from the sale of environmental water other than making further purchases of environmental water. Examples of other use of the proceeds from the sale of environmental water include paying for the cost of storing environmental water in dams, which is estimated to be \$25 million.²⁵⁷ These more recent concerns about the management of

²⁵⁴ Victorian Environmental Water Holder *Water Allocation Trading Strategy 2018-2019*. (VEWH, Melbourne, 2018) has indicated that it can sell water to norther regions if environmental water needs are met.

²⁵⁵ Victorian Environmental Water Holder “VEWH water sale in northern Victoria - March 2015” (2015) Available at <<http://www.vewh.vic.gov.au/news-and-resources/news/vewh-water-sale-in-northern-victoria-march-2015>>

²⁵⁶ Warwick Long “Liberal MP wants Murray-Darling water sold to irrigators so government authority can pay its way” *ABC Rural* (27 April 2015)

²⁵⁷ Above.

environmental water suggest further changes may occur and that water allocation policy will continue to develop in response to new challenges.

The water market has also increased the value of water. There is increasing concern about water takes whereby licences in Victoria and other states are used for commercial water bottling purposes.²⁵⁸ In Victoria, the Stanley rural community took legal action over their concerns that water takes for bottling was occurring on one property of 16 acres that initially held water licences to irrigate orchards. The volume allocated was 50 megalitres of surface water. Upon application, the allocation was amended to 19 megalitres of groundwater and 31 megalitres of surface water. The Stanley Rural Community Inc. group argued that the take contravened section 47 of the Planning and Environment Act 1987(Vic) which limited the rights granted under section 8(4)(a) of the Water Act 1989(Vic).²⁵⁹ However, the Victorian Supreme Court determined that planning law did not override water licences issued under the Water Act 1989(Vic) and the use of water for water bottling was legal.

13 New South Wales Water Law and Policy

New South Wales has a range of natural and regulated surface (released from dams) water.²⁶⁰ Its experience of water law reform is important because most of the state's water is used for irrigation.²⁶¹ New South Wales was faced with the problem of how to allocate water to more efficient uses and environmental needs. The 1994 COAG Water Reform Framework required states to implement water reform. New South Wales, therefore, had to “create a legislative framework that allocates water

²⁵⁸ Narelle Towie “Greed took over”: The farmers fighting bottled water giants for their water” *The Guardian* (30 April 2019).

²⁵⁹ *Stanley Rural Community Inc v Stanley Pastoral Pty Ltd* [2017] VSCA 385; 54 VR 676. Water mining has gained increasing attention across Australian states as an emerging problem.

²⁶⁰ Deborah Curran and Sharon Mascher “Adaptive Management in Water Law: Evaluating Australian (New South Wales) and Canadian (British Columbia) Law Reform Initiatives” (2016) 12(1) *McGill International Journal of Sustainable Development Law* at 91.

²⁶¹ Lin Crase, Leo O'Reilly and Brian Dollery “Water markets as a vehicle for water reform: the case of New South Wales” *Aust. J. Agric. Resour. Econ.* 44(2) 299 at 300.

efficiently while simultaneously recognising the legitimate claims of the environment to this resource”.²⁶² In comparison to Victoria, the water allocation rules in New South Wales “provide a relatively lower reliability of supply in many river valleys than in any other states”.²⁶³ Problems with New South Wales implementation of water reforms were stated as early as 2005 when the National Competition Commission assessed state progress on implementing a range of competition reforms including the water reforms. The Commission raised concerns about the assessment of environmental water and whether it was based on the best scientific evidence.²⁶⁴

Irrigators were particularly affected by the changes to water allocation in New South Wales. There were two types of irrigation schemes. The first type was “Irrigation Areas” which were on Crown land and where the irrigation infrastructure and land were both owned by the State. The second type was “Irrigation Districts” constructed on private land. The amount of water available under both was “one foot per acre of irrigable land (3 megalitres per hectare) but with a maximum *entitlement* limit”.²⁶⁵

13.1 Statutory Framework – Irrigation Act 1912 (NSW)

In Irrigation Areas land was allocated to irrigators to encourage settlement. Those who were within the Irrigation Area were granted “water rights” under the Irrigation Act 1912 (NSW), an Act which has now been repealed. Section 12 stated the nature of water rights under the Act:

12 Water rights

²⁶² Above at 300.

²⁶³ HN Turrall and others “Water trading at the margin: The evolution of water markets in the Murray Darling Basin” *Water Resour. Res.* 41 (2005) 1 at 1.

²⁶⁴ National Competition Council “Assessment of government’s progress in implementing the National Competition Policy and related reforms 2005 (Commonwealth Government of Australia, Melbourne, 2005) at xxi.

²⁶⁵ Paul Taylor, Tony McGlynn and Warren Martin “The influence of privatisation on irrigation water rights in NSW” Paper for presentation at the Regional Conference of the International Association for the Study of Common Property, Brisbane, Australia, September 2001 at 5.

- (1) The Ministerial Corporation shall each year, at the times and in the quantities fixed by it, supply water in pursuance of the water rights which are attached to the land of any occupier:
 - (a) to the boundary of any land held by any one person bona fide in the person's own interest, and
 - (b) to such other points as may be agreed upon.

This water right was not legally guaranteed. The amount of water delivered depended on the administrative decision of the state. The “number of water rights attached to a landholding, were determined administratively by reference to the ability of a land holder to support a family” and how productive the land may be.²⁶⁶ As a result of administrative decision making the actual water right as a legal entitlement was not the same as the volume of water received. The methods for determining the amount of water received were based on internal administrative processes of the New South Wales government. This scheme “took on the perception” of a water right even though there was no legal guarantee of a supply of water. The water rights could have been removed by the Government without compensation by ending Irrigation Areas or by repealing the Act.²⁶⁷ After all, the right to water relied on the statute and any rights flowing from the Act were creatures of statute.

The second type of irrigation scheme in New South Wales was “Irrigation Districts” where water infrastructure was owned by the state. Access to water in Irrigation Districts was under the Water Act 1912. The Irrigation Districts differed from Irrigation Areas because of their larger size:²⁶⁸

The Irrigation Districts contained larger landholding at the outset, designed for pastoral enterprises, and it was intended only a part of each landholding would be irrigated...The “Partial Area” policy also meant the irrigation practices were scattered and no initially as intensive as is the case today in those areas.

The Irrigation Districts were initially established on a less intensive scale.

²⁶⁶ At 13.

²⁶⁷ At 13.

²⁶⁸ At 5.

13.1.1 The Process of Privatising Irrigation Schemes

There were significant institutional changes in the water sector in New South Wales. Before the water law reforms, irrigation schemes were owned by the public sector. As described above, the amount of water available in an irrigation scheme depended upon the administrative decision making of the state. The proposal to privatise irrigation schemes raised concerns about the legal structure of new private institutions and how access to water would be defined. The privatisation of irrigation schemes was driven primarily by irrigators.²⁶⁹ Privatisation was a two-step process of consolidating the existing schemes into five schemes before privatisation under the Irrigation Corporations Act 1994 (NSW). Division 3 of the Act was very systematic in providing a statutory basis for the transfer of assets and the negotiations that would precede the transfer.²⁷⁰ The Irrigation Corporations Act 1994 was repealed on 1 January 2001 by the Water Management Act 2000 (NSW). Core provisions relating to the operation of Irrigation Corporations are now included in Chapter 4 of the Water Management Act 2000 (NSW).²⁷¹

There are several critical elements in the privatisation process that New South Wales undertook but which New Zealand did not. These points are summarised in the work of Taylor and others.²⁷² The NSW government retained its regulatory oversight of private irrigation schemes in order to maintain the social and economic goals of the schemes and to ensure that the use of water was in the state interest. The regulatory oversight included measures to protect irrigators' rights following privatisation. The New South Wales government wanted to limit its exposure to the future costs of maintaining irrigation schemes. It would step back from its role in the daily administration and delivery of water. Maintaining the financial viability of the schemes would be in the hands of the new irrigation companies. Finally, the

²⁶⁹ At 2.

²⁷⁰ Irrigation Corporations Act 1994 (NSW). Division 3 makes reference to any debts owing to the state and where the funds will be deposited.

²⁷¹ Water Management Act 2000 (NSW), s 116.

²⁷² Taylor, McGlynn, and Martin "The influence of privatisation on irrigation water rights in NSW" above, n 265 at 10-11.

New South Wales government wanted to ensure the long-term sustainability of the privatised irrigation schemes. In comparison, New Zealand did not maintain regulatory oversight of its irrigation schemes once they were privatised under the Irrigation Schemes Act 1990. These issues will be explored in more detail in the next chapter.

Land and Water Management Plans were a part of the water licensing requirements of the irrigation schemes in New South Wales. Plans were to be prepared with the irrigation community with government assistance and with funding to implement the plans in the long term. The Land and Water Management Plan provided the government with ongoing policy oversight of the operation of the irrigation scheme. The New South Wales government did not step back from irrigation schemes as emphatically as New Zealand did in 1990.²⁷³ Furthermore, the New South Wales approach to privatising irrigation schemes was much more systematic in its implementation.

13.2 Statutory Framework – Water Management Act 2000 (NSW)

The Water Management Act 2000 (NSW) was passed as the primary legislation governing the management and allocation of water to implement the COAG reforms.²⁷⁴ The Act promoted the ecologically sustainable development of water resources. The Act aimed to achieve improvements in water quality and to provide greater certainty to water licence holders to assist with water transfers. The Act contains provisions relating to Water Planning which are extensive and detailed. The “principles” of the Act are stated in section 5 and can be summarised as follows.

²⁷³ See also Irrigation Corporations Act 1994, s 53.

An irrigation corporation licence is subject to:

- (a) the conditions imposed on the irrigation corporation licence from time to time by or under this Act; and
- (b) such other conditions as are imposed on the irrigation corporation licence by the Ministerial Corporation when the irrigation corporation licence is granted and as are notified in writing to the licensee, whether or not the conditions are specified in the licence.

²⁷⁴ It progressively replaced the Water Act 1912 (NSW).

Protection is required for floodplains, wetlands, animal and plant habitats to prevent further degradation and water quality from “all water sources” should be protected. There is an important reference to the “cumulative impacts of water management licences and approvals and other activities on water sources and their dependent ecosystems” in section 5(d). The inclusion of cumulative effects of licences is important. The section maintains a focus on the environment and how the environment may be affected by the granting of several licences. Again, this focus on the environment is something that does not feature in New Zealand water allocation statutory requirements.

The remaining subsections in section 5 focus on cultural, social and economic aspects of water specify that:

- (e) geographical and other features of Aboriginal significance should be protected, and
- (f) geographical and other features of major cultural, heritage or spiritual significance should be protected, and
- (g) the social and economic benefits to the community should be maximised, and
- (h) the principles of adaptive management should be applied, which should be responsive to monitoring and improvements in understanding of ecological water requirements.

Section 5(3) of the Act states principles for water sharing which include protecting “dependent ecosystems” and “basic landholder rights”. Section 5(4) states principles in relation to water use which include avoiding “soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, a decline of native vegetation or, where appropriate, salinity and, where possible, land should be rehabilitated”. The use would also “be consistent with the maintenance of productivity of land in the long term and should maximise the social and economic benefits to the community”. The remaining principles in section 5 relate to drainage, floodplain management and carrying out controlled activities. Overall, the principles contained in section 5 of the Act capture the critical water management issues faced by New South Wales. These objectives and principles influence how

the Act defines water rights. The Water Management Act 2000 (NSW) abolished common law rights to water.²⁷⁵

The principles of the Water Management Act 2000 (NSW) and the Murray-Darling Basin Agreement are implemented through a State Water Management Outcomes Plan.²⁷⁶ The State Plan ensures that sustainable diversion limits are met as required under the Murray-Darling Basin Agreement. Section 6(2) of the Water Management Act 2000 (NSW) states the specific aims of the Plan:

- 6 (2) The objects of a State Water Management Outcomes Plan are as follows:
- (a) to set the over-arching policy context, targets and strategic outcomes for the management of the State's water sources, having regard to:
 - (i) relevant environmental, social and economic considerations, and
 - (ii) the results of any relevant monitoring programs,
 - (b) to promote the water management principles established by this Act,
 - (c) to give effect to any State government policy statement in relation to salinity strategies.

The State Water Management Outcomes Plan Order 2002 (NSW) addresses the objects as described above. The Order sits at the top of the hierarchy of a State Plan which is then reliant upon the preparation of regional Water Management Plans.²⁷⁷

Management plans developed under the *Water Management Act 2000* should provide for the monitoring of performance of relevant local management targets and this information will be collated and reviewed to assess performance against the SWMOP targets. The Minister may provide guidance on objectives, strategies and performance indicators for this purpose (as required in a management plan under Section 35 (1) of the Act). The monitoring and assessment of the long term outcomes, however, will be designed and undertaken through statewide programs and targeted local activities which ensure that sampling and analysis is carried out at a scale and density appropriate to deliver meaningful and cost effective information.

The State Water Management Outcomes Plan has a lifespan of five years. Water management committees may be established to carry out a specific task, including the preparation of the Regional Water Management Plan. The “core provisions” of

²⁷⁵ Water Management Act 2000 (NSW), s 393.

²⁷⁶ The Water Management Act 2000 (NSW), s 6(3)(a) contained the requirement to give effect to “government obligations arising under any inter-governmental agreement to which the government is a party, such as the Murray-Darling Basin Agreement set out in Schedule 1 to the Water Act 2007 of the Commonwealth...”. The Act is administered by the New South Wales Office of Water.

²⁷⁷ State Water Management Outcomes Plan Order 2002 (NSW), Chapter 1, Part 6.

these plans are stated within the Water Management Act 2000 (NSW).²⁷⁸ This process provides uniformity to the creation of the regional water plans.

13.3 Unbundling and Water Licences

The water allocation system in New South Wales is based on a system of granting water access licences. Section 56 of the Act states the features of a “water access licence”. The Act allows the holder access to a “share component” to take water at specified times and locations. The share component as stated in section 56(2) may be fixed at a maximum volume, a proportion of water or storage capacity, a specific proportion of dam inflow or a specific number of units. The “water access licence” may be assigned to a category of licence as stated in section 57(1):

- (1) There are the following categories of access licences:
 - (a) regulated river (high security) access licences,
 - (b) regulated river (general security) access licences,
 - (c) regulated river (conveyance) access licences,
 - (d) unregulated river access licences,
 - (e) aquifer access licences,
 - (f) estuarine water access licences,
 - (g) coastal water access licences,
 - (h) supplementary water access licences,
 - (i) major utility access licences,
 - (j) local water utility access licences,
 - (k) domestic and stock access licences,
 - (k1) floodplain harvesting (regulated river) access licences,
 - (k2) floodplain harvesting (unregulated river) access licences,
 - (l) such other categories of access licence as may be prescribed by the regulations.
- (2) Subcategories of any category of access licence may be prescribed by the regulations.

In comparison to Victoria the New South Wales approach to bulk water entitlements does not separate the bulk water applications within one category. Instead section 57(1) provides for bulk water licences as major utility licences in s57(1)(i). Rules for bulk water access entitlements are included in water management plans prepared under section 20 of the Act, as discussed below. There are separate provisions relating to irrigation schemes under Chapter 4 of the Act.

²⁷⁸ Water Management Act 2000 (NSW). Part 3 of the Act contains the sections that relate to the “core provisions” to be included in a Water Management Plan for water sharing, water use, drainage management, floodplain management, controlled activities and aquifer interference activities and environmental protection.

The different categories of water access licences reflect the degree of security in accessing the various water categories and also their distinctive characteristics. Applicants for a new water access licence may apply for a licence under section 61 of the Act. Section 61(1) requires the Minister to have regard to the relevant water management plan, The Minister must have regard to section 63(2)(b) in ensuring that harm will not be done if the licence is granted. The method by which the final allocation is made is based on the Office of Water calculating how much water is likely to be available for the next year. The main requirement for new water access licence applications is that the category of licence is provided and the application is complete under section 63. Those who may be purchasing water in the water market will also a water access licence before being able to use the water as they intend. Hence the key principles that determine water allocation between water access licences is dependent on the priority prescribed under the Act.

Section 58 states the priority between water licence categories. There are three general categories that the water access licences can be grouped into. These are allocations for domestic stock and town water supply, high security access licences and general security access licences.²⁷⁹

58 Priorities between different categories of licence

(1) For the purposes of this Act, the following priorities are to be observed in relation to access licences:

(a) local water utility access licences, major utility access licences and domestic and stock access licences have priority over all other access licences,

(b) regulated river (high security) access licences have priority over all other access licences (other than those referred to in paragraph (a)),

(c) access licences (other than those referred to in paragraphs (a), (b) and (d)) have priority between themselves as prescribed by the regulations,

(d) supplementary water access licences have priority below all other licences.

(2) If one access licence (the higher priority licence) has priority over another access licence (the lower priority licence), then if the water allocations under them have to be diminished, the water allocations of the higher priority licence are to be diminished at a lesser rate than the water allocations of the lower priority licence.

(3) In relation to the water management area or water source to which it applies, a management plan may provide for different rules of priority to those established by subsection (1).

²⁷⁹ Water Management Act 2000 (NSW), s 58(1)(a).

(4) If a management plan so provides for different rules of priority, those different rules are taken to have been established by this section.

The provisions of section 58(2) show that priorities between the different types of water access licences are also relevant at times of scarcity. For example, domestic stock and town water supply access licences have the highest level of priority. Followed by high security access licences and general access licences. The final allocation of water will be based on the priority stated in section 58. Those access licences with a lower priority would have diminished water allocation at times when there is less water available to be allocated.

The principles for water allocation under a licence are determined by water sharing plans. Section 20(1) of the Act states that water management plans “must deal with” environmental water rules, identify the water needs in an area, identify the “requirements for water for extraction under water licences”, establish “access licence dealing rules and establish a “bulk access regime”. Section 20(2) elaborates on the bulk water access regime stating that the management plan must be consistent with water availability limits, establish rules for access to water, recognise the “effect of climatic variability” and can establish priorities for water allocation in situations where there is a reduction in water availability. However, under section 20(3) any rules that are prepared in relation to priorities for water allocation must be consistent with the statutory direction in section 58 as discussed above.

The allocation water under a water management plan may be suspended under section 49A if there is a water shortage, or under section 49B if there is an extreme weather event.

The actual allocation under the water access licence is subject to an annual determination. Water use licence holders are advised of the percentage of the water that is allocated under each category. Water sharing plans prepared under the Act are also relevant to the process as they state the limits at which particular water access licences will be able to access water. The allocations for domestic stock and town water supply, high security access licences and general security access

licences will differ. For example, domestic and stock water takes under a water management plan may be at 100% while irrigator may be provided with a direction to stop pumping water once the minimum flow of the river falls below a certain level.

The duration of a water access licence is perpetual under section 69. Initially, water access licences had a duration of 15 years with major utilities having a licence duration of 20 years.²⁸⁰ Licence holders could apply for a renewal of their licence within 12 months of the licence expiring. These original provisions were not in accordance with the National Water Initiative 2004 objective to strengthen water rights. Nonetheless, the change to effective perpetual ownership does not mean that there is a guarantee to a fixed amount of water being delivered. The water access right ensures access to an annual share of water, an amount which may fluctuate. It is also important to note that the Minister may impose further conditions upon the water access licence holder under section 67. This provision also indicates that although the holder of the licence may have perpetual ownership, the holder's licence remains a licence subject to the Crown being able to exercise its power to manage the underlying water resource in the future.

The New South Wales Office of Water holds significant power in terms of investigating potential breaches of water allocation licences. Part 1, Division 6 of the Act addresses enforcement by the Court. Part 2 includes other enforcement powers focusing on the power of authorised officers to obtain information, enter premises and require people to answer questions relating to a potential breach of the Act.²⁸¹

²⁸⁰ Water Management Act 2000 (NSW), s 69 and 70 were amended in 2004 to a perpetual licence.

²⁸¹ Water Management Act 2000(NSW) ss 339-339G. For a comprehensive overview of compliance provisions in the Act, see Cameron Holley and Darren Sinclair "Compliance and Enforcement of Water Licences in NSW: Limitations in Law, Policy and Institutions" (2012) 15(2) *Australasian Journal of Natural Resources Law and Policy* 149.189.

13.4 NSW Water Register

Section 71 of the Water Management Act 2000 (NSW) requires that a “Water Access Licence Register” is maintained at state level. Section 71A requires the following details of the licence to be recorded on the Register:

- (1) The following matters relating to an access licence (including a replacement access licence) or a holding in an access licence must be recorded in the General Division of the Access Register:
 - (a) Ministerial action in relation to the licence or holding,
 - (b) any general dealing in the licence or holding,
 - (c) any dealing on default in relation to the licence or holding,
 - (d) any caveat lodged in relation to the licence or holding,
 - (e) any security interest held over the licence or holding,
 - (f) any devolution of the licence or holding as referred to in section 72,
 - (g) any alteration in co-holder’s tenancy arrangements in relation to the licence or holding, as referred to in section 73,
 - (h) any other matter prescribed by the regulations.
- (2) The following matters are to be recorded in the Assignment Division of the Access Register in such manner as the Minister considers appropriate:
 - (a) any assignment dealing in an access licence,
 - (b) any other matter prescribed by the regulations.

These detailed provisions provide a clear statutory indication of when and what type of information is relevant to the Registrar. From a public interest perspective, the inclusion of information on Ministerial action is essential, particularly where allegations of Ministerial intervention arise.²⁸² From the licence holder’s financial point of view the ability to view information regarding security interests is also important. The provisions relating to changes to a licence are comprehensive. They provide information on a state level to any potential purchaser of a water licence or to any financial institution relying upon the licence as security.

²⁸² Laini Kirkman “Peter Harris served with Summons over water use in Barwon-Darling River” *Moree Champion* (15 November 2017).

13.5 Environmental Water in New South Wales

New South Wales is required to account for environmental water. This state has taken a different approach from Victoria as it has not consolidated environmental water under a State Environmental Water Holder. Instead, New South Wales manages “planned” environmental water in water sharing plans and “Held” environmental water in environmental water licences. The New South Wales Water Resource Plans Roadmap 2016-2019 indicates that the water sharing plans, which are referred to as “Water Resource Plans”, will be implemented in 22 regions by 2019.²⁸³ The Plans will determine how water is shared between consumptive users and the environment. The underlying purpose of the Plans is to meet the requirements of states under the Murray-Darling Basin Plan so that limits on water extraction are in place by 2019. The process for creating each Plan is set out in the Roadmap 2016-2019. Three months are allowed to measure and evaluate the risks of any existing plans. Then, a 6-15-month period is provided for the consultation phase – including public submissions. Once a draft plan is published a further six months can be used to reach a Final Plan stage. Finally, the plan must be accredited by the Murray-Darling Basin Authority. The creation and implementation process is detailed and provides a sound structure for water plan implementation.

New South Wales’ progress on meeting the environmental water targets has been heavily criticised in the Murray-Darling Basin Authority’s December 2018 progress report.²⁸⁴ The progress report states that New South Wales is “behind schedule” with 20 plans under development. It concedes that the state is making an effort to invest in water planning. New South Wales is currently operating under old plans which include the Barwon-Darling Plan. This plan was subject to criticism following the media attention it received as a result of the Australian Broadcasting Corporation’s (ABC) 2017 *Four Corners* programme in which it was alleged that

²⁸³ NSW Department of Primary Industries Water “Delivering Water resource Plans for New South Wales Roadmap 2016-2019. (November 2016).

²⁸⁴ Murray Darling Basin Authority *Water Resource Plan = December 2018 Quarterly Report* (Australian Government, Canberra, 2018) at 7.

unchecked water theft was occurring.²⁸⁵ Following the programme, the New South Wales Department of Industry responded to the concerns that had been raised. In its response, the Department emphasised that it was working on a new set of water plans that would be accredited. Of greater significance was the written confirmation that the Department had spoken to irrigators about “walking away” from the water reforms:²⁸⁶

Have you ever discussed with irrigators and/or their representatives plans for NSW to walk away from the Murray-Darling Basin Plan?

Yes – it is prudent for the NSW Government to consider all possible scenarios for the implementation of the Basin Plan, and to ensure the best possible outcome is achieved for NSW irrigators, the environment and regional communities.

While NSW has considered alternative scenarios, we have also publicly advocated the benefits of the Basin Plan in its current form. In particular, we have explained to stakeholder groups the importance of seeing the plan through.

The legal ramifications of the *Four Corners*’ investigation are discussed in more detail in the next chapter. The South Australian government also responded to the ABC programme’s allegations with a Royal Commission which examined the issues raised in it.²⁸⁷ The Royal Commission found serious problems with the administration of water, confirming that the constitutional barriers could undermine state co-operation in implementing the reforms. Evidence of environmental stress in the Murray-Darling Basin corroborate those concerns. Such evidence includes reports showing that the Native fish stocks in New South Wales have also been dying in the region in large numbers, a situation which indicates that surface water flows are at dangerous levels.²⁸⁸ Importantly, the seriousness of the allegations of water theft have the potential to undermine the progress that the reforms have made in implementing water law reform.

²⁸⁵ Australian Broadcasting Corporation *Four Corners Program – Pumped* (Monday 24 July 2017).

²⁸⁶ New South Wales Department of Industry *Response to ABC 4 Corners Inquiry* (20 July 2017).

²⁸⁷ Bret Walker *Murray Darling Basin Royal Commission* (Government of South Australia, Adelaide, 2019).

²⁸⁸ Anne Davis “Hundreds of thousands of native fish dead in second Murray-Darling incident” *The Guardian* (7 January 2019).

14 *Water Law and Policy in South Australia*

14.1 *Statutory Framework*

The Natural Resources Management Act 2004 (SA) is the primary legislation affecting water allocation in South Australia. It was introduced to “promote sustainable and integrated management of the State’s natural resources” and it forms the basis for market-based water allocation as required under the National Water Initiative 2004 and Water Act 2007 (Cth).²⁸⁹ It repealed the Animal and Plant Control (Agricultural Protection and Other Purposes) Act 1986, the Soil Conservation and Land Care Act 1989 and the Water Resources Act 1997. This section will describe the key features of the water allocation provisions within the Act.

Plans for water management and allocation are a core part of the Natural Resources Management Act 2004 (SA). The state of South Australia is divided into eight regions which each have their own Natural Resources Management Boards.²⁹⁰ Within each region “A regional NRM board may, by notice in the Gazette, designate an area within its region as an area within which an NRM group will operate”.²⁹¹ The Board appoints the Natural Resources Management Group members. Section 48 of the Natural Resources Management Act 2004 (SA) requires that the NRM Group composition includes up to seven members with the collective “knowledge, skills and experience” to meet the Group’s obligations. The process for appointing the Board is a form of “government assisted self-organisation”.²⁹²

²⁸⁹ Natural Resources Management Act 2004 (SA), long title.

²⁹⁰ Section 45.

²⁹¹ Section 44(1).

²⁹² Barbara Cosens “Governing the Freshwater Commons: Lessons from Application of the Trilogy of Governance Tools in Australia and the Western United States” in Cameron Holley and Darren Sinclair (2018) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) at 288.

The selection process for Group members “must” include public notice asking for expressions of interest.²⁹³ The appointments are subject to consultation with the relevant council, Primary Producers SA Inc. and the Conservation Council of South Australia.²⁹⁴ Section 52 states the function of Natural Resource Management Groups. Section 52(1)(a) requires the Group “to be actively involved in the development and implementation of any relevant regional NRM plan at the local level...” It is also required to educate the community on the “importance of integrated and sustainable natural resources management” and provide advice to the regional NRM Boards.

The NRM Group is an integral part of managing natural resources in South Australia by being involved in the creation of natural resource management plans. The Board appointment process reflects the top-down approach of the water reforms. There is, however, concern that this approach may decrease local capacity to respond to drought because some legitimacy has been lost in the process of removing the pre-existing governance bodies.²⁹⁵

14.2 Unbundling and Water Licences

Water allocations in South Australia are managed through the operation of a water licence system. The water licences issued under the Natural Resources Management Act 2004 (SA) provide for an ongoing right to take water; however, the actual allocation received will depend on how much is eventually allocated. Under section 152 water allocations can be obtained under a licence, interstates water entitlements or forest water licences.

Water licences can provide for a “water access entitlement” which specifies the volume of water that can be taken.²⁹⁶ Under section 146(2) a “water access

²⁹³ Natural Resources Management Act 2004 (SA) s, 48(2)(a).

²⁹⁴ Section 48(2)(b).

²⁹⁵ Roberts, Mitchell and Douglas “Water and Australia's Future Economic Growth”, above n 100.

²⁹⁶ Natural Resources Management Act 2004 (SA), s 146(1).

entitlement” gives access to a share of water from a “consumptive pool” to the licence holder. The entitlement is subject to certain conditions under section 146(3) as follows:

- (3) A water access entitlement is subject to—
 - (a) a determination of the Minister under subsection (4); and
 - (b) any other provision of this Act that operates with respect to the licence or the water access entitlement; and
 - (c) the conditions attached to the licence.
- (4) The Minister will from time to time, by notice in the Gazette, determine the volume of water that is to be made available from a consumptive pool for allocation under this Act during a period specified by the Minister.

The principles relevant to granting a water access licence are stated in section 147 of the Act. The Minister must ensure that granting the licence would not be “contrary to the provisions of the relevant water allocation plan” or that the application is for access to contaminated water that would present a public health risk.

A water licence or water access entitlement may be transferred subject to the approval of the Minister.²⁹⁷ The Minister retains the right to “vary any condition” of the water licence to the extent that the transfer may “require a reduction in the size of a dam, or require other work to be undertaken with respect to a dam, wall or structure, to match the effect of the transfer”.²⁹⁸ An exception to the water licensing requirement is water taken for personal domestic or household use, which does not require a licence and includes water for domestic stock.²⁹⁹

The Water Register records South Australia’s water licence information. The Register may not include information “that, in the opinion of the Minister, should be kept confidential for safety or security reasons”.³⁰⁰ Information that is

²⁹⁷ Section 150.

²⁹⁸ Section 150(13)(d).

²⁹⁹ Natural Resources Management Act 2004 (SA), s 124(4).

³⁰⁰ Section 226(3) and Schedule 3A.

“commercially sensitive” may also be protected from public inspection.³⁰¹ The water licence is personal property and changes in ownership or use of the licence as collateral are recorded on the Water Register.

The Irrigation Act 2009 (SA) regulates water for irrigation purposes. It defines the irrigation water rights and basic requirements for irrigation trusts. Irrigation trusts hold the water right on behalf of the irrigators. It is a statutory requirement under s 29 of the Act to fix the amount of water that each member holds. The method for determining the amount of water is also stipulated in sections 29(4) and 29(5) as follows:

- (4) An irrigation right must be fixed on a fair and equitable basis after having regard to—
 - (a) the nature or type of crops growing on relevant land; and
 - (b) such other matters considered relevant by the trust.
- (5) An irrigation right—
 - (a) may be expressed as a volume or units (subject to the operation of the Natural Resources Management Act 2004 and any reduction in the amount of water that may be available to the trust under that Act); or
 - (b) may be constituted in some other manner authorised by the regulations.

It should be noted that such provisions relating to the nature of crops grown on land are not included in New Zealand. In the case of South Australia the rights held by irrigators in an irrigation trust under the Irrigation Act 2009 (SA) may be converted to a water licence under the Water Management Act 2005.³⁰²

14.3 Natural Resource Management Plans

The Department of Environment, Water and Natural Resources must prepare a State Natural Resources Management Plan. The State Plan is required to demonstrate how the overall “objects” of the Natural Resources Management Act 2004 (SA) will be

³⁰¹ Section 226(3a).

³⁰² Irrigation Act 2009 (SA), s 32(1)(c)

achieved.³⁰³ Further guidance in section 74 of the Act requires an assessment of natural resources at a state level, identification of risks to natural resource degradation and of measures to address how ongoing monitoring and evaluation will be carried out. These requirements are an excellent legislative tool to ensure that current information about natural resources is recorded and evaluated. The State Plan contains policy that guides the creation of further regional plans by NRM Boards:³⁰⁴

At the centre of the NRM system is the State NRM Plan which provides the strategic blueprint for NRM boards and agencies to develop their own specific plans.

NRM Boards are required to prepare Regional Natural Resource Management Plans. The Plan must have regard to the objects of the Act and also include the methods that will be used to improve the health of natural resources, conservation and land drainage issues.³⁰⁵

The NRM Board is also required to prepare a separate Water Allocation Plan for “prescribed” water resource in their region. Under section 76(4) it must include the following:

- (4) A water allocation plan must—
 - (a) include—
 - (i) an assessment of the quantity and quality of water needed by the ecosystems that depend on the water resource and the times at which, or the periods during which, those ecosystems will need that water; and
 - (ii) an assessment as to whether the taking or use of water from the resource will have a detrimental effect on the quantity or quality of water that is available from any other water resource; and
 - (aab) include—
 - (i) an assessment of the capacity of the water resource to meet environmental water requirements; and
 - (ii) information about the water that is to be set aside for the environment including, insofar as is reasonably practicable, information about the quantity and quality, the time when that water is expected to be made available, and the type and

³⁰³ Natural Resources Management Act 2004 (SA), s 74.

³⁰⁴ Government of South Australia Our Place. Our Future. State Natural Resources Management Plan South Australia 2012 – 2017 (Government of South Australia, Adelaide, 2012) at 3.

³⁰⁵ Natural Resources Management Act 2004 (SA), s 75.

- extent of the ecosystems to which it is to be provided; and
- (iii) a statement of the environmental outcomes expected to be delivered on account of the provision of environmental water under the plan;....

These statutory requirements for a water allocation plan ensure a level of comparability across the Water Allocation Plans. The Plans should address issues relating to water quality and quantity and if a water take has a detrimental effect on water quality that should also be taken into account. There is limited scope for the NRM Boards to avoid addressing the issues that are stipulated under the Act.

14.4 Water Allocation Plans

Water allocation plans are an important part of water allocation law in South Australia because they include the provisions to meet the sustainable diversion limits under the Murray-Darling Basin Plan. Water Allocation Plans that cover the Murray-Darling Basin located in South Australia must also meet the following requirements:

87—Promotion of River Murray legislation and IGA

To the extent that a plan applies to the Murray-Darling Basin or in relation to the River Murray, the plan should—

- (a) seek to further the objects of the *River Murray Act 2003* and the *Objectives for a Healthy River Murray* under that Act; and
- (b) be consistent with—
 - (i) the terms or requirements of the Murray-Darling Basin Agreement, and any relevant resolution of the Ministerial Council under that agreement; and
 - (ii) any relevant provisions of the Basin Plan under the *Water Act 2007* of the Commonwealth, (insofar as they may be relevant).

The objects of the River Murray Act 2003 (SA) contained in section 6 stress the importance of using “all reasonable and practicable measures” to ensure that the River Murray is protected and restored. It also requires developing “mechanisms” protect the River Murray “while at the same time providing for the economic, social and physical wellbeing of the community”. Those activities which have an adverse effect on the River Murray should be “regulated or brought to an end”.

Furthermore, any plans should “promote the principles of ecologically sustainable development in relation to the use and management of the River Murray”. The “aspirations of indigenous peoples with an association with the River Murray” and their contribution to ecologically sustainable development should also be considered. Community interests and a commitment to the health of the River Murray are also indicated. The Act addresses the Administration and Implementation Strategy for the Act which must set priorities to show how the Minister will meet the objects of the Act.³⁰⁶ The provisions set clear expectations that the River Murray Act 2003 (SA) must be implemented.

Under section 76(b) the water allocation plan may “set out the principles associated with the determination of water access entitlements”. The Water Allocation Plan for the River Murray Prescribed Watercourse was adopted in accordance with section 80(3)(a) of the Act in February 2019.³⁰⁷ The Plan includes the provisions for environmental water and the basis for making the South Australian Water Allocation Statement.³⁰⁸ The South Australian approach is guided also by the use of plans that determine how much water is allocated under an access licence. In that respect it is similar to New South Wales. However, a key difference is that the planning provision closely regulate the formation of plans.

³⁰⁶ River Murray Act 2003 (SA), s 21(1)

- (1) The Minister must prepare and maintain a plan to be called the River Murray Act Implementation Strategy.
- (2) The Implementation Strategy must—
 - (a) set out the priorities that the Minister will pursue in order to achieve the objects of this Act and to further the implementation of the ORMs; and
 - (b) set out strategies that the Minister intends to adopt to meet those priorities; and (c) take into account the State Natural Resources Management Plan and the Planning Strategy, and may include other matters as the Minister thinks fit.
- (3) The Minister must review the Implementation Strategy at least once in every five years

³⁰⁷ Department of Environment and Water *Water Allocation Plan for the River Murray Prescribed Watercourse* (South Australia Government, Adelaide, 2019).

³⁰⁸ Department of Environment and Water *South Australia’s River Murray Water Allocation Statement* ((South Australia Government, Adelaide, 2019) was issued on 15 July 2019 which provides water information for the next season. The allocations in the document are based on those formally gazetted by the South Australian government.

15 *Water Law and Policy in Western Australia*

15.1 *Statutory Framework*

Not all Australian states have been successful in implementing the more recent water reforms. In 2005, Western Australia was the “only jurisdiction to have significant outstanding obligations on water industry legislation”.³⁰⁹ Western Australia responded to the changes required under the 1994 COAG Agreement by amending the Rights in Water and Irrigation Act 1914 (WA).³¹⁰ In the year 2000. The amendment allowed the unbundling of water licences so that water licences could be traded separately from land.

The Act was administered by the Water Resources Management Commission until the Commission was abolished.³¹¹ The function of the Commission was to administer water resources management under various Acts, including the Country Areas Water Supply Act 1947 (WA), the Metropolitan Water Authority Act 1982 (WA), the Metropolitan Water Supply, Sewerage and Drainage Act 1909 (WA) and Part III of the Rights in Water and Irrigation Act 1914 (WA) which dealt with water licensing. The Commission merged the Western Australian Water Resources Council, the Water Resources Division of the Water Authority, the Hydrogeology and Groundwater Resources Branch of the Department of Minerals and Energy and the Waterways Commission.³¹²

The establishment of the Commissioner was an effort to centralise water management. In that “The Commission has power to do all things necessary or convenient to be done for or in connection with the performance of its

³⁰⁹ National Competition Council *Assessment of government’s progress in implementing the National Competition Policy and related reforms 2005* (Commonwealth Government of Australia, Melbourne, 2005) at xxxi. Ten per cent of its payments from the Council were suspended and the matter deemed to be more appropriate for the National Water Commission.

³¹⁰ Rights in Water and Irrigation Amendment Act 2000 (WA).

³¹¹ The Commission was established under the Water and Rivers Commission Act 1995 (WA).

³¹² State Records Office of Western Australia, AU WA A898 - Water and Rivers Commission

functions”.³¹³ Since 2007, the functions of the Commission, including the administration of the various Acts it was responsible for, was transferred to the Western Australia Department of Water.³¹⁴

15.2 Unbundling and Water Licences

The take and use of water is subject to obtaining a licence under the Rights in Water and Irrigation Act 1914 (WA). Section 5C states that taking water without a licence is an offence and specifies a penalty of \$10,000 and a further \$1,000 per day. The ability to take water for domestic needs and stock which are not “raised in intensive conditions” is recognised in section 26GZI for both surface water and non-artesian groundwater. Section 5D refutes any claims based on customary use rights.

The principles for granting a water licence are contained in Schedule 1 Section 7 of the Act. The Minister has broad discretion to refuse a licence application. The Minister must have regard to “all” the matters in Schedule 1 Section 7(2) including whether the application is “in the public interest”, “ecologically sustainable”, “environmentally acceptable”, could affect current or future water needs, would be detrimental to others in the Minister’s opinion, could have another source of water, keeps within local practices and bylaws, or is consistent with planning instruments.

15.3 Western Australia Water Register

Once a licence has been issued under section 5C it must be recorded on the Water Register. The Water Register is a public register that may be made available in electronic form.³¹⁵ The Register must include “the nature of the instrument” or licence, “period for which it is in force”, business name and address, “legal description of the land on which, it is situated”, security interests, whether a person

³¹³ Water and Rivers Commission Act 1995 (WA) s, 11.

³¹⁴ Rights in Water and Irrigation Amendment Act 2007 (WA).

³¹⁵ Rights in Water and Irrigation Amendment Act 2007 (WA) 26GZI.

dealing in a security interest has prior convictions under the Act and any other matters required by regulations.³¹⁶

The Western Australian approach was to add to the existing water law framework. This type of water allocation and licensing follows a “traditional approach”.³¹⁷ This traditional type of entitlement is generally a fixed entitlement. Any change in the entitlement requires far greater legislative effort; “A change in a collective limit may provide the basis to amend individual entitlements but this will require the exercise of a Ministerial discretion on a case-by-case basis”.³¹⁸ Western Australia has retained basic structures for the unbundling of water and registering licences. It does not take the water sharing approach that is currently in place in Victoria and New South Wales (as described above) where changes to collective entitlements are more easily spread across all licences. Western Australian licences do not have the same features as their Victorian and New South Wales equivalents where the amount of water actually received depends upon the allocation made to the collective on a seasonal basis.

15.5 Western Australia Water Plans and Environmental Water

Plans for water are addressed under Division 3D of the Act. Plans are classified as regional, sub-regional and local area management plans under section 26GV. The Regional Management Plan prepared by the Minister of Water Resources guides the management of water in that region by defining “water resource values, including environmental values as well as the use and integration of water”.³¹⁹ The preparation of sub-regional plans is also the responsibility of the Minister of Water Resources. Sub-regional plans provide information on “how rights in respect of water are to be allocated to meet various needs, including the needs of the

³¹⁶ Rights in Water and Irrigation Amendment Act 2007 (WA) 26GZJ.

³¹⁷ Michael Bennett “Adjusting Collective Limits on the Use of Natural Resources: Approaches in Australian Fisheries and Water Law” (2015) 34(1) UTLR 68.

³¹⁸ At 68.

³¹⁹ Rights in Water and Irrigation Amendment Act 2007 (WA), s 26GW(2).

environment” amongst other matters.³²⁰ Sub-regional management plans are prepared for monitoring and reporting as stated in section 26GX(3):

A sub-regional management plan is to specify the monitoring and reporting (which is to occur at least once in every 7 years) to be carried out by the Minister to ensure, as far as is practicable, that the objects of this Part are achieved in the implementation of the plan.

The hierarchy of plans is based upon their function and the need to follow the regional plan.³²¹

The public is able to participate in the creation of a plan at the initial stages of plan development. The Department of Water has a crucial role in water allocation planning in Western Australia. Plans will take into account demand for water for particular consumptive uses such as irrigation or hydropower. For example, in the review of the Ord River Plan the setting allocation limits for irrigation involved balancing the needs of irrigators with that of hydropower operators. The criteria that were considered in setting the allocation limits for each consumptive use are described as follows:³²²

Allocation limits represent the annual volume of water that can be taken for consumptive use (such as irrigation) from each subarea. The allocation limits are based on the current dam infrastructure with its existing commitments to irrigation, hydropower and the environment. Future climate is assumed to be similar to that experienced in the past as global climate models do not indicate a clear wetting or drying trend for the Kimberley.

The description of the creation of allocation limits shows how the consumptive use limits are a part of the allocation of water in Western Australia.

Western Australia is undertaking water law reform with a new Water Resource Management Bill drafted in 2018. The Bill will result in the consolidation of six Acts relating to water into one. The Bill was preceded in 2013 by the release of a

³²⁰ Rights in Water and Irrigation Amendment Act 2007 (WA), s 26GX(2b).

³²¹ Government of Western Australia *Water Allocation Planning in Western Australia A Brief Overview* (Department of Water, Perth, 2011).

³²² Department of Water and Environmental Regulation *Ord Surface Water Allocation Plan Evaluation Statement 2013-2017* (Government of Western Australia, Perth, 2018) at 4.

Position Paper on Reforming Water Resource Management.³²³ The reforms covered in the Position Paper included “water allocation planning, licensing, administrative processes, trading, risk assignment and environmental water”.³²⁴ The policy drivers for further water law reform included the State’s commitments under the National Water Initiative, changes in climate, population growth, an expanding economy and other specific issues related to mining.

A further driver of Western Australian water law reform is the lack of planning for environmental water. There is concern that environmental watering plans are inadequate to protect and prioritise environmental water as required under the National Water Initiative 2004 and Water Act 2007(Cth).³²⁵ Under section 26GW regional management plans should define environmental values. Under Schedule 1, Division 2 Clause 7(2)(c) of the Act the Minister should consider, amongst other matters, whether the take under a licence application is “environmentally acceptable”. There are no clear statutory obligation within the Act for the formation of specific environmental watering plans. The reform process is well underway and it is much needed to bring Western Australia in line with the expectations under the National Water Initiative 2004 and Water Act 2007(Cth).

16 *Summary*

This chapter provided an overview of water allocation law and policy in Australia. It focused on the replacement of the riparian doctrine by a statutory system of water allocation as the riparian doctrine became unsuitable for Australian conditions and aspirations for irrigated settlement. Water scarcity was already an issue for the Australian continent and in the pursuit of irrigated settlement water was over-allocated within states and colonies. The states and colonies had originally managed

³²³ Department of Water (2013) Securing Western Australia’s Water Future. Position Paper – Reforming Water Resource Management (Government of Western Australia, Perth, 2013).

³²⁴ At 1.

³²⁵ Jeanette Jensen and Alex Gardner “Legal Duties for Environmental Water Provisions in Western Australia” (2017) 42 University of Western Australia Law Review” 206.

water resources within their boundaries; however, the establishment of the Federation and resulting Commonwealth government in 1901 raised tensions over the control and management of water. These tensions were not fully resolved within the Constitution. Over time, clauses relating to trade and external affairs powers were used by the Commonwealth to encourage co-operation in water management. To complicate matters the Murray-Darling River Basin spans several states. As state political boundaries did not align neatly with catchments, a response to over-allocation was required at the Commonwealth level. The Commonwealth government worked hard to gain political co-operation to implement environmental policy needed to improve water allocation across states.

However, when the Commonwealth desired to act upon its constitutional powers, it was limited in the area of water management. In order to overcome these limitations, state action was premised on the implementation of international treaties to protect environmental heritage. In the 1990s, the problem of over-allocation became increasingly apparent at an international level. The approach of co-operative federalism was used to encourage a shift to improving water allocation and sustainability of supply through a market-based approach with each state being encouraged to implement the Water Act 2007 (Cth) to address the problem of water allocation in ways that both deal with past problems, including hydrological issues, and improve environmental outcomes.

The factor that propelled Australia to act decisively in water policy and law reform was increasing water scarcity as demand increased and supply decreased during the Millennium Drought. In hindsight, water markets have provided Australia with an additional tool to manage drought conditions. The success of the Australian experience with water markets is identified in three key factors.³²⁶ The first area is the establishment of an “independent” entity in the form of the National Water Commission. Australia was able to use the National Water Commission to assist in facilitating and mediating the tensions between states during the implementation of

³²⁶ Poh-Ling Tan (2007) “How do water markets function in droughts and other hard questions: Learning from law reform in Australia” presented at Legal Aspects of Water Sector Reforms Geneva, International Environmental Law Research Centre at 8.

the National Water Initiative 2004. The second area was the gradual introduction of water trading across catchments. Once Water Resources Plans were established they reduced the operational barriers to water trading. The third area was in effectively educating water users to a point where they were more receptive to water “recycling and desalination”.³²⁷ The legal system was faced with balancing the tensions between water as a common pool resource and the nature of property rights in that water permit or water share.³²⁸

The example of Victoria provided an account of how regulation assisted in establishing a framework for water markets with environmental water. Victoria has created an Environmental Water Holder separate from other government departments, partly, so that decision making during times of extreme scarcity will not compromise environmental water, as has happened in the past. In creating the Environmental Water Holder office, environmental water entitlements are on a par with other water entitlements so that the environment as a public good has a level of protection in a market structure. New South Wales and South Australia, the other states in the Murray-Darling Basin, have also unbundled their water entitlements to create water allocations based on a share of water available. They have also created water registers and established legislative frameworks to encourage the development of water markets. In comparison, Western Australia has not yet created water entitlements that are allocated from a consumptive pool. The state has unbundled its water allocations in a more “traditional” sense by maintaining water entitlements that give water holders a fixed amount of water to access. Western Australia water law is, however, currently undergoing further reform. There is no doubt that the Water Act 2007 (Cth) and the requirements that it imposes on states to reform their water allocation law and policy is capable of providing a rich source of information on lessons to be learned from water reform. The following chapter will analyse the critical points of Australian water allocation law and policy to discover what lessons are relevant to New Zealand’s developing its water law and

³²⁷ At 8.

³²⁸ Francine Rochford “Compensation for Regulation of Water Use – a Comparative Constitutional Perspective” (paper presented to New Zealand Centre for Environmental Law Conference, Auckland, April 2009).

CHAPTER SEVEN - COMPARATIVE ANALYSIS

1 *Introduction*

This chapter examines the lessons that New Zealand can learn from Australia's experience in water law and policy development. Whereas New Zealand has not embarked upon extensive water allocation law reform, Australia does provide a valuable example of significant water allocation law reform. One of the difficulties with the comparison is that Australian water allocation is far more advanced than New Zealand. It makes a comparison between the two jurisdictions appear to be counter-intuitive. With a little patience from the reader, the comparative analysis forms a logical path through the water law and policy of both jurisdictions.

The comparative analysis in this chapter answers the research question by addressing the problems identified regarding the gap in New Zealand's water policy between 1991 and 2011. These problems related to the lack of alternatives to the "first come, first served" method of water allocation; the lack of opportunities to transfer water between users without heavy administration; addressing how to develop cohesive national guidance on water allocation law and policy development; and generally how to achieve sound water allocation for all water users.

The chapter begins by examining the legal authority of national institutions responsible for the development of water law and policy. In Australia, this role is fulfilled by the National Water Commission. The responsibility for New Zealand water policy development is split across government departments, including the Ministry for the Environment and the Ministry for Primary Industries (responsible for water for irrigation). New Zealand is facing problems following a lack of national water policy from 1991 to 2011. It is therefore, worth addressing whether having a national authority would assist in implementing water allocation law reform.

As has been stated previously, the “first come, first served” method of water allocation has been a problem for New Zealand and has contributed to the problem of fully allocated catchments with limited means to facilitate transfer between water users. It creates a “gold rush” effect in catchments that are close to full allocation as water permit applicants rush to ensure their application is submitted before the catchment is fully allocated. Adding to the problem of limited ability to transfer water is the fact that New Zealand water allocations are tied to the land. By drawing on the Australian comparison, it is apparent that if water permits were separated (unbundled) from land, it would assist in developing other water products to improve water transfers. The Australian experience shows that after unbundling, there are more options to develop new water products in the form of categorising water allocations and making separate rules regarding priorities based on those categories. The general categories identified are for environmental water, bulk water takes, and other water entitlements in the form of licences or shares. This chapter illustrates how unbundling would assist New Zealand in addressing the question of how to find methods to allocate water, other than the “first come, first served” method.

When examining bulk water applications, some clear benefits emerge with regards to the processing of bulk water allocations. Australian states generally classify such water takes as “bulk water” applications and the regulatory process for determining whether they are granted or not can take into account infrastructure investment and state interests. There is no statutory distinction in New Zealand for large water takes that are for municipal supply, irrigation or electricity generation. Yet, these categories of water take involve significant investment in infrastructure to manage the water allocation. It is worthwhile to consider the potential benefits of legal recognition of bulk water applications in New Zealand.

The Australian water reforms have been comprehensive. The inclusion of matters relating to recording and reporting on water allocation is an integral part of the reforms. Based on the Australian experience it is evident that embarking upon changes to unbundle should be complemented with an increased systematic collection of information on water takes. In the Australian experience, this

information is not just for water users but also for other stakeholders such as the public, government and financial institutions. Furthermore, the information is not just hydrometric. It also includes adjustments for seasonal or temporary takes, security interests, owners, the nature of the water permit and the level of security ascribed to the water permit. In response to the need to benchmark and report this water allocation-related information, Australia developed water accounting standards. The standards assist in communicating water information to a broader range of users. This analysis considers to what extent a similar approach to the collection and dissemination of water information would be useful in New Zealand.

In terms of water scarcity, Australia is undoubtedly in a different position from New Zealand. Australia has had to respond decisively to evidence of physical water scarcity, particularly in the Murray-Darling Basin. Driven by the need to return more water to the environment, the Australian response to water scarcity included several measures. These included implementing water markets as part of a cap and trade system (not a free market) which is heavily regulated.¹ Although Australia was innovative in developing water allocation law and policy, more recently its progress in water law reform implementation has stagnated.² There are also concerns about the effectiveness of regulation and enforcement of the cap on water abstraction.³ Despite these concerns, the evaluation of the reform process in Australia shows the extent and commitment of the Australian Commonwealth to improving the allocation of water.

In comparison to Australia, New Zealand is experiencing economic water scarcity, not physical water scarcity. Evidence of economic water scarcity in New Zealand includes some regional catchments such as in the Canterbury region which has become fully allocated or over-allocated. New Zealand can learn in a number of

¹ Cameron Holley and Darren Sinclair “Water Markets and Regulation: Implementation, Success and Limitations” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) 141 at 142.

² Cameron Holley and Darren Sinclair “Australia’s Water Reform Journey – from Stagnation to Innovation” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018) at 5.

³ Cameron Holley and Darren Sinclair, above n 1 at 142.

areas from the Australian experience of undertaking extensive water law reform to improve water allocation outcomes. As the Australian experience in implementing water allocation law has been not only complex but challenging, New Zealand can learn from both the success and shortcomings of Australian water law reform.

2 Comparative Analysis Table

The following table compares the key features of Australian states' water allocation law and policy with that of New Zealand. The table compares New Zealand with the Australian states of Victoria, New South Wales, South Australia and Western Australia. This comparison provides an account of how water allocation law and policy in individual states differ from New Zealand law and policy in this area. The Comparative Analysis Table draws upon the case studies provided in the previous chapter.

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
STATE LEGISLATION					
Main Water Allocation Legislation	Resource Management Act 1991 (NZ)	Water Act 1989 (Vic)	Water Management Act 2000 (NSW)	Natural Resources Management Act 2004 (SA)	Rights in Water and Irrigation Act 1914 (WA)
Is there a commitment to sustainability in the objects of the Act?	<p>Yes</p> <p>Section 5 states: “(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.</p> <p>(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—</p> <p>(a) sustaining the potential of natural and</p>	<p>Yes</p> <p>In the purpose Section 1(d) states: “to make sure that water resources are conserved and properly managed for sustainable use for the benefit of present and future Victorians”.</p> <p>Division 1B of the Water Act 1989 (Vic) requires the development of Sustainable Water Strategies</p> <p>Section 22(1)(d) requires that the role of the Minister is</p> <p>“to make sure that water resources are conserved and properly managed for sustainable use for the</p>	<p>Yes</p> <p>Section 3 states: “The objects of this Act are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations”.</p> <p>Section 14(3) states: “It is the duty of a management committee to exercise its functions consistently with the principles of ecologically sustainable development”.</p>	<p>Yes</p> <p>Section 7(1) states: “The objects of this Act include to assist in the achievement of ecologically sustainable development in the State by establishing an integrated scheme to promote the use and management of natural resources”</p>	<p>Yes</p> <p>Section 4 states: “4.Objects of this Part</p> <p>(1)The objects of this Part are —</p> <p>(a)to provide for the management of water resources, and in particular —</p> <p>(i)for their sustainable use and development to meet the needs of current and future users; and</p> <p>(ii)for the protection of their ecosystems and the environment in which water resources are situated, including by the regulation of activities detrimental to them”.</p>

	physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations”.	benefit of present and future Victorians”				
Is there a separate Act for water management?	No	Yes	Yes	No	Chapter 7 relates to the “Management and protection of water resources”.	Yes
Does the Act also include provisions relating to water for irrigation?	No The Irrigation Schemes Act 1990 privatised Irrigation Schemes.	Yes Part 11 of the Act covers Irrigation which applies to an “Authority” that includes an “Irrigation District”.	Yes Part I of the Act covers all Irrigation Corporations formed under the Irrigation Corporations Act 1994 (s116). Part 2 covers private irrigation districts	No	Irrigation Act 2009 (SA) Rights under the Act may be converted to a water licence under the Natural Resources Management Act 2004 (SA) under s32(1)(c) of the Irrigation Act 2009 (SA).	Yes Part IV Irrigation Districts

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
WATER REGISTER					
Is there a National/State Water Register	No Water Permit information is held by Regional Councils. Securities against water permits may be registered on the Personal Property Securities Register.	Yes Section 84B	Yes Water Access Licence Register (s71)	Yes Schedule 3A	Yes Division 3E
Is it a public Register	Information can be requested regarding water permits. Yes, the Securities Register is a public register.	Yes	Yes	Yes	Yes
Does the Water Register Record Security Interests?	NA New Zealand does not have a Water Register	Yes Mortgage interests on water shares in Schedule 12A	Yes Recorded on security interest with evidence in approved form (S71D)	Yes Natural Resources Management Act 2004 (SA) Schedule 3A	Yes Division 3E Register of Instruments 26GZM

Does the Water Register Require Notice to Third Parties to change the security interest?	The PPSR does not require notice to the third party of changes.	Yes Notifications for changes to mortgage interests on security shares in Schedule 12A	Yes Schedule 1A provides further details on registration and removal of security interests	Yes Schedule3A regulates the creation, priority, variation, transfer, discharge, enforcement of a security interest.	Yes Division 3E Register of Instruments 26GZO Holder of the security interest to be notified of certain events
Are there statutory provisions relating to the type of information that must be provided.	Not specifically about water permits, i.e. the volume of water allocated. Water permits may be registered as “goods” on the Personal Property Securities Register under s122(4) of the RMA.	Yes Division 1 Section 84A – 84E	Yes Schedule 1A	Yes Schedule 3A	Yes Division 3E

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
WATER ALLOCATION – STATUTORY CATEGORIES					
“Water Allocation” Terminology	<p>A water allocation is the event or process of making an allocation of water under a water permit.</p>	<p>Water allocation means the volume of water granted once an application for water has been determined.</p> <p>Section 3 of the Water Act 1989 (Vic) defines “water allocation” by categorising it into environmental entitlement, bulk water and water licence.</p> <p>The final water allocation for environmental water and bulk water is based on a seasonal determination or under the terms of the entitlement if there is no seasonal determination made.</p> <p>The final allocation for water shares is the volume allocated to the particular share at any time.</p>	<p>Water allocation means the volume of water granted once an application for water has been determined under the water access licence</p> <p>There are three broad categories of licences: domestic use and town water supply, high security licences and general security licences.</p> <p>Actual water allocation is based on annual declarations and a system of water management plans.</p>	<p>Water allocation means the volume of water granted once an application for water has been determined under a water licence as defined in Section 3 of the Natural Resources Management Act 2004 (SA)</p>	<p>Water allocation means the volume of water granted once an application for water has been determined. Under The Rights in Water and Irrigation Act 1914 (WA) d “water entitlement” as defined in ss 26Q(3), Sch. 1 cl. 17(4), Sch. 1 cl. 28 and Sch. 1 cl. 37.</p>

WATER ALLOCATION - BULK WATER					
Bulk water is a category of water allocation	No statutory distinction between applications for high volumes of water and smaller takes	Yes s34(1)(a) for “water supply or irrigation”	Yes Major Utility category of Water Access Licence s57(i)	Categories of water licence exist for some categories of bulk water take such as municipal water supply and irrigation schemes.	No statutory distinction within the Act for all bulk water, however, there are separate processes for irrigation water and water supply.
Bulk water allocations processing and priority	Regional councils follow administrative procedures in the RMA. There is priority for all applications by order of time or “first come, first served” principle as per the precedent in <i>Fleetwing Farms v Marlborough District Council</i> .	Decided separately from other water use applications at Department level	Water supplier licences are given priority over all other categories of water access licences s 58.	Subject to provisions in Natural Resource Management Plans	Not applicable
Principles of water Allocation	No distinction for any water permit application based on volume, including bulk water. Applications are decided at regional council following the “first come, first served” rule to assess the merits of the application without making comparisons with existing or future applications	Section 40 gives the Minister broad discretion. Under section 40(1) the Minister “must have regard to” any Ministerial report prepared under the Act, existing and projected water availability, avoiding adverse effects on the environment, any existing water allocations made to the applicant, Government	Rules for bulk water applications are included under s20 of the Act as part of water management plans that must be prepared for each area. The rules must be in accordance with priorities under section 58 for water access licences.	Regional Water Allocation Plans are prepared following the provisions of the Act. Once the Plans are prepared they must also be accredited. The Plans include limits on water allocations. The water allocation plan will state where applications for new takes are restricted and if so it	Does not have separate provisions for bulk water as part of comprehensive water allocation legislation. Water allocations in regional plans cap consumptive use for particular categories of water take such as irrigation or hydropower. These limits are contained at the regional level once plans are developed.

policies on water allocation and conservation, the purpose for which the water is to be used and the needs of other potential applicants

will outline how new allocations can be acquired through trading.

Further water law reform may be able to address this area in a more comprehensive manner.

WATER ALLOCATION - ENVIRONMENTAL WATER

Is Environmental water legally recognised as a separate legal entity for the purposes of water allocation?	Not for the purposes of holding water allocations or water rights. There is legal recognition of the Wanganui River as part of the settlement process with local Maori tribes that does not affect existing water allocations.	Yes	Yes	Yes	Yes
Can the environmental water holder participate in the water market?	N/A	Yes.	<p>The Commonwealth Environmental Water Holder can buy water for the environment. State environmental water holders, such as the Victorian Environmental Water Holder, can also participate in the market to ensure that water is returned to the environment.</p> <p>Market participation and water buy back schemes by the government have been a contentious part of the reform process. Some rural communities in particular feel that they are unfairly bearing the burden of the effect of the reforms as it returns water to the environment by purchasing it from existing water holders who might otherwise operate businesses in the area.</p>		
Principles for Water Allocation	N/A	<p>Broad Ministerial Discretion to make environmental water allocations under section 48F.</p> <p>The Minister can consider potential adverse effects on existing users, government policies on conservation and</p>	Office of Environment and Heritage holds environmental water. It is ensuring that the water holdings are in accordance with the requirements of the Water Act 2007(Cth)	Environmental water allocations are a part of natural resource management planning process. Environmental water is held by the Murray Darling Basin Authority, Commonwealth	Subject to current reform as there is limited reference to environmental water planning under the Act. Environmental water planning is subject to Ministerial discretion.

water allocation, water management plans and any other matters the Minister thinks fit.

which requires the plans to be accredited. New South Wales has experienced some issues with meeting the requirements of the Water Act 2007(Cth) on time.

Environmental Water Holder and the South Australian government.

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
WATER ALLOCATION – Unbundling (Water allocation in entitlements, licences and shares)					
Are water allocations tied to land (bundled)?	Statutory scheme of water allocation which distinguishes between water take and use.	No	No	No	No
Water Allocation	In practice water take and use are still often ‘bundled’ together. Actual water allocation is a fixed entitlement recorded on the water permit, unless the Regional Plan allows for a class of water that has lower reliability.	Unbundled and actual water allocation will vary according to share available or declared. <ul style="list-style-type: none"> • Water use licence (ss64J, 64L) • Delivery licence (Sch15(4)) • Water Share (ss33F) • Bulk Entitlements (s34(1)(a) for “water supply or irrigation” (Bulk Entitlement Allocations are discussed below in this Table)) 	Unbundled and actual water allocation will vary according to share available or declared. Water Access Licence with a “share component” which is expressed as maximum volume, proportion of available water, proportion of storage capacity of a dam or a specific number of units	Unbundled and actual water allocation will vary according to share available or declared. <ul style="list-style-type: none"> • Forest water licence s169(c) • Well drillers licence s139 • Water access entitlement Chapter 7, Part 3 	Unbundled Actual water allocation is still a fixed entitlement but can be traded in full or part separately from the land.
Nature of Statutory Property Rights in a Water Permit (NZ) /Unbundled Allocation	Section 122(1) of the RMA states that “A resource consent is neither real nor personal property”.	Can deal with the unbundled water licence or water allocation as personal property	Can deal with the unbundled water licence or water allocation as personal property	Can deal with the unbundled water licence or water allocation as personal property	Can deal with the unbundled water licence or water allocation as personal property

<p>Court's Interpretation of Property Rights in a Water Permit (NZ) /Unbundled Allocation</p>	<p>Contention regarding the application of property law concepts to resolving water permit issues.</p> <p>The nature of rights in a water permit in common law does recognise elements of property for the holder of the consent.</p>	<p><i>ICM Agriculture v The Commonwealth</i> confirmed that property rights were not gained by the Commonwealth when irrigator's entitlements under new legalisation were reduced.</p>		
<p>Principles for Water Allocation</p>	<p>For the Water Use Licence the relevant principles are in Section 64U which are focused on limiting the adverse effects of irrigation at the location of the water take. The adverse effects include reducing the effects of salinity, managing groundwater infiltration, protecting biodiversity and reducing the</p>	<p>Water access licences are issued based on being in accordance with relevant water management plans and not have an adverse effect on the environment.</p> <p>Water access licences are given priority under the Act. First priority is given to domestic water and town water supply, second priority is given to high security licences and third</p>	<p>Regional Water Allocation Plans are prepared following the provisions of the Act. Once the Plans are prepared they must also be accredited. The Plans include limits on water allocations.</p> <p>The water allocation plan will state where applications for new takes are restricted and if so it will outline how new</p>	<p>The principles for granting a water licence are contained in Schedule 1 Section 7 of the Act. The Minister has broad discretion to refuse a licence application. The Minister must have regard whether the application is "in the public interest", "ecologically sustainable", "environmentally acceptable", could affect current of future water needs, would be detrimental to others in the Minister's opinion, could have another source of water, keeps within local practices and bylaws,</p>

<p>cumulative effects of water use.</p>	<p>priority is given to general licences.</p>	<p>allocations can be acquired through trading.</p>	<p>or is consistent with planning instruments.</p>
<p>Water Shares - Broad Ministerial Discretion under section 33J.</p> <p>First under section 33J(1), where there is a bulk entitlement in the zone or a “permissible consumptive volume has been declared” the Minister must ensure that the issue of a water share is “consistent” with the pre-existing bulk entitlement and it is “not likely to have” an effect on other water shares, environmental entitlements and “the needs of other potential applicants”.</p> <p>The second category is where section 33J(1) does not apply. Under section 33J(2)(a) to (k) the requirements are that the Minister “must</p>	<p>Once the water available is declared then the water access licence holder will know what percentage of their licence they have been allocated.</p> <p>Hence priorities between different water allocations is based on the type of licence held.</p>		

consider” the “existing and projected” availability and quality of water, potential “adverse effect” on existing uses of water, waterways, aquifers and the environmental water reserve , other water shares already owned by the applicant, “the need to protect the environment” and government conservation policy, any adverse effect there could be on maintaining the environmental water reserve, “the needs of other potential applicants” and relevant report or inquires under any Act

- Other matters that the Minister “thinks fit to have regard to”.

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
WATER ALLOCATION PLANS					
NATIONAL	<p>Gap in national planning and policy from 1991 to 2011.</p> <p>National Policy Statement for Freshwater Management 2014 (Amended in 2017)</p>	<p>National Water Initiative 2004</p> <p>Water Act 2007 (Cth) and the Murray-Darling Basin Plan</p> <p>National Competition Reforms to promote improved efficiency in water management</p>	<p>National Water Initiative 2004</p> <p>Water Act 2007 (Cth) and the Murray-Darling Basin Plan</p> <p>National Competition Reforms to promote improved efficiency in water management</p>	<p>National Water Initiative 2004</p> <p>Water Act 2007 (Cth) and the Murray-Darling Basin Plan</p> <p>National Competition Reforms to promote improved efficiency in water management</p>	<p>National Water Initiative 2004</p> <p>Water Act 2007 (Cth) and the Murray-Darling Basin Plan</p> <p>National Competition Reforms to promote improved efficiency in water management</p>
AUSTRALIAN STATES AND NEW ZEALAND REGIONS	<p>Regional policy statements and plans to be prepared by Regional Councils.</p> <p>However, not all Councils prepared Water Allocation Plans</p>	<p>Sustainable Water Strategies established from 2006 to 2011.*</p>	<p>State Water Management Outcomes Plan which has a lifespan of 5 years</p> <p>Strong direction in the Water Management Act 2000 (NSW) objects.</p> <p>Also regional water plans that state limits applicable to water access licences.</p>	<p>State Natural Resources Management Plan is required under the Natural Resources Act 2004 (SA).</p> <p>Also Regional Natural Resources Management Plans prepared by the Natural Resources Management Board.</p>	<p>Plans are required under the Rights in Water and Irrigation Act 1914</p> <p>Regional, sub-Regional and local plans for water management prepared by the Department of Water.</p> <p>Subject to further reform as Plans are not compulsory to prepare</p>

	NEW ZEALAND	VICTORIA	NEW SOUTH WALES	SOUTH AUSTRALIA	WESTERN AUSTRALIA
RECORDING AND REPORTING WATER DATA					
National Water Statistics	Until recently the Department of Statistics and Ministry for the Environment prepared separate reports on water data. A joint report is now prepared.	Reported to and collated by the Bureau of Meteorology under the Water Act 2007 (Cth).	Reported to and collated by the Bureau of Meteorology under the Water Act 2007 (Cth).	Reported to and collated by the Bureau of Meteorology under the Water Act 2007 (Cth).	Reported to and collated by the Bureau of Meteorology under the Water Act 2007 (Cth).
Regional Reporting of water information is standardised	Regional Councils may develop their independent methods for collecting, storing and reporting data. Scientifically based as hydrological data Regional reports carried out by Regional Councils or their consultants	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards
Business Reporting and Use of Water Information including financial institutions	No Water information relates to hydrological characteristics. The Australian Water Accounting Standards have	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards	Yes Through the use of Water Accounting Standards

not been adopted in New Zealand.

New Zealand government has established Guidelines for Councils to Report Water

*Victoria State Government, Department of Environment, Land, Water and Planning “Sustainable Water Strategies”
<https://www.water.vic.gov.au/planning-and-entitlements/water-resource-planning/sustainable-water-strategies>

3 *New Zealand's National Water Institutions*

The RMA is the primary legislation addressing water allocation in New Zealand. It included provision for resource management plans and policies to be prepared at the national and regional level.¹ The review of water allocation law and policy in New Zealand since the enactment of the RMA established that the full implementation of the RMA for water allocation would be complete only once the plans at national and regional level were prepared. However, in contrast to the Australian situation, it was not compulsory to prepare these plans under the RMA, but it was one of the “functions” of councils under the RMA.² While most regional plans were prepared, they were weak in their effectiveness in terms of managing water allocation or preventing over-allocation. Furthermore, no national policy instrument was prepared for water allocation from 1991 to 2011, a state of affairs that resulted in a policy gap.³ Chapter Four critically evaluated the policy gap and its implications. During the national policy gap, water allocation was carried out on a regional level through rules in regional plans. Essentially, between 1991 and 2011 water allocation plans and policy development occurred without national guidance.⁴

As has been stated earlier in the thesis, under the RMA New Zealand does not have a national water commission. Previously, New Zealand did have a national body responsible for water allocation policy development, a body which was established under the Water and Soil Conservation Act 1967. That body – the New Zealand National Water and Soil Conservation Authority – had a comparable role to the Australian National Water Commission. The Act defined the statutory role of the National Water and Soil Conservation Authority, reflecting its extensive powers. The Authority was meant to collect information on existing and future water

¹ For an account of the structure of water allocation planning in New Zealand see Chapter Four.

² Resource Management Act 1991, Part 4 defines the “Functions, powers and duties of central and local government”.

³ See Chapter Four for a comprehensive discussion on the lack of water allocation policy at the national level under the RMA.

⁴ For a discussion and analysis of regional plans in New Zealand see Chapter Four.

allocation. It was able to inquire into “future requirements” for water allocation and “competing demands”.⁵ When making decisions on water allocation, it had to consider the “best use” of water.⁶ In 1988, the Authority was abolished, and its powers were placed with those of regional water boards.⁷ National oversight of water policy development and many of the functions of the Authority were devolved to the regional level.

3.1 Lessons from Australia on the role of National Water Institutions

As has been shown, the Australian Commonwealth government overcame significant constitutional barriers when implementing water law reform.⁸ The examination of the Australian Constitution in Chapter Six showed that the Commonwealth Government did not have express constitutional powers to allocate water.⁹ Instead, it relied upon a variety of other constitutional powers to encourage states to co-operate on changes to water law and policy. Because of the constitutional context, it was important for the Commonwealth to work with the momentum of state agreement and to move relatively quickly to implement changes across states.¹⁰ The National Water Initiative 2004 and the Water Act 2007 (Cth) ensured that all states worked towards a common goal in implementing water law reform.¹¹ The National Water Initiative 2004 provided the blueprint for state water law reform and the implementation of water markets.¹² The National Water

⁵ Water and Soil Conservation Act 1967, s 14(4)(a).

⁶ *Keam v Minister of Works and Development* [1982] 1 NZLR 319 and *Stanley v South Canterbury Catchment Board* (1971) Planning Tribunal 463,68

⁷ Water and Soil Conservation Amendment Act 1988, s 3.

⁸ James Crawford “The Constitution and the Environment” (1991) 13 Sydney L. Rev. 11 and discussion in previous chapter.

⁹ See discussion on Australian Constitutional powers regarding water in Chapter 4 section 5 – 6.

¹⁰ Tranche payments were provided to those states that could show they had met key performance indicators in implementing the water law reform. See Council of Australian Governments The Council of Australian Government's Water Reform Framework 1994

¹¹ Productivity Commission Impact of Competition Policy Reforms on Rural and Regional Australia, Report No. 8 (Productivity Commission, Canberra, 1999) at 94.

¹² The COAG Water Framework 1994 and National Water Initiative 2004 also stated that water rights should be unbundled to facilitate trading.

Commission was also established to provide continued support and leadership for water law reform implementation. It is therefore important to evaluate the reasons for the establishment and abolition of the Commission, notably to explore whether the Commission was abolished because it had fulfilled its statutory objective or whether other reasons that contributed to its demise.

The Australian experience shows that it is essential to understand the role of national institutions in implementing water allocation reform. The National Water Commission provided an independent voice that gave much-needed transparency to the water reform process in Australia. There are therefore several reasons why New Zealand should establish a National Water Commission to implement comprehensive water reform like Australia. Water allocation law reform will take a long time and having the independent oversight of a National Water Commission will assist in systematically implementing the reforms while also providing support to the various stakeholders affected. The Commission should be a permanent body with similar responsibilities to those which Australia's National Water Commission had to report on future water demand.

Much of the New Zealand economy depends on water to produce commodities. Currently, the Ministry for the Environment does not have responsibility for water for agricultural production. As stated earlier, irrigation water policy development is the responsibility of the Ministry for Primary Industries. As demand grows for water because of climate change, population growth and economic growth, decisions about water allocation will only become more difficult. A central independent body would be the best means to bring the same transparency to water allocation policy development in New Zealand as the National Water Commission has done in Australia. The current quasi-judicial regionalised approach to water allocation decision making is not a long-term solution for New Zealand. There are examples of high-profile water allocation applications being decided by councils

See discussion in Chapter Six "Australia" section 6 "1994 COAG Reforms – An era of Co-operative Federalism". In some instances, this approach has led to the development of further unbundling so that delivery shares are separate from the actual water allocation. Unbundled entitlements for the actual water delivered may be in the form of a permit or licence that can be varied. In other words, the licence holder will receive a percentage of the water stated on their water licence. For an example of this approach see Water Act 1989 (Vic).

following the “first come, first served” rule, which have broader implications for the New Zealand environment and economy¹³ The critical evaluation in Chapter Five explained the problems facing New Zealand water allocation as stated in the Land and Water Forum Reports. The Reports are comprehensive in terms of identifying the barriers that water permit holders face when wanting to transfer water permits. While high profile media coverage is provided to water bottling exports, the impact of water bottling may not be at the same scale as water takes for other uses, such as irrigation. That is not to say that water permits for water bottling should remain unregulated. Rather the argument is that a wider and more comprehensive view of water allocation issues in New Zealand should be examined for their long-term impact.

4 *A New Zealand Water Register*

New Zealand does not have a Water Register. One of the functions of councils is to hold information relating to water permits; however, that function does not include recording information about security interests attached to water permits.¹⁴ In New Zealand, the registration of security interests relating to water permits is maintained under the Personal Property Security Act 1999. The Comparative Analysis Table shows gaps in the use of a water register for the registration and removal of securities. For example, in New Zealand it is not compulsory to register the security interest over a water permit. In Victoria, New South Wales, South Australia and Western Australia the registration of security interests over water licences are required in order to provide information to third parties. As stated in the Comparative Analysis Table, all these states provide for comprehensive details regarding the type of information that must be required. In New Zealand, the information regarding water permits is currently split between councils and the

¹³ See Matt Shand “Chinese company seeks consent to draw 580 million litres of pristine spring water” *Sunday Star Times* (13 August 2017); Chris Hutching “Chinese firm touts NZ’s potential as a major bottled water exporter” *stuff.co.nz* (15 November 2018); Cate Broughton “Christchurch water protest attracts thousands” *www.stuff.co.nz* (9 March 2019)

¹⁴ Resource Management Act 1991, s 35.

Personal Property Securities Register. The establishment of a water register would, therefore, assist in providing a transparent public record of water permits in one place. The ease of access to information relating to water allocation is evident in the Australian experience. In Australia, there is a wide range of people who seek access to water allocation information for a range of purposes from irrigators verifying the volume of water allocated to them to banks using water allocations as collateral for loans.

Currently, in New Zealand purchasers of a business using water permits may rely upon record keeping by regional councils to verify consent conditions, a reliance which could raise significant legal issues.¹⁵ The reality is that water permits are a valuable part of business transactions.¹⁶ The recording of water permits in a national Water Register will standardise the collection of water permit information and the registration of security interests. Section 122(4) of the RMA already allows for the recognition of resource consents, including water permits, as “goods” to be registered on the Personal Property Security Register.

In the process of unbundling the state of Victoria considered the link between information in the land register and the need to verify land and water information:¹⁷

As part of the conversion process accurate land ownership data is required, particularly to ensure accuracy of the mortgage is maintained. This requires a comparison of some of the information in the water authority records and the land registry records, and to enable this to occur the legislation specifically authorises the use of the information in those records for cross-checking.

The point raised in the quote above is a very practical one. It recognises that land and water were bundled together as assets that could then be used to provide security for mortgages or other loans. The process of unbundling water permits

¹⁵ The Supreme Court in *Marlborough District Council v Vining Reality Group* [2012] NZSC 11 confirmed a duty of care is imposed on Councils to provide correct information regarding water permits. In this case there was a discrepancy between the actual amount of water under a water permit and the amount recorded in the sale and purchase agreement for a vineyard. Furthermore, if the Council is found to be negligent in providing information regarding a water permit it may be held liable for its actions.

¹⁶ Eloise Gibson “When the river runs dry: The true cost of NZ water” www.stuff.co.nz (27 April 2017).

¹⁷ Parliament of Victoria Hansard (16 November 2005) above n 28 at 1947.

required regulation to maintain the legal obligations in existing mortgages and other securities. As shown in the Comparative Analysis Table above all the Australian states analysed have established a water register. The water register provides the legal definition of rights regarding the name of the owner, quantity, location of the take, the price of transfer and location and the registration of security interests. The Comparative Analysis Table also shows that notice must be given to third parties with a registered security interest if certain events occur.

In comparison, in New Zealand, the registration of security interests attached to water permits does not require third party notification. A benefit of a separate water register would be that it enables changes to the underlying security to trigger the notification to a registered third party. The economic value of a water permit would be protected by the creation of a water register in New Zealand. New Zealand needs the requisite protection for the transfer of water permits to higher value use by providing the appropriate level of protection to businesses that rely on the value of their water allocation for lending purposes.

New Zealand should consider the consolidation of water permit information in the form of a water register that is similar to Australia's register. A New Zealand water register would improve the reliability of water permit information by recording it in a public register. Furthermore, it would recognise the economic value of water as an asset of businesses relying upon water allocation to operate successfully.

4.1 Recording and Reporting of Water Data

As described in the previous chapter, policy objectives in the COAG Framework 1994 required the development of water information collection. The comprehensive nature of the Australian reforms meant that this included the development of water accounting standards. The collection of water information and data is a key part of measuring the success of the Commonwealth-led water law reform. In Australia, water accounting was included in the water reform process on the basis that "high quality information is necessary to base sound decisions relating to water

management”¹⁸ Before the reforms water accounts were kept mainly for internal technical purposes and users. The shift towards broader general purpose water resource accounting was prompted by the National Water Initiative water policy reform, government investment in water saving and the need to deal with the problem of over-allocation.¹⁹ The Water Accounting Conceptual Framework formed the foundation for the development of the Water Accounting Standards.²⁰

The Water Accounting Standards were developed by taking into account the wide range of stakeholders that use water information. The Commonwealth government uses water accounts to measure progress on returning water to the Murray-Darling under the Murray-Darling Basin Plan. Water accounts are used to help market participants make informed choices about water use so that they can manage the risk of their transactions.²¹ For example, irrigators may choose particular crops in line with forecasts for water availability that are based on water reports, or councils may purchase extra water from the market to secure municipal supplies.²² Water account information could be used by government policy makers, lobby groups, regulators, consultants, academics and environmental organisations for decision making about a water project.²³ Water Accounting Standard 1 and 2 are voluntary standards that may be used in the public and private sector.²⁴ The true value of water accounting is that it allows information on water take and use to be benchmarked across all water users. These Water Accounting Standards also provided consistent definitions of water assets and liabilities.

¹⁸ Jayne M Godfrey and Keryn Chalmers (eds) *Water Accounting International Approaches to Policy Decision-making* (Edward Elgar, Cheltenham, 2012) at 4.

¹⁹ Maryanne Slattery, Keryn Chalmers and Jayne M Godfrey “Beyond the Hydrographer’s Legacy: Water Accounting in Australia” in Jayne M Godfrey and Keryn Chalmers (eds) *Water Accounting International Approaches to Policy Decision-making* (Edward Elgar, Cheltenham, 2012) at 22.

²⁰ At Preamble.

²¹ At Preface [9].

²² At 22.

²³ At Preface [16].

²⁴ Australian Water Accounting Standard 1 *Preparation and Presentation of General Purpose Water Accounting Reports* (Commonwealth of Australia Bureau of Meteorology, Canberra, 2012).

The Comparative Analysis Table shows that water information in the Australian states is reported using the Water Accounting Standards. Water accounts based on the Water Accounting Standards may be collated by the Bureau of Meteorology which is responsible for preparing annual water accounts. In comparison, whereas the Australian Water Accounting Standards are for all public and private water users, the New Zealand water accounting guidance has been prepared for regional councils only.²⁵ The guide includes examples of the various approaches taken by regional councils' collecting and reporting of water "accounting" data. This guide includes a reporting template which records consumptive and non-consumptive takes and categories of water for the environment.²⁶ The New Zealand water accounting guide would benefit from being expanded to all water users. There should be further research undertaken on whether the Australian Water Accounting Standards should be adopted in New Zealand.

5 Alternatives to the "First come, First served" Method of Water Allocation in New Zealand

The comparison with Australia showed a significant difference between current water allocation in New Zealand and the extent of water law reform that has been undertaken in Australia. It is fair to state that New Zealand is lagging in addressing water allocation and finding alternative methods to allocate water to the environment, bulk water takes and other water takes.

In Australia, states can prioritise water allocation based on the different categories of water take. One of the difficulties in making comparisons with Australia is that each state has a unique approach to the naming and classification of water allocation. The difference in approaches is important to note in the comparative

²⁵ New Zealand Government *A Guide to Freshwater Accounting under the National Policy Statement for Freshwater Management 2014* (Ministry for the Environment, Wellington, 2014).

²⁶ Ministry for the Environment *A Guide to Freshwater Accounting under the National Policy Statement for Freshwater Management 2014* (Ministry for the Environment, Wellington, 2015) at 48. Refer to Table 5.1.

analysis because it means that the comparisons are not direct comparisons between Australian states and New Zealand. With regards to water allocation, the Comparative Analysis Table shows that states can divide up their water allocations by volume. The Comparative Analysis Table shows that bulk water entitlements for irrigation water or municipal water supply can then be given priority over other water takes if necessary. The distinction between water takes enables a prioritising of water takes according to water policy objectives. In comparison, regional councils in New Zealand currently allocate water under the “first come, first served” method, which does not allow for a comparison to be made between competing applications regardless of the size or volume of the take.²⁷

The lack of strong guidance in freshwater allocation priorities is an issue for councils deciding water allocation applications. Regional councils are challenged by the fact that there is no distinction between the demand for water for New Zealand’s national projects in irrigation,²⁸ increased demand from municipal water suppliers and from other individual consents.²⁹ Councils are limited in their ability to assess the applications before them because of the “first come, first served” allocation method.³⁰ The current allocation method prevents councils from comparing one application against another or from considering other future potential uses for the same water. As a result, the “first come, first served” method effectively prevents water from being allocated to its highest value use. Some councils are calling for “a robust set of criteria” to determine priorities for water allocation.³¹ As has been shown, the current National Policy Statement – Freshwater Management 2014 (revised in 2017) still does not provide the “robust”

²⁷ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257.

²⁸ See discussion in Chapter Four on the Irrigation Acceleration Fund.

²⁹ *Tauranga City Council v Bay of Plenty Regional Council* Notice of Appeal on behalf of Tauranga City Council Against Decision on Proposed Plan Change 9 (Region-Wide Water Quantity) (15 November 2018). The Tauranga City Council Submission to the Proposed Plan Change also stated that it is facing these issues as a future urban growth area.

³⁰ Waikato Regional Council *Waikato Regional Freshwater Discussion: A Framework For Getting The Best Use Allocation Through Time Issues and Opportunities* (Waikato Regional Council, Hamilton, 2016). The observations in this paragraph are drawn from this policy paper at 19.

³¹ At 19.

guidance that the councils seek as it does not change the “first in, first served” method of allocation.³²

There are a number of options that could help New Zealand implement more effective policy water allocation; however, these options vary in terms of their effectiveness. On the one hand, the National Policy Statement – Freshwater Management 2014 (revised in 2017) should be revised further to include more detail on regulatory tools to assist regional councils in preventing over-allocation.³³ This change would bring some minor improvements. On the other hand, there is a need for more extensive reform in the form of a specific statute focusing on water or natural resource allocation.³⁴ The latter option goes beyond amending the RMA yet again.

The Australian approach to address these water allocation problems has been to establish priorities by categorising water takes for “bulk water” takes, environmental water and other water takes. The other water takes are generally referred to as water shares or licences. These are simplified categories as there is no generic water allocation definition across Australian states. Each state has developed law to address these categories of water allocation as required under the NWI and Water Act 2007 (Cth). A core part of the reforms was to unbundle or separate water allocations from land. The unbundling process and how it led to the creation of different categories of water takes for environmental water, “bulk water” and other water shares and licences is examined in more detail below.

³² National Policy Statement Freshwater Management 2014 (Revised 2017).

³³ Ministry for the Environment *A Guide to the National Policy Statement for Freshwater Management* (Ministry for the Environment, Wellington, 2014).

³⁴ See Greg Severinsen and Raewyn Peart *Reform of the Resource Management System The Next Generation Synthesis Report* (Environmental Defence Society, Auckland, 2019) for proposed reform of the RMA including the potential to establish a separate Allocation Act.

5.1 Unbundling Water Allocations

Quite simply, New Zealand has not unbundled its water entitlements from land. Consequently, there is limited scope to develop new water products or methods of water allocation. New Zealand needs to consider the value of unbundling with regard to the Australian experience in water allocation law reform.

Unbundling of water permits, i.e. separating the take and use of water from land, was an essential initial step in establishing Australian water markets.³⁵ Unbundling was included as an objective in the 1994 COAG Agreement and required that states unbundle their water entitlements.³⁶ Unbundling was required for two reasons: first, to facilitate trade in water markets and second, to improve the verification process of land and water information. Unbundling occurred at the individual state level. The Australian Productivity Commission has however been critical of the state implementation of unbundling at the individual state level stating that “growth in water markets and the attainment of allocative efficiency have been obstructed by the failure to unbundle water entitlements on a uniform basis”.³⁷ Nevertheless, the benefit of unbundling for Australia was to enable further policy options when allocating water³⁸ and the National Water Initiative 2004 which set the overall agenda for water allocation law reform reinforced the commitment to unbundling.³⁹ The analysis of the Australian experience in unbundling shows the points that need to be considered before passing a law to unbundle water take and use.

³⁵ Viki Waye and Christina Son “Regulating the Australian Water Market” (2010) 22 J. Environ. Law 431 at 437

³⁶ Australian Government Department of Environment and Energy *Intergovernmental Agreement on a National Water Initiative 2004*. (Australian Government Department of Environment and Energy, Canberra, 2004).

³⁷ Australia Productivity Commission *Rural Water Use and the Environment: The Role of Market Mechanisms* (Australian Government, Productivity Commission, Canberra 2006).

³⁸ Jennifer McKay, (2008) “The Legal Frameworks of Australian Water: Progression from Common Law Rights to Sustainable Shares” in Lin Crase (ed) *Water Policy in Australia. The Impact of Change and Uncertainty* (RFF Press, Washington, 2008) 44-60. New water products allowed the spread of risk across a catchment if there was a water shortage.

³⁹ National Water Commission National Water Initiative. First Biennial Assessment of Progress in Implementation (Commonwealth of Australia, Canberra, 2007) at 3.

Unbundling in Australia raised several concerns. There was a concern that unbundling and subsequent water trading could result in stranded assets. Water speculation was also an issue in terms of concern about the possibility that 10 per cent of water could be sold to non-users.⁴⁰ The banking industry raised strong concerns regarding the potential effect of unbundling on financial transactions involving water shares. The banking industry questioned the lack of direction on how a water share was defined, the treatment of mortgages, and how to ensure water access remained viable for irrigators so that they could continue their farming business.⁴¹

Before unbundling, the value of a farm for mortgage-lending purposes was based on the value of the land.⁴² After the process of unbundling was complete, the value of land was clearly separated from the value of water allocated to the business owner. As a result of unbundling the security interests in agricultural business loans also shifted. Banks were able to recognise the value of water allocation as a separate asset.⁴³

One consequence of unbundling was the creation of a water entitlement as an asset in its own right with a value independent of (and potentially greater than) the value of the land to which it was previously attached.

For situations where the value of water was greater than land value, water provided the business owner with an additional asset, which illustrates that unbundling diversifies the asset base of agricultural businesses. The consequences for the banking industry are that unbundled water entitlements are more straightforward to mortgage and transfer.

The unbundling process in Australia also affected land valuations because the value of water allocations was separated from land. Consequently, the total revenue collected from regional rates based on land value declined. Councils had to develop

⁴⁰ Parliament of Victoria, Council, Hansard (21 November 2005) “Water Resource Management Bill 2005 Second Reading” Speaker Stoney at 2252.

⁴¹ At 2252.

⁴² National Water Commission *Current Issues Influencing Australian Water Markets* (Australian Government, Canberra, 2013) at 16.

⁴³ At 16.

policy to address the problem of lower land rate collection. For example, in Victoria, transitional provisions were included to ensure that the valuation of land remained the same for three years after unbundling. Councils in Victorian irrigation districts were provided with an \$18 million assistance package to make up for the lost rating revenue.⁴⁴ New Zealand would also need to anticipate and address the potential changes to land rating and council revenue if unbundling went ahead.

Little attention has been paid to unbundling and its potential effect in New Zealand legal literature although some account is taken of it in the environmental planning research.⁴⁵ Unbundling in New Zealand deserves further attention as it is an area for further law reform that requires action from central government. Unbundling would be the first step of comprehensive water law reform similar to Australia. It would allow the separation of water allocation into categories for bulk water, environmental water and other general water allocations in the form of shares, licences or entitlements. Ultimately fully unbundled water allocation systems like that in Australia spread the risk of lower water availability across all water users. Hence the final allocation of water will vary on a seasonal basis.

5.2 General Water Allocation (Water Shares, Licences and Entitlements)

It can be seen that unbundled water allocation in Australia has enabled the development of greater options for water allocation. Examples of the different water allocation methods are detailed in the Comparative Analysis Table above. For example, the states of Victoria, New South Wales and South Australia issue a water entitlement (generally referred to as a “water licence”) as a permanent property right confirming the right to have water delivered to land. However, the actual water allocation is not equivalent to permanent water entitlement. The permanent water entitlement states the maximum volume of water that can be delivered to a

⁴⁴ ABC News “Councils back water rights unbundling aid” *ABC News* (27 September 2007).

⁴⁵ Jim Sinner and Andrew Fenemor *Opportunities for separating the take and use of water in planning frameworks and resource consents. A Report for the Sustainable Water Program of Action* (Ecologic Foundation, Nelson, 2007).

particular site. The actual water allocation is a percentage of the total water available for that season and is shared between water licence or water share holders. The exact methods and legal basis for calculating the share of the water allocation vary across states, which was evaluated in Chapter Six.

The Comparative Analysis Table shows that unbundling in Victoria resulted in three broad categories of water entitlements: for general water users (not a bulk water take or environmental water take); a water share which enables the holder to use the water; water use rights for using water on defined areas of land and rights associated with the delivery of water for irrigators.⁴⁶ Victorian irrigators choose whether they wish to unbundle their water entitlements or not. There is a different approach in New South Wales where the water share is a part of the water licence and the water allocation is stated as a proportion of water available, as storage capacity or as a maximum number of units.

New Zealand irrigation schemes are self-regulated since the schemes were privatised under the Irrigation Schemes Act 1990. Once the irrigation scheme operator obtains a water permit, subsequent water allocation to irrigators is based on a contractual rather than a statutory basis.⁴⁷ The Australian experience in water law reform shows how regulation of water allocation in irrigation schemes can provide greater protection to irrigators. The Comparative Analysis Table shows that Victoria, New South Wales, South Australia and Western Australia all have regulation that determines how rights to water in an irrigation scheme are allocated. For example, in Victoria, the transfer of water shares involves a two-step process. First, the “Water Corporation” must approve the transfer. Secondly, the transferee must then lodge the transfer with the Water Registrar as part of the notification process under the Water Act 1989 (Vic). The first stage in the notification process

⁴⁶ The Water Resour. Manag. Act 2005 (Vic) amended the Water Act 1989 (Vic) to introduce these changes. Parliament of Victoria Hansard (16 November 2005) “Water Resource Management Bill 2005 Second Reading” Lenders (Minister for Finance) at 1945.

⁴⁷ Central Plains Water Limited, “Central Plains Water User Agreement 2015”

Available at < <http://www.cpwl.co.nz/wp-content/uploads/Central-Plains-Water-Limited-Water-Use-Agreement-2015.pdf>>

requires identity verification.⁴⁸ The seller must also declare the value of water being sold when registering the water sale. If there is a mortgage against the water share bank approval is required before the transfer can occur. New Zealand's unregulated irrigation schemes should also include these features. The Australian experience shows that unbundled water allocations are transferred with greater ease.

5.3 Bulk Water Allocation

New Zealand should consider separating bulk water applications as a separate category of water allocation. The Comparative Analysis Table shows the "bulk water" applications in Victoria and New South Wales are for major water takes generally involving dams for irrigation, municipal water takes or dams for water storage. For example, The Water Act 1989 (Vic) distinguishes between bulk entitlement holders and other water allocation permit holders.⁴⁹ One of these distinctions is that the bulk entitlement holders will hold water permits on behalf of others and the volume of water allocated is significantly higher than that for other water allocations.

New Zealand does not have an equivalent recognition of "bulk water" or major water takes. Instead, all water permit applications received by the council are processed according to the "first come, first served" method of water allocation. Scant attention is paid to bulk water allocation for major water takes in New Zealand's environmental law literature. The need of other potential water applicants in New Zealand is a factor that councils currently cannot consider under the "first come, first served" rule as discussed in Chapter Four. As a result, an application from a municipal water supply company is subject to the same priority rules as all other applications. As already noted, the priority rule for all applications currently rests on the time of application or the "first come, first served" rule.⁵⁰ This priority

⁴⁸ Water Act 1989 (Vic), s 84J(2).

⁴⁹ Water Act 1989 (Vic). Part 4 of the Act contains provisions relevant to the granting of bulk entitlements to water.

⁵⁰ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 (CA).

processing by time may put bulk water applicants at a disadvantage as the lack of certainty regarding water allocation may hinder further long-term planning.

The process for deciding whether the bulk water allocation is granted or not can be separated from other water allocation applications. For example, in Victoria, bulk water applications are lodged with the Minister for Water.⁵¹ This statutory process shifts the decision making associated with the project away from the regional level. Consequently, the Minister assesses the bulk water application taking into account state rather than regional water policy and priorities. The Ministerial assessment of bulk water applications includes government policies relating to water allocation priorities and “the needs of other potential applicants”.⁵² In New Zealand, bulk water allocations could be suitable for high volume takes for irrigation, municipal water supply and electricity generation. The state policies for major water takes could then take into account other priorities that are important to consider in determining bulk water applications.

5.4 Environmental Water Allocation

New Zealand does not have an environmental water holder or an equivalent office with similar statutory functions to hold water rights for the environment like the Australian Environmental Water Holder. As has been detailed in the previous chapter, provision for the creation of the Australian Environmental Water Holder was stated in Objective 4(b) of the 1994 COAG Water Reform Framework. Under the Water Act 2007 (Cth) environmental water was recognised as a separate category of water and the Environmental Water Holder was established with special powers to purchase, dispose of or deal in environmental water in the water market.⁵³

⁵¹ Water Act 1989 (Vic), s 36.

⁵² Water Act 1989 (Vic), s 40(m).

⁵³ Water Act 2007 (Cth) Part 6 details the establishment, functions and operation of the Commonwealth Environmental Water Holder. For a comparison of legal personhood of the Wanganui River and the Victorian Environmental Water Holder see Erin L. O’Donnell and Jullia Talbot-Jones “Creating legal rights for rivers: lessons from Australia, New Zealand and India” (2018) 23(1) *Eology and Society* 7. The Wanganui River legal personhood was granted as part of the settlement with local Maori tribe. It does not acquire or hold water for the environment. In

Further environmental water was acquired through measures such as the Murray-Darling Basin Plan. The previous chapter showed that environmental water has also been acquired through buy-back schemes, trading and investment in water efficiency projects.⁵⁴ The recognition and aggregation of environmental water allowed the Environmental Water Holder to participate in the water market.

In comparison, New Zealand does not have a regulated water market. The Comparative Analysis Table shows that New Zealand does not have a number of the regulatory features that are a part of Australian water allocation law and policy. The Environmental Water Holder has been a part of the Australian water law reform experience over the last 20 years. The previous chapter stated that its establishment was driven by the implementation of water markets and a need to provide a legal status to environmental water. If further reforms to water allocation were to be undertaken, then it would be worthwhile to examine whether a role for an equivalent environmental water holder would be appropriate for New Zealand.

6 *Summary*

This chapter has provided a comparative analysis of water allocation law and policy in Australia and New Zealand. It critically evaluated the areas where New Zealand could learn from the Australian experience. The analysis showed that the Australian experience in water law and policy yields valuable lessons for New Zealand. New Zealand is in a unique situation where it does not have a dry climate like Australia's. Nevertheless, New Zealand does have issues not only with the full allocation of

contrast the role of the Commonwealth Water Holder is to acquire and hold environmental water allocations.

⁵⁴ Commonwealth of Australia *Securing our Water Future* (Australian Government Department of the Environment, Water, Heritage and Arts, Canberra, 2010) at 6:

Water for the Future has \$3.1 billion for purchasing water entitlements to help restore the health of our vitally important rivers, wetlands and floodplains. In the Murray-Darling Basin, the Australian Government is buying back permanent water entitlements directly from irrigators in order to restore the balance between water for human use and for the environment. By the close of 2009, the Australian Government had secured the purchase of 766 gegalitres of water entitlements worth just over \$1.2 billion.

some catchments but also with the limitations of the “first come, first served” method of water allocation.

The most valuable lessons from the Australian water law reform journey relate to the foundational changes in New Zealand water law that are now long overdue. As a starting point, the recording and reporting of water allocation take and use require a more uniform approach. The Australian experience shows how a water register can be implemented and the range of information that it can provide in a transparent manner. In the Australian experience, the water register forms an important part of the water market information. Market participants rely upon the water register information for information about whether they should trade water. New Zealand does not have the same policy drivers for introducing water markets. However, it would be irresponsible to continue to allocate valuable water resources without full and transparent records of how much water is being allocated and to whom. Maintaining regional councils as the repositories for this legal water information is not viable in the future. Businesses relying upon water are using their water permits as assets. Financial institutions are lending money based on the information on the volume of water allocated. Thus, there is a strong argument for recognising the economic value of water by recording the information, with increased security for those dealing with the register. In this way a water register would act much like the land register.

The analysis of the Australian situation shows that there are alternatives to the “first come, first served” method of water allocation. Australia has progressed further with unbundling from statutory water allocations, separating take and use to further unbundling so that new water products are developed and the risk of how much water can actually be delivered to a site (the water allocation) is spread across all water users. New Zealand has many choices to make about how to allocate water in a wider range of water products and how far it wants to unbundle water take and use. New Zealand should consider trialing further unbundling in irrigation schemes which are currently privately administered and do not promote the transfer of water to other uses as freely as the Australian model does. Unbundling also strengthens the argument for a water register because there will be more information to record,

information with layers of complexity that a range of stakeholders will rely upon. To implement more advanced unbundling will require promulgation of appropriate regulation by Parliament.

Another lesson that New Zealand can take from Australia is to pay attention to the cautionary points that have been emerging more recently. These relate to the failure to implement water law reform. There are concerns relating to water theft and a lack of transparent auditing of the implementation of reforms at state level. New Zealand needs to be mindful of the underlying scientific debates relating to water allocation. These debates already exist in the form of appropriate scientific models on which to base water allocation decisions. The Australian experience shows that dealing with a lack of compliance, as evidenced with a lack of compliance with water metering requirements in Canterbury, cannot be ignored. Such problems need to be prominent in the mind of policy makers when reforming water allocation law and policy. A solution to this problem is to ensure that national water institutions with statutory oversight remain a permanent part of the water allocating framework. They should not be temporary institutions whose existence is subject to review. The literature on water scarcity proves that water allocation is a global problem. New Zealand is a country that has valuable freshwater resources. There is an inherent responsibility on the New Zealand government to ensure that water allocation in New Zealand is not frittered away or “locked up” for uses when priorities may change in the future. The “first come, first served” method of water allocation is outdated and no longer suitable for a country experiencing economic water scarcity.

CHAPTER EIGHT - CONCLUSION

1 *The New Zealand Situation*

This research has shown that New Zealand water allocation is relatively unsophisticated in comparison to Australia. The allocation of water under the “first come, first served” method has led to problems with allocating water to higher-value use. Nor can regional councils legally take into account alternative uses for water. The lack of comparison with other applications means there is hardly any opportunity to prioritise one use over another. In some catchments, the demand for water has resulted in a goldrush effect as applicants rush to be next in line to apply for limited water resources. Fully allocated catchment are facing the problem of how to reallocate water. In this context, the Australia experience of water law reform can provide valuable lessons in how to implement water law reform to improve water allocation. The Australian water law reform experience is comprehensive, and it must be considered as a package of reforms.

The evaluation of New Zealand water allocation law in this thesis focused on the policy gap at the national level from 1991 to 2011. It addressed the significance of the gap contributing to problems with water allocation. The analysis showed that, in theory, the RMA and its hierarchy of planning instruments would provide a framework for resource allocation that allowed the resource users to determine how and when they would apply for resources, including water. Furthermore, it showed that adding to water allocation problems was the fact that during this policy gap, the development of water allocation plans and rules varied considerably amongst regions. This variation has contributed to the problems faced by New Zealand with over-allocation in some catchments, especially since some regions had weak plans for water allocation.

One of the key policy responses to water allocation and water quality issues was the establishment of the Land and Water Forum. The Forum identified areas that required further attention and made recommendations to address them. The Forum also stated that the “first come, first served” method of water allocation was

problematic. The “first come, first served” method of water allocation is a default mechanism for determining water permit applications. The problem is that it provides little incentive for water transfers and can result in a gold-rush effect between applicants. The Forum clearly articulated the problems with water allocation in its Reports.

Some may question why the government has not closely followed the Forum recommendations concerning examining the potential of water markets. Part of the answer to this question is that the Forum was established outside the formal processes of developing national direction under the RMA. Hence the government was not legally obliged to follow its recommendations. That is despite its support for the Forum. From a policy perspective, the Forum Reports have influenced the national direction under the National Policy Statement for Freshwater Management, which was first promulgated in 2011. The analysis of policy development after the policy gap and of the National Policy Statement itself showed that measures to address over-allocation remained inadequate. The significance of this finding is that despite the identification of problems with water allocation, such as the lack of ability to easily transfer water to higher-value uses, further policy development and implementation remain slow. Specifically, there is a lack of national direction on unbundling, developing a water register, separate legal recognition of environmental water or re-establishing the hydrometric network.

The research recognised that New Zealand is at a crossroads when it comes to water allocation in terms of addressing water allocation law and policy problems. There appears to be a degree of inertia in addressing water allocation problems in New Zealand in particular. This may appear to be a contradictory statement in light of the policy work undertaken as part of the Land and Water Forum and the revisions to the National Policy Statement Freshwater Management that focus on water quality. This is particularly true when making a comparison with the lack of policy direction during the national policy gap from 1991 to 2011. However, when making a comparison with the comprehensive package of Australian water law reform implemented across states, there is evidence of inertia in New Zealand water law and policy development to make improvements to the current system of water

allocation. New Zealand would need to implement changes to water allocation law and policy in one jurisdiction without the need to overcome constitutional barriers like Australia has grappled with.

The research question was focused on lessons from Australian water law reform. One of the limitations of the Australian water law reform experience is that it does not address the issues relating to water allocation and indigenous people. Further research needs to examine the implications of changes to water allocation law and policy in relation to the voice of Māori in water allocation.

2 Lessons from Australia

Australia has made an effort to deal comprehensively with its water allocation. The more recent reforms have resulted in a hard won commitment from states to allocate water more efficiently. The method of allocation generally involves categorising water takes based on their volume as bulk water takes, environmental water or general categories of water shares and licences. At the heart of the water allocation system in Australia is the understanding that the volume of water allocated is not necessarily the volume of water received. The water allocation system in Australia generally allows for the actual volume of take in water licences and shares to be adjusted by the state. The state reserves its discretion to adjust the allocation based on how much water is available in a season. For example, all water licence holders in a catchment may have their actual water allocation determined as a percentage of the total available water. At times of scarcity, this method of water allocation is able to spread the risk of a lack of water more evenly across water licence holders. The categories and rights associated with different types of water licences bring a level of complexity to water allocation that may not be embraced in New Zealand. The reallocation of water is then carried out through a market-based system. Through the market system water can be purchased or sold as needed and the environment has equal legal standing.

The research on Australian water policy and law found that the constitutional structure of the Australian government hampered water reform in the Murray-Darling Catchment. It was not until 1994 that a comprehensive voluntary agreement between the Commonwealth of Australian States was reached with an agenda to improve water allocation through a range of policy tools including payments to states for implementing the reforms. The reforms are now facing a crisis of sorts with allegations of water theft undermining the extensive effort that has gone into reaching a consensus across states. The reform process itself may be on the brink of policy failure if states step back from their commitments to restore environmental water flows to the Basin. A further issue that has not been addressed in Australia is that of where indigenous involvement in water allocation can and should occur. Again, in New Zealand addressing settlement claims in relation to water allocation should be addressed as a part of any proposed change.

Chapter Seven drew upon the issues identified in the comparative analysis to provide lessons for improving New Zealand water allocation. The chapter included a Comparative Analysis Table which focused on New Zealand and the Australian states of Victoria, New South Wales, Western Australia and South Australia. The comparative analysis answers the main research question which asks what lessons can be gleaned from the Australian experience in water allocation law reform.

It is important to recognise that Australian water law reform did not follow a linear path; however, there were points of significance in Australia's water reform experience. The first was the 1994 COAG Meeting where the Australian Commonwealth and states agreed on water allocation policy objectives. The second was the National Water Initiative 2004 which included agreeing to implementation of water markets and associated policy reform. Third was Commonwealth legislation driving change at the state level with the Water Act 2007 (Cth) which provided for statutory measures and timelines for implementing water markets, a water register, water accounting, water market rules, environmental water allocation and the Murray-Darling Basin Plan to restore the health of the Murray-Darling Basin.

To begin with one of the lessons for New Zealand is the importance of having one body to lead the implementation of reforms that is not connected to any other government department. The distance from other departments is necessary because of the transparent review function of the body. The comparison also showed the importance of national water leadership in Australia and New Zealand. In Australia, the National Water Commission was abolished to save costs. Yet its transparent review function and role in the implementation of the Australian water law reforms was praised by the Wentworth Group of Concerned Scientists. The recommendation contained in this research is that a body similar to the Australian National Water Commission should be established in New Zealand.

The importance of information has been apparent in the Australian reforms. Information about water take and use has been so crucial that Water Accounting Standards were developed as part of Australian reforms. While in New Zealand, there is a lack of appreciation for the relevance of water accounting information and how it can be communicated to a broader range of stakeholders. The experience of Australia in setting accounting standards shows that water accounting is central to developing water allocation policy as it also serves to bring common terminology and understanding of concepts related to water allocation.

The research identified what can be termed foundational problems with New Zealand water allocation. Any proposed changes to water allocation should be based on a robust system of recording water allocations in water permits. The research clearly showed that there is a lack of information regarding actual water takes and permitted water takes. The lesson from Australia is to ensure that comprehensive water law reform addresses water permit information. New Zealand's water permit information is regionalised and not centralised with a water register. There should be a consolidation of information relating to water permits in a water register. The significance of this finding is that it would provide improved legal recognition of the value of water permits.

This research has also emphasised that New Zealand must take heed of the comprehensive nature of Australian water law reform. The lesson is that markets

alone were not the solution to Australia's water allocation woes. Markets were a means to an end and a part of a far more sophisticated approach to addressing water allocation than just implementing markets. Markets addressed political and constitutional barriers in the Murray-Darling Basin to assist with the transfer of water across state boundaries in a more sustainable manner for the Basin itself by following the Basin Plan. Markets played an important role in the purchase of water for the environment. But to fully implement the return of environmental water the environment was given legal recognition. The environment was given legal status with the office of the Environmental Water Holder. The use of markets to buy back water raised political ire in rural communities too who felt unfairly burdened by the implementation of water reforms. The markets were implemented following the process of further unbundling water allocations so that the rights to take, use and have water delivered could be traded independently of each other. While markets operate to reallocate water, water allocation itself does include the categorisation and prioritisation of water according to its use. The broad categories are bulk water (irrigation, municipal supply, and storage), environmental water, and water shares and licences.

There is a lesson for New Zealand irrigators too. New Zealand privatised irrigation schemes under the Irrigation Schemes Act 1990 but stopped short of regulating them. The Act stopped short of regulating irrigation schemes to provide irrigators with rights that would protect their access to water in irrigation schemes. Further regulation of irrigation schemes, like that in Australia, could also facilitate the transfer of water between different uses, not just existing uses. In the context of deregulation, the regulation of irrigation schemes may appear to be unnecessary interference in private matters. However, the Australian experience shows that regulated schemes can provide a range of benefits to those dealing with irrigation schemes. Underlying the regulation of irrigation schemes is the recognition that water allocations are a valuable economic asset for businesses. Irrigators are invariably operating businesses that rely on secure access to water. Providing irrigators with greater security with access to water and ease of transfer would assist in addressing at least some of the water allocation issues that New Zealand faces with the current "first come, first served" method of water allocation.

Furthermore, the Australian experience shows that valuing water allocations in the banking industry remains an area which requires further work. Yet, in New Zealand, there is a lack of discussion relating to the operation of irrigation schemes and the question of whether water transfers within them could be improved for irrigators. The Australian experience shows that further regulation of the schemes would ease some of the pressure relating to the lack of transfers of water allocation by providing greater transparency and security for irrigators than private arrangements may allow.

The comparative analysis extends the knowledge base regarding water allocation policy and law reform that Australia has undertaken and which New Zealand has not. In some instances, the legal implications of the potential changes to New Zealand water law reform have not been examined in depth from a legal perspective. The potential areas for further action include further unbundling to assist with providing greater options for water transfers, distinguishing bulk water entitlements for municipal water, irrigation or hydropower and creating an Environmental Water Holder office. It is apparent that policy discussion alone will not bring change to water allocation. To make a change to water law action is required to improve water allocation and put an end to the “first come, first served” method of allocation with comprehensive reform like Australia.

BIBLIOGRAPHY

A Cases

1 New Zealand

Altimarloch Joint Venture Ltd v Moorhouse HC Blenheim CIV-2005-406-91, 3 July 2008.

Altimarloch Joint Venture Ltd v Moorhouse HC Blenheim CIV-2005-406-91, 23 March 2009.

Annan v National Water & Soil Conservation Authority & Minister of Energy (No2) (1982) 8 NZTPA 369.

Andrew Day v Manawatu-Wanganui District Council 31 August 2012 [2012] NZEnvC 182.

Aoraki Water Trust v Meridian Energy [2005] 2 NZLR 268 (HC).

Carter Holt Harvey v Waikato Regional Council [2011] EnvC 380.

Central Plains Water Trust v Ngai Tahu Properties Ltd (2006) 13 ELRNZ 63 (HC).

Central Plains Water Trust v Ngai Tahu Properties Ltd Christchurch CIV-2006-409-2116, 8 February 2007 (HC).

Central Plains Water Trust v Ngai Tahu Properties Ltd [2008] NZCA 71; (2008) .14 ELRNZ 61; [2008] NZRMA 200.

Central Plains Water Trust v Ngai Tahu Properties Ltd (2008) NZLR 71.

Electricity Corporation of New Zealand Ltd v Manawatu-Wanganui Regional Council W70/90 NZPT.

Environmental Defence Society Incorporated v National Water and Soil Conservation Authority (1979) 7 NZTPA 385.

Falkner v Gisborne District Council (1995) 3 NZLR 622.

Fish and Game New Zealand (Central South Island Region) v Otago Regional Council C79/2002, EnvC, (28 June 2002).

Fleetwing Farms v Marlborough District Council [1996] NZRMA 369 (HC).

Fleetwing Farms Limited v Marlborough District Council W101/97 [1997] NZEnvC 362 (26 November 1997).

Fleetwing Farms Ltd v Marlborough District Council [1997] 3 NZLR 257 (CA).

Geotherm Group Ltd v Waikato Regional Council (2002) 9 ELRNZ 75 (EnvC).

Geotherm Group Ltd v Waikato Regional Council (2003) 9 ELRNZ 335 (HC).

Hampton v Canterbury Regional Council (Environment Canterbury) [2013] NZRMA 482 (HC).

Hampton v Canterbury Regional Council (Environment Canterbury) [2015] NZCA 509; (2015) 18 ELRNZ 825; [2016] NZRMA 369.

Horticulture New Zealand v Manawatu-Wanganui Regional Council [2013] NZHC 2942 [24 September 2013].

Keam v Minister of Works and Development [1982] 1 NZLR 319.

Machinery Movers Ltd v Auckland Regional Authority 1 NZLR 492.

Marlborough District Council v Vining Realty Group [2012] NZSC 11.

Minister of Conservation v Otago Regional Council C71/2002, (25 June 2002).

Ngai Tahu Property Ltd v Central Plains Water Trust [2008] NZSC 24.

Otago Water Resource Users Group v Otago Regional Council C88/2003, (4 July 2003) C21/2002.

Re Ngai Tahu Property Ltd Christchurch C104/06, (EnvC) (21 August 2006).

Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation [2016] NZHC 220, (2016) 19 ELRNZ 370.

Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation [2016] NZCA 411, [2016] 3 NZLR 828.

Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Conservation [2017] NZSC 106.

Simon Hampton v Canterbury Regional Council [2016] NZSC 50.

Southern Alps Air Ltd v Queenstown Lakes District Council (2007) 13 ELRNZ 221; [2008] NZRMA 47 (HC).

Southern Alps Air Ltd v Queenstown Lakes District Council [2007] NZRMA 119 (EnvC).

Stanley v South Canterbury Catchment Board (1971) Planning Tribunal 463,68.

The Favourite Ltd v Vavasour [2005] NZRMA 461.

Vining Realty Group Ltd v Moorhouse [2010] NZCA 104.

Wellington Fish and Game Council v Manawatu Wanganui Regional Council [2017] NZEnvC 37.

2 *Australia*

Commonwealth v Tasmania [1983] HCA 21; 158 CLR 1; 57 ALJR 450; 46 ALR 625.

Dunn v Collins (1867) 1 SALR 126.

Gardner v Kidman [1962] HCA 27; 108 CLR 12.

ICM Agriculture Pty Ltd v The Commonwealth [2009] HCA 51.

JT International SA v Commonwealth of Australia; British American Tobacco. Australasia Limited v The Commonwealth [2012] HCA 43; 250 CLR 1.

Koowarta v Bjelke-Petersen (1982) 153 CLR 168.

Mabo v Queensland [No 2] (1992) 175 CLR 1.

Queensland v Commonwealth (1989) 167 CLR 232.

Richardson v Forestry Commission of Tasmania (1988) 164 CLR 261.

Stanley Rural Community Inc v Stanley Pastoral Pty Ltd [2017] VSCA 385; 54 VR 676.

Victoria v Commonwealth (1996) 187 CLR 416; 138 ALR 129; 70 ALJR 680; BC9603985.

3 England

Attwood v Llay Main Galleries [1926] 1 Ch.44 [1925] AllER.

Mason v. Hill (1833) 5 B. & Ad. 1 110 ER 114.

B Legislation

1 New Zealand

Counties Act 1956.

Clutha Development (Clyde Dam) Empowering Act 1982.

Conservation Act 1986.

Conservation Law Reform Act 1990.

Environment Act 1986.

Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010.

Electric Motive Power Act 1896.

Goldfields Act 1862.

Highways and Watercourses Diversion Act 1858.

Irrigation Schemes Act 1990.

Land Transfer (Computer Registers and Electronic Lodgement) Amendment Act 2002.

Land Transfer Act 2017.

Local Government Act 2002.

Manapouri-Te Anau Development Act 1960.

Marine Farming Act 1971.

Mines Act 1877.

Mining Act 1886.

Mining Act 1926.

Ministry of Works and Development Abolition Bill 1988.

Municipal Corporations Act 1954.

National Development Act 1979.

New Zealand Forests Act 1874.

New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act 1987.

Public Works Act 1882.

Public Works Act 1908.

Public Works Act 1928.

Resource Management Bill 1989.

Resource Management Bill 2005.

Resource Management Act 1991.

Resource Management and Electricity Legislation Amendment Bill 2005.
(Resource Management Amendment Bill (No. 5) and the Electricity Amendment
Bill (No. 3)).

Resource Management (Measurement and Reporting of Water Takes) Regulations
2010.

Soil Conservation and Rivers Control Act 1941.

Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.

Timber Floating Act 1873.

Waitaki Catchment (Amendment) Act 2004.

Resource Management Waitaki Catchment Amendment Bill 2004.

Water and Soil Conservation Act 1967.

Water and Soil Conservation Amendment Act 1988.

Waters Pollution Act 1953.

Water Power Act 1903.

Water Power Works Act 1910.

Other

National Policy Statement Freshwater Management 2014.

2 *Australia*

Australian Water Accounting *Standard 1 Preparation and Presentation of General Purpose Water Accounting Reports* (Commonwealth of Australia Bureau of Meteorology, Canberra, 2012).

Artesian Wells Act 1897 (NSW).

Border Rivers Agreement Snowy Mountains Hydro-Electric Power Act 1949 (Cth).

Irrigation Act 1886 (Vic).

Irrigation Corporations Act 1994 (NSW).

National Water Commission Act 2004 (Cth) *Repealed*.

National Water Commission (Abolition) Act 2015 (Cth).

Natural Resources Act 2004 (SA).

Natural Resources Management Act 2004 (SA).

Rights in Water and Irrigation Amendment Act 2000 (WA).

Rights in Water and Irrigation Amendment Act 2007 (WA).

River Murray Act 2003 (SA).

Water Commission Act 2004 (Cth) *Repealed*.

Water and Drainage and Artesian Wells (Amending) Act 1906 (NSW).

Water Act 1989 (Vic).

Water Management Act 2000 (NSW).

Water and Rivers Commission Act 1995 (WA).

World Heritage Properties Conservation Act 1983 (Cth).

3 *England*

Australian Courts Act 1828 (Imp)

C Treaties

Convention Concerning the Protection of the World Cultural and Natural Heritage
UNTS. 1037 (1972)

Convention on Wetlands of International Importance Especially as Waterfowl
Habitat. Ramsar (Iran) UNTS. 14583 (1971)

South Pacific Nuclear Free Zone Treaty 1985

Treaty of Waitangi 1840

D Books and Chapters in Books

Barry Barton “Property Rights Created Under Statute in Common Law Legal
Systems” in Aileen McHarg, Barry Barton Adrian Bradbrook and Lee Godden (eds)
Property and the Law in Energy and Natural Resources (Oxford University Press,
Oxford, 2010).

Gerry Bates *Environmental Law in Australia* (5th ed, New South Wales,
LexisNexis, 2002).

Bret C. Birdsong “Adjudicating Sustainability. New Zealand's Environment Court
and the Resource Management Act” (2002) 29(1) *Ecology L. Q.* 1.

Laurance Boisson de Chazournes and others “Introduction” in Laurance Boisson de
Chazournes and others (eds) *International Law and Freshwater. The Multiple
Challenges* (Edward Elgar, Cheltenham, 2013).

LC Botterill and DA Wilhite (eds), *From Disaster Response to Risk Management:
Australia's National Drought Policy* (Springer, Dordrecht, 2005).

Tom Brooking and Vaughan Wood "The Grasslands Revolution Reconsidered" in
Eric Pawson and Tom Brooking (eds) *Making a New Land. Environmental
Histories of New Zealand* (Dunedin, Otago University Press, 2013).

Keryn Chalmers (ed) *Water Accounting International Approaches to Policy
Decision-making* (Edward Elgar, Cheltenham, 2012).

Barbara Cosens “Governing the Freshwater Commons: Lessons from Application
of the Trilogy of Governance Tools in Australia and the Western United States” in
Cameron Holley and Darren Sinclair (2018) *Reforming Water Law and
Governance. From Stagnation to Innovation in Australia* (Springer, Singapore,
2018)

Lin Crase (ed) *Water Policy in Australia. The Impact of Change and Uncertainty*
(Routledge, Washington, 2008).

Tim Cummins and Alistair Watson “A Hundred-year Policy Experiment: The Murray-Darling Basin in Australia” in John Quiggin, Thilak Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray-Darling Basin* (Edward Elgar, Cheltenham, 2012).

Trevor Daya-Winterbottom “Sustainability, Governance and Water Management in New Zealand” in Michael Kidd, Loretta Feris and Tumai Murombo (eds) *Water and the Law Towards Sustainability* (Edward Elgar, Cheltenham, 2014).

Peter De Cruz *Comparative Law in a Changing World* 3rd ed (Routledge-Cavendish, Longton 2017).

Brian Easton *The Commercialisation of New Zealand* (Auckland University Press, Auckland, 1997).

Peter Farley *Short Report Series on Locally Managed Irrigation Report No.2. Privatization of Irrigation Schemes in New Zealand* (International Irrigation Management Institute, 1994).

Peter Farley *Irrigation Scheming. A History of Government Irrigation in New Zealand*, (Peter Farley, Waikanae, 2013).

AD Fenemor, T Davie and S Markham “Hydrological Information in Water Law and Policy: New Zealand’s Devolved Approach to Water Management” J Wallace and P Wouters (eds). *Hydrology and Water Law Bridging the Gap* (London, IWA Publishing).

Douglas E Fisher *Water Law* (LBC Information Services, North Ryde, 2000).

Douglas E Fisher *Australian Environmental Law* (Lawbook, New South Wales, 2003).

Douglas E Fisher *The Law and Governance of Water Resources: The Challenge of Sustainability* (Edward Elgar, Cheltenham, 2009).

Robert French “The Incredible Shrinking Federation: Voyage to a Singular State?” in Gabrielle Appleby, Nicholas Aroney and Thomas John (eds) *The Future of Australian Federation* (Cambridge, Cambridge University Press, 2012).

Donald Garden *Australia, New Zealand and the Pacific. An Environmental History Nature and Human Societies* (ABC-CLIO Inc, California, 2005).

Joshua Getzler *A History of Water Rights at Common Law* (Oxford University Press, Oxford, 2004).

Lee Godden “Property in Urban Water: Private Rights and Public Governance” in P Troy (ed) *Troubled Waters: Confronting the Water Crisis in Australia's Cities* (ANU Press, Canberra, 2008).

Lee Godden “Environmental Markets and Property in Water” in Aileen McHarg, Barry Barton Adrian Bradbrook and Lee Godden (eds) *Property and the Law in Energy and Natural Resources* (Oxford University Press, Oxford, 2010).

Jayne M Godfrey and Keryn Chalmers (eds) *Water Accounting International Approaches to Policy Decision-making* (Edward Elgar, Cheltenham, 2012).

Janice Gray, Cameron Holley and Rosemary Gail Rayfuse *Trans-jurisdictional Water Law and Governance* (Earthscan, New York, 2016).

Janice Gray and Louise Lee “Water Entitlements as Property: A Work in Progress or Watertight Now?” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018).

Ronald Griffin *Water Resource Economics. The Analysis of Scarcity, Policies, and Projects* (MIT Press, Cambridge, 2016).

Bernhard Grossfeld *The Strengths and Weakness of Comparative Law* (Oxford University Press, Oxford, 1990)

Matthew Heberger “Australia’s Millennium Drought: Impacts and Responses” in Peter Gleick (ed) *The World’s Water Volume 7. The Biennial Report on Freshwater Resources* (Island Press, Washington, 2012).

Cameron Holley “International Environmental Law and Australia and New Zealand” in Shawkat Alam, Jahid Hossain Bhuiyan Tareq MR Chowdhury and Erika J Techera (eds) *Routledge Handbook of International Environmental Law* (Routledge, New York, 2012).

Cameron Holley, Neil Gunningham and Clifford D Shearing. *The New Environmental Governance* (Earthscan, New York, 2012).

Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance. From Stagnation to Innovation in Australia* (Springer, Singapore, 2018).

Aynsley Kellow *Transforming Power. The Politics of Electricity Planning* (Cambridge University Press, Melbourne, 1996).

Jane Kelsey *The New Zealand Experiment: A World Model for Structural Adjustment* (Auckland University Press with Bridget Williams Books, Auckland, 1995).

Matt Kendall “Drought and its Role in Shaping Water Policy in Australia” in Kurt Schwabe and others (eds) *Drought in Arid and Semi-Arid Regions* (Springer, Dordrecht, 2013).

Ganesh Keremane, Jennifer McKay and Zhifang Wu “Achieving Ecologically Sustainable Development in Multi-level Water Governance Regimes: The Case of the Murray-Darling Basin” in Michael Kidd, Loretta Feris and Tumai Murombo (eds) *Water and the Law Towards Sustainability* (Edward Elgar, Cheltenham, 2014).

Patrick Keyzer *Principles of Australian Constitutional Law* (4th ed, LexisNexis, Chatswood, 2013).

Trevor Langford-Smith and John Rutherford *Water and Land; Two Case Studies in Irrigation* (Australia National University Press, Canberra, 1966).

Katherine Luketina and Phoebe Parson “New Zealand’s Public Participation in Geothermal Resource Development” in Adele Manzella, Agnes Allansdottir and Anna Pellizzone (eds) *Geothermal Energy and Society* (Springer, Italy, 2019).

John E Martin *People, Politics and Power Stations* (Electricity Corporation of New Zealand and Historical Branch (Department of Internal Affairs, Wellington, 1991).

Jennifer McKay “The Legal Frameworks of Australian Water: Progression from Common Law Rights to Sustainable Shares” in Lin Crase (ed) *Water Policy in Australia. The Impact of Change and Uncertainty* (RFF Press, Washington, 2008).

Elizabeth Macpherson and others “Lessons from Australian Water Reforms: Indigenous and Environmental Values in Market-Based Water Regulation” in Cameron Holley and Darren Sinclair (eds) *Reforming Water Law and Governance*. (Springer, Singapore, 2018).

Bal Matheson and Daniel Minhinnick “Water” in Derek Nolan QC (ed) *Environmental and Resource Management Law* (LexisNexis, Wellington, 2018).

Caroline Miller *Implementing Sustainability. The New Zealand Experience* (Routledge, New York, 2011).

Naho Mirumachi “Water and Sustainable Development” in Michael Redclift and Delyse Springett *Routledge International Handbook of Sustainable Development* (Routledge, London, 2015).

Geoffrey Palmer *Environmental Politics. A Greenprint for New Zealand* (John McIndoe, Dunedin, 1990).

Peter Salmon and David Grinlinton (eds) *Environmental Law in New Zealand* (Thompson Reuters, Wellington, 2015).

John Pigram *Australia's Water Resources: From Use to Management* (CSIRO Publishing, Collingwood, 2007).

John Quiggin “Why the Guide to the Proposed Basin Plan Failed, and What Can Be Done to Fix It” in John Quiggin, Thilak Mallawaarachchi and Sarah Chambers (eds) *Water Policy Reform, Lessons in Sustainability from the Murray Darling Basin* (Edward Elgar, Cheltenham, 2012).

Judith Rees *Natural Resources: Allocation, Economics and Policy* [Internet] (Taylor and Francis, London, 2017).

Nicholas A Robinson “Origins and Implications of “Sustainable Development” in International Law” in Trevor Daya-Winterbottom (ed) *Frontiers of Resource Management Law* (Wellington, Brookers Ltd, 2012).

JH Ruhl, Steven E Kraft and Christopher L Lant. *The Law and Policy of Ecosystem Services* (Island Press, Washington, 2007).

Jacinta Ruru *The Legal Voice of Māori in Freshwater Governance. A Literature Review* (Landcare Research, Lincoln, 2009).

Jeffrey D Sachs *The Age of Sustainable Development* (Columbia University Press, New York, 2015).

Joseph Sax “Our Precious Water Resources: Learning from the Past, Securing the Future” in Trevor Daya-Winterbottom (ed) *Resource Management Theory & Practice* (Resource Management Law Association of New Zealand, Auckland, 2009).

JT Scholz and B Stiffler (eds) *Adaptive Governance and Water Conflict* (RFF Press, Washington, 2005).

Vandana Shiva *Water Wars. Privatization, Pollution and Profit* (South End Press, Cambridge, 2002).

Maryanne Slattery, Keryn Chalmers and Jayne M Godfrey “Beyond the Hydrographer's Legacy: Water Accounting in Australia” in Jayne M Godfrey, Kate Stoeckel Romany Webb Luke Woodward and Amy Hankinson *Water Law* (Lawbook Co, Australia, 2012).

Poh-Ling Tan *Legal Issues Relating to Water Use. In Property: Rights and Responsibilities Current Australian Thinking* (Land and Water Australia, Canberra, 2002).

Tom Tietenberg and Lynne Lewis *Environmental and Natural Resource Economics* (10th ed, New York: Routledge, 2016).

P Troy (ed) *Troubled Waters: Confronting the Water Crisis in Australia's Cities* (ANU Press, Canberra, 2008).

J Wallace and P Wouters (eds) *Hydrology and Water Law: Bridging the Gap* (IWA Publishing, London, 2006).

Nicola Wheen “An Updated History of New Zealand Environmental Law” in Eric Pawson and Tom Brooking (eds) *Making a New Land: Environmental Histories of New Zealand* (Dunedin, University of Otago Press, 2013).

Robert Wilkinson “The Water-Energy Nexus Methodologies, Challenges and Opportunities” in Douglas S Kenney and Robert Wilkinson (eds) *The Water-Energy Nexus in the American West* (Edward Elgar, Cheltenham, 2011).

George Williams, Sean Brennan and Andrew Lynch *Blackshield & Williams Australian Constitutional Law and Theory Commentary and Materials* (6th ed, The Federation Press, Sydney, 2014).

Konrad Zweigert and Hein Kötz *An Introduction to Comparative Law* (3rd ed, Oxford University Press, Oxford, 1998).

GM Zuppi “The Groundwater Challenge” in Corrado Clini, Ignazio Musu and Maria Lodovica Gullino (eds) *Sustainable Development and Environmental Management. Experiences and Case Studies* (Springer, Netherlands, 2008).

E *Journal Articles and Working Papers*

Amir Aghakouchak and others “Australia's drought: lessons for California” (2014) 343 (6718) *Science* 1430.

Jason Alexandra “Evolving governance and contested water reforms in Australia’s Murray Darling Basin (2018) 10(2) *Water* 113.

Jon Barnett and Jonathan Pauling “The Environmental Effects of New Zealand’s Free-Market Reforms” (2005) 7(2) *Environ Dev Sustain* 271.

Barry Barton “From Public Service to Market Commodity: Electricity and Gas Law in New Zealand” (1998) 16(4) *JERL* 351.

Morgan Bazilian and others “Considering the energy, water and food nexus: Towards an integrated modelling approach” (2011) 39(12) *Energy Policy* 7896.

Michael Bennett “Adjusting Collective Limits on the Use of Natural Resources: Approaches in Australian Fisheries and Water Law” (2015) 34(1) *UTLR* 68.

Anik Bhaduri and others “Achieving Sustainable Development Goals from a Water Perspective” (2016) 4 *Front. Environ. Sci.* 64.

Ben Boer “World Heritage Disputes in Australia” (1992) 7 *J. Environ. Law Litig* 248.

Sarah Boone and Stephen Fragaszy “Emerging Scarcity and Emerging Commons: Water Management Groups and Groundwater Governance in Aotearoa New Zealand” (2018) 11(3) *Water Alternatives* 795.

Théa Bounfour “International Water Law and the Sustainable Development Goals” (2016) 46(6) *EPIL* 380.

FM Brookfield “The Water and Soil Conservation Act 1967 and its Application: An Attempted Guide for the Practitioner” (1969-1972) 2 *Otago L. Rev.* 21.

FM Brookfield “High Courts, High Dam, High Policy: The Clutha River and the Constitution” (1983) *New Zealand Recent Law* 62.

Ton Bührs and Peter Christoff “Greening the Antipodes? Environmental policy and politics in Australia and New Zealand” (2006) 41 *AJPS* at 236.

Takele Soboka Bulto “The Human Right to Water: Invention or Discovery” (2011) 12 *MJIL* 1.

Katherine L Christ and Roger Burritt “The role for transdisciplinarity in water accounting by business: reflections and opportunities” (2018) 25(3) *Australasian Journal of Environmental Management* 302.

Lloyd Burton and Chris Cocklin “Water Resource Management and Environmental Policy Reform in New Zealand: Regionalism, Allocation, and Indigenous Relations.” (1996) *CJIELP* at 81.

Ann L Brower “Is collaboration good for the environment? Or, what’s wrong with the Land and Water Forum” (2016) 40(3) *NZJE* 390.

Robert Buchanan “Hydro-electric power development in New Zealand” (1930) 75(5) *Georg. J.* 444.

Stephanie L Castle and others “Groundwater depletion during drought threatens future water security of the Colorado River Basin” (2014) 41(16) *Geophys. Res. Lett.* 5904.

Sanford D Clark and Ian A Renard “The Riparian Doctrine in Australian Legislation” (1970) 7 *MULR* 477.

Daniel Connell and Quentin Grafton “Planning for water security in the Murray-Darling Basin” (2008) 3(1) *Public Policy* 67.

Daniel Connell and R Quentin Grafton. “Water reform in the Murray-Darling Basin” (2011) 47(12) *Water Resour. Res.* 1.

Christina Cook and Karen Bakker “Water security: Debating an emerging paradigm” (2012) 22(1) *Global Environ. Chang.* 94.

James Crawford “The Constitution and the Environment” (1991) 13 *Sydney L. Rev.* 11.

Lin Crase, Leo O’Reilly and Brian Dollery “Water markets as a vehicle for water reform: the case of New South Wales” *Aust. J. Agric. Resour. Econ.* 44(2) 299.

Lin Crase and Bethany Cooper “The Political Economy of Drought: Legacy and Lessons from Australia's Millennium Drought” (2017) 36(3) *Economic Papers: A Journal of Applied Economics and Policy* 289.

Deborah Curran and Sharon Mascher “Adaptive Management in Water Law: Evaluating Australian (New South Wales) and Canadian (British Columbia) Law Reform Initiatives” (2016) 12(1) *McGill International Journal of Sustainable Development Law* 91.

Alan Curtis and others “The great experiment with devolved NRM governance: lessons from community engagement in Australia and New Zealand since the 1980s” (2014) 21(2) *Australasian Journal of Environmental Management* 175.

Carole Dalinand others “Groundwater depletion embedded in international food trade” (2017) 543(7647) *Nature* 700.

BH Davis “New Control Over Natural Water” (1968) NZLJ 105.

Bruce Davis “Adaption and Deregulation in Government Business Enterprise: The Hydro-Electric Commission of Tasmania 1945-1994” (1995) 54(2) AJPA 252.

Peter Davis “Australian and American Water Allocation Systems Compared” (1968) 9 Boston College L. Rev. 647.

Trevor Daya-Winterbottom “New Zealand-freshwater allocation: Property rights, non-derogation from grant and legitimate expectation” (2015) 25(1) Water Law 38.

Inge de Graaf and others “A global-scale two-layer transient groundwater model: Development and application to groundwater depletion” (2017) 102 Adv. Water Resour. 53.

Albert Dijk and others “The Millennium Drought in southeast Australia (2001–2009): Natural and human causes and implications for water resources, ecosystems, economy, and society” (2013) 49(2) Water Resour. Res. 1040.

Benjamin Docker and Ian Robinson “Environmental water management in Australia: experience from the Murray-Darling Basin” (2014) 30 Int. J. Water Resour D. 164.

Riyanti Djalante, Cameron Holley and Frank Thomalla “Adaptive governance and managing resilience to natural hazards” (2011) 2(4) International Journal of Disaster Risk Science 1.

Rebecca Durrer “Propagating the New Zealand Ideal” (2006) 43 The Social Science Journal 173.

Elizabeth Eppel “Collaborative Governance Case Studies: The Land and Water Forum” (2013) Working Paper 13/05 Institute for Governance and Policy Studies, School of Government, Victoria University of Wellington.

M Falkenmark, J Lundquist and C Widstrand (1989). “Macro-scale water scarcity requires micro-scale approaches: Aspects of vulnerability in semi-arid development” (1989) 13(4) Natural Resources Forum 258.

Peter Farley and Benjamin M Simon “Privatizing Government Irrigation Projects in New Zealand” (1996) 32(3) J. Am. Water Res. Assoc. 585.

Douglas E Fisher “Water law, the High Court and techniques of judicial reasoning” (2010) 27 (2) EPLJ 85.

Rick Fisher and Shona Russell “Water Policy and Regulatory Reform in New Zealand” (2011) 27(2) J. Water Resour. D. 387

Laura Fraser “Property Rights in Environmental Management: The Nature of Resource Consents in the Resource Management Act 1991” (2008) NZJEL 12

Thomas Garry “Water Markets and Water Lessons in the United States: Lessons from Australia” (2007) 4(2) MqJICEL 23.

Leah M Gibbs “Just add water: Colonisation, water governance, and the Australian Inland” (2009) 41 *Environ. Plan. A* 2964.

T Gleeson and others “The global volume and distribution of modern groundwater” (2016) 9(2) *Nat. Geosci.* 161.

Lee Godden “Water Law Reform in Australia and South Africa: Sustainability, Efficiency and Social Justice” (2005) 17(2) *J. Environ. Law* 181.

Lee Godden “Realising capacity: Indigenous involvement in water policy and law reform in south-eastern Australia” (2010) 20 (5,6) *Water Law Special Issue - Contemporary Indigenous Peoples' Legal Rights to Water in The Americas and Australasia* 243.

Simon Gosling and Nigel W Arnell “A Global Assessment of the Impact of Climate Change on Water Scarcity” (2016) 134(3) *Clim. Change* 371.

Kevin Goss “Environmental flows, river salinity and biodiversity conservation: managing trade-offs in the Murray-Darling Basin” (2003) 51(6) *Aust. J. Bot.* 619.

Quentin R Grafton “Responding to the ‘Wicked Problem’ of Water Insecurity” (2017) 31(10) *Water Resour. Manag.* 3023.

Quentin Grafton and Sarah Wheeler “Economics of water recovery in the Murray-Darling Basin, Australia.” (2018) 10 *Annu. Rev. Resour. Econ.* 487.

Thomas Hardin “The Tragedy of the Commons” (1960) 162 (3859) *Science* 1243.

Edwyna Harris “Institutional Change and Economic Growth: The Evolution of Water Rights in Victoria, Australia 1850-1886” (2007) 26(2) *Economic Papers* 118.

Andrew Hayward “Freshwater Management: Water Markets and Novel Pricing Regimes” (2006) 10 *NZJEL* 215.

Cameron Holley and Neil Gunningham “Natural resources, new governance and legal regulation: When does collaboration work?” (2011) 24 *NZULR* 309.

Cameron Holley and Neil Gunningham “Next Generation Environmental Regulation: Law, Regulation and Governance” (2016) 12 *Annu. Law Rev.* 273.

Cameron Holley and Darren Sinclair “Introduction to this Special Issue. Rethinking Australian water law and governance: Success, challenges and future directions” (2016) 33 *EPLJ* 275.

Theodore Horbulyk “Markets, Policy and the Allocation of Water Resources Among Sectors: Constraints and Opportunities” (2005) 30 (1) *Can. Water Resour. J.* 55.

A Horne, J Freebairn and E O’Donnell “Establishment of Environmental Water in the Murray-Darling Basin: An Analysis of Two Key Policy Initiatives” (2011) 15(1) *AJWR* 7.

Constance D Hunt, Peter A Bobeff and Kenneth A Palmer “Legal Issues Arising from the Principle of Sustainable Development: Australia, Canada and New Zealand” (1991) 9 (1) *Journal of Energy and Natural Resources Law* 1.

Karen Hussey and Steven Dovers “Trajectories in Australian Water Policy” (2006) 135 *Journal of Contemporary Water Resources and Education* 36.

Jeanette Jensen and Alex Gardner “Legal Duties for Environmental Water Provisions in Western Australia” (2017) 42 *University of Western Australia Law Review* 206.

Anthony S Kiem, “Drought and water policy in Australia: Challenges for the future illustrated by the issues associated with water trading and climate change adaptation in the Murray-Darling Basin” (2013) 23(6) *Global Environ. Chang.* 1615.

Paul Kildea and George Williams “The Constitution and the Management of Water in Australia's Rivers” (2010) 32 *Sydney L. Rev.* 595.

RT Kingsford “Ecological Impacts and Institutional and Economic Drivers for Water Resource Development: A Case Study of the Murrumbidgee River, Australia” (2003) 6 *Aquatic Ecosystem Health & Management* 75.

Mac Kirby and others “Sustainable irrigation: How did irrigated agriculture in Australia's Murray-Darling Basin adapt in the Millennium Drought?” (2014) 145 *Agricultural Water Management* 154.

Jonathan La Nauze and Emma Carmody “Will the Basin Plan Uphold Australia's Ramsar Convention Obligations?” (2012) *Australian Environment Review* 311.

Junguo Liu and others “Water Scarcity Assessments in the Past, Present, And Future” (2017) 5(6) *Earth's Future* 545.

PA Memon “Decision making for multiple utilization of water resources in New Zealand” (1989) 13 *Environmental Management* 553.

PA Memon and B Gleeson “Towards a New Planning Paradigm? Reflections on New Zealand's Resource Management Act” (1995) 22 *Environment and Planning B: Environment and Design* 109.

Donald W Meinig “Goyder's Line of Rainfall: The Role of a Geographic Concept in South Australian Land Policy and Agricultural Settlement” (1961) 34(4) *Agricultural History* 207.

Mesfin M Mekonnen and Arjen Y Hoekstra “Four billion people facing severe water scarcity” (2016) 2(2) *Science Advances* 1500323.

Ioanna Mouratiadou and others “The impact of climate change mitigation on water demand for energy and food: An integrated analysis based on the Shared Socioeconomic Pathways” (2016) 64 *Environmental Science & Policy* 48.

Kenneth M Murchison “Environmental Law in Australia and the United States: A Comparative Overview (1995) 22 *Boston College of Environmental Affairs Law Review* 503.

Erin O’Donnell and Elizabeth MacPherson “Challenges and Opportunities for Environmental Water Management in Chile: An Australian Perspective” (2011) 23 *Water Law* 24.

Erin L. O’Donnell and Jullia Talbot-Jones “Creating legal rights for rivers: lessons from Australia, New Zealand and India” (2018) 23(1) *Eology and Society* 7.

Katherine Owens “Reimagining Water buybacks in Australia: Non-governmental organisations, complementary initiatives and private capital” (2016) 33(4) *EPLJ* 342.

Raewyn Peart “Innovative approaches to water resource management: a comparison of the New Zealand and South African approaches” (2001) 5 *NZJEL* 127.

Jacqueline Peel and Lee Godden “Australian Environmental Management: A 'Dams' Story” (2005) 28 *University of New South Wales Law Journal* 668.

James Pittock, John Williams and Quentin Grafton. “The Murray-Darling Basin plan fails to deal adequately with climate change. ” (2015) *Water* 26.

John Quiggin and others “Climate Change, Uncertainty, and Adaptation: The Case of Irrigated Agriculture in the Murray-Darling Basin in Australia” (2010) 58(4) *Canadian Journal of Agricultural Economics/Revue Canadienne D'Agroeconomie* 531.

Frank R Rijsberman, “Water Scarcity: Fact or Fiction?” (2006) 80(1) *Agricultural Water Management* 5.

Rowan Roberts, Nicole Mitchell and Justin Douglas “Water and Australia's Future Economic Growth” (2006) 1 *Economic Round-Up* 53.

Carol M Rose “Property and Expropriation: Themes and Variations in American Law” (2000) *Utah L. Rev.* 1.

Jacinta Ruru “Indigenous Restitution in Settling Water Claims: The Developing Cultural and Commercial Redress Opportunities in Aotearoa, New Zealand” (2013) 22 *Pacific Rim Law and Policy Journal* 311.

John Scanlon “A hundred years of negotiations with no end in sight: Where is the Murray Darling Basin Initiative leading us?” (2006) 23 *EPLJ* 1.

Leonie Seabrook, Clive McAlpine and Rod Fensham “Cattle, crops and clearing: Regional drivers of landscape change in the Brigalow Belt, Queensland, Australia, 1840–2004” (2006) 78 *Landscape and Urban Planning* 373.

WR Derrick Sewell “The Politics of Hydro-Megaprojects: Damming with Faint Praise in Australia, New Zealand and British Columbia” (1987) 27 *NRJ* 497.

Wilson Sousa Jr and others “Water: Drought, Crisis and Governance in Australia and Brazil” (2016) 8 (11) *Water* 493.

Rebecca Swainson and Rob C. de Loe (2011) “The importance of context in relation to policy transfer: a case study of environmental water allocation in Australia” *Environmental Policy and Governance* 21(1) 58.

Gary Taylor “Environmental Policy-Making in New Zealand, 1978-2013” (2013) 9(3) *Policy Quarterly* 18.

Linda Te Aho “Indigenous Challenges to Enhance Freshwater Governance and Management in Aotearoa New Zealand: The Waikato River Settlement” (2010) 20, (5,6) *Water Law Special Issue - Contemporary Indigenous Peoples' Legal Rights to Water in The Americas and Australasia* 285.

V Thampapillai “The Murray-Darling River Basin. Sustainable Development and Water Trade” (2006) 36(1) *EPIL* 42.

Bruce Thom “Professor Trevor Langford-Smith, 1916–2011” (2012) 43 *Australian Geographer* 93.

HN Turrall and others “Water Trading at the Margin: The Evolution of Water Markets in the Murray Darling Basin” (2005) 41 *Water Resour. Res.* 1.

Hon Simon Upton “Stace Hammond Grace Lecture: Purpose and Principle in the Resource Management Act” (1995) 3 *Waikato L. Rev.* 17.

Albert van Dijk and others “The Millennium Drought in Southeast Australia (2001–2009): Natural and Human Causes and Implications for Water Resources, Ecosystems, Economy, and Society” (2013) 49 *Water Resour. Res.* 1040.

D. Vanham and others. “Physical water scarcity metrics for monitoring progress towards SDG target 6.4: An evaluation of indicator 6.4. 2 “Level of water stress” (2018) 613 *Sci. Total Environ.* 218.

Charles J Vörösmarty and others “Global Water Resources: Vulnerability from Climate Change and Population Growth” (2000) 5477 *Science* 284.

Charles J Vorosmarty and others “Global Threats to Human Water Security and River Biodiversity” (2010) 467 *Nature* 555.

G Watson “Ministerial Responsibility and the Maniototo Irrigation Scheme” (1985) 6(1) *Otago L. Rev.* 158.

Viki Waye and Christina Son “Regulating the Australian Water Market” (2010) 22 *J. Environ. Law* 431.

Edward P Weber, Ali Memon and Brett Painter “Science, Society, and Water Resources in New Zealand: Recognizing and Overcoming A Societal Impasse” (2011) 13 *J. Environ. Pol. Plan.* 49.

Nicola Wheen “A Natural Flow - A History of Water Law in New Zealand” (1997) 9(1) Otago L. Rev. 71.

Nicola Wheen “The Resource Management Act 1991: A Greener Law for Water” (1997) 1 NZJ Env'tl. L. 165.

John Williams “Water reform in the Murray–Darling Basin: A challenge in complexity in balancing social, economic and environmental perspectives” (2017) 150(1) J. Proc. R. Soc. NSW 68.

F Parliamentary and Government Materials

1 New Zealand

Audit Office, Report on Ministry of Works and Development Irrigation Schemes April 1987 (Audit Office, Wellington, 1987).

Board of Inquiry into the Tukituki Catchment Proposal *Final Report and Decision of the Board of Inquiry into the Tukituki Catchment Proposal In Relation to Matters Referred Back by the High Court June 2015*.

Cabinet Paper “Improving the Resource Management Act 1991” (CAB Min (04) 30/10).

Cabinet Paper “Economic Growth and Infrastructure Committee Water Reform – The Third Report of the Land and Water Forum” (8 November 2012).

Cabinet Paper “Regulatory Impact Statement for Draft National Environmental Standard on Measuring Water Takes” (February 2008) CAB POL (08).

Cabinet Paper “A New Approach to Crown/Maori Relationship for Freshwater” (3 July 2018) CAB 18-00032.

Cabinet Paper “Implementing the New Start for Fresh Water: Proposed Officials’ Work Programme” (n.d.).

David Carter *Budget 2011* “Lifting investment in irrigation” (9 May 2011) Press Release.

Rt Hon Wyatt Creech (Chair) Doug Martin Greg Hill and Doug Low. *Investigation of the Performance of Environment Canterbury under the Resource Management Act and Local Government Act* (Ministry for the Environment, Wellington, 2010).

Deloitte *Peer Review of the Ruataniwha Water Storage Scheme Business Case* (Hawkes Bay Regional Council, Napier, 2014).

Labour, New Zealand *First New Zealand Labour Party & New Zealand First Coalition Agreement 52nd Parliament* (Labour, New Zealand First, Wellington, 2017).

Land and Water Forum *Report of the Land and Water Forum: A Fresh Start for Fresh Water* (Land and Water Trust, Wellington, 2010).

Land and Water Forum *Second Report of the Land and Water Forum. Setting Limits for Water Quality and Quantity* (Land and Water Trust, Wellington, 2012)

Land and Water Forum *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water* (Land and Water Trust, Wellington, 2012).

Land and Water Forum *Fourth Report of the Land and Water Forum* (Land and Water Forum Trust, Wellington, 2015).

Land and Water Forum *Terms of Reference for Land and Water Forum Project* (Land and Water Forum, Wellington, 2009).

Lincoln Environmental *Information on Water Allocation in New Zealand Report No 4375/1* (Ministry for the Environment, Wellington, 2000).

Statistics New Zealand (2013) “Big increase in irrigated land supports more agricultural production” Agricultural Production Statistics: June 2012 Media Release.

Ministry for the Environment *The State of New Zealand’s Environment 1997* (Ministry for the Environment, Wellington, 1997).

Ministry for the Environment *Environmental Stewardship for a Prosperous New Zealand: Briefing for Incoming Minister for the Environment November 2008* (Ministry for the Environment, Wellington, 2008).

Ministry for the Environment and Ministry of Agriculture and Fisheries *Wai Ora: Report of the Sustainable Water Programme of Action Consultation Hui* (Ministry for the Environment, Wellington, 2005).

Ministry for the Environment *Discussion Document on the Proposed National Environmental Standard on Ecological Flows and Water Levels* (Ministry for the Environment, Wellington, 2006).

Ministry for the Environment *Briefing Paper: Joint Ministers Meeting with MAF and MfE Reference 08-B-0260* (Ministry for the Environment, Wellington, 2008).

Ministry for the Environment *A Guide to Freshwater Accounting under the National Policy Statement for Freshwater Management 2014* (Ministry for the Environment, Wellington, 2015).

Ministry for the Environment *Next Steps for Freshwater: Summary of Submissions* (Wellington: Ministry for the Environment, 2016).

Ministry for the Environment *Clean Water 90% of Rivers and Lakes Swimmable by 2040* (Ministry for the Environment, Wellington, 2017).

Ministry for the Environment *Briefing to the Incoming Ministers: Environment and Climate Change* (Ministry for the Environment, Wellington, 2017).

Ministry for the Environment *Briefing for the Incoming Minister for the Environment. Water Issues.* (Ministry for the Environment, Wellington, 2017)

Ministry for the Environment *A Guide to the National Policy Statement for Freshwater Management* (Ministry for the Environment, Wellington, 2014).

Minister for the Environment *Minister of Agriculture Appendix 1 Background on Sustainable Water Programme of Action in New Start for Freshwater* Cabinet Paper (n.d.).

Ministry for the Environment & Statistics NZ *New Zealand's Environmental Reporting Series: Our Fresh Water 2017* (Ministry for the Environment, Wellington, 2017).

Ministry for the Environment and Māori Crown Relations Unit. *Shared Interests in Freshwater: A New Approach to the Crown/Māori Relationship for Freshwater.* (Ministry for the Environment and Māori Crown Relations Unit, Wellington, 2018).

Ministry for Primary Industries Irrigation Acceleration Fund (IAF) *Guidelines for Applicants* (Ministry for Primary Industries, Wellington, 2010).

Ministry of Works *Law and Administration in Respect of Water. Report to Cabinet by the Interdepartmental Committee on Water* (Ministry of Works, Wellington, 1963).

New Zealand Institute of Economic Research Inc. and AgFirst Consultants NZ Ltd *Value of Irrigation in New Zealand: An Economy-wide Assessment: Final Report to the Ministry for Primary Industries* (Ministry for Primary Industries, Wellington, 2014).

Office of the Minister of Agriculture Office of the Minister for the Environment *Sustainable Water Programme of Action: Implementation Package* (n.d.).

Office of the Minister for the Environment Office of the Minister of Agriculture *Fresh Start for Fresh Water: High Level Government Response to the Land and Water Forum Report CAB.*

Parliamentary Commissioner for the Environment *Growing for Good: Intensive Farming, Sustainability and New Zealand's Environment* (Parliamentary Commissioner for the Environment, Wellington, 2004).

Walther Moore and Murray Arthur-Worsop *Privatising Water: An Analysis of Initiatives to Sell Community Irrigation Schemes and to Create Water Markets* (Ministry of Agriculture and Fisheries, 1989).

2 Australia

Australian Bureau of Statistics *4610.0 – Water Account, Australia, 2015–16* (ABS, Canberra, 2016).

Australian Bureau of Statistics 4618.0 – *Water Use on Australian Farms, 2015–16* (ABS, Canberra, 2017).

Lisa Brennan McKellar and others *Irrigation Costs and Benefits. A Technical Report to the Australian Government from the CSIRO Flinders and Gilbert Agricultural Resource Assessment, Part of the North Queensland Irrigated Agriculture Strategy* (Australian Government Department of Infrastructure and Regional Development, Canberra, 2013).

Council of Australian Government (COAG) COAG Water Reform Framework 1994- Attachment A: Water Resource Policy (Communique, 25 February 1994)

Murray-Darling Basin Authority *A Path to Water Reform. Timeline of Water Resource Management in the Murray-Darling Basin* (Australian Government, Canberra, n.d.).

Australian Government *The National Competition Policy: Report by the Independent Committee of Inquiry* (Australian Government, Canberra, 1993),

Australian Government Department of Environment and Energy *Intergovernmental Agreement on A National Water Initiative 2004* (Australian Government, Canberra, 2004).

Australian Government *The Senate Rural and Regional Affairs and Transport References Committee: The Management of the Murray-Darling Basin, March 2013* (Australian Government, Canberra, 2013).

Australian Government Solicitor AGS *Swimming in New Waters: Recent Reforms to Australian Water Law, Legal Briefing No. 90, 21 July 2009* (Australian Government, Canberra, 2009).

Australian Government Department of the Environment, Water, Heritage and Arts *Securing our Water Future* (Australian Government, Heritage and Arts, Canberra, 2010).

Australian Government *A National Plan for Water Security* (Australian Government, Canberra, 2007).

Environmental Defenders Office *Reforming the Environmental Water Reserve: How amendments to Victoria's Water Act Could Restore River Health*. (Environmental Defenders Office, Melbourne, 2010).

Australia Productivity Commission *Rural Water Use and the Environment: The Role of Market Mechanisms* (Australian Government, Canberra 2006).

Australian Productivity Commission *Impact of Competition Policy Reforms on Rural and Regional Australia, Report No. 8* (Australian Government, Canberra, 1999).

Ken Matthews *Independent Investigation into NSW Water Management and Compliance. Interim Report* (NSW Government, Sydney, 2017).

Ken Matthews *Interim Report. Independent Investigation into NSW Water Management and Compliance* (New South Wales Government, Sydney, 2017).

Murray-Darling Basin Commission *The Living Murray Environmental Watering Plan 2006–2007* (Australian Government, Canberra, 2006).

Murray-Darling Basin Authority *Guide to the Proposed Basin Plan* (Australian Government, Canberra, 2010).

Murray-Darling Basin Authority *A Yarn on the River: – Getting Aboriginal Voices into the Basin Plan*. (Australian Government, Canberra, 2011).

Murray-Darling Basin Authority *A Path to Water Reform. Timeline of Water Resource Management in the Murray-Darling Basin* (Australian Government, Canberra, n.d.).

Murray-Darling Basin Authority *Sustainable Diversion Limit Adjustment Mechanism: Draft Determination Report* (Australian Government, Canberra, 2017).

Murray-Darling Basin Water Authority *The Murray-Darling Basin Water Compliance Review* (Australian Government, Canberra, 2017).

Murray-Darling Basin Authority *Water Resource Plan - December 2018 Quarterly Report* (Australian Government, Canberra, 2018).

National Water Commission *National Water Commission 2009 Biennial Assessment* (Australian Government, Canberra, 2009).

National Water Commission *A Module to Support Water Planners and Managers Develop and Implement National Water Initiative Consistent, Inclusive Water Planning and Management Processes that Support Indigenous Social, Spiritual and Customary Objectives* (Australian Government, Canberra, 2017).

National Water Commission *Australia's Water Blueprint: National Reform Assessment 2014* (Australian Government, Canberra, 2014).

National Water Commission *National Water Initiative. First Biennial Assessment of Progress in Implementation* (Commonwealth of Australia, Canberra, 2007).

National Water Commission *A Review of Indigenous Involvement in Water Planning* (National Water Commission, Canberra, 2014).

New South Wales Department of Industry *Response to ABC 4 Corners Inquiry* (20 July 2017) Press Release.

Policy Council of Australian Governments *Sir Eric Neal Report of the Working Group on Water Resource Policy to the Council of Australian Governments* (Australian Government, Canberra, 1994).

Productivity Commission *Impact of Competition Policy Reforms on Rural and Regional Australia, Report No. 8* (Productivity Commission, Canberra, 1999).

Senate Legal and Constitutional Affairs References Committee *A Balancing Act: Provisions of the Water Act 2007* (Australian Government, Canberra, 2011).

Productivity Commission *Impact of Competition Policy Reforms on Rural and Regional Australia, Report No. 8* (Australian Government, Canberra, 1999).

Bret Walker *Murray-Darling Basin Royal Commission* (Government of South Australia, Adelaide, 2019).

Water Accounting Standards Board *Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports* (Commonwealth of Australia, Canberra, 2009).

Water Accounting Standards Board *Water Accounting Conceptual Framework for the Preparation and Presentation of General Purpose Water Accounting Reports* (Commonwealth of Australia, Canberra, 2014).

G International Reports

Food and Agriculture Organization of the United Nations *Coping with Water Scarcity: An Action Framework for Agriculture and Food Security* (United Nations, Rome, 2012).

OECD *Organisation for Economic Co-operation and Development Environmental Policies in New Zealand A Review by the OECD and its Environment Committee; Undertaken in 1980 at the Request of the Government of New Zealand* (Organisation for Economic Co-operation and Development, Paris, 1981).

OECD *Factbook 2010. Economic, Environmental and Social Statistics* (OECD, Paris, 2010).

OECD *Water Resources Allocation: Sharing Risks and Opportunities, OECD Studies on Water* (OECD Publishing, Paris, 2015).

United Nations *Introduction and Proposed Goals and Targets on Sustainable Development for the Post 2015 Development Agenda* (2014).

OECD *Environmental Performance Review* (OECD Publishing, Paris, 2017).

United Nations Department of Economic and Social Affairs *World Economic and Social Survey 2013* (2013).

United Nations *High Level Plan on Water* (United Nations, High Level Panel on Water, 2016).

Wentworth Group *Submission to the Senate Inquiry into the Urgent Provision of Water to the Coorong and Lower Lakes* (Wentworth Group, Sydney 2008).

Wentworth Group *Sustainable diversions in the Murray–Darling Basin: An Analysis of the Options for Achieving a Sustainable Diversion Limit in the Murray–Darling Basin* (Wentworth Group, Sydney 2010).

Wentworth Group *Statement on the Future of Australia's Water Reform* (Wentworth Group, Online, 2014).

World Bank *World Bank Making Sustainable Commitments: An Environment Strategy for the World Bank* (World Bank, Washington, 2011).

World Commission on Environment and Development *Report of the World Commission on Environment and Development: Our Common Future* (United Nations, Oslo, 1987).

J Van der Gun *Groundwater and Global Change: Trends, Opportunity and Challenges* (UNESCO, Paris, 2012).

H Internet and Newspaper Resources

ABC News "Councils back water rights unbundling aid" *ABC News* (27 September 2007).

Adam Bennett "Ruataniwha dam controversy spreads" *New Zealand Herald* (26 September, 2013).

Anne Davis "Hundreds of thousands of native fish dead in second Murray-Darling incident" *The Guardian* (7 January 2019).

Eloise Gibson "When the river runs dry: The true cost of NZ water" *www.stuff.co.nz* (27 April 2017).

Simon Hendery "Council writes off \$14m investment in failed Ruataniwha dam project" *NZ Farmer* (30 August 2017).

Laini Kirkman "Peter Harris served with Summons over water use in Barwon-Darling River" *Moree Champion* (15 November 2017).

Charlie Mitchell "Millions of litres of water illegally taken: Is Ecan doing enough?" *NZ Farmer* (20 June 2016).

Hugh Morris "Cape Town drought: What happens when the city runs out of water?" *The Telegraph* (5 February, 2018).

Radio New Zealand "Final dam submission decided by officials" *Radio New Zealand News* (17 September 2013).

Warwick Long "Liberal MP wants Murray-Darling water sold to irrigators so government authority can pay its way" *ABC Rural* (27 April 2015)

I Other Resources

Laws of New Zealand Water (online ed).

Australian Broadcasting Corporation Four Corners Program – Pumped (Monday 24 July 2017).

Barry Barton “The Nature of Resource Consents: Statutory Permits or Property Rights” (paper presented to New Zealand Law Society Environmental Law: National Issues Intensive Conference, July 2009) 51.

Ben Carr and others “The Murray-Darling Basin Balanced Water Fund and the Environmental Water Trust – Using Markets and Innovative Financing to Restore Wetlands and Floodplains in the Murray-Darling Basin for Financial, Social and Environmental Outcomes” (paper presented at 8th Australian Stream Management Conference, 3 August 2016).

Central Plains Water Limited “Central Plains Water User Agreement 2015”

Mike Joy (2014, June). *The Demise of New Zealand’s Freshwater: Politics and Science*. At Hamilton Branch of the Royal Society.

Ben Groom and Phoebe Koundouri “The Economics of Water Resource Allocation: Valuation Methods and Policy Implications” *Ideas Working Paper Series RePec* (Federal Reserve Bank of St Louis, St Louis, 2011).

Bill Kaye-Blake and others *Water Management in New Zealand: A Road Map for Understanding Water Value. NZIER Public Discussion Paper, Working Paper 2014/01* (New Zealand Institute of Economic Research, Wellington, 2014).

John Quiggin and Poh Ling Tan *Sustainable Management of the Great Artesian Basin: An Analysis Based on Environmental Economics and Law* Murray-Darling Program Working Paper3/M04 (University of Queensland, 2004).

Jennifer M McKay “Encountering the South Australian Landscape: Early European Misconceptions and Our Present Water Problems” (paper presented to Hawke Institute Working Paper Series No. 21, University of South Australia, 2002).

Geoffrey Palmer “The Resource Management Act – How we Got It and What Changes are Being Made to It” (paper presented to Address to Resource Management Law Association 27 September 2013, New Plymouth, 2013).

Francine Rochford “Compensation for Regulation of Water Use – a Comparative Constitutional Perspective” (paper presented to New Zealand Centre for Environmental Law Conference, Auckland, April 2009).

Guy Salmon and others “Collaborative Governance on Environmental Policies Affecting Rural Landowners: Comparing Nordic and New Zealand Practices” (paper presented at the Yale University UNITAR Conference on Environmental Governance, 2008).

Poh-Ling Tan “How do Water Markets Function in Droughts and Other Hard Questions: Learning from Law Reform in Australia” (paper presented at Legal

Aspects of Water Sector Reforms Geneva, International Environmental Law Research Centre, 2007).

Paul Taylor, Tony McGlynn and Warren Martin “The Influence of Privatisation on Irrigation Water Rights in NSW” (paper presented at the Regional Conference of the International Association for the Study of Common Property, Brisbane, Australia, September 2001).

Narelle Towie “Greed took over”: The farmers fighting bottled water giants for their water” *The Guardian* (30 April 2019).

Hawkes Bay Regional Council *Ruataniwha Water Scheme HB Today* Public Meeting 6 August 2015.

J Planning Documents and Policy Statements

1. New Zealand

Bay of Plenty Regional Council *Region-wide Water Quantity – Proposed Plan Change 9 Version 3.8* (Bay of Plenty Regional Council, Tauranga, 2017).

Environment Southland Regional Council Proposed Southland Water and Land Plan (Environment Southland Regional Council, Invercargill, 2016).

Manawatu-Wanganui Regional Council *One Plan 2014* (Horizons Regional Council, Palmerston North, 2014).

National Policy Statement for Freshwater Management 2011.

National Policy Statement for Freshwater Management 2014 (Amended 2017).

Taranaki Regional Council *Implementation Programme for the National Policy Statement Freshwater Management* (Taranaki Regional Council, New Plymouth, 2015).

Taranaki Regional Council *Progressive Implementation Programme for the National Policy Statement Freshwater Management* (Taranaki Regional Council, New Plymouth, 2018).

Taranaki Regional Council *Taranaki Regional Requirements for Good Farm Management* (Taranaki Regional Council, New Plymouth, 2017).

Waikato Regional Council *Waikato Regional Council Variation 6* (Waikato Regional Council, Hamilton, 2012).

Waikato Regional Council *Waikato Regional Freshwater Discussion: A Framework For Getting The Best Use Allocation Through Time Issues and Opportunities* (Waikato Regional Council, Hamilton, 2016).

Greater Wellington Regional Council *Proposed Natural Resources Plan for The Wellington Region 31 July 2015* (Greater Wellington Regional Council, Wellington, 2015).

2. *Australia*

Council of Australian Governments *The Council of Australian Government's Water Reform Framework 1994*.

Australian Commonwealth Government *Intergovernmental Agreement on A National Water Initiative 2004*, (Department of Environment and Energy (Cth), Canberra, 2004).

State Water Management Outcomes Plan Order 2002 (NSW).

NSW Department of Primary Industries *Water "Delivering Water Resource Plans for New South Wales Roadmap 2016-2019*. (November 2016).

Government of Western Australia *Water Allocation Planning in Western Australia: A Brief Overview* (Department of Water, Perth, 2011).

Department of Water (2013) *Securing Western Australia's Water Future. Position Paper – Reforming Water Resource Management* (Government of Western Australia, Perth, 2013).

Government of South Australia *Our Place. Our Future. State Natural Resources Management Plan South Australia 2012 – 2017* (Government of South Australia, Adelaide, 2012).

K *Dissertations*

Pamela F Walker *The United Tasmania Group* (Hons Dissertation, University of Tasmania, 1987).

Mike Walmsley (2016). *Would a Water Market System Coupled with a Beneficial Use Doctrine Similar to that of the Western United States Help Foster Sustainability of Water Resource Allocation in New Zealand?* (Doctor of Philosophy (PhD) Dissertation, University of Waikato, 2016).

