

# **A Geography of Water Matters in the Ord Catchment, Northern Australia**

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## **Abstract**

This thesis examines water matters in the Ord catchment. It shows how social, environmental, cultural and economic dynamics are manifest in water matters. In so doing, it critiques material and discursive practices that create environmental injustices, and highlights efforts underway to remedy those. The thesis makes two major contributions. First, to dissect water politics in the Ord through the prism of how water matters – from water supply and sanitation, to water allocations for cultural flows. Second, to demonstrate a theoretical means towards this end, by combining political ecology and environmental justice with a Masseyian spatial approach.

Water, as a physical substance, makes tangible invisible power relations. To consider this, the thesis marries political ecology, with its focus on how power and politics help shape human-environment relationships, to environmental justice. A politics of difference informs the particular type of environmental justice drawn on here: it asks whether there is recognition of difference, plurality of participation, and equity in distribution of benefits, in environmental matters (Schlosberg, 2004). This nuanced theoretical terrain blends well with a Masseyian spatial approach that acknowledges places as made of ‘loose ends and missing links’ (Massey, 2005:12). The latter holds that places are never finished, are always being made, while the former analyses how power relations operate throughout processes.

The thesis presents water matters as contested yet crucial to making sense of social-environmental relations; through contextualizing governance transformations and current water dilemmas, the shape of this contestation becomes clear. This involves spaces of interests coming together, and spaces where interests remain apart. These gaps are renegotiated through instruments such as the Ord Final Agreement. However, fraught water matters do persist, in part due to the complex place-based politics of water in the Ord that include Indigenous politics, environmental contestation, development processes, and a recent colonising history.

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# TABLE OF CONTENTS

<b>CHAPTER ONE: INTRODUCTION TO RESEARCH AND CONTEXT OF STUDY</b>	<b>12</b>
<b>1.1 Water matters in the Ord and renegotiating space</b>	<b>12</b>
Community driven change	16
Future challenges	19
<b>1.2 Concepts and methods informing research</b>	<b>21</b>
Conceptual framing	21
Methods	24
<b>1.3 The thesis structure</b>	<b>31</b>
<b>1.4 Conclusion</b>	<b>33</b>
<b>CHAPTER TWO: THEORY</b>	<b>35</b>
<b>2.1 Introduction</b>	<b>35</b>
<b>2.2 A political ecology of water</b>	<b>37</b>
Water matters	42
Situated analysis and Feminist Political Ecology	43
<b>2.3 Environmental justice</b>	<b>46</b>
Australian environmental justice	47
Sustainable development and environmental justice	51
Water justice: a global movement	52
<b>2.4 Masseyian space – postcolonial futures?</b>	<b>58</b>
Postcolonial geography	60
Postcolonial geography in Australia	62
<b>2.5 Conclusion</b>	<b>65</b>
<b>CHAPTER THREE: INDIGENOUS WATER MATTERS</b>	
<b>3.1 Introduction</b>	<b>67</b>

<b>3.2 Environmental flows and incorporating Indigenous water values</b>	<b>68</b>
<b>3.3 Cultural flow</b>	<b>73</b>
Current indigenous water rights recognition	77
<b>3.4 National context of Indigenous water values recognition</b>	<b>83</b>
The Fitzroy River, traditional owners and conservation groups	85
Murray Darling catchment management and the Murray Lower Darling River Indigenous Nations	89
<b>3.5 International contexts of Indigenous water values recognition</b>	<b>97</b>
Introduction	97
Joint management treaties in New Zealand and Canada	98
The human right to water and catchment management	102
<b>3.6 Conclusion</b>	<b>106</b>
<b>CHAPTER FOUR: A HISTORY OF WATER AND PEOPLES IN THE ORD</b>	<b>108</b>
<b>4.1 Introduction</b>	<b>108</b>
<b>4.2 Intercultural spaces – transforming the Ord River</b>	<b>110</b>
<b>4.3 Early Contact Days between colonisers and Miriwoong Gajerrong peoples</b>	<b>113</b>
<b>4.4 Pastoral station times</b>	<b>120</b>
<b>4.5 Early Irrigation trials and error</b>	<b>131</b>
<b>4.6 Mining wealth on country: towards partnerships?</b>	<b>145</b>
<b>4.7 Tourism and Recreation</b>	<b>152</b>
<b>4.8 Future growth?</b>	<b>156</b>
<b>4.9 Conclusion</b>	<b>162</b>
<b>CHAPTER FIVE: INDIGENOUS PERSPECTIVES ON WATER IN THE ORD CATCHMENT</b>	<b>164</b>
<b>5.1 Introduction</b>	<b>164</b>

<b>5.2 Traditional Miriwoong Gajerrong values pertaining to water in the Ord catchment</b>	<b>166</b>
<b>5.3 Recognition of Indigenous values relating to the Ord</b>	<b>174</b>
<b>5.4 Ecosystem health and environmental flows: negotiating a transforming river</b>	<b>181</b>
<b>5.5 Conclusion</b>	<b>188</b>
<b>CHAPTER SIX: WATER MATTERS IN THE ORD, PART ONE</b>	<b>189</b>
<b>THE ORD FINAL AGREEMENT</b>	<b>189</b>
<b>6.1 Introduction</b>	<b>189</b>
<b>6.2 Impetus for the OFA: some antecedents</b>	<b>191</b>
<b>6.3 OFA - space for water joint management?</b>	<b>194</b>
<b>6.4 Two different readings of the OFA</b>	<b>198</b>
The OFA as compensation to Miriwoong Gajerrong peoples: a less Eurocentric reading	201
Paving the way for Ord Stage 2: a more Eurocentric reading	203
<b>6.5 Water matters</b>	<b>208</b>
Partial acknowledgement of Indigenous rights to water in the Ord	208
Natural resource management and plurality of participation	211
<b>6.6 Conclusion: strategic deployment of narratives from elsewhere</b>	<b>214</b>
<b>CHAPTER SEVEN: WATER MATTERS IN THE ORD, PART TWO</b>	<b>216</b>
<b>COMMUNITY WATER MANAGEMENT</b>	<b>216</b>
<b>7.1 Where water meets the body</b>	<b>216</b>
<b>7.2 Water concerns for Indigenous contexts within the Ord catchment</b>	<b>219</b>
Water supply and sanitation in communities	220
Community Waterholes – the Molly Springs project	228
<b>7.3 Causes of water dilemmas for Indigenous contexts in the Ord</b>	<b>231</b>

<b>7.4 The broader context: Environmental health development nationwide</b>	<b>236</b>
<b>7.5 Global water dilemmas</b>	<b>243</b>
<b>7.6 Conclusion</b>	<b>247</b>
<b>CHAPTER EIGHT: WATER MATTERS IN THE ORD - CONCLUSIONS AND SUGGESTIONS</b>	<b>249</b>
<b>8.1 Opening of the first water recycling project in the Ord catchment at a corporate Sandalwood farm, May 2006</b>	<b>249</b>
<b>8.2 Ranging values in the Ord: water values brought forth by the Rural and Regional Affairs and Transport References Committee</b>	<b>252</b>
<b>8.3 Acknowledgement of Indigenous peoples' water values</b>	<b>259</b>
<b>8.4 Environmental values in the Ord catchment</b>	<b>261</b>
<b>8.5 Environmental change in the Ord and its connection to broader scale environment and development processes</b>	<b>264</b>
<b>8.6 Native title, natural resource management and irrigation expansion</b>	<b>266</b>
<b>8.7 Terra nullius, water allocation and managing resources</b>	<b>268</b>
<b>8.8 Contextualising water supply and sanitation dilemmas</b>	<b>269</b>
<b>8.9 Suggestions and concluding comments</b>	<b>270</b>
<b>REFERENCES</b>	<b>273</b>
<b>APPENDICES</b>	<b>294</b>
<b>Appendix A: Lists of interviews for primary research</b>	<b>295</b>
<b>Appendix B: Dollar value of water uses in the Ord</b>	<b>296</b>

## LIST OF FIGURES

Figure One: Map of Ord Catchment	14
Figure Two: Birdwatching at Smoke Creek, near Argyle Diamond Mine.	29
Figure Three: Major intersections between environmental justice, political ecology and Masseyian spatial theory.	36
Figure Four: Cattle production for the whole Kimberley.	130
Figure Five: Area of selected irrigation crops in the ORIA, 1999/2000 (wet season) - 2000 (dry) and 2004/2005 (wet season)-2005 (dry).	141
Figure Six: Value of selected crops ORIA, 1999/2000 (wet season) – 2000 (dry season) and 2004/2005 (wet season) – 2005 (dry season).	142
Figure Seven: Limestone grasslands in southern Ord catchment	147
Figure Eight: Estimated Tourist Expenditure 1999-2005.	155
Figure Nine: Picture of signage at Ivanhoe crossing including ethnobotany.	178
Figure Ten: Context of sign from Figure Ten	178
Figure Eleven: Celebration of engineering triumph	179
Figure Twelve: Sign showing how the dam works, overlooking Ord Main Dam.	180
Figure Thirteen: Fishing trip down the lower Ord, Kununurra Diversion Dam in background	184
Figure Fourteen: Map of conservation areas	195
Figure Fifteen: New land management arrangements under the OFA,	197
Figure Sixteen: Discourses circulating around the OFA	200
Figure Seventeen: Reserve 31165, map from OFA.	210
Figure Eighteen: Gooda Gooda mud map, not to scale	227
Figure Nineteen: Excerpt from the United Nations Declaration on the Rights of Indigenous Peoples	245



## LIST OF TABLES

<b>Table One:</b> Land uses in proposed broadscale irrigation sugarcane venture	159
<b>Table Two:</b> OFA breakdown of distribution of funds.	205
<b>Table Three:</b> Indigenous communities in the Ord catchment and water management issues.	221
<b>Table Four:</b> Recommendations from the Water Report.	240

## LIST OF ACRONYMS

ABS	Australian Bureau of Statistics
ACF	Australian Conservation Foundation
ADM	Argyle Diamond Mine
ANCID	Australian National Centre for Irrigation and Drainage
APA	Argyle Participation Agreement
ASEIA	Aboriginal Social and Economic Impact Assessment
ATSIC	Aboriginal and Torres Strait Islander Commission
AUD	Australian Dollar
CDEP	Community Development Employment Projects
CHINS	Community Housing and Infrastructure Needs Survey
CoAG	Council of Australian Governments
DEP	Department of Environment and Protection
DNR	Department of Natural Resources
EIS	Environmental Impact Statement
EKIAP	East Kimberley Impact Assessment Project
ERMP	Environmental Review and Management Process
FOEI	Friends of the Earth International
GL	Gigalitres
HREOC	Human Rights and Equal Opportunities Commission
IBT	Inter Basin Transfers
IFI	International Financial Institutions
ILUA	Indigenous Land Use Agreement
JBNQA	James Bay Northern Quebec Agreement
KLC	Kimberley Land Council
KPIA	Kimberley Primary Industries Association
KWSP	Kimberley Water Source Project

MNC	Multi-National Corporations
MLDRIN	Murray Lower Darling River Indigenous Nations
NGO	Non Government Organisation
NRM	Natural Resource Management
OCRG	Ord Catchment Reference Group
OFA	Ord Final Agreement
OIC	Ord Irrigation Cooperative
OL WMP	Ord Land and Water Management Plan
OLW	Ord Land and Water
ORIA	Ord River Irrigation Area
RRAT	Senate Standing Committee on Rural and Regional Affairs and Transport, Federal Government
SWEK	Shire of Wyndham East Kimberley
TO	Traditional Owner
WA	Western Australia
WRC	Water and Rivers Commission

# Chapter One: Introduction to Research and Context of Study

## 1.1 Water matters in the Ord and renegotiating space

Water matters reflect the way people and places within the Ord catchment connect. Two dams reconstruct the Ord, as does the associated land-use for irrigation agriculture. The altered hydrology enables multiple practices, including, but not limited to: mining at the head of the catchment; hydropower production, and; extensive tourism. Hydrological changes have adverse impacts too: Miriwoong<sup>1</sup> and Gajerrong peoples continue their traditional practices where possible but the changed flow regime and dense riparian vegetation have wrought significant river degradation, limiting these practices. Also, the history of Indigenous dislocation as a result of catchment flooding, and associated farming, has forced resettling in often marginal areas. Overall, the catchment's large area – 46,100km<sup>2</sup> spanning the Western Australia-Northern Territory border (Figure One) – encompasses many values ranging from irrigated agriculture, to high conservation priorities with three Ramsar sites, and to the sustenance of the traditional livelihoods of local Indigenous peoples. Complexity characterises this space.

The thesis has two major purposes: to dissect water politics, through the prism of how water matters, in the Ord, and; to demonstrate a theoretical approach towards

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<sup>1</sup> Miriwoong is most commonly spelt 'Miriwung' in official documents. Local Indigenous people who I worked with generally prefer the former, as it reflects phonetic accuracy. I use Miriwoong throughout the thesis.

this end, by combining political ecology and environmental justice with a Masseyian spatial approach. These objectives are operationalized through catchment based analysis. Geographical perspectives grow from this grounded form of research, enabling complex multi-scalar realities to become visible. Rather than limiting analysis to success or failures of particular projects, the catchment perspective captures how water matters across and within various scales. See next page for a detailed map of the catchment.

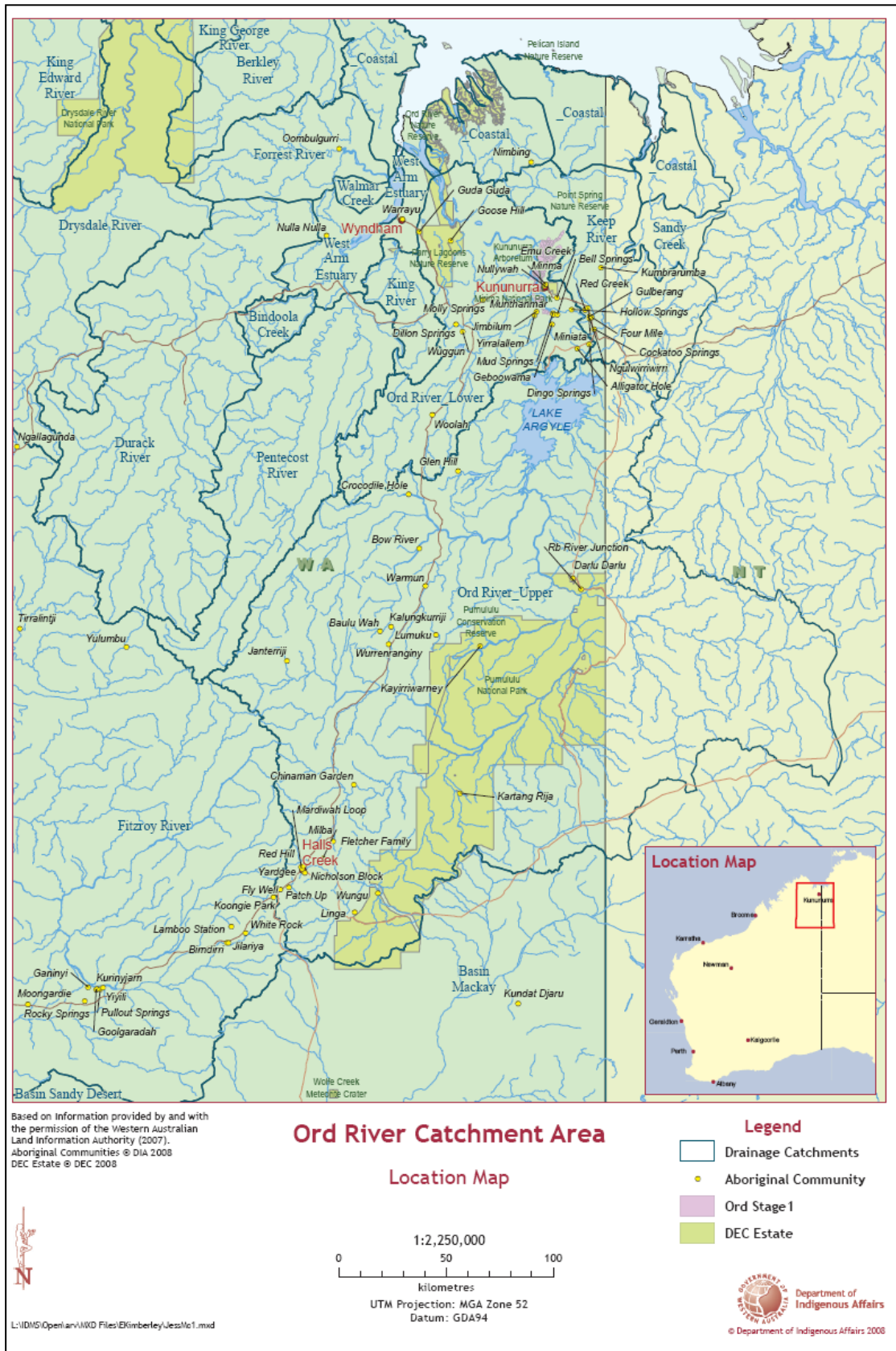


Figure One: Map of Ord Catchment (compiled by Tony Veale, Department of Indigenous Affairs Western Australia)

I use the term water matters as an umbrella phrase to encompass water politics, water values, water philosophy, water rights, water supply and sanitation, and water management. I also use it to convey a sense of water mattering; this may seem obvious but in a context such as the Ord, where water is abundant and inexpensive, reiterating this tenet is important. These terms are necessarily broad as the thesis examines the ways water represents justice to, and for, Indigenous people within the Ord - a new question for this context. It also analyses why and how particular changes have occurred in the Ord within water matters. In a novel way, it integrates environmental justice, political ecology and Masseyian spatial politics to do so.

The dams on the Ord capture water for, initially, the irrigation of 15,000 hectares, and subsequently the creation of hydropower for diamond mining and urban uses. Unlike most other catchments in northern Australia, the Ord has maintained some form of irrigation since dam inception. Planning for these dams built momentum during the 1950s and the Ord Main Dam was opened in 1973. The Ord Main Dam created Lake Argyle and this vast water body, at least nine times the size of Sydney Harbour, flooded important cultural sites and country. The planning of these hydrological transformations occurred without inclusion of local Indigenous people.

Dispossession occurred with the damming of the river, and the subsequent conversion of traditional lands into irrigated agriculture. As a result, Indigenous people were socially and economically marginalised (Shaw, 1992; Kimberley Land Council, 2004).

### **Community driven change**

More than three decades on from the construction of the Ord Main Dam, attempts to remedy some of the manifold impacts of these developments are emerging through recent native title negotiations. Native title consists of those rights and interests of Aboriginal and Torres Strait Islander people in land and water, according to their traditional laws and customs, which are recognised under Australian law<sup>2</sup>. After ten years of native title litigation failed to resolve competing interests in the region, steps toward a negotiated solution began in 2003. Local Indigenous peoples were persistent in claiming their native title interests as current and enduring. Negotiations were supported financially by the Western Australia state, thereby ensuring that traditional owners had adequate resources for legal assistance.

These negotiations culminated in a negotiated agreement signed by traditional owners, the State, and private interests. The Ord Final Agreement (OFA) is the name of this Indigenous Land Use Agreement stipulating a range of governance changes (Western Australia, 2005). It produced: the setting up of six conservation reserves that are to be jointly managed by Traditional Owners (TOs)<sup>3</sup> and the WA Department of Environment and Conservation; the creation of Reserve 31165 at the southern end of Lake Argyle (to be co-managed by the Department of Water and TOs for that country); the allocation of community purpose land within the Ord

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<sup>2</sup> Native title law is more successful in northern Australia with delivering a wider 'recognition space' of Indigenous values. The experience in northern contexts is unlike the more densely populated southern Australia, where 'narrow understandings of *tradition* at the common law, and the extinguishing effect of certain categories of land tenure, has limited the potential of native title to recognise the laws and customs of traditional owners' (Weir and Ross, 2007: 2). Strategic use of litigation by traditional owners in the Ord reflects opportunities for renegotiating access to country in northern Australia.

<sup>3</sup> 'Traditional Owners' refers to the identified native title holders within the Ord.



catchment at two sites (Yardungarrl and East Kununurra) for Indigenous people<sup>4</sup>, and; an AUD57 million compensation package for local Indigenous TOs. This package compensates for both past acts and the surrendering of native title to facilitate future irrigation expansion in the Ord. Furthermore, the OFA prescribes mechanisms for involvement of Miriwoong Gajerrong traditional owners in Ord Stage 2 decision making processes, and includes a range of initiatives that focus on improving the capacity of Indigenous people to engage in the local economy and benefit from any future irrigation on forfeited country. Thus, through surrendering native title to some country, Indigenous people have secured compensation, as well as support for participation in future development opportunities. The OFA provides material opportunities for inclusive participation within the Ord.

This re-negotiated landscape of the Ord also attempts to provide opportunities for Indigenous peoples to maintain connections to country in meaningful ways. Here, the term 'country' refers to the Indigenous Australian use. As Rose (2002) writes:

‘An understanding of “country”, for those of us who were not born and raised to it, starts with the idea that country is a nourishing terrain...People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, grieve for country and long for country...’ (Rose, 2002:14).

Country is more than the place where you come from, for many Indigenous Australians it shapes lives and must be shaped through living with it. For the Ord,

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<sup>4</sup> Community purpose land is intended to provide security to the traditional owners adversely affected by the earlier developments.

significant challenges have existed that impede access to country but working through these has impelled native title claims.

As an outcome of native title based negotiations, the OFA spells out co-management of new conservation areas, thereby including traditional owners in formal decision making over their country. This conservation estate aims to provide for conservation, recreation and tourism, while protecting the environmental and cultural heritage of the region.

These recent governance transformations dramatically reshape elements of social, economic, environmental and cultural interactions in the Ord. The negotiation process leading up to the OFA allowed for relationship-building to occur both amid Indigenous peoples, and between Indigenous and non-Indigenous peoples. The OFA acts as a 'living document' (following Tehan, Palmer, Langton and Mazel, 2006), with a potential for inclusive implementation of natural resource management, that decries the unjust natural resource uses that underpinned the settler state in the Ord catchment. However, a substantial challenge lies in realising this potential; will the perception of the available opportunities for Indigenous people, to effectively participate in this new framework, carry through to a meaningful reality? A living document only succeeds through its implementation: it requires attention and responsiveness.

The challenge of the OFA to meet its potential occurs at the same time that water is becoming a more highly contested resource across the world, and especially in Australia. The dominant Australian water culture arose from a productivist paradigm

of water allocation that often makes scarcity. Unlike the rest of Australia, scarcity does not dominate water matters in the Ord as annual floods are captured by two dams. Water is cheap and generally readily available. However, distribution inequities and a productivist paradigm do impact on water matters here; Indigenous water perspectives do not receive equal acknowledgement or accommodation.

### **Future challenges**

The human-environment relations of the Ord provide the focus of this thesis, with special attention on how Indigenous perspectives are included. Plainly, water matters. This assertion flows from the arguments of Bakker and Bridge (2006), who show how *matter* matters. They encourage a less anthropocentric geography, where resources are understood as inherently political; 'By this, we mean that resources are an epistemologically specific outcome of competing claims over access to, control over, and definitions of nature (Bakker and Bridge, 2006:21). Humans delineate when nature becomes resource when identifying targets for exploitation.

Counterclaims emerge from the already defined discursive frame. Identification of these counterclaims occurs in this research thanks to ethnographic research embedded in the Ord catchment, while it also allows an applied environmental justice-political ecology approach. From partnership research with the Kimberley Land Council, I found that the community driven Ord Final Agreement facilitates extensive inclusions of Indigenous concerns, but water matters are only partially present.

In the OFA negotiations, the request for a water allocation by Miriwoong and Gajerrong peoples was not successful in the final determination. This is a notable absence given that irrigation expansion in the Ord forms an expected outcome of the

negotiated agreement. To allow this expansion, native title over 16,000ha of high value black-soil plains is being given up by the Miriwoong Gajerrong peoples. Major land-use changes are being ushered in with this governance realignment: currently, the physical implications of these transitions remain unclear<sup>5</sup>. These gaps may risk the health of the catchment and temper some of the benefits gained from the OFA.

Indigenous water perspectives value healthy rivers and springs: unimpeded flow and integrity of seasonal variation important parts of viable waterways. At present, social values around water are defined as post-dam by government water managers, effectively excluding traditional Indigenous water values. Environmental flows are even aligned with post-dam interests according to government planning documents. Private interests, including irrigation and hydropower for mining activities, are therefore not threatened by inclusion of environmental interests. The possible conflict between environmental values and development interests is neatly avoided. Water matters do not stop at the river edge, however; community water management encompasses both ecological and human rights concerns. Being able to live on country necessitates water provision and treatment of waste, and protection of important water holes or springs. Proper planning and implementation of water supply and sanitation can provide this. However, too often, as my research shows, the processes meant to deliver apt community water management fail, and communities experience faulty service delivery.

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<sup>5</sup> The full impacts of the creation of one of the largest dams in Australia, and the related Ord Stage 1 irrigation of about 12,000 hectares on environmental health, are also not yet known.

## 1.2 Concepts and methods informing research

### Conceptual framing

The challenge of answering the core research problem of the thesis requires considerable attention to conceptual and methodological issues. At the widest level, I use political ecology as a philosophical frame for this thesis. In performing political ecology, researchers analyse how political, economic, social and cultural factors affect environmental matters. This broadly defined approach forms a prism through which water matters in the Ord can be viewed. A key strength of this theoretical framework is how the discursive representation of a process is as important as the material reality of an environment (Blaikie and Brookfield, 1987). Additionally, it examines the dialectical relationship of a range of social and environmental processes (Zimmerer and Bassett, 2003:3). Such a relationship holds with water, where social and environmental processes always interact.

Environmental justice, married with political ecology, provides a complementary theoretical framework that can dissect the social-environmental nexus.

Environmental justice asks equity questions of human-environment relations, including the fairness of environmental outcomes from developments. Usually it studies how poor environmental outcomes are experienced by certain marginalised groups. Hillman writes (2006:295) that 'Environmental justice as a political movement and research programme originated amidst concerns over the unjust distribution of environmental hazards primarily in, or close to, disadvantaged or marginalised communities.' Here, I use Schlosberg's (2004, 2007) application of justice theory to environmental justice. Primarily, his later work examines capabilities theory – whether 'individuals have the capacities necessary to fully function in their chosen lives' (Schlosberg, 2007). He examines practices that may or may not

involve recognition of difference; plurality of participation, and; the equitable distribution of resources and costs and benefits (Schlosberg, 2004). Traditional environmental justice carries normative tendencies but Schlosberg's (2004) reinterpretation suggests it has wider applicability: it offers a structuring analysis from empirical data. His conceptualisation of environmental justice emphasises a politics of difference that does not quash nuanced readings of complex situations.

Bringing these perspectives together in a geographical sense is assisted by the framework and arguments developed by Massey (2005) in her book '*for space*'. Applying Massey's ideas to this case study suggests that attempts to portray issues of land and water justice inevitably construct a 'space of loose ends and missing links' (Massey, 2005:12). These in turn are dialogically related to other-scaled spaces. By using Massey's (2005) discussion of the multiplicity of space, I show how counter-discourses to hegemonic management regimes also exist within Indigenous Australian contexts. The concepts of space and multiplicity are co-constitutive (Massey, 2005). As such, it is possible to achieve an understanding of a varied social realm based on coevality. By coeval I mean that traditional Indigenous lifeways are an accepted presence in a contemporary intercultural sphere – they are here and now (Fabian, 1983; Muecke, 2004; Attwood, 2005). This mode fits well with Schlosberg's (2004) non-prescriptive theoretical approach towards environmental justice as discussed above. Merging these approaches together, and applying them to a case of water governance in the Ord, comprises a key contribution of this thesis.

Acts of dispossession limit Indigenous peoples' access to maintaining country and ritual in many Australian contexts, including this case study. Native title negotiations

have re-opened spaces for Indigenous people to work with country in the Ord. This thesis portrays coeval trajectories in the Ord, including the success of Indigenous people in the Ord valley to secure compensation for economic and social impacts from earlier development and future acts.

The intercultural politics played out in the OFA are a key element of the material and discursive domains that comprise this case study. 'Intercultural' refers to the intertwining of cultural spaces, such as in the creation of indigenous corporations (Martin, 2005). Intercultural analysis recognises that bounded cultural realities are a misnomer: Indigenous and non-Indigenous spaces intersect, they are rarely autonomous (Lea, Kowal and Cowlshaw, 2006; Martin, 2005). This case study adds to a progressive political ecology that moves away from detailed description of the failings around environmental management, as has characterised some political ecologies to date (Robbins, 2004). It does so by casting a critical gaze over recent shifts within the Ord. The governance changes introduced with the OFA have the potential to belong to the 'success stories' but there are some absences too – including a substantive water right for Indigenous purposes.

To this end, this thesis also references Howitt and Suchet-Pearson's (2006) argument that modern natural resource management (NRM) regimes in Australia are Eurocentric – they have a silencing effect on Indigenous lifeways through their discursive techniques. This includes language choice such as 'NRM'. I wish to contribute to the work that is involved in 'recognising and responding respectfully to those elements of cultural landscapes that Eurocentric management discourses routinely deny exist' (Howitt and Suchet-Pearson, 2006: 333). Howitt and Suchet-

Pearson's (2006) argument is lucid in its call for plurality in approaches and context-specific work. This thesis adopts that framework and hence seeks to build on Howitt and Suchet-Pearson's (2006) work.

## **Methods**

The conceptual issues discussed above raise specific concerns for methods. A prescriptive approach to data can not document the coequality of a 'space of loose ends and missing links'. Massey's acknowledgement of incompleteness in studies pertaining to cultural issues resound here. Similarly, Kim Doohan (2006) recognises that cultural analysis case studies are always partial. In spelling out her thesis aims, Doohan (2006:78) refers to the anthropologist Geertz to argue:

'I want to provide a detailed account of the Argyle case recognising that there are times when one does not necessarily 'get it right' and that "cultural analysis is intrinsically incomplete"'(Geertz, 1975:29)

Reductive methods are of no use here. Rather, appropriate research tools include ethnographic fieldwork and semi-structured interviews. The primary mode for gathering information for this thesis evolved in participation with the everyday activities of the Kimberley Land Council, the peak representative native title body for the Kimberley. Later, as the Miriwoong Gajerrong Corporation was more established, I also engaged with this locally driven, traditional owner managed institution. This enabled a form of action research to grow. I took direction from colleagues and traditional owners with whom I worked and interacted. This research received approval from the Human Research Ethics Committee, University of Sydney.



Essentially, a research agreement with the Kimberley Land Council (KLC) forms the basis for this collaborative research. The goals of this research agreement include: forming a reciprocally beneficial relationship between Miriwoong and Gajerrong traditional owners and myself; supporting the day to day activities of the KLC in Kununurra as requested, and; acting as a conduit for information between catchment management groups and traditional owners through the KLC and the Miriwoong Gajerrong Corporation. Working towards a research agreement began in 2005 with travel to Kununurra for a scoping trip. There, I talked with traditional owners about this research project and sought their support and collaboration. In return, I offered my research and administrative skills, in a volunteer capacity. This collaborative arrangement was successful in facilitating an intense period of research over six months starting from 1<sup>st</sup> March 2006 in Kununurra<sup>6</sup>. By the end of August, I travelled back to Darwin for a few more interviews before leaving northern Australia.

Placing myself within Kununurra – the ‘gateway to the Kimberley’ — allowed invaluable participant observation to occur. I was involved in the daily activities of the KLC and the newly created Miriwoong Gajerrong Corporation (MG Corp). From that position, I could investigate the local contexts that shape society-water relations within broader contexts for, as Haraway (1991) says, ‘the only way to find a larger vision is to be somewhere in particular’ (Haraway, 1991:196). Situated knowledge approaches have mushroomed in many research fields. For geography, a suite of examples where research can provide useful outcomes for local communities is found in Rocheleau, Thomas-Slayter and Wangari (1996). This collection includes numerous instances of the application of situated knowledges to the domain of

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<sup>6</sup> Earlier trips occurred in 2005 for a reconnaissance and in 2001 for Honours research.

political ecology in support of ethical practice. Partnering with local institutions representing politically, economically or socially marginal groups, remains common to much political ecology practice. It was essential that my own research included this positioning.

The preference, and subsequent opportunity, to research and participate with the KLC was deliberate. As a political ecologist, my interest lies with questions of power and politics, change and environment. Native title determinations are an instrument of all these elements. The KLC branch in Kununurra represents Indigenous people in native title contestations for northern Western Australia; many traditional owners work with and through this organisation. For this research, my discussions with the KLC began with a meeting of eight traditional owners in 2005. I learnt that the KLC in Kununurra was a locally based participant in negotiations towards the OFA. Ethical research with indigenous peoples involves support of local gatekeeper institutions. That was obtained. I pursued this approach to do all that I could to make my research real and relevant.

The challenges in realising a meaningful collaborative research practice are vast. One challenge is bringing tangible outcomes to local partner institutions and individuals (recognised by, for example, Scott, Miller and Lloyd, 2006). The aligning of home institutions' priorities – usually involving publications and presentations – and the partnering institutions' priorities form a plane of needs that the researcher must work across. Two facets of this are the different time lines of communities with research projects and the often scarce resources of students. These differing needs and capacities can add to tensions in these relationships.

One oft cited way of overcoming these tensions comes from the rhetoric of participation, where those people subject to the research are involved in each stage of research design (Chambers, 1994). The difficulty of bringing this action research approach into reality is widely identified (see e.g. Fabian, 1990; Kobayashi, 1994; England, 1994; Rose, 1997; Scott et al, 2006). In particular, the role of a researcher wanting to 'give something back' is raised in working through issues of representation and reflexivity. The desire to escape reductive, naively objective research praxis is a central view of the social sciences' cultural turn. Indeed, 'self-reflexivity has become *de rigueur* in parts of the humanities and social sciences' (McGregor, Gibson and Miller, 2007:48); it informs many reconstructed research approaches, from feminist to postcolonialist to poststructuralist methods. McGregor et al (2007) challenge its frequent use by researchers who fail to critically engage with what it means to actually be self-reflexive. Similarly to Rose (1997) and Scott et al (2006), the difficulties in expressing my own positioning, and resolving ethical dilemmas that grow from being in the field, persist. I am a white, young woman born and bred in rural southeastern Australia as a 'townie', not on a farm. For this research, I am institutionally supported by the University of Sydney and the Kimberley Land Council. I went to the Kimberley aware of the histories of 'eggheads' (Cowlshaw, 1999) and do-gooders. In addition, my positioning as supported by Indigenous institutions placed me as partisan to a viewpoint considered as oppositional by many within the town. Dilemmas in representation abound here, all not solved by simple self-reflexivity. For example, power relations are more complex than powerful researcher and weaker research subject – I needed people to participate in the research and local subjects held the power to refuse or avoid me. In response to McGregor et al's

(2007) reflection, negotiating the 'backstage' politics of research both enabled and constrained this thesis.

Grounded within the research agreement with the KLC, an 'exchange of effort' helps to face contentious discourses of participation. By 'exchange of effort' I mean a fair trade of capacity. For instance, I was given a space to work in and internet access, as well as access to traditional owner meetings and public events relating to water. Meanwhile, I helped develop a project to improve recognition of Indigenous water values in the Ord. I also did, and continue to do in a lesser capacity, various administrative and design tasks as requested. This exchange of effort situates this thesis within a broader set of social relations..

Moreover, the research on which this thesis is based was also made possible by being institutionally supported in Kununurra. For instance, I attended meetings of the local Ord Catchment Reference Group and facilitated project development between the KLC and the Department of Water. A project on Indigenous cultural values relating to Lake Argyle, an extension of downstream similar projects, was approved and is underway. I also assisted in drafting an application for a Community Water Grant project (Commonwealth of Australia, 2007). This project intended to install rainwater tanks for a community just to the south of Kununurra. In more informal capacities, I participated in various volunteer environmental activities including a birdwatch at and around Argyle Diamond mine (see Figure Two) and a tree planting day near Mirima National Park. These experiences gave me invaluable insight into the social-environmental processes shaping the way water is valued in the Ord.



Figure Two: Birdwatching at Smoke Creek, near Argyle Diamond Mine.

Many people across the region asked what the outcome of this work I am doing with the 'Kununurra mob' would be. I intend to make available a plain English version of the thesis to interested parties. The standard thesis document shall be placed in a local library as well as within the Kimberley Land Council library. In response to these plans, I was variously told *ah, another report to sit on the shelf eh?* or *good for you, hey*, all fair comments. Such reactions may reflect the fatigue of people who feel they are under a steady stream of investigation for purposes seen as distant to themselves. The implication, raised in the second quotation, spoke of the benefit I would get from a PhD qualification. These conversations further spurred me to perform whatever material tasks were deemed useful by local Indigenous peoples. This exchange of effort practice was mingled with a critical anthropological method (Marcus and Fischer, 1999). In this way, a conscious positioning as one to be taught by Miriwoong and Gajerrong peoples grew. These challenges around a reflexive approach are similar to those involving how situated knowledges are developed and expressed; reflexivity can be something that is easier to write about than truly done

(among others see Kapoor, 2004; England, 1994)<sup>7</sup>. Many of the interview subjects were identified through advice from employees of the partner Indigenous organisations with whom I worked. Others were introduced to me by interview subjects, in a snowball pattern. Participant observation techniques were most useful in talking with local people about how they perceived changes in society and water, and how contestations over water change.

So in order to understand water values in the Ord, I use a mix of primary and secondary sources of empirical information. Primary sources include:

- Aboriginal communities as nominated by the Kimberley Land Council (KLC) (under the terms of the Cooperative Research Agreement)
- KLC employees
- Miriwoong Gajerrong Corporation employees
- Department of Environment employees
- Department of Agriculture employees
- Shire of Wyndham-East Kimberley employees
- Kimberley Development Commission employees
- Ord Irrigation Co-operative consultants and employees
- Data from field observations recorded in field notes.

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<sup>7</sup> These tensions are challenging and resistant to resolution Rose (1997). Recognising this dilemma, and acting cautiously, may offer a reasonable way to continue.

The interviews were in depth conversations about the work the research participants did, and how water matters affected them. In total, twenty three research participants gave extended interviews, some over two hours long (see Appendix A). Several others offered insights in informal capacities. Of the interviews, notes were always taken by hand during interviews and then transcribed to computer thereafter. If quotes were used for this thesis, then participants were asked (via email) to confirm the content of the quotes before inclusion. Secondary sources include mainstream news media, including newspapers and radio/television reports, and, grey material, for example corporate and government planning documents.

### **1.3 The thesis structure**

As earlier stated, the definition of water matters is expansive in this thesis. It includes consideration of water supply and sanitation, protection of important waterholes, water allocation for rivers, recreation and tourism, water for irrigated agriculture and hydropower, and water's aesthetic values. A political ecology of water in the Ord emerges from sifting through the most pressing of these concerns, as identified by the situated field method described above.

This introductory chapter has set out my research questions and the methods used to investigate them. It has also provided a summary of the contextual parameters of this research project. The following chapter outline indicates the argument structure.

Chapter Two reviews key issues relating to water that are relevant to the research project. It applies political ecology and environmental justice theory to

understandings of water rights, especially with respect to cultural flows in Indigenous contexts, and recent developments in native title. The combination of the three key theory bodies occurs here.

From here, I examine Indigenous water matters, including cultural flows. Current recognition of Indigenous water rights does not substantively address the broad spectrum of Indigenous water values. I analyse this injustice within major catchments of northern and southern Australia. Also, examples are given of negotiated water matters delivering favourable outcomes for Indigenous people from New Zealand and Canada.

Transforming geographies of the Ord catchment are the focus for Chapter Four. It gives a temporal analysis of changing spaces in this eastern Kimberley space. As a history of society and water relations, this chapter sets the scene for more recent governance transformations and the related changes in physical landscapes.

Chapter Five analyses Indigenous perspectives on water within the Ord, and shows how environmental values converge and diverge. Cultural, social, economic and environmental values are explored in this chapter. Indigenous peoples value unimpeded rivers and protected waterholes, healthy water and shared resources. This chapter shows that recognition of these values is limited.

From here, I examine the recent governance transformations within the Ord. Chapter Six evaluates the Ord Final Agreement, a negotiated agreement that sets up joint



management for newly created conservation areas in the Ord valley and provides compensation for the impacts of Ord Stage 1. As such, it frames how strategic deployment of narratives from elsewhere, such as sustainable development, has helped Miriwoong and Gajerrong peoples gain recognition of their rights.

Chapter Seven looks at community water management in the Ord, including water supply and sanitation, and protection of important water holes. This matter is especially crucial for Indigenous peoples in rural contexts and is delivered by institutions forming intercultural spaces. Indigenous peoples globally are building strategies to secure means to maintain lifeways and connections to the water justice movement are explored in this chapter.

Chapter Eight opens with two vignettes, one from an event that occurred during fieldwork and the other gleaned from government records. These vignettes show that, while some changes in recognition of Indigenous water matters is evident within the Ord, substantial space exists for further shifts. Chapter Eight also concludes the thesis and points to future research directions, as well as suggestions for policy development from this work.

## **1.4 Conclusion**

This introduction has shown how various water matters that are often dealt with in isolation are integrated in this thesis. It establishes the specific questions propelling

this research and how they were investigated by mixed methods, including fieldwork and interviews. The next chapter examines relevant literature that frames the research and applies it to the research questions previously stated.

## **Chapter two: Theory**

### **2.1 Introduction**

This Chapter looks at theories within political ecology, environmental justice and spatial analysis: it canvasses issues of power, development, sustainability, justice and difference. Because of the context of this research, I explore themes including postcolonial relations and resource management changes. The three theoretical planks of political ecology, environmental justice and Masseyian space, structure the chapter. Throughout, I focus on theorists with a special interest in water matters.

Environment and people interact in varying ways. Social, political and economic dimensions shape these contexts and water cuts through each of these. This literature review aims to open up understandings of what water means to people, to show how power currents through it to recreate complex interrelations. The following diagram, Figure Three, captures the intersections between environmental justice, political ecology and Masseyian theory as argued in this chapter. It graphically presents what underpins the ensuing analysis.

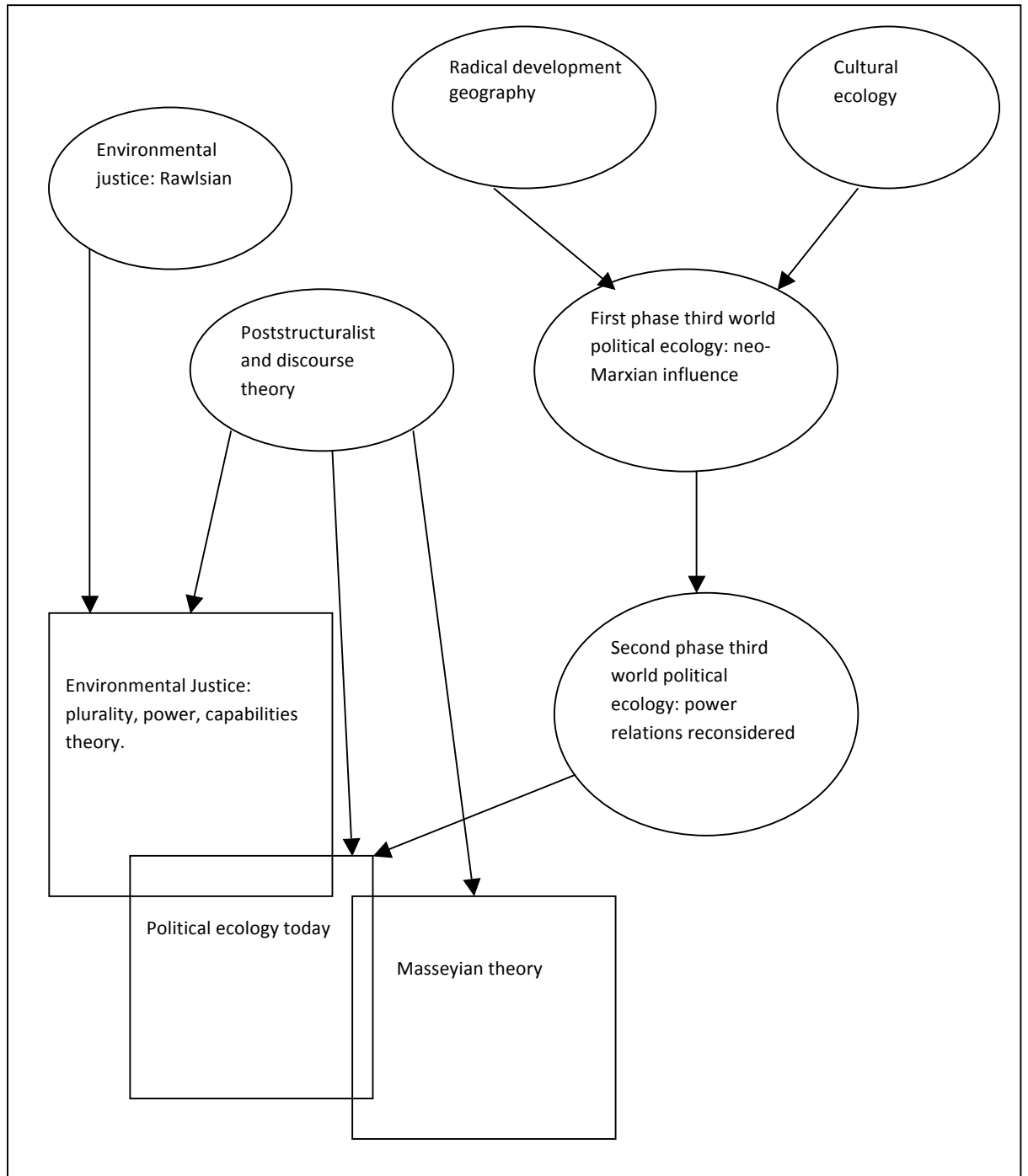


Figure Three: Major intersections between environmental justice, political ecology and Masseyian spatial theory (source: the author).

## 2.2 A political ecology of water

Political ecology is the study of the dialectical relationships between a range of social and environmental processes (Zimmerer and Bassett, 2003:3). The dialectics – or the tensions between interacting forces, elements or ideas (Meriam Webster, 2009) – of water matters are myriad. For example, tensions could surround conservation, production, degradation and regeneration. For the Ord, dilemmas transpire from waves of agriculture intensification, and persistent attempts by Indigenous peoples to have their rights recognized. A political ecology approach analyses these dialectics, and how they change. This overview of political ecology looks at: where political ecology sits today, what makes a political ecology of water, and; the possibility of a progressive political ecology. It does not ask whether people-based or environment-based studies should be the proper focus of political ecology; this debate has played out elsewhere (for example Bush, 2004; Bryant, 1992). Rather, this thesis argues that a strong place-based analysis is the apt focus for a political ecology of water. The most appropriate political ecology focus always depends on the matter in question – a political ecology of climate change may look very different to that of water.

With particular reference to water, Barbara Johnston (2003) compiled many examples of tensions over social-environmental processes. She found that

“Developing” or “managing” water resources with centralized and privatized approaches require transformations in the loci of power over resource value, access, use and control from resident peoples to external power structures. Enclosure of a commons resource involves redefining the meaning and value of resources, from those valued as critical to a traditional way of life to those

valued as economic commodities, supporting progressive growth in the national and global economy. When water is commodified, the meaning and prioritization of use values shifts from household subsistence and regional markets to the national and global economic arena.’ (Johnston, 2003: 82).

This observation understands power dynamics surrounding the intervention of dams on rivers and impairment of local traditional lifeways as partly a result of priorities coming from elsewhere. Imposing extractive, western water cultures typifies such relations. (There are problems in generalizing across western water cultures, see Strang (2008) for an analysis of these. She forwards analysis based on scientific and alternative water values). The commodification of water emerges as the key problem here: extracting economic value from something that previously was a common good can relocate power over this resource.

In an earlier edited volume, Johnston and Donahue (1997) document numerous instances of contested water – from Palestine/Israel to the James Bay Hydroelectric Project in North America (for more on James Bay, see Chapter Three). These excellent case studies provide insight into how water manifests power relations. At the same time, however, often these instances do not show how local people redefine themselves and their water cultures in relation to changed systems, or how there can be resilience or adaptation to hydrological reconfiguration. They also often do not depict what happens once external parties become locally situated; when local peoples accrue just compensation for loss of utility from traditional resources, or when the ‘meaning and prioritization of use values’ (Johnston, 2003) shifts back to household subsistence and regional markets. I consider this sort of change analysis within power relations a key strength of political ecology.

An integrative approach constitutes another central element of political ecology; the approach facilitates an understanding of the material and discursive realities around natural resource management transformations<sup>8</sup>. These issues were highlighted in a recent special issue of *Geoforum* to cover the seminal contribution of Piers Blaikie to political ecology. In that special issue, Tim Forsyth (2008) argued that:

‘Blaikie’s approach to political ecology can be seen to be more than either the deconstruction of environmental narratives (in the manner of much poststructuralist analysis), nor trying to explain environmental change more accurately by “peeling the onion” (in the critical realist sense). Rather, it is a politicized acknowledgement of the co-production of environmental knowledge and social values in ways that, tentatively, try to reconstruct environmental explanations and interventions in the favor of vulnerable people.’ (Forsyth, 2008: 762)

This quote shows Forsyth scrutinizing the debate around whether political ecology should be more ‘political’ or ‘ecological’ – and whether deconstruction or critical realism be its rightful aim (for a discussion of the latter, see Bush, 2004). The latter reflects one major argument within the social sciences today. For the purposes of this thesis, the two prongs of political ecology – environmental knowledge and social values – are understood as interrelated (also echoing Zimmerer and Bassett, 2003). With this underpinning, political ecology reconstructs environmental explanations to

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<sup>8</sup> Transitions analyses avoid less useful categories of ‘unhealthy/healthy or broken/fixed ecosystems... [and instead produces] a political ecology of production, rather than of destruction...’ (Robbins, 2004:105). This perspective adds nuance to a transformation analysis.

expose power relations. It aims to reposition knowledges in ways that do not undermine vulnerable peoples.

A progressive political ecology moves away from detailed description of the failings around environmental management, as has characterised some political ecologies to date, and towards a critique of recent shifts within the sustainable development movement. Robbins (2004) suggests that political ecology, as an explanatory framework, is very good at telling the failures of environmental management but could be employed more frequently to also start telling the successes. He writes that a political ecology of production rather than destruction (Robbins, 2004:105) could be a practical way to implement this 'success' telling. Zimmerer (2006) similarly takes up the theme of constructive politics within a political ecology approach, in his exploration of the cultural ecology/political ecology interface. He talks about the expansion of conservation areas in a global sense and how they are increasingly adopting a more locally responsive role, incorporating local use realities rather than simply obliterating these factors (Zimmerer, 2006). As such, possibilities of particular 'spaces of hope' can be perceived, characterised by 'new spatialities that can lead to benefits for a broad base of local people, especially the currently less powerful, as well as the potential to help sustain the health of environments' (Zimmerer, 2006:71). Zimmerer's work resonates with Massey's spatiality; it also highlights an environmental politics that explores multiplicities in situ.

The political ecology approach analyses the interaction of social and environmental phenomena through a suite of different qualitative and quantitative measures. This tendency has attracted many critics. One of the earliest was Enzenberger (1974)



who was overwhelmingly disparaging to the very fundamentals of political ecology, arguing that appraisal bogs the discipline, rather than knowledge building. This critique of political ecology does not surprise, given that one of its key aims is to deconstruct grand narratives (Peet and Watts, 2004). However, political ecology does more than simply critique, as evidenced in numerous significant political ecology texts, including Peet and Watts (2004) and Rocheleau, Slayter-Thomas and Wangari (1996). Some even argue that this interpretation of political ecology is inaccurate: for example, Clark (2001) draws on Marxist theory to counter Enzenberger's claims. He argues that a dialectical approach allows political ecology to deliver comprehensive analysis of environmental matters that are crucially important. Because of this, he states that it needs to shift from dualist debates, where, Clark (2001) argues, Manichaeian divisions flourish in a 'war of the ecologies'. He advocates an approach that first embraces cultural critique and then looks at transformations, much as Marcus and Fischer (1999) do for the human sciences and especially anthropology. He states that:

'A dialectical political ecology needs to undertake a careful analysis of the place of the imaginary in creating social ecological reality and recognise the politics of the imagination as central to the project of social transformation.' (Clark, 2001:35).

I take this to mean that social transformations are possible only if a certain individual/group imagine them to be so, and that a political ecology approach, in its discussion of these transformations, attempts to account for this link. Echoes of this constructive focus are found in Robbins' (2004) argument for the inclusion of stories

of success in political ecology. A political ecology approach that does something beyond just a critique, perhaps through offering a new research agenda based on these transformations, is advocated by Clark (2001) and Robbins (2004).

### **Water matters**

Sound theorising can also be found in Bakker and Bridge's (2006) repositioning of 'resource geographies' to argue that 'matter matters'. Through analysis of commodity stories, bodies, text and, finally, hybridity, they argue for a simple acknowledgement of how 'things other than humans make a difference in the way social relations unfold' (Bakker and Bridge, 2006:17). They give the currently relevant example of the way drought is increasingly being understood as a 'co-produced' reality in Australia; both society and nature intermingle in the constitution of droughts. In fact, water scarcity is a relative fact, as Bakker (2000) shows in her study of water availability (see also Johnston, 2003). Situated research best reveals how matter matters within certain contexts. This encourages a less distanced geography, where 'matter matters because it is through grounded research that we encounter differences that make a difference.' (Bakker and Bridge, 2006:21). This embedded practice, where neither material nor discursive realities are given higher rankings, is a deployed materiality that social scientists – from gender studies to anthropologists – draw upon. Within geography, it signifies a shift towards a more nuanced approach to resources. This political ecology of water relies on such a non-hierarchical analysis of connected dynamics; the material and discursive co-produce and are, in some instances, in tension with each other.

In their seminal text on political ecology, Peet and Watts (first edition 1996, second edition 2004) argue for the 'emancipatory potential of current political activity around environment and resources' (Peet and Watts, 2004:5). Similarly to the environmental justice school, political ecologists such as Vandana Shiva and Arturo Escobar incorporate into their theoretical framework a practical political engagement with new movements. They bring 'cultural mobilisation' more emphatically into the fold, centering it in a newer political ecology that has greater sensitivity to environmental politics, and elevates the importance of discourse study in this evolving field. It is interesting that both Bakker and Bridge (2006) and Peet and Watts (2004) argue for situated research and yet come up with slightly different foci. Taking both to the extremes, these positions could even be perceived to be polar positionings - for where could 'matter matter' in an entirely discursively focused analytical frame? However, while Peet and Watts' (2004) volume certainly does include discursive readings of resource geographies, these case studies still demonstrate distinctly grounded readings of dialogical practices, far from the relativism found in some fringe postmodern studies (for examples of grounded resource geographies see especially Zimmerman, 2004; Kosek, 2004; Goldman, 2004).

### **Situated analysis and Feminist Political Ecology**

Feminist political ecology likewise relies upon a context-particular approach in a 'strong but not exclusive focus on gender and seeks to deal with difference of all kinds, informed by feminist critiques of science and poststructural critiques of development' (Rocheleau, 1995:10). Underpinning this critical approach is an inclination to ask questions relating to control and access to resources and environmental management, and how both these facets are defined (Rocheleau, Thomas-Slayter and Wangari, 1996). Questions of representation, subject positioning and gender equity are important in feminist political ecology; being clear

about where research comes from and how gender relations frame it are crucial.

Links with Haraway's body of work on situated knowledge are clear here, including her important Cyborg Manifesto (Haraway, 1991) that brings to the fore her standpoint theory. The latter emphasises the power of partial objectivity:

'Situated knowledges require that the object of knowledge be pictured as an actor and agent, not a screen or a ground or a resource, never finally as slave to the master that closes off the dialectic in his unique agency, and authorship of "objective" knowledge.' (Haraway, 1991: 198)

Recognising the embedded nature of doing research facilitates a more academically honest position. Haraway's (1991) work is strongly influential in political ecology, environment studies and cultural studies, and operates as an important tool in this research. Feminist political ecology (FPE) today continues to build upon the situated analysis approach. As Rocheleau (2008) somewhat densely describes:

'FPE and poststructural PE are based on multiple actors with complex and overlapping identities, affinities and interests. An emergent wave of political ecology joins FPE, post-structural theory, and complexity science, to address theory, policy and practice in alternatives to sustainable development. It combines a radical empiricism and situated science, with feminist post-structural theories of multiple identity and "location", and alternative development paradigms.' (Rocheleau, 2008: 716)

Multiplicity and complexity are two recurring themes here. Combined with a rigorous empiricism, feminist political ecology gives a strong base for analysis. (Also evident

here is the post-structural antecedent identified in Figure Three earlier in this chapter.)

Political ecology is the scaffolding theoretical tool in this thesis primarily due to its comprehensive nature – a thorough analysis of water politics necessitates an inclusive theoretical structure. This is best captured in Swyngedouw's (2004) discussion of the power of water. His political ecology analysis of urban water in Guayaquil aims to:

‘...reconstruct the political, social, and economic conduits through which water flows and to identify how power relations infuse the metabolic transformation of water as it becomes urban. These flows of water that are simultaneously physical and social carry in their currents the embodiment of myriad social struggles and conflicts. The exploration of these flows narrates stories about the city's structure and development. Yet these flows also carry the potential for an improved, more just, and more equitable right to the city and its water.’ (Swyngedouw, 2004:4)

These aspirations coincide with those of the current thesis but, added to this, is an emphasis on intercultural spaces and recognition of the changes and continuities in Ord water cultures. This section has reviewed the development of political ecology and shown the connections of this to situated knowledges. With Swyngedouw (2004) above, it also introduced connections between political ecology and environmental justice. The next section explores environmental justice and further establishes the joining of these modes that frame this thesis.

## 2. 3 Environmental justice

Environmental justice is the second theoretical body informing this thesis. It focuses on the question of how environmental matters are processed, from participation to distribution elements, and examines whether people are able to continue their livelihoods in certain places. The literature and practice of environmental justice includes embracing plurality and diversity. By doing so, the emphasis shifts from normative costs-benefits analysis towards a more expansive perspective on environmental issues. This opening of the theoretical space around environmental justice also contributes to reworking the way 'justice' itself as a notion is understood. David Schlosberg's (2004) theoretical insights stand out in this field. Through his critical gaze over liberal notions of justice, he identifies how the environmental justice movement helps expand the notion of justice through social practice; also, he applies developments in justice theory to the environmental justice realm. He argues that if we rely on the Rawlsian notion of justice alone to inform environmental justice, then we would limit the understanding of justice to distributional elements of practice. In terms of environmental justice, this may refer to the distribution of costs and benefits from industrial or agricultural developments. Schlosberg (2007) argues that the additional ways that justice theory has developed to understand the processes of justice and injustice are not fully used. After reviewing the changes in environmental justice theory, this section: examines Schlosberg's contribution to environmental justice; the extent of Australian environmental justice literature, and; water justice debates.

The environmental justice movement has argued that environmental ills such as pollution are inequitably distributed, with those already economically marginalised experiencing further disadvantage through contamination of their environments. An editorial by Walker and Bulkeley (2006) provides a good tracking of this history, for an environmental justice themed edition of *Geoforum*. They recount the argument that the costs of development are borne by those of difference, often those who are economically disadvantaged or belonging to a racial minority. Schlosberg (2004) argues that the environmental justice movement now defines justice in a broader sense as it recognises the diversity of participants and experiences in affected communities. This valuing of plurality gives recognition to different sorts of knowledges and may open up environmental decision making processes to non-mainstream involvement. For instance, it is possible to value the traditional ecological knowledge that Indigenous communities hold about their localities within a framework that values plurality.

### **Australian environmental justice**

Australian environmental justice work does not flourish in the same way as in the United States. Indeed, Elisa Arcioni and Glenn Mitchell (2005) declare that environmental justice, as both concept and movement, has not 'arrived' here<sup>9</sup>. They attempt to start filling this gap by addressing the environmental politics surrounding a smelter in Port Kembla through an environmental justice lens. They examine the community protests as a form of public participation in environmental decision making. Their research shows that environmental justice was sacrificed for political and economic gain. When environmental justice movements do emerge within

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<sup>9</sup> Justice movements with an environmental focus within Australia use an eco-justice lexicon, for example the Edmund Rice Centre has an eco-justice project for fair food trade.

Australia, Arcioni and Mitchell argue that they will, as in the US, provide a powerful means to achieving environmental equity.

Interestingly, Arcioni and Mitchell (2005) do not reference Mark Hillman's environmental justice research on river management. Hillman's (2004) paper on stream rehabilitation and recognition of Indigenous knowledges provides good grounds for building an Australian environmental justice discipline. Hillman (2004) discusses the nominal shift from top-down, centralist management of river systems with an engineering focus, to decentralised, bottom-up participatory approaches in water governance. He argues that while the rhetoric aligns with the latter, actual practice still reflects the former; Indigenous voices are rarely heard and ecological needs are often sidelined. Therefore, a new approach is warranted – one that takes ecological justice as its core and provides space for multiple perspectives. Later, Hillman (2006, in the aforementioned edition of *Geoforum*) looks again at catchment management and environmental justice. He raises important arguments about the need to have close analysis of the geographic and historic contexts of particular catchments. Appropriate participation of individuals beyond the often narrowly defined stakeholder base can occur via this deeper understanding of local specificities. Hence, the 'community of justice' broadens with thorough situated analysis. Also, ecology requires strong advocacy within systems that are anthropocentrically focused. Situated justice analysis says that justice to the environment is as vital as just environmental outcomes.

Both Hillman and Schlosberg draw on Nicholas Low and Brendan Gleeson's (1998) work to show how justice to the environment must be included in any efforts to



improve equity and sustainability. Environmental justice is, through this inclusion, something much more than better outcomes for marginalised groups. Low and Gleeson, according to Schlosberg, state two clear tenets as the basis for their philosophical discussion:

“Every natural entity is entitled to enjoy the fullness of its own form of life’ and ‘all life forms are mutually dependent and dependent on non-life forms’.” (Low and Gleeson quoted in Schlosberg, 2004:531)

These principles aim to bring ecology strongly into the environmental justice fold. Throughout their analysis, they state distributive justice as the only locus of power concerning their work. Schlosberg (2004) takes umbrage with this, and, while Hillman (2004, 2006) does not explicitly state so, by his expansive understanding of justice, possibly would share in criticizing their unitary notion of justice. In fact, Schlosberg (2004:531) even suggests that these two principles ‘are really about recognising and respecting (1) the potential of nature and (2) the dependence of humans on the realisation of this potential in nature.’ He sees these as two distinct elements of an environmental justice framework. Further insight into what their concept of justice means appears in the following quote.

‘The struggle for justice as it is shaped by the politics of the environment, then, has two relational aspects: the justice of the distribution of environments among peoples, and the justice of the relationship between humans and the rest of the natural world. We term these aspects of justice: *environmental* justice and *ecological* justice. They are really two aspects of the same relationship’ (Low and Gleeson, 1998:2).

The two aspects, environmental justice and ecological justice, are a part of situated justice. The first – environmental justice – as already discussed refers to community groups protesting against pollution while the second looks at what overly anthropocentric viewpoints can do to environmental sustainability. Low and Gleeson (1998:3) state that situated justice provides a better way to talk about how environmental problems exist in ‘specific places and local contexts’. In fact, political ecology operationalises this situated justice approach. With Low and Gleeson’s work, the connections between environmental justice and political ecology become explicit. However, I agree with Schlosberg’s critique that through trying to limit justice to distributional understandings, there is reduced power to analyse different contexts and participatory processes. Normative thinking can dominate analysis that restricts itself to distributional questions. Also, analysis focuses on outcomes rather than processes when distributional justice becomes the sole focus. This sort of endpoint thinking has plagued efforts to include multiple voices in development trajectories. For this reason, I prefer Schlosberg’s environmental justice theorising than Low and Gleeson’s.

Schlosberg’s astute observations relating to nuanced justice analysis provides a sound structure to guide this thesis. This thesis continues the adaptation of environmental justice theory into the Australian context. By examining the Ord catchment, I apply Hillman’s approach and extend Arcioni and Mitchell’s public participation analysis. Additionally, I introduce Schlosberg’s later work to an Australian rural case, especially his co-option of capability theory. While governments and community groups do not tend to explicitly use the environmental justice lexicon, this analysis shows that implicit adoption of equity frameworks has occurred in the Ord.

## **Sustainable development and environmental justice**

Like sustainable development theory and practice, the environmental justice movement accentuates the importance of participation in the political processes that create and manage environmental policy. Participatory processes in consultations and activist practices, feedback mechanisms, and public review processes are crucial to the environmental justice movement. Sustainable development praxis shares this emphasis and sustainable development theorists and environmental justice do share some common ground. Agyeman (in 2004 with Evans; and 2005) underlines this correlation in his discussions of the narrowing gap between the two. The converging of these notions is mirrored in his advocating of ‘just sustainability’ where the social equity principle of sustainable development extends to include the fair sharing of environmental costs and benefits (Agyeman, 2005).

As discussed above, Schlosberg’s (2004) inclusion of difference in the theoretical approach to environmental justice, overcomes the narrower focus on ‘fairness’ of distribution associated with some other notions of justice. The idea is not to go ‘beyond’ liberal notions of justice but to adopt a ‘trivalent’ conception of justice – Schlosberg (2004) states that ‘justice demands a focus on recognition, distribution, and participation. They are three interlinking, overlapping circles of concern.’ (Schlosberg, 2004:521). This integration is where Schlosberg (2004) draws inspiration for the theoretical expansion of the notion of ‘justice’<sup>10</sup>. In later work,

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<sup>10</sup> Indigenous movements often identify the inseparability of these notions as the commonality of their experiences. However, it is important to avoid essentialising the ‘traditional’ voice of Indigenous experience (Povinelli, 1999).

Schlosberg (2007) adds capabilities theory to the suite of ways justice is understood in practice within the environmental justice movement. Capabilities theory reframes environmental justice to incorporate participation, recognition, distribution and capabilities. It asks whether people are able to continue their lifeways within their contexts or if these are compromised by environmental destruction or change. It thus examines how power works to enable or constrict living in place.

A fundamental building block in environmental justice practice is recognition of the multiplicity of power. In the case of environmental justice, Schlosberg (2004) argues that it cannot be uniform but it can be unified. This is because it is defined by the range of processes and resistances that occur in local spaces that share global connections. Environmental justice practice informs Schlosberg's theorising in 'Defining Environmental Justice' (2007), where he states that plurality actually shapes environmental justice.

### **Water justice: a global movement**

Water dilemmas exist globally. Strang (2004) illustrates how meanings around water are highly contested, more so even than land; 'There are debates about who should own it, manage it, have access to it, profit from it, control it or regulate it.' (Strang, 2008:40). A global movement working to achieve water justice continues to grow in response to the threats to free and safe water provision for all.

There are many problems associated with uniformity in movements with global connectivity, and the globally networked water justice movement provides a good

example of the dangers around rendering difference invisible in an activist agenda. Evidence of this focus on uniformity is found in material produced by organisations such as Friends of the Earth International (FOEI) who are participants in the water justice movement. In one publication, FOEI stated that the ‘world’s poorest people are desperately in need of water and sanitation services, but experience has shown that they are just further marginalised when their countries follow the corporate mode of privatisation.’ (Friends of the Earth International, 2003: 4). While it is true that the world’s poorest people are in need of water and sanitation services in many circumstances, the too-easy dismissal of private participation in water supply and sanitation is inaccurate and problematic. There are several instances of private vendors providing water in urban contexts where public utilities do not operate and have provided this service for decades (Bakker, 2003; Budds and McGranahan, 2003). This means that people are already experiencing reduced access to supply and are being innovative in the remedying of this lack. There are complex processes, such as what Bakker (2003) calls ‘archipelagoes of supply’, in place to overcome these inadequacies and these may not take the form of the public networked water supply so familiar in urban developed environs. A summary of these dynamics, found in Allen et al (2006) follows.

‘The options available to cover the deficit in basic services rarely rely exclusively on the extension of formal infrastructural networks but on more decentralised, more flexible forms of service provision. Failure by the public and private sectors to support such forms of water and sanitation provision often means that peri-urban dwellers, in particular the poor, are left to their own devices in accessing these essential services. As their needs and practices often remain “invisible” to the public sector, policy changes aimed at

improving the efficiency of formal water and sanitation provision frequently do little to ensure better access by the peri-urban poor, and often even represent an obstacle... An approach to water and sanitation services that strengthens collective action can have multiple benefits. For one thing it can minimise the burden on women and children by decreasing time spent on collecting water. At the same time, it has the potential to improve livelihoods of the peri-urban poor, as many of them greatly depend on water for productive uses. Moreover, the transition from informal vendors to purchasing water from community-managed systems can lower considerably the money spent on water.' (Allen, Davila and Hofmann, 2006:349)

It is necessary to acknowledge the variety of practices people have available for securing supply in order to understand the potential impact of transformations. This would help the water justice movement to move away from a polarised fight against international financial institutions (IFIs) and multinational corporations (MNCs), and instead, forge a situated politics of water access, control and coordination.

Just as one side of the private versus public debate discursively obfuscates the material reality of water supply and sanitation, so too does the other. IFIs and MNCs simplify the argument in their portrayal of the majority of public provision of water as being generally inefficient and ineffective (for example Garn, Isham and Kahkonen, 2002; World Bank, 2005). The common line is that public sector providers have, in most cases, been inefficient in providing access to reliable water supply and sanitation. On one level, it is clear that the debate is so heated because the stakes are so high. Water is a universal need that everyone needs, irrespective of their

capacity to pay, and this is where the water justice movement seeks to intervene. However, water cultures that have different histories to developed nations' water management trajectories can fall foul of the one-size-fits-all approach that so often comes with private sector participation. This is also where water cultures that diverge from the mainstream come into conflict.

The water justice movement has awareness of, and use, the clash of water cultures to ground their position. Paradigm conflicts over water management practices have grown into fully fledged wars according to some, including Shiva (2002), Barlow and Clarke (2002) and Roy (1999). In her polemical text 'Water Wars: Privatization, Pollution and Profit', Shiva (2002) turns her activist gaze to the contest over water:

'Paradigm wars over water are taking place in every society, East and West, North and South. In this sense, water wars are global wars, with diverse cultures and ecosystems, sharing the universal ethic of water as an ecological necessity, pitted against a corporate culture of privatization, greed, and enclosures of the water commons.' (Shiva, 2002: x)

Certainly, there are instances of 'water wars' around the world, including the Cochabamba dispute in 2000. After privatization, the water provider in Bolivia's third largest city was set to increase prices two to three times the prevailing levels. Indigenous peoples fought on the streets to prevent this occurrence, with one death eventuating (Aurralde, 2008). However, while there are examples of violent contests over water, Shiva's universalising of the conflict highlights what is concerning about the water justice movement in its current shape. The pitting of big corporations

against diverse cultures and ecosystems misrepresents what is a complex situation in each locality. Each context often holds a mix of water provision regimes (Bakker, 2003) and this needs acknowledgement rather than reduction to a case of corporate cultures preying on victim communities. At the other extreme, there are some arguing that water is actually a catalyst for cooperation that brings together nations regionally to work towards equitable distribution and use (Asmal, 2001). Asmal (2001) suggests that no group has gone to war strictly over water and predicts that they never will. Regardless of the veracity of his claims, as one time President of the World Commission on Dams, his position carries some weight.

Indeed, the World Commission on Dams was instrumental in bringing to broader attention the challenges around reconfiguring rivers with large dams. It was created in 1998 and made its final report in 2000 (World Commission on Dams, 2000). The WCD recommended that decision making processes on dam construction acknowledge the rights of all stakeholders – including managing any associated risks with the river engineering. Following this landmark investigation and publication, Patrick McCully (2001) presented a powerful account of the myriad impacts from large dams, broaching the social to the ecological. He showed how, while dams are frequently potent symbols of patriotic pride and anthropocentric nature management, their vast impacts have been largely unplanned for or inadequately addressed. These insightful texts reframed the dam debate to a significant extent, not least by putting forward an integrated framework for river infrastructure planning. The costs and benefits of dam construction were also well captured in these two texts.



To a certain extent also, WCD (2000) and McCully (2001) flagged a way out of the aforementioned impasse in the water justice movement: focus research to explore the local specificities of water supply and sanitation regimes. As Dubash (2004) argues in his political ecology of groundwater markets in Western India, it is essential to move away from arguing over the intrinsic superiority of public versus private sector participation in water supply and sanitation. He suggests that political ecologies of water management, that by necessity are located in specific contexts, reveal more about the impact of different modes of operation, be they private, public or a mix of both. It is the ideological predispositions towards either mode that clouds appropriate evaluation of practices. Both Dubash (2004) and Bakker (2003) argue that repositioning the dilemma of water governance in material realities can serve to counter polemical discourses. However, Dubash (2004) does grant that 'the tangible sense, validated by experience ... (of) unchecked expansion of the market interest in the water arena does threaten the public interest and spur a counter-movement aimed at restricting market excess.' (Dubash, 2004:221). Rather than perpetuating a polarised debate, this serves to place in context the dilemmas around achieving water justice where it counts most, in local spaces.

This thesis emphasises the importance of a context-specific analysis to combat misleading generalisations, while resisting tendencies towards environmental determinism. When diagnosing likely outcomes of water scarcity, environmental determinism projects a unilinear path from water shortage, anxiety, conflict and then to violence (Allan, 2005). However, 'it is dangerous to predict hydro-political outcomes on the basis of a defined area and its environmental endowment – on for example, a river basin or a nation, or on the assumption that the amelioration of water scarcity depends on capturing new water resources.' (Allan, 2005:197). This is

relevant when looking at the growing tendency of urban contexts turning to rural sources of water to bolster their supplies. From cities first competing with peri-urban areas, and now rural users, the link between rural and urban users is strengthening (Young, 2007:84). While a particular environment may have constraints relating to water access, in many instances inter-basin transfers are possible if enough funds are available. Rural-urban differentiation over water is discussed by Finger and Allouche (2002) pertaining to the state's changing role in water management. They describe how water privatisation in urban areas is not a separate issue to those things happening in rural areas. Concentration of privatisation in urban centres may not spill over into rural areas. In certain contexts, 'rural areas are left to their own fate and not many options are proposed, except for community management or NGOs' (Finger and Allouche, 2002:179). The latter is more common for rural developing contexts than wealthier contexts.

The global debate on water justice is a subset of the environmental justice movement: this chapter presents recent theoretical developments in both and resituates the frames of the debate. In so doing, I have emphasised avenues for connections between political ecology and environmental justice. The third theoretical realm used to inform this research is Masseyian space. Massey's reiteration that understanding space as never finished and is intrinsically open, reinforces the links between political ecology and environmental justice. All three theoretical modes share this centering of multiplicity and diversity.

## **2.4 Masseyian space – postcolonial futures?**

The third constellation of concepts that inform this thesis concerns the multiplicity of space. A geographical analysis is, by definition, spatially constituted. Here, the

theory discussion looks at how Massey answers the space question before looking at postcolonial geography generally and then postcolonial geography within Australia. The question of space is multifaceted and in flux. It relates to dimensions of scale; place boundaries, imagined and otherwise, and; lifeways within places and related spatial identities. This thesis adopts an understanding of space as a product of interrelations (Massey, 2005:10). Massey's earlier tome 'A Global Sense of Place' (1994) challenges hyper-aspatialised calls made by some postmodern philosophers that time has destroyed space. She argues that exploring a sense of place allows understandings of difference and reasserts the importance of location:

'It is a sense of place, an understanding of "its character", which can only be constructed by linking that place to places beyond. A progressive sense of place would recognise that, without being threatened by it. What we need, it seems to me, is a global sense of the local, a global sense of place.' (Massey, 1994:156)

This explaining of how a place develops, of how the connections to elsewhere always involve recognition of other ways of being and other scales, allows difference. It is Massey's (2005) manifesto '*for space*' that most recently captured the essence of this visioning. Here, she elegantly puts forth several propositions that combine to call for a reinvigorating of the spatial. The propositions that are directly relevant to this work include: space as a product of interrelations; 'space as the sphere of possibility of the existence of multiplicity in the sense of contemporaneous plurality' (Massey, 2005:9), and; finally, 'space as always under construction' (Massey, 2005:9). So space is never finished, it is always being made. This means that multiplicity is possible, for

different ways of being can coexist in *open* space. This speaks to how partial attempts to resolve local issues of land and water justice inevitably construct a 'space of loose ends and missing links' (Massey, 2005:12) which is dialogically related to other scaled spaces, including state, national, and international levels.

As such, an understanding of the social as made of heterogeneous coevalness is possible. An unfinished sense of space allows this. Coevalness refers to the contemporaneous coexistence of different lifeways. For example, Indigenous traditions are not historical artifacts if they are represented and performed by people today. The very essence of Indigenous philosophy, where culture is brought from the past into the present and continued into the future, speaks to this. An Indigenous philosophical ecology, as examined by Rose (2005), shows the multiple recursive connections that are primarily activated through caring for country. In denials of coevality, colonising peoples can relegate Indigenous lifeways to history. Fabian (1983:31) explains these denials as the 'tendency to place the referent(s) of anthropology in a Time other than the present of the producer of anthropological discourse'. The producer may be a writer, policy maker, environmental consultant or researcher, but the outcome is the same. If indigenous traditions are temporally distanced, then their relevance to the present is diminished.

### **Postcolonial geography**

A postcolonial geographical approach avoids denials of coevalness and hence reinforces Masseyian epistemologies. Most postcolonial geography adopts a cultural and/or historical approach (Blunt and McEwan, 2002) and the 'post' in 'postcolonialism' refers to temporal aftermath and critical aftermath – cultures, critiques, discourses that lie beyond colonialism. Before I look at postcolonial

geography, I introduce postcolonial studies. The watershed work by Said (1978), which examines the discourse of the Orient, forms the logical starting point in any discussion of postcolonial studies. This seminal text destabilises the binary oppositions of the Orient vis-à-vis the Occident and argues for a complete abandonment of discursive Orientalism. Following Said (1978), Spivak (1988) asks whether the 'subaltern' (subordinate, lesser person) can speak. Her text critiques the tendency of dominant discourses and institutions to marginalise subaltern voices. In the case of postcolonial contexts, this is the colonised peoples. Taking up this mantle and applying a geographic gaze, Escobar (2001:139) 'proposes that place-based struggles might be seen as multi-scale, network-oriented subaltern strategies of localization.' His study of the social movement of black communities of the Pacific rainforest region of Colombia sheds light on how multiplicity can co-exist with localization strategies. In a similar way to Escobar, Kapoor (2004) brings Spivak's literary critic voice to the question of development and suggests that practitioners in the field of development struggle with like questions – 'do our depictions and actions marginalise or silence these groups and mask our own complicities?' (Kapoor, 2004:628). Ethical engagement and hyper-self-reflexivity is the only way forward in trying to work collaboratively in research 'entanglements', as difficult as she admits this to be in the demanding context of being 'in the field'. These theoretical dialogues inform my methodology, as indicated in Chapter One, and they show how, for political ecology practice, ethical engagement must coincide with respect of difference.

Postcolonial work in geography connects particular colonial projects to broader level trends, while at the same time specifying the conditions of a certain space. Such practice Lester (2002) describes in his analysis of the construction of colonial discourse, for instance when he states that 'we can conceive of colonial and

postcolonial places and practices being simultaneously and mutually constructed through extensive, if uneven, transnational circuits of exchange.’ (Lester, 2002:44). In search of a definition of a postcolonial approach relevant to geography, Blunt and McEwan quote Jacobs (1996:25) who suggests that ‘Postcolonialism may be better conceptualised as an historically dispersed set of formations which negotiate the ideological, social and material structures of power established under colonialism’. This fluid definition shows up a weakness in postcolonial theory, oft criticized for its elusiveness. A spatial dimension could pin it down more comprehensively. Blunt and McEwan (2002:2) add that it is a geographically dispersed set of formations as well – bringing the concern with the spatial in line with the temporal.

### **Postcolonial geography in Australia**

The Australian literature on postcolonial geography addresses the issues of Indigenous rights within a settling state and the extent to which these rights are acknowledged. For instance, Gooder and Jacobs (2002:201) analyse the ‘struggle by Indigenous and non-Indigenous Australians to restructure the emotional infrastructure bequeathed by colonialism’. They look at the repercussions of the ‘*Bringing Them Home*’ report (HREOC, 1997) and the qualified apology offered by Prime Minister John Howard and question whether the flurry of apologies in their various guises constitute a forgetting rather than a remembering of things that should not disappear. Other postcolonial geography looks at land and resources contestation in Australia.

The cross cultural politics played out in the Ord catchment are a key element of the material and discursive domain that comprises this case study. The neo-colonialist concerns raised by Howitt and Suchet-Pearson (2006) include discussion of how within the:

‘Indigenous Australian experience...discourses and practices of both development and conservation reflect highly problematic assumptions about relationships between people, and between people and their surroundings, which are rooted in Eurocentric ontologies, and that failure to challenge these assumptions risks reimposing colonial power relations on groups who make different sense of the world.’ (Howitt and Suchet-Pearson, 2006:323).

I highlight the identified risk of reimposing colonial relations that comes with interventions – either of a development or conservation frame. Howitt and Suchet-Pearson’s insight serves as a salutary warning for researchers working with postcolonial contexts. At the same time, this risk also has another side where Indigenous peoples take opportunities to assert their self-determining identity.

The danger identified by Howitt and Suchet-Pearson (2006) lies in imposing discourses of no relevance to those subject to them, and effectively setting communities up to fail. They challenge normative frameworks that uncritically apply concepts such as ‘sustainable development’ and ‘natural resource management’ to Indigenous places and thereby perpetuate the colonising process. This thesis contributes to the work that is involved in ‘recognising and responding respectfully to those elements of cultural landscapes that Eurocentric management discourses

routinely deny exist' (Howitt and Suchet-Pearson, 2006: 333). Deborah Bird Rose's (2004) work on 'Wild Country' offers another way to look at a postcolonial Australia that addresses the re-imposition of colonial relations dilemma. The violence that accompanied colonisation lingers within settled nations that do not build an alternative framework. She advocates an ethics based around positive connections; for example, the pastoral industry is identified as a place where engagements are dynamic and sometimes positive.

Postcolonial geographies dovetail well with Massey's (2005) re-conceptualisation of space, such as in contexts where development projects are newly proposed or recently underway. Here, spaces are being remade through social reconfiguration of physical elements. This is because they come from a position where strategic essentialism (Kapoor, 2004) refers to a strategy that nationalities, ethnic groups or minority groups can use to present themselves. While strong differences may exist between members of these groups, and internally continuous debates may investigate various possible outcomes, it is sometimes advantageous for minority groups to temporarily 'essentialise' themselves. In so doing, a strategically useful approach can bring forward a group identity in a simplified way to achieve certain goals. These goals operate within a space being remade in the same way that Massey (2005) talks about space as never finished.

In another way, postcolonial geographers are interested in looking at the way research actually happens and, like political ecologists and critical anthropologists, seek collaborative approaches that move away from reiteration of colonising tendencies (Raghuram and Madge, 2006). This is something Castree (2004)



overlooks in his strong critique of the shibboleths of geography – a wide-ranging reading of Massey, Harvey and Escobar. Castree (2004) argues that the relational geography approach does not sit well with the global Indigenous rights movement. He interprets the Indigenous rights movement as defining itself in opposition to mainstream institutions and as explicitly against them. Care is needed here to avoid making motherhood statements about the modus operandi of a very diverse movement. This section has canvassed the postcolonial geography approach and shown how readings of culture are intrinsic to this sphere.

## **2.5 Conclusion**

By merging the three theoretical fields of environmental justice, political ecology and Masseyian space, this thesis delivers a novel contribution to academic pursuit. Each offers a vital contribution to the theory informing the research; together, they form an apposite way to read a human geography landscape. Chapters Five, Six and Seven apply this theory to the information gathered during fieldwork. The next chapter introduces the broad issue of Indigenous water rights, including cultural flows and the human right to water (referring often to water supply and sanitation conditions). It begins to fulfill one of the purposes of this thesis – the interweaving of the three bodies of theory – to explain Indigenous water matters.

The diagram shown in Figure Three demonstrates common antecedents for the theoretical elements of the thesis. Poststructural analysis is a key commonality. However, this alone is not sufficient. The grounded nature of political ecology and

the strong geographic base that influences both Massey and environmental justice forms another linkage. The power in combining these three theoretical elements comes from opening up, and drawing connections between, water matters that are too often left isolated.

The holism that is enabled by this integrative theory also assists in analysing Indigenous water matters – including water philosophies. For example, the latter frequently sees water allocations, involvement in water decision making, and water supply and sanitation, not as separate responsibilities of various private and public entities, but as related concerns.

## Chapter Three: Indigenous Water Matters

### 3.1 Introduction

This chapter applies the conceptual thoughts of the previous chapter to the specific question of Indigenous water matters. The key notion at the heart of this endeavour is the 'cultural flow'. A cultural flow constitutes recognition of the Indigenous water values for a river, and, depending on the river type, it may be an absence or presence of water; either way, it aims to include Indigenous priorities in water management. This chapter also details how a human right to water connects to catchment management. Through incorporating a cultural flow within the Ord, accommodation of Indigenous values could happen, allowing space for the recent changes in Indigenous land rights to flow into the water realm.

Changing social values in northern catchments are investigated by Jackson, Stoeckl, Straton and Stanley (2008: 287). They state that:

'For some values, such as those associated with cultural significance, it is not yet clear exactly how to incorporate them into water resource allocation decisions. If price-based evaluations are to be used it may be relatively straightforward to illustrate market values through economic valuation, but the translation of non-market values into commensurable units will be more difficult.'

Partly answering this challenge, a cultural flow, often analogous to environmental flows, could provide a feasible solution to the challenging question of how to incorporate environmentally just outcomes in the Ord. To test this possibility, I start by discussing environmental flows and the possibility of opening management to joint arrangements. Then, I examine local instances of multiple water values recognition,

including Indigenous peoples'. These cases show that recognition of Indigenous water values within the Ord is not only possible but, to a limited extent, has happened. However, these measures of inclusion are piecemeal. The case studies from national and international contexts show how Indigenous water rights are being acknowledged elsewhere. The examples indicate the possibilities from increasing Indigenous involvement in natural resource management. Cases from New Zealand and Canada show how compensation for changes to catchments is possible. Overall, in this chapter I demonstrate that recognition of Indigenous water values, such as through cultural flows, is possible but context dependent; so too is compensation measures for loss of such a right.

### **3.2 Environmental flows and incorporating Indigenous water values**

Water politics continue to grow in complexity. From rural to urban contexts, from wealthy to impoverished situations, new players are rising to claim a role in water governance. Simultaneously, stakes are rising in determining how water is used as perceptions of scarcity, regardless of the material reality, become common. Also, uncertainty increases with climate change looming as a more immediate risk due to its significant impacts on water cycles. Predictions for northern Australia water distribution patterns, as a result of climate change, include: a more variable pattern; greater rainfall quantities, and; more severe cyclonic activity (Commonwealth of Australia, 2006a:13). This section takes up the key concerns raised in water politics discourse as relevant to the Ord. To begin with, I consider environmental flows, water allocations and associated processes determining environmental values with regards to rivers, such as collaborative management practices.

The concept of allocating water in rivers to provide for environmental flows is relatively novel, especially in natural resource management within western water cultures. I use the term 'western water culture' to differentiate between Indigenous water cultures and introduced water cultures accompanying colonisation. Western water cultures are far from uniform: in his depiction of the environmental movement in Australia, Lines (2006) correctly observes how 'the West has never been a single, hegemonic society at all, but a debating ground; not a monolith but a fertile, confused corroboree of contending voices.' (Lines, 2006: 17). While this diversity may be true, what is common to the colonising peoples of Australia was reliance upon mechanistic modes of production for extracting value from natural resources. Technical interventions facilitated control of rivers. In contrast, the concern for long term environmental sustainability is new within mainstream governance structures. This concern turns around a history of highly extractive and exploitative management praxis.

The rise of a conservation agenda in mainstream Australia stems from protecting valuable rivers, such as the Franklin in Tasmania (Lines, 2006). 'Environmental flows', as a specific notion and conservation strategy, was purportedly introduced by the Australian Conservation Foundation in 1996 when launching a major campaign to reverse the decline of Australia's rivers (Australian Conservation Foundation, 1996). In academic contexts environmental flows were discussed before this time, such as at the Centre for Water Policy Research's 'Water Allocation for the Environment' conference (Pigram and Hooper, 1991) that brought forth speakers on topics ranging from ecological water requirements to policy initiatives like catchment management councils.

More recent national water reform processes, driven by the Council of Australian Governments (CoAG), include environmental flows as an integral component (Smith, 1998). In his landmark text, Smith (1998) indicates how from a scientific viewpoint, there is a range of procedures to work out appropriate environmental flows. The complexities are due to adapting strategies to rivers that have varying levels of regulation. He compares the Murray-Darling, a system that is at least fully allocated, to Queensland catchments that have consumptive uses as only a small fraction of the total use. In the latter instances the central tension lies with decisions on environmental water requirements prior to the allocations for further developments. The opportunity exists to intervene for conservation purposes rather than introduce damaging flow regimes in northern catchments, mainly through environmental flow knowledge, and institutionalisation of this notion. I won't go further into the technical challenges around working out appropriate environmental flows here, but Harris (2007) provides for a discussion of decision support tools and the specific challenges in Australia where equilibrium river systems do not exist.

Prior to the language of environmental flows emerging in national water politics, ideas of full consumptive use predominated. The catch phrase 'not a single drop of fresh water should reach the sea' was influential in directing river management practices (Thoyer, 2006:123). Evidence of this is seen in the current crisis in the Murray Darling Basin (Weir, 2007). Much has changed in policy but the impacts of historic decisions persist. Similarly to Smith (1998) above, Thoyer (2006) presents a comparison of catchments to elucidate some general principles about water politics today. The Murray Darling in Australia, the Central Valley in California, and the Ardour River in France are chosen as examples where re-allocations of water rights are or have been negotiated. She argues that 'governments tend to avoid conflicts

and seek to privilege voluntary agreements even when they can legally resort to more stringent solutions' (Thoyer, 2006:124). The legacy of full-use resource regimes is found in difficulties around building more sustainable solutions.

In the Ord, the balancing of ecological, social, cultural and 'consumptive' water requirements is a government responsibility. This governance role is complex as resolving tensions between current and potential future users influences ongoing planning processes. In this context, environmental flows are presently defined as that amount of water required to maintain ecological characteristics created post-dam creation. According to the community driven Ord Land and Water Management Plan (2000), the fit between this government decision and community values relating to the river is almost perfect. On closer inspection, however, the community position they reference was derived from a process that did not draw on Indigenous people's expertise, or actually establish their support (KLC, 2004). This means that the government decision is only partially inclusive. Further, Storey and Trayler (2006) seem to contend that Indigenous values are best and only represented in cultural values. I see this as an incomplete assessment of the myriad water values held by Miriuwung Gajerrong peoples. Despite this, notions of community inclusion and representation emerge quickly here; water management is a social phenomenon.

Evidently, Indigenous water values are expressed more comprehensively in joint management arrangements that aim to allow equal participation in working out conservation strategies on country. Joint management is meant to give Indigenous people a voice in what happens on their traditional country and facilitate continuities in traditional lifeways. The risks around joint management, as identified by Natcher,

Davis and Hickey (2005) and Margerum and Whitall (2004) in papers focusing on North American contexts, need to also be raised in relation to the Ord catchment. The latter talk of how information sharing is challenging when varying levels of technical expertise exist in stakeholder groups (Margerum and Whitall, 2004). Communication –a key element of successful joint management – is impossible if parties are not talking a common language. Further dilemmas may occur when culturally diverse groups that share a colonial history engage in collaborative management (Natcher et al, 2005). Gaining trust is difficult when fundamentally different value systems meet. Similar concerns are raised by Carter and Hill (2007b), in their research on two cases of joint management in northern Australia affected by institutional racism:

‘Because formal governance structures emanate from within the state, many joint management structures perpetuate existing practices and processes and may intentionally abuse the power imbalance or exploit weaknesses in community cohesiveness. While formal structures will be needed for many agency interactions, the notions of ‘genuine’ representation and accountability need to become embedded within bureaucratic culture. Further, informal networks and structures are often overlooked or downplayed, but can be supported through less formalised mechanisms. Ultimately linking both formal and informal structures in a well-designed process will help progress cross-cultural environmental management in Australia.’ (Carter and Hill, 2007b:51)

More than good will is required to make joint management successful. A beginning step is to develop understandings of these cultural differences. From here, working



relationships can be built on engagement through, rather than subversion of, these multiple ways of being (Carter and Hill, 2007a; Natcher et al, 2005, and; O’Faircheallaigh and Corbett, 2005:636). Talking together is what joint management allows but more than a shared table is required. This reality is critical in making a joint approach for water matters work.

### **3.3 Cultural flow**

A cultural flow is one mechanism for formal mainstream recognition of Indigenous water values (Behrendt and Thompson, 2003; Craig, 2005). As discussed above, a cultural flow is an allocation of water that addresses Indigenous peoples’ traditional water cultures. In general terms, for northern Australia this may be an absence of water in dry months and large flooding flows in the wet<sup>11</sup>. This Chapter shows that, while cultural flows are not currently a part of water management in the Ord, other instances of shared water management do exist. This is happening at times through indirect routes, as shared values and interests between Indigenous and non-Indigenous people create ad hoc coalitions. This occurs via conservation strategies, compensation for landscape changes, and joint management arrangements. At present, other water values in the Ord, including both hydropower for mining and irrigation expansion, hold primacy. These priorities impede the inclusion of more flexible flow regimes. For instance, a cultural flow that includes little to no dry season flow would reduce hydropower production, and hence affect mine and town activities.

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<sup>11</sup> Of course, appropriate cultural flows, like environmental flows, need to take into account nuances in the system, including flood pulses and medium flood events.

A cultural flow is a new concept and is therefore far from fixed. It is also not a fix-all. The question of who would acknowledge such a water value must be addressed. For example, both public and private institutions can acknowledge Indigenous water values. Indeed, transformations within both these contexts may be instrumental in acknowledging Indigenous aspirations to water. One forum for this to occur is through agreement making over a range of things including land tenure, river re-regulations and improving access to resources, such as fishing rights. Such a forum existed within the native title negotiations for the Ord Final Agreement. The discussion herein this Chapter shows the challenges in negotiating cultural differences that support water values in the Ord.

These challenges, while strongly embedded in this context, share some similarities to situations where colonising relationships are changing in other places. The following observations from O'Regan, Palmer and Langton (2006) demonstrate these tensions. O'Regan is a Maori elder who was influential in processes around the Ngāi Tahu agreement; a negotiated land use agreement between Maori and the New Zealand government. The following quote from O'Regan highlights the dilemmas around negotiating complex agreements, from an Indigenous perspective.

'Working out how you're going to form and make these customary rights work in a contemporary society which is evolving and changing all the time is actually quite challenging and does require a certain amount of creative thinking, and going into full bore haka mode – just poking your tongue out at the other side – doesn't really work. What you want is a habitat in which you're going to be able to get your eels and where your young ones coming

up want to be taught how to fly fish and your old people actually don't mind as long as they get a free feed of salmon. It's very hard to get people to deal with these rights in some sort of longer term time line of thinking. They tend to think of the wedding [or the funeral] that's coming on the marae and providing for that...(2003)' (O'Regan, Palmer and Langton, 2006: 59)

Moving from oppositional stances towards collaborating on more sustainable projects is one feature of O'Regan's strategy. Applying this to river management in Australia, cultural flows are emerging as a facility to develop partnership in NRM approaches. A cultural flow is also then seen as a potential instrument in obtaining an inclusive system of river management (Behrendt, 2003; Craig, 2005). Further, on a national scale, potential for inclusion of Indigenous peoples' water values has been recognised in the National Water Initiative (Jackson, 2008), one of the first national agreements to incorporate formal recognition of Indigenous rights to water by government institutions. It is these connections between different contexts that build a political ecology of water in the Ord.

The debilitation of river systems in Australia has widespread impacts for Indigenous peoples. Weir (2007:44) states that the poor condition of rivers is akin to a second dispossession:

'The consequences of the over-extraction of water from the inland rivers are so serious that it is being experienced by the traditional Aboriginal land owners as a contemporary dispossession from their country. It is a second dispossession: the first occurred when European settlers did not recognise

their rights to land, and gave the traditional country to others to further their own purposes. Despite this, continuing public and informal access to the inland rivers has provided important opportunities for the traditional owners to enjoy those connections with country that have persisted during the experience of colonisation.'

Declining river health has critical impacts upon Indigenous traditional lifeways; dispossession can undermine the bedrock of traditional cultures. For example, Weir (2007) identifies the possibility of a rupture in the cycle of passing on Indigenous knowledge. However, at the same time, resilience needs not to be ignored. Connections to country persist through informal avenues and some public access. The tenacity of indigenous water values enables this continuing connection in spite of threats.

More generally, as Brierley, Hillman and Fryiers (2006) state, river health is symbolic and symptomatic of human health and the strength of human-environment relations. This supports the claim that declining rivers hold consequence for more than ecological health. Indeed, as Rose (2005) points out in her exploration of an Indigenous philosophical ecology, keeping country healthy helps people stay healthy too. Rose (2005) gives the example of burning country and how it has multiple benefits – for plants, animals and the humans initiating it. Country tells when and how to burn and only those responsible for certain country can aptly do so. In resituating the human within the ecological, Rose (2005) offers a useful insight into Indigenous philosophy more generally. Indigenous water values are touched upon here as well in her discussion of seasonality - environmental responses are cued by

signs. Water gives insight to country. Overall, Indigenous philosophical ecology can inform how water matters are understood more broadly.

The notion of water as key to country is explored by Diana Young (2006) when writing of the Anangu, western desert people. Her analysis presents the multiple values of water and its bodily, spiritual, survival and all-powerful elements, as this quote demonstrates.

'I have argued that in the classifications of water sources and in material practices, Anangu realise a compelling relationship between the surfaces of country and human bodies, which is contingent on water as a conduit of Ancestral power. Water is brought out from inside the land, and rain falls from the sky and goes in. Water encompasses every dimension. In the times of its presence on the surface of the land it offers, in its unstable glitter, an indication of its spiritual power. To immerse one's self in water renders one like country, reconnected in varying degrees with Ancestral power, whether in a newly flowing creek or simply as a toddler under a stand pipe. The skin of the body becomes fecund and health is "produced" anew.' (Young, 2006: 256)

### **Current indigenous water rights recognition**

The recognition of Indigenous water rights is relatively novel. The cultural significance of water in Indigenous communities<sup>12</sup> prompts recognition and validation of this difference in natural resource management practices. The Commonwealth

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<sup>12</sup> I use the term 'Indigenous communities' with some caution since these are not bounded and monocultural domains – porous spaces of intercultural interaction characterise many of what is commonly known as 'Indigenous communities' (Merlan, 2006).

Native Title Act 1993 refers to land and waters as integrated systems, and, in most cases, determinations recognise the rights to access and use water. For instance, native title includes:

‘The right to use and enjoy the land and waters of the determination area

The right to take water,

The right to fish,

The right to control use by others, and,

The right to protect places of significance, including sites under water.’

(Morgan et al, 2004:43).

Native title rights to water, as recognised by non-Indigenous law, are still being defined and will remain unclear for some time yet (Ross and Weir, 2007; Langton, 2002). However, it is clear that there is substantial scope for recognition of the water rights of Indigenous peoples in rural and remote communities via native title. Building on this, Morgan et al (2004) advocate a cultural flow for Indigenous nations as a priority in water allocation processes.

Indigenous water rights are acknowledged differently to land rights in native title matters. For example, Altman (2004) writes how water rights are only a customary use right under native title law, unlike land rights that can be exclusive freehold. Indigenous water use prior to European settlement receives infrequent examination, but it is often assumed to have been appropriately matched to environmental conditions. Rose (2004) depicts Indigenous population dynamics across Australia as matching water availability; tribal boundaries are larger in more arid regions and

smaller in the wetter coastal areas. In his seminal text on water resources and management in Australia, Smith (1998) observed that 'few modern writers on Australian water history comment upon pre-European Aboriginal use of water' (1998:139). The little that had been written referred to the ingenuity of fish traps and the spiritual importance of water. He reiterated this observation in an overview of Australian water resources management (Smith, 2003a) by finding that, at least in much official policy, water rights of Indigenous peoples had been ignored until that time. Further, acknowledgement of Indigenous water rights has not run concomitantly with land rights. This may be due in part to the relatively recent mushrooming of the water rights sphere. Also, water markets are recent inventions. Taking these facets together, it is easy to see how Indigenous water rights lag land rights in terms of recognition.

The political success of land rights and native title rights struggles has dominated attempts to gain widespread recognition of Indigenous rights. Native title decisions have included some recognition of water rights, although this rarely goes uncontested as I shall show.

Earlier work on Indigenous water rights highlights the need for more formal attention and study on this area, as well as broader recognition of Indigenous interests in water resource developments (for example Craig, 1991). This is not least because conflicts over water resource allocation and use have had serious implications for Australian Indigenous peoples. The water resource examples Craig (1991) analyses show little evidence of paradigm change in the way governments and bureaucracies negotiate cultural differences. One early suggested path to overcome this intractability would

be to build cross-cultural negotiation processes that draw on practices appropriate to Indigenous cultural realities (Craig, 1991). This reads like a precursor to joint management arrangements. Since then, amendments to native title legislative have acknowledged the different rights of Indigenous peoples in Australia, including those based on cultural continuities. The ramifications of these legal changes are still emerging, however, since Craig's (1991) call for better Indigenous water right recognition, little has tangibly changed. For example, the case that Craig made in 1991 is echoed in 2002 by Langton in writing on Indigenous water rights. Both argue that the distinct water cultures of Indigenous peoples are vulnerable to settlement practices that take over control and access to water. Langton (2002) also discusses the cultural traditions associated with Indigenous waterscapes and how they have been misappropriated by colonial practices. Both Craig (1991) and Langton (2002) posit that Indigenous peoples should be able to argue their rights claims in fairer contexts. Hence, while native title law has brought about some shifts in land management, substantive water rights seem to have eluded Indigenous peoples.

Negotiations are increasingly important in native title determinations, signaling a shift from litigious processes. The negotiation environment is crucial in ensuring equity. Context in building equitable cross-cultural negotiations is emphasised by Craig (1991) and others including Yu (1997) and O'Faircheallaigh (2004). It is insufficient to provide a commitment to facilitate negotiations without necessary funding and support to ensure a fair participatory process. Craig (1991) wrote prior to the development of native title legislation, but her argument is still relevant. In native title determinations now, the trend is towards negotiating agreements between parties (O'Faircheallaigh, 2004). These negotiations are only equitable, O'Faircheallaigh (2004) states, if parties are similarly situated in terms of resources during



negotiations. Achieving fair outcomes is then possible by giving full respect to cultural differences.

The subject of native title negotiations is as important as is the process. As indicated above, water rights are consistently sidelined in native title agreement making. The broad range of Indigenous rights that could be recognised is discussed by Morgan, Strelein and Weir (2004) in their discussion paper on Indigenous water rights in the Murray. Their paper is based on participatory research with Indigenous groups. It identifies the right to self-determination as one of the most important elements in recognising Indigenous rights. Concerns for self-determination shape the engagement between Indigenous peoples and the government. Morgan et al (2004) argue that self-determination should be the fundamental element in recognising the rights of Indigenous people and, as such, contextualise all negotiations, including over natural resource management:

‘Indigenous peoples in Australia have distinctive rights and a status based on prior and continuing occupation of land and waters, and authority and autonomy as distinct polities. Indigenous peoples’ contemporary identity is a window into and reflection of their past which shows strong threads of continuity and the survival of their distinct political, social, cultural and economic identity.’ (Morgan et al, 2004:28).

Recognising these distinctive rights is the cornerstone for appropriate engagement between Indigenous and non-Indigenous peoples. Understanding the different histories of Indigenous peoples in Australia is a necessary antecedent for this

acknowledgement. Such acknowledgement could be built around a self-determination principle (HREOC Aboriginal and Torres Strait Islander Commissioner, 2001). Internal governance with structures that respond to internal needs rather than reflexive to external demands is an element of the self-determination practice<sup>13</sup>.

Currently, the Indigenous affairs policy landscape in Australia is undergoing changes with the installation of the Rudd government. A national apology to the stolen generations took place in February 2008, and the Labor government has signed the United Nations Declaration on the Rights of Indigenous Peoples, discussed further in Chapter Five. At the same time, continuation of the Northern Territory intervention was confirmed in 2009, albeit in a slightly amended form. The intervention has been interpreted as 'coercive reconciliation' (Altman and Hinkson, 2007) with its agenda to 'stabilise, normalise, exit Aboriginal Australia' (from the book title). However, while the intervention occurred without extensive consultation in the midst of those affected by it, some saw it as an opportunity to deliver meaningful changes of a long term nature (Altman and Hinkson, 2007). It is clearly too early to determine what impact it will have.

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<sup>13</sup> Self-determination, as an objective within national Indigenous politics, slipped further from the spotlight with the former Howard Government's introduction of decentralised public-private partnership approaches, known as 'Shared Responsibility Agreements'. These agreements pursued by governments at State/Territory and Federal levels were portrayed as operating as 'practical reconciliation' (Dodson and Pearson, 2004; Collard, D'Antoine, Eggington, Henry, Martin and Mooney, 2005). The distinct water cultures that characterise one element of Indigenous resource management are far from embraced within a 'practical reconciliation' approach that some see as paternalistic (Dodson and Pearson, 2004). The instigation of the Northern Territory Intervention has similarly received critique (see Altman and Hinkson, 2007).

### 3.4 National context of Indigenous water values recognition

Recognition of Indigenous water values may come through unexpected and informal channels. Jackson et al (2005) talk about the alignment of recreational desires and Indigenous priorities:

‘In most catchments, and particularly in those subject to development pressure where catchment planning is most needed, there are also likely to be significant non-Aboriginal interests, such as recreational fishing and tourism. Thus, the intracultural interactions contribute to complex sociopolitical catchment relations, as do the contemporary interactions between Aboriginal and settler societies. Holcombe describes these interactions as the ‘shifting ground of Indigenous and non-Indigenous engagement as a result of the intercultural encounter’ (2004; p. 2; Martin 2003). (Jackson et al, 2005:109)

Here, Jackson et al are talking about the multiplicity of non-extractive river users and how their interests may coincide. This could be read as the creation of conditional coalitions, something discussed in more detail in Chapter Four. For instance, conservationists and Indigenous groups may share opposition dam construction on rivers.

This section has shown how Indigenous water values are not yet holistically recognised in multiple contexts by governing bodies. As recognition of difference is one of the ‘circles of concern’ in environmental justice practice (Schlosberg, 2004),

evidence of its lack provides some explanation for the elusiveness of water justice aspirations. This shall be discussed further below. Recognition of diversity is a cornerstone of environmentally just spaces.

As shown earlier in this chapter, native title operates as a useful space for acknowledging Indigenous peoples' rights. It has paved ways for shared planning.

'Native title has provided the vehicle through which Indigenous people have been able to engage in the planning process. Resolution of native title through negotiated agreements has also provided the opportunity to explore a range of outcomes that extend beyond the strict legal position which might be reached through litigation. However, few governments, as respondents to claims, have used native title negotiations as the vehicle through which the social and economic goals of the claimant group can be realised. It is argued that human rights principles can form a strong basis for such an approach.'

(McFarlane, 2004:2)

McFarlane's (2004) comments demonstrate key features of how native title works. The litigation approach limits progressive agreements that may expand its applicability. In contrast, negotiation offers a richer framework. In this thesis, the OFA, an instance of the latter, is discussed as a vehicle for realising many Miriwoong and Gajerrong peoples' social and economic goals. The negotiated agreement created what years of litigation could not. McFarlane (2004) goes on to review opportunities for Indigenous aspirations to water realisation through the National Water Initiative (NWI). Now signed by all states, the NWI identifies many issues where 'Indigenous interests are to be considered beyond that given to the general

public' (McFarlane, 2004:17). These range from water plans including Indigenous social and cultural objectives, to possible allocation of water to native title holders. This chapter now looks at the Fitzroy and the Murray Darling catchments, both useful instances for contextualising the Ord case.

### **The Fitzroy River, traditional owners and conservation groups**

Through comparing the Ord to the Fitzroy, I draw out commonalities and differences between these northern catchments. In doing so, I bring together important elements of Indigenous water rights recognition relevant to the Ord. The Fitzroy River is the other major river system in the Kimberley, flowing southwest of the Ord and meeting the sea near Derby through 85,000 square kilometres (Storey, Davies and Froend, 2001). It is largely unregulated except for a barrage that operates similarly to a small dam, and is 100 kilometres upstream from inter-tidal influence. The barrage was installed for the failed Camballin irrigation project of the 1960s (Yu, 2006). Remnant infrastructure lingers of the rice project that fell through: canals, piping, culverts, roads and more. Movements to reinitiate irrigation in this 90,000km<sup>2</sup> catchment re-emerged in the late 1990s and early 2000s. Amongst others, genetically modified cotton was then advocated as a viable crop (Environs Kimberley, 2006).

Partly in response to these possibilities, the Water and Rivers Commission of Western Australia commissioned studies into current Fitzroy cultural and ecological values (Toussaint et al, 2001; Storey, et al, 2001). The intertwining of cultural, economic and ecological Indigenous water values was recognised in these reports. For example, Storey (2006:48) recounts how 'It was observed that Aboriginal hunting seasons corresponded to the known lifecycle of the target species, which reveals a

strong association between Indigenous culture and the ecology of the river system (Storey et al. 2001, Toussaint et al. 2001)'. The hunting seasons are co-constituted by intermingling cultural and ecological Indigenous values. This resonates with Rose's (2005) work on Indigenous philosophical ecology; interactions are paramount and 'benefits ramify' through continual care for country. Further, the river landscape is 'imbued with cultural meanings that are continually being reaffirmed, interpreted and transformed by each generation' (Yu, 2006: 137). The reconfiguring of society-water relations is ongoing in the Fitzroy. Yu (2006) describes an example of this with desert people relocating, after the advent and intensification of the pastoral industry, to inhabit river country. Over time, relations with river people grew and now ties to 'new' country are recognised as a result of social integration through marriages. This information about the Fitzroy provides valuable comparative data that was largely absent in the Ord before construction of the dams. Similar patterns, such as the introduction of pastoral activity, occurred in both catchments. These two places share multiplicity and contestation.

Place based analysis identifies water values for the Fitzroy. In summing up this multiplicity, Toussaint (2008:57) states that

'attachments indigenous groups have with the river over time, result in the Fitzroy River being not only an important water-place, but also a site of meaningful engagement, including struggle over its usage. Sectors of indigenous and settler societies who live in the Kimberley care deeply about the river for many different socio-cultural, economic, emotional and political reasons: the river is part of their permanent or temporary homeland, some people have customary law affiliations with the river, others fish and swim in

the river for food and/or for fun, and some cherish the times when the annual flood replenishes wildlife.'

This long term attachment secures Indigenous peoples' connection with country. The Ord and Fitzroy can be seen as parallel catchments in the way people think about water management in the Kimberley. People often invoke lessons from one system as instructive for the other. For instance, along with the Ord catchment, in recent times the Fitzroy catchment has been considered by southerners for water supply supplementation (Office of Water Strategy, 2005). Comparisons between the two catchments were made to assess the affordability of various transport options. The cost of taking water from the Fitzroy, either groundwater or surface water, was calculated as more expensive than the Ord (Kimberley Expert Panel, 2006). During fieldwork for this research, common reference was made to how the Ord provides a good case study of what not to do in the Fitzroy and elsewhere in northern Australia (for example Miriwoong traditional owner, pers comm., and in the Kimberley Economic Roundtable report see Vernes, 2005). Elements of this 'lesson learning' are shown in this passage about changes in the Ord.

'Comparisons with the regulation of the Ord River, and to a lesser extent the failed Camballin Project on the Fitzroy, provide clues to the possible consequence to ecological and cultural values of damming reaches of the Fitzroy River. Impoundment of the Ord River and the constant releases for irrigation and hydropower generation has resulted in simplification and narrowing of downstream riparian zones, loss of inundation of the floodplain, reduced variability in river-flows, loss of migratory species from upstream from

the dams, isolation (physical and genetic) of many fish and crustaceans above the dams, modification of sediment delivery to the lower reaches and build-up of sediment in the estuary. Loss of these ecological values has concomitantly undermined cultural values dependent on the various plants, animals and processes (Storey et al. 2001).’ (Storey, 2006: 48)

The extent to which traditional Indigenous ecological and cultural values are currently ‘lost’ is not fully known – it is true that they are significantly undermined by river changes. Certainly where the water flooded important sites to make Lake Argyle, continuing of some ceremonial practices became impossible (Shaw, 1986; Shaw, 1992). Barber and Rumley (2003) found some continuity in traditional Indigenous water values despite the physical changes to the river. For example, similar to many Indigenous creation stories that start with Rainbow Serpent dreaming (Rose, 2004), this narrative holds relevance today as a creation myth. Whatever the extent of loss or change, this example shows the connections between the Ord and Fitzroy catchments that are acknowledged and recreated consistently. Further evidence of this interweaving appears in the coalitions developing between Indigenous organisations and conservation groups in the Kimberley.

The Kimberley Appropriate Economies Roundtable at Fitzroy Crossing in 2005 brought together, *inter alia*, these narratives of water values. One reason for the meeting was to raise public awareness to the traditional owners’ custodial rights and responsibilities with relation to water in response to those proposals to ship water south to Perth from the Kimberley (Kimberley Expert Panel, 2006). This meeting confirmed principles including that the ‘Fitzroy River, ground waters, and



conservation areas are valuable natural resources requiring protection through an appropriate legal framework.’ (KLC, *Environs Kimberley*, ACF, 2005:18). (The Roundtable is further discussed in Chapter Six.) These instances reveal novel spaces where shared values in the intercultural domain are reshaping catchment management priorities, in part to incorporate Indigenous water values. It is important to note that not all Indigenous peoples’ interests coincide with conservationists, and vice versa (Toussaint, 2008). The disagreement over gas harvesting off the coast of the Kimberley illustrates this: some Indigenous people were for natural gas extraction facilitation for the economic benefits it would accrue, while a conservation effort under the slogan ‘Save the Kimberley’ voiced opposition (Carney, 2008). Clearly, it is erroneous to paint as harmonious Indigenous and conservation interests in every context. The Murray Lower Darling River Indigenous Nations involvement in catchment management is the next context examined, to situate these northern catchments within the national context.

### **Murray Darling catchment management and the Murray Lower Darling River Indigenous Nations**

The Murray Darling Basin is the most prominent basin within Australia because of its multiple values and vast size. In recent times, the dispute between environmental flows and irrigators’ needs has had a high profile, although this is not the only realm of contestation. State versus Federal Government control of this water body has also stirred debate (for example Roberts and Lewis, 2007). Throughout colonisation, the Indigenous nations of the Murray Darling Basin have called for recognition of their water values. This is not a new request – in 1860, Yorta Yorta people were asking for a share of the river’s resources (Fullerton, 2001). They placed a request with the Victorian Protection Board for a tax of ten pounds on each steamer passing up and down the Murray ‘to be expended on supplying food to the Yorta Yorta people in lieu

of fish which have been driven away.' (Fullerton, 2001:209). At the same time as different groups are asking for environmental flows to return to the Murray, Traditional Owners have sought to 'expand the decision-making processes of the Murray-Darling Basin Ministerial Council (Ministerial Council) to include recognition of the authority, knowledge and values of the Indigenous Nations in the management of their country' (Morgan, Strelein and Weir, 2006:135). This request for participation is not sacred site specific but on a larger scale; the recognition of their role as carers for country is expansive. This evokes Craig's (2005) analysis of environmental flows to acknowledge Indigenous water values.

'Ensuring that particularly significant springs or waterholes are protected and receive adequate water to keep them active may not necessarily be a factor on allocating water to environmental flows. In determining amounts necessary for environmental flow, the scale is likely to be much larger, taking into account whole catchments or water basins, and in the process, smaller, but nonetheless significant points of water may be overlooked.' (Craig, 2005:14).

These comments indicate the importance of scale when examining Indigenous water rights. They also reflect the persisting calls by Indigenous peoples to have their water values incorporated through both formal recognition and actual practice. Expressions of ongoing cultural attachment are common values that are true, in general terms, for Indigenous peoples living with traditional ties to country worldwide.

Throughout Australia, Indigenous peoples see viable rivers as sustaining communities. In a piece on international law and water rights, Collings (2002) depicts

the connections between cultural attachment, community sustainability and the capacity to continue expression of those cultural traditions associated with water.

‘The ongoing cultural attachment of Aboriginal and Torres Strait Islander peoples to “water” is recognised as creating a right or entitlement to continue this affiliation, and the social, political and economic foundations that exist. The entitlement of Aboriginal and Torres Strait Islander peoples to practice their cultural traditions affiliated with “water” include other indivisible rights for the sustenance of the “community” as a whole.’ (Collings, 2002:65).

Cultural attachment is the *a priori* condition for building social, political and economic value around water values. The basis for cultural flows is similar to this conceptualisation. The Murray Darling is a substantially different system to the Ord in geography, climate, hydrology and sociology. However, experiences here are useful in investigating the avenues Indigenous peoples seek and obtain due acknowledgement of their interests in natural resource management. This is especially the case within the MDB as, even without strong native title recognition by the courts, substantive intercultural exchange has occurred. The opportunities this acknowledgement gives to improving water management practice are significant, especially in terms of policy benchmarking for Australia.

The issue of policy benchmarking is apparent in efforts to include once silent voices within water management. One such voice is that which meshes with integrated natural resource management approaches: the inclusive perspective of Indigenous peoples with regards to natural resources. For the Murray Darling system, the stakes are particularly high. Despite the stark environmental deterioration of the rivers comprising the catchment, substantial production value continues to emanate from

the basin, what many call Australia's food-basin. The one million square kilometre catchment contributes to 41% of the gross national value of agricultural production (Morgan, Strelein and Weir, 2006:136 quoting the Ministerial Council 2001). The conditions are such now, however, that new solutions are being sought while simultaneously the traditional owners of these deteriorating rivers ask for different ways forward.

'The severity of the problems along the rivers, in particular the Murray, has led to the questioning of water management practice... There is a growing awareness of the need for innovative responses to the water crisis, particularly those that can approach it in a more holistic sense. Thus, it is within the context of a severely degraded, economically prized water resource demanding new approaches to environmental management, that the traditional owners seek to make a space for their perspectives on water management. '(Morgan et al, 2006: 138-139)

The threats to economic sustainability are prompting novel and potentially reconciliatory movements. The challenges for the Murray Darling traditional owners include seeking participation as custodians and articulating their desire for meaningful changes in a crowded social landscape.

The governance structures relating to the MDB are complex, in part due to the whole-of-government approach dominating catchment management regimes. State government departments liaise with the Murray Darling Basin Commission, and community representation occurs via the Community Advisory Committee. The Community Advisory Committee gives advice directly to the Ministerial Council and is expected to communicate information back to communities. Full analysis of these

arrangements is found in Morgan et al (2006). The Community Advisory Committee has just two positions available for Indigenous people from the whole catchment, which significantly restricts Indigenous participation in these processes. Running in parallel to the state run institutions is the coalition of Indigenous nations entitled the Murray Lower Darling River Indigenous Nations (MLDRIN) alliance. Morgan et al describe the alliance's raison d'être as re-centering the custodial role of traditional owners within the Basin.

'One of the primary aims for the establishment of an alliance of Murray and Lower Darling Indigenous Nations...was to change fundamentally the way governments engage with the Indigenous Nations in relation to natural resource management. In particular, there was a desire to reinforce the role of traditional owners in this respect, by moving away from the notion of mere "consultation" with a homogenous "Indigenous community".' (Morgan et al, 2006: 140).

The emphasis here is on processes of understanding indigeneity. This suggests a need for learning on behalf of non-Indigenous peoples and, with this knowledge, action to deliver both recognition and distributive just outcomes.

The MLDRIN group's concerns echo in the Discussion Paper prepared for the Indigenous response to the Living Murray Initiative, a report examining the state of the Murray (Morgan, Strelein and Weir, 2004). The Discussion Paper focuses on the inter-connection between the contemporary Indigenous societies of the region and the catchment management practices, from the socio-economic to the ecological, of

the Murray Basin. Some key points of the positioning of Indigenous peoples from the Discussion Paper are:

‘Indigenous people are part of the social community of the Murray River, and seek to improve the health of the river for social outcomes, recreation, clean drinking water for towns and communities, and so on.

Indigenous people as residents and users of the Murray River are part of the economic community; the river has long maintained their traditional lifestyles across their country, as it has supported the economies of irrigators and farmers.

Indigenous people have a shared interest with the environmental community to restore the natural river environment; the degradation of the Murray River has restricted the ability of Indigenous people to manage their land and water resources. (emphasis in original).’ (quoted from Morgan et al, 2006:20)

These qualities are also true of Indigenous people in the Ord catchment. The interests they hold in the region are not just cultural but also economic, social and environmental as shown in the OFA.

The shape of the relationship between traditional owners and rivers is intrinsic to identity formation in the Murray Darling. The life giving flows of water within the Murray Darling basin have continually maintained the Indigenous nations depending upon them. The failing rivers coincide with failing health of the traditional owners; the axiom ‘healthy country, healthy people’ resonates in the MDB as it does in the Ord. Related to this, there are commonalities in the way traditional owners assert their society-water relations within a changing sphere of water politics. Correspondingly to dynamics in the Ord, natural resource management is only one item amongst ‘many

contested issues concerning the colonial relationship between Indigenous people and the state' (Morgan et al, 2006:141). But also like this northern catchment, NRM is of substantial import to Indigenous peoples because of affinities to specific components of country, including fauna and flora. These originate with dreamtime narratives. Morgan et al (2006) argue that for traditional owners from the MDB, 'involvement in natural resource management creates opportunities for Indigenous people to sustain and consolidate these connections, and to undertake responsibilities inherited from their ancestors, responsibilities which are also their children's inheritance.' (Morgan et al, 2006: 141)

Native title provides an avenue for substantive realignment of governance structures in northern Australia. In contrast, gaining victory in native title cases in southern Australia is extremely hard. In most instances of native title claims Australia wide, claims are vigorously contested, by both public and private parties. A sharp experience of native title failing to deliver on the promise of the Mabo 1992 decision is that of the Yorta Yorta native title claim. In this native title claim, lodged by the Yorta Yorta traditional owners of the central Murray River valley, the courts decided that 'traditional laws and customs had expired before the end of the nineteenth century and therefore so had native title, washed away by "the tide of history" (Davies, 2003:28)<sup>14</sup>. This unflinching view of tradition and history most likely contributed to

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<sup>14</sup> Davies (2003:28) goes on to say that 'The minority judgment in the Federal Court appeal argued for a more adaptive view of "tradition", examining the laws and customs now observed by the group and their basis in tradition, rather than asking whether or not the customs and laws selectively documented in historical material are still observed today, or whether they have been "abandoned".'

Morgan et al's (2006) position on native title and its usefulness for respecting Indigenous values.

'The adversarial culture that has emerged around native title has caused considerable antipathy towards Indigenous people and confusion and uncertainty among officers of government agencies and departments in their dealings with Indigenous communities. In many ways native title has obscured the need to address Indigenous peoples' rights other than those determined by native title processes.' (Morgan et al, 2006:147)

This is a fair comment for if recognition of different rights progresses within a litigious context, then a lack of goodwill is easily fostered. However, the 'antipathy towards Indigenous people' and connected 'confusion and uncertainty' with regard to interacting with Indigenous communities, is also most likely a reflection of the lack of reconciliation on a national scale. The Yorta Yorta example provides evidence of the challenges Indigenous peoples face in achieving native title acknowledgement in the south.

The case of MLDRIN involvement with MDB catchment management reveals important possibilities outside native title. The coincidence of environmental values and traditional owners' values to restore the rivers is something that doesn't always happen. This case illustrates what can be set in motion when the chance to prioritise shared values arises (Morgan et al, 2006:154). The most pertinent lesson from this case to the Ord catchment is contained in this extended quotation from the closing comments of Morgan et al (2006:154-155):

'The frustration for Indigenous people in seeking to settle with the state is that, too often, governments fall at the final hurdle. The demand on Indigenous



people to demonstrate capacity and coherence and, at the same time, to compromise to reach final and binding agreements is not matched by the state. When Indigenous people demonstrate their readiness to settle and propose clear implementable options that go beyond the rhetoric, the lack of capacity and unity within government is often revealed.’

The MDB case is a good example of how Indigenous water values are interacting with mainstream management practices. This example is provided here to contextualise Ord catchment dynamics examined in the first section of this chapter. On a national scale, the MDB story contributes to awareness of Indigenous water values and feeds into strategies such as the National Water Initiative (for more on the NWI see MacFarlane, 2004; Hussey and Dovers, 2007, and; Jackson and Morrison, 2007). Last, international instances of water negotiation to include Indigenous peoples’ values contextualise this case study of the Ord.

### **3.5 International contexts of Indigenous water values recognition**

#### **Introduction**

The international scale illuminates two important water matters: first, the inclusion of water in agreement making over resources, and, second, the human right to water. Of the former, two cases, one from New Zealand and Canada, are selected as examples of how joint management treaties are able to acknowledge Indigenous water values, and provide compensation for impairment. The two agreements chosen here – the James Bay Northern Quebec Agreement in northern America and the Ngāi Tahu Agreement in New Zealand – include compensation for changes to

rivers instigated by settling nations. Discussion of the human right to water closes the chapter.

### **Joint management treaties in New Zealand and Canada**

Treaty making between Indigenous peoples and settler states has included recognition of Indigenous aspirations to water. This section selects case studies from Canada and New Zealand to show common themes in the way Indigenous peoples are seeking and gaining recognition of their multifarious rights (Tehan, Langton, Palmer and Mazel, 2006). Agreements are 'living documents' (Tehan et al, 2006:2) in the sense that the success of the agreements lie in their fulfillment, not just their being. Even though some may be titled as 'final' agreements – similarly to the Ord Final Agreement – they are usually structured to impact upon future relations, including such arrangements as joint natural resource management.

The length of time spent in negotiation can impact on the ongoing life of agreements. For instance, the James Bay Northern Quebec Agreement (JBNQA) took just nine months to negotiate in 1975 (Palmer and Tehan, 2006:33). This hasty conception (Palmer and Tehan, 2006) was due to the need for the governments of Quebec and Canada to secure agreement from the Cree for a large scale hydropower project. Ettenger (1997) similarly writes of the inadequate consultation process – one amounting to partial community engagement, at best. Subsequently, the Cree perceived the agreement as a 'way of both asserting their identity and sharing land rather than surrendering rights and title.' (Palmer and Tehan, 2006: 34). At the same time, it was found to be inadequate and so the Cree have initiated more than 30 instances of litigation against the two governments (Palmer and Tehan, 2006:35).

These ongoing lawsuits, Palmer and Tehan (2006) argue, are evidence of the agreement renegotiating to improve it from the below par position it started from. This is one way in which an agreement can be a 'living document'.

The Cree made an agreement with the Government of Quebec permitting developments in their country. When abuses of this agreement occurred, litigation by the Cree ensued. The threat of persistent litigation by indigenes is one leverage point used to overturn unjust negotiated agreements. This is true for the governments of Canada and Quebec and the Cree; the persistent litigation by Cree peoples led to a new agreement in 2002 known as the 'Peace of the Brave' agreement. Underlining the litigation was a fundamental clash between Indigenous water aspirations and developers' and states' interests. Dams and associated hydropower developments are a classic instance of this where Indigenous peoples may prioritise free flowing rivers over degraded systems.

'[I]n exchange for their support for two new hydro projects and the settlement of outstanding litigation by the Cree against the Government of Quebec, the Agreement provides for Cree direct participation (business contracts, employment, revenue sharing) in resource development in the territory, participation in mining and remedial works...the agreement provides for \$24 million in year one, \$46 million in year two and \$70 million per year over 48 years for community and economic development programs to be decided and implemented by the Cree' (Palmer and Tehan, 2006: 37)

Substantial compensation is being provided in return for dramatic reshaping of the Eastmain River flowing through the Cree nations (James Bay and Northern Quebec Agreement, n.d.). An important theme in the agreement is the self-determination of the programs for community and economic development stemming from the monies given as compensation. The enduring calls for justice from Cree people, for the impacts of the river transformations, supported their concomitant calls for a better package of benefits in the negotiations.

Just as colonial impacts are being renegotiated in Canada, so too have more comprehensive and just agreements evolved in New Zealand. Environmental injustices arrived with the colonisation of the south island of New Zealand by the British. Resistance to this is apparent in the sustained campaigning by the Ngāi Tahu, Maori people of southern New Zealand, for a treaty that offers fairer outcomes than the original Treaty of Waitangi. One of the chief negotiators of the Ngāi Tahu people, Sir Tipene O'Regan, together with Palmer and Langton (2006), wrote about the process of securing the Ngāi Tahu treaty (also quoted at the beginning of this chapter). Their paper emphasises the importance of the Ngāi Tahu negotiators constantly securing the support of elders during the processes, leading up to and including negotiations. The community was well informed thanks to feedback loops that circulated advancements in the case. O'Regan personally attested to traveling by car around Ngāi Tahu territory, over which 39,000 people live, and giving and receiving information about facets of the negotiations. It is now recognised, through one of the most all-inclusive agreements of New Zealand, that the Ngāi Tahu hold ranga-tiritanga (tribal authority) over 80 per cent of New Zealand's South Island.

O'Regan et al (2006:54) describe the package as comprising:

- The Deed of 'On Account' Settlement of 14 June 1996 - \$10 million to Ngāi Tahu and vested country in the people of Ngai Tahu;
- A \$10 million payment on signing the Deed of Settlement that took place on 29th November 1998;
- \$150 million cash settlement in a Crown Settlement Offer of 23 September 1997, and;
- Additionally to this settlement, Ngāi Tahu received \$24.5 million in interest dating from the 1996 Heads of Agreement and \$25 million in back-dated forestry rentals from the Crown Forest Assets Act 1989.

The desires of the Ngāi Tahu included ensuring their water values are maintained now and into the future. The compensation package gives acknowledgement to the natural resource management rights and responsibilities of the Ngāi Tahu while giving recompense for imposed industries that circumvent continuation of these.

The outline of these two cases, one from Canada the other from New Zealand, indicate some common elements of the agreement making that is happening between Indigenous populations and settler states. First, determined campaigns by custodians of country are a strong driver in making settlements possible. Second, settler states are usually seeking security in some form, be it access to resources or limiting risk of litigation. Third, agreements are 'living documents' and deliver a means for reconciliation to occur between conflicting parties. Finally, community

involvement and support is crucial for agreements to be successful, as is a rigorous implementation strategy.

### **The human right to water and catchment management**

The human right to water hinges upon appropriate catchment management.

Globally, the water justice movement raises awareness of this problem. However, the uptake of integrated catchment management internationally does not explicitly address the human right to water, that which compels the water justice movement.

Chapter Two detailed the broad momentum of the water justice movement, showing how public and private participation in the water realm brings forth somewhat reactionary campaigns, on either sector's capacity efficacy. I now look at where natural resource management fits within the human right to water discussion<sup>15</sup>.

The extension of human rights to water involves suitable resource use. If healthy river systems – including surface and ground water sources – no longer flow, then there are obvious impediments to sustaining good water supply and sanitation.

Catchment management often negotiates tensions in natural resource management priorities. As Hirsch, Carrard, Miller and Wyatt (2006) describe, these tensions in catchment management can be between:

- 'top-down and bottom-up approaches;
- the holistic philosophy that lies behind integrated river basin management and the participatory ideal of de-centred decision making;

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<sup>15</sup> A good review of the relevant literature on health and ecology is included in Burgess, Johnston, Bowman, Whitehead (2005).

- the science-based approach...and community-based initiatives oriented to local knowledge on the other;
- catchment management institutions' role to allocate an increasingly scarce and finite resource (water) versus a catchment management institutional role to mobilise developmental resources and funds for new infrastructure to take yet more water off the river.' (Hirsch et al, 2006a:1).

These tensions are the origins of many dilemmas over how to sustainably manage this renewable resource. Recognition of Indigenous rights and interests cuts across each of these tensions, including: whether traditional ecological knowledges are acknowledged and respected (Haynes, 2006), and whether catchment management embraces participatory decision making (Hillman, 2004). It is also in these tensions, between the human and the ecological, that differences between water values are most stark.

A human right to water rests upon sustainable resource management. This is shown in a functional definition of the human right to water, coming from Scanlon, Cassar and Nemes (2003). They define a 'right to water' as including the right to access enough water. It has to be affordable and suitable in both quantity and quality. They distinguish this from a 'right to access to water' that 'may not touch upon fundamental issues such as quality and quantity.' (Scanlon et al, 2003:3). Quality and quantity of water are directly connected to whether appropriate river basin and ecosystem management occurs.

However, neither sufficient water nor suitable water will be sustainably produced from a catchment wracked with environmental problems, unless endpoint technological

interventions are used. At the same time, an overly rights-based approach can sideline understanding and fail to address whole catchment matters. Scanlon et al (2003) recognise that a rights-based approach can be too human focused as it advocates considering water as simply a social good. Disregarding ecological realities can risk emphasising an overly anthropocentric approach, rather than an integrated approach inclusive of environmental needs: balance is the answer. They seek to advance the 'human right to water' notion to embrace 'an acknowledgement that healthy, functioning river systems and groundwaters are essential for people, plants and animals.' (Scanlon et al, 2003:27). Integration, rather than persistent silo governing, is a tool to achieve this.

The problems that a human rights paradigm may carry are not analysed by Scanlon et al (2003) in advocating the human right to water (nor do others who seek the application of human rights concerns to environmental dilemmas, for example Craig, 2005). Contestation persists over what comprises human rights. The lack of universal consensus on what human rights are, Woods (2006) suggests, make including the human right to environmental goods less than useful. He argues that environmental justice may be possible without recourse to the human rights paradigm. While Woods' (2006) point is salient it remains that efforts for widespread acceptance of a human right to water continue<sup>16</sup>. Further, human rights and environmental concerns coalesce on water matters, and especially on community water management. As will be discussed in Chapter Six's discussion of the OFA, Miriwoong and Gajerrong peoples wish to be able to live on country, without

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<sup>16</sup> Others argue that fostering the human right paradigm strengthens both sustainability and environmental justice work. Because of the great degree of overlap between the two, a just sustainability framework – as advocated by Agyeman and Evans (2004), Agyeman (2005) – generates a beneficial union (see Chapter 2).



threatening the health of themselves or their water supplies. Continuing their holistic custodianship involves unity of human and environment.

One way of making the high profile human right to water campaign less human centred – and more ecocentric – is through making explicit ecosystems' value. An anticipated outcome of identifying ecosystem value is improving the efficiency of water markets (Emerton and Bos, 2004). This involves putting ecosystems into water equations in planning processes. Emerton and Bos (2004:6) critique the common under-funding and minimal water allocation to ecosystems, despite their roles as an important component of water infrastructure.

‘One essential condition for success will be the ability of planners and investors to factor in environmental concerns - and particularly the links between natural ecosystems, water demand and supply. Despite the importance of healthy ecosystems for secure water supplies, and the importance of secure water supplies for healthy ecosystems, recognition of the relationship between ecosystem status and water infrastructure has long been missing from water rhetoric and practice.’ (Emerton and Bos, 2004:14).

This is a key concern in water dilemmas today. Multiple influences on this singular resource feed complexities that influence healthy ecosystems catchment-wide. Water is best for all users when it is not tainted. This common bond is often unspoken and yet unites different users and stakeholders, while also complicating planning for sustainability of this resource (Strang, 2005). That quality, from which all water values emanate, is at danger of being marginalised if focus is placed too heavily on securing water supply and sanitation, without appreciating catchment dynamics.

The shift towards inclusive recognition of the connection between water infrastructure and ecosystem status is a salutary one in securing healthy rivers. This is especially in terms of sustainable development for all. At the same time, there is no necessary problem in how water holds multiple values for different social groups and stakeholders, especially if one user's gains do not detract from the quantity and quality of water available to others. This relationship is likewise recognised by Scanlon, Cassar and Nemes (2003: 22) as aforementioned (see also Wescoat and White, 2003, for a discussion of water for life that includes water governance analysis). This section has tied water management to human rights matters. The interconnected nature of these issues contrasts with dominant water governance approaches operating in Australia. Possibilities exist to provide more integrated service delivery, as shown later in Chapter Seven, but if the fundamental links are not made, water supply and sanitation failings risk persistence.

### **3.6 Conclusion**

A cultural flow emerges as an appropriate means of Indigenous water recognition in the Ord. This chapter has shown how, in the midst of declining river health, the spaces for Indigenous water right recognition are challenged. At the same time, however, through understanding water as country and using native title processes, incipient recognition is glimpsed. This chapter discussed how a cultural flow could be conceptualised and frames the question of Indigenous water rights recognition within national and international contexts. The experiences of Indigenous peoples in different catchments provide exemplars of intercultural water value recognition. Also, the comparisons present what is possible. Similar openings emerge in different

contexts – such as those shown above in the Fitzroy, Murray Darling, and in New Zealand and Canada. Indigenous aspirations to water are being expressed in intercultural spaces, albeit non-systematically, and groups are capitalising on this in creating living documents to renegotiate postcolonial landscapes.

In collating the cases discussed above on national and international scales, the question emerges of what, materially, might a cultural flow for the Ord look like? This is a challenging question as there is no complete baseline data for what the river was like before colonial interventions (Vernes, 2005). Where there were once extremely low flows in the dry season, there is now year round constant flow. This input of water a-seasonally is one of the greatest shifts in the Ord's hydrology. At present, as shall be shown in Chapter Four, environmental flows in the Ord are defined as post-dams (Department of Water, 2006). This means that, unlike in catchments in southern Australia, environmental flows can not be defined as synonymous with cultural flows unless the former is redefined to include the latter. This is environmental justice at a whole-of-river scale; Chapter Seven looks at the scale of the body.

## Chapter four: A history of water and peoples in the Ord

### 4.1 Introduction

'Alexander Forrest discovered this river on 25 July 1879 during his major expedition across the Kimberley. On 2 August 1879 he named it "after His Excellency the Governor of Western Australia who has taken so great an interest in this expedition"...' (Epton, 2003: 48).<sup>17</sup>

'The role of water in the European conquest of Aboriginal Australia cannot be overstated. European appropriation of waterholes, whether for temporary or permanent use, generally meant that Aborigines were denied continuing access to these. This probably disrupted social and economic patterns of Aboriginal life. It may also have placed heavier demands on adjacent water supplies.' (Clements, 1989:2)

The Ord River received its current and widely accepted name, as did many natural features throughout Australia, from an explorer moving through frontier country. Miriwoong Gajerrong people's history of society-water relations in this part of Eastern Kimberley are not recorded with the certitude displayed in Epton's (2003) short narrative above. Partly this is because of the powerful role water played in colonising

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<sup>17</sup> According to my reading of Forrest's (1880) diary, it was on August 2<sup>nd</sup> that he named the Ord River such, after first coming upon it on July 25<sup>th</sup>.

country for, as Clements (1989) stated, the control of water supplies was instrumental to controlling regions. This gap is starting to be filled with retrospective investigations into how local Indigenous peoples value this important catchment (for example, see Barber and Rumley (2003)). Also, limited information about Indigenous water values can be assembled from ethnographies by Kaberry (1939) and Shaw (1986, 1992). However, the point remains that the written record of society-water relations in the Ord is asymmetrical: a fact which poses vital challenges for documenting the region's environmental history. The challenge is to weave a narrative that neither reproduces nor over-compensates for pre-existing imbalances. In this chapter, this challenge is met through depicting the changing Ord catchment over time as dialectically related to changing social relations between colonisers and Indigenous peoples. In so doing, it shows the flows of water, understood both materially and discursively; flows of water are an 'embodiment of myriad social struggles and conflicts.' (Swyngedouw, 2004:4). This, then, is an environmental history of natural resource management of the Ord catchment strongly influenced by a reading of environmental justice.

The structure of this chapter is chronological. It starts with a glimpse of the theory of environmental history before analysing initial Indigenous contacts with the non-Indigenous colonisers, the station days, and then, the recent period of irrigated agriculture. The last section looks at industry and agriculture within the Ord – from mining to hydropower. It also looks at the partnerships that are starting to mushroom in this part of the Kimberley, showing indications of greater commingling of interests between Indigenous and non-Indigenous peoples. I introduce each section with two quotes that are indicative of the contestations of the period in question. This is not an attempt to set up a binary reading of history: there are not two parallel, separate streams of history in the Ord. Rather, I chose the quotes to emphasise the

documented and undocumented gulf of difference that has run through the Ord River's transformations.

## 4.2 Intercultural spaces – transforming the Ord River

'We had to fight for the things we've gained. Only way to succeed, you have to fight...(But he'd rather get "level", work together with kartiya<sup>18</sup>, and control things themselves)...

We had to fight Canberra, Perth, big mining company and the government people. We want to get level and stop there (referring to school and housing). Then we'll be right. They've got money, surely to Christ. Government has money, they could look after Aboriginal people. Aboriginal people bin lost in the past. We got to put something in writing, and it all go away (will be solved).' (Joe Thomas quoted in Ross and Bray, 1989:125)

'For them there is no how, or where, or why. People come into the world and pass away. This country was once the black man's hunting-ground. Now it is the white man's pasture-lands. Everything is very mysterious, and nothing is worth the trouble of questioning. There may be other countries in the world, but there is food and drink and plenty in their own. What matters besides?' (Durack and Durack, 1935: 90)

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<sup>18</sup> *Kartiya* means whitefella in the East Kimberley. It is also spelt *gardiya*, *gardia* and *gadiya*.

This thesis analyses the intercultural terrain in the Ord catchment and so it is with the beginning of non-Indigenous involvement in natural resource management that this environmental history logically starts. It does not explore in great detail the way Indigenous peoples used country prior to colonisation. This is because there is something of a paucity of formal accounts of this time but also, more importantly, because oral histories that have been recorded by anthropologists, and other academics, tend to focus on the negotiated relations post-colonisation. This is especially so after the construction of dams and the mining began, when the Ord River started changing in dramatic and often unforeseen ways.

This history shows the connections between social realities and transformations of the river. It aims to present a diachronic portrayal of environmental realities in the Ord (Dovers, 1994). For example, I understand Indigenous traditional culture as a living reality rather than historically situated.

The framework I use to tell these stories draws heavily on current approaches within the sub-discipline of environmental history. This is a complex and evolving field, much like political ecology and environmental justice. And, similarly to these, its concerns encompass both discursive and material domains. This is made clear when considering the environmental history of a catchment. As Sörlin and Warde (2005) state, environmental history inhabits the interface of cultural and materialistic explanations for human behaviour. This is part of the reason that it dovetails particularly well with a political ecology approach. Nevertheless, this strength is also a challenge in terms of working out how to integrate data gathering and analysis.

Environmental history lends itself to syncretic analyses, such as this thesis, in which multiple approaches are incorporated flexibly within research.

In the Australian context, environmental histories draw on both qualitative and quantitative approaches. In 'Environmental History and Policy: Still Settling Australia', and the earlier 'Australian Environmental History', Dovers ([ed], 2000) and Dovers ([ed], 1994) respectively exemplify these tendencies. For example, Roberts and Sainty (2000) combine oral histories and ecological data to fill gaps in longitudinal analysis of management practices impacting upon the Lachlan River (central western New South Wales) and Moira Lake (on the Murray in southern NSW). They found that 'despite its shorter time frame and lower scientific credibility, oral history may be as effective in implementing change in policy or attitudes as the quantitative and better-documented Moira Lake study [which didn't use oral history in its method].' (Roberts and Sainty, 2000:140). In this case, qualitative environmental histories are valuable as they supplement more applied methodologies which involve rapid and participatory environmental history projects. In contrast, Powell (2000) uses purely qualitative techniques in his investigation into water management and the geographical imagination in Australia - comparing Indigenous to colonial and current modalities. Powell (2000) draws on historical documents including news stories from a range of catchments from the Ord to the Murray to ground his analysis. Both approaches are useful, the former providing a synthesis example, the latter a purely qualitative analysis, and both guide the study presented here. In the current chapter, the analysis of water histories in the Ord is primarily qualitative while referring to quantitative dimensions relating to changes in the waterway.



An excellent study of water values pre- and post-dam is made by Jay Arthur (1997) in 'An Unobtrusive Goanna'. She graphically portrays this in four sketches of the landscape with discursive terms laid over a birds-eye view of the river with dams. Arthur (1997) depicts landscapes that emerge from the Ord irrigation project, what she calls the 'Event' (McLean, 2001). The pre-dam landscapes have a deficient nature that lacks productivity and is alien – terms include 'hostile environment', 'untapped', 'vulnerable and empty'. Post-dam it is a humanized landscape, with absences where 'Aboriginality is conceived as having no place in the post-dam world' (Arthur, 1997:42). Arthur's (1997) study distils many key changes around water matters in the Ord; this chapter expands these observations by looking beyond the dam.

### **4.3 Early Contact Days between colonisers and Miriwoong Gajerrong peoples**

'Around the billabongs are depressions in the earth, each one a family hearth where food is prepared and eaten and much of the gossip, quiet talk, and arguments are carried on... Close by are generally billies (formerly shells) for fetching water from the pool about a hundred yards away or more, for as a rule, the natives do not camp by the edge of their water supply. In summer there will be floods, and at any time there are always snakes and insects in the rank grasses.' (Kaberry, 1939:5)

'When Europeans came to explore and settle in Kimberley, they found Aborigines with very different cultural traditions from those in the south and in the desert. Already aware of the outside world, they had adopted at least one major technological innovation from the Indonesian (the canoe), and had gained some

experience in interracial warfare. Although Aborigines had some initial difficulties in identifying Europeans as belonging to the human species, they were quick to learn and adapt to the new situations which confronted them.' (Crawford, 1981:31)

The Ord catchment was occupied by Europeans following the cattle overlanding route from northern New South Wales, through northwestern Queensland, and across the top end of the Northern Territory. This was after early sea-based explorations. Shaw (1992) writes of how Indigenous people of the northern regions saw 'successively explorers and port settlers, gold miners, cattle pastoralists, farmers and, most recently, miners once again. The initial explorations were made by sea as they were in many other parts of Australia' (Shaw, 1992:13). The Ord River that they encountered was without major impoundments and Miriwoong Gajerrong people lived with its changing flows.

The Ord River ran as a free, largely unregulated river when it was first encountered by non-Indigenous colonisers. Alexander Forrest is accredited as the first European person to discover the Ord, doing so in 1879, with a team of Indigenous and non-Indigenous people. Clements (1989:28) quotes this encounter between Forrest's party and Aboriginal people on 24 July, 1879:

'Today, we came across an old native man and three children, who made a tremendous noise when they saw us, and seemed to be dreadfully frightened. Farther on we met three women returning to their camp, whose terror

deprived them of speech. When, however, we moved on, they commenced shouting loudly.'

On further reading of Forrest's diary, printed in 1880 after the conclusion of his travels, it seems that interactions were ambiguous and tense; the explorer's intentions were not yet clear and caution was exercised by both parties. Forrest's expedition notes highlight the country at the southern end of the catchment – he made '[r]eference to the numerous streams and to splendid grassy plains...pastoralists would find this a far cry from the drought stricken plains that abound elsewhere in Outback Australia' (Clements, 1989:29). Also, Forrest's notes from this expedition indicate the potential of mineral wealth, making this part of the world a favourable option for settlement intensification. The presence of 'fresh water, grass and gold' formed an agreeable trifecta for 'enterprising colonists' (Clements, 1989:30).

The explorer describes the river as 'ten chains<sup>19</sup> wide and running strong, which we could not cross without some difficulty' (Forrest, 1880:26). Numerous ducks and other birdlife sustained their journey. Also, there was evidence of Indigenous inhabitation from the 'smoke of natives' fires... in every direction' (Forrest, 1880:26), indicating a relatively dense population of Indigenous peoples. In terms of the specific nature of the river, Forrest (1880:26) says that 'on the banks of this magnificent stream the land is both barren and rough.' By August, Forrest's expedition party was still spending time around the Ord, partly because the two

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<sup>19</sup> Ten chains equals just over two hundred metres.

Indigenous people enlisted as guides were seriously unwell. Surveys of the river from vantage points revealed it to be surrounded by challenging terrain, both upstream and downstream from Forrest's midway point. The whole of the river was not mapped at this stage:

'We are still 300 miles from the telegraph line, and cannot of course tell what difficulties may yet be in store for us, so I feel bound to push on; at the same time no one can regret more than I do, that I am unable to follow this magnificent stream to its mouth, which I have no doubt will be found in Cambridge Gulf – the whole of its waters in that case being in Western Australia territory. I have named this river the Ord, after his Excellency the governor of Western Australia, who has taken so great an interest in this expedition.' (Forrest, 1880:27)

The impacts of this early expedition reverberate for years to come and not least in identifying this region as suitable for intensive agricultural pursuits. Quite differently, Phyllis Kaberry set out to the Kimberley in the late 1930s with the intention of looking at Indigenous women's lives. Kaberry's (1939) observations demonstrate how Indigenous people's connection to country was closely linked to the changing riverscape. She describes how, in the East Kimberley,

'...mountains, rivers, and natural features have shaped his mythology, and in turn have become projections of The Time Long Past into the present. Out of the conflict with natural forces, a relationship has emerged which is reflected in the social and religious organisation. If I describe the landscape in detail, it

is not to add the inevitable touch of local colour...Native culture to be grasped in its completeness must be seen through the country, which is no mere backcloth for tribal activities, but something much more vital and dynamic. The anthropologist and reader must come to terms with it before turning to a study of its inhabitants.' (Kaberry, 1939:1-2)

The antecedents to today's 'healthy country, healthy people' maxim can be seen in these observations – country is 'vital and dynamic' and an understanding of it is intrinsic to developing an understanding of Indigenous lifeways (Rose, 1996, 2002). Indeed, 'People are brought into being by country, and thus are born into relationships of mutuality. As April (one of Rose's collaborators) explained, "if you don't look after country, country won't look after you." Care and country are mutual.' (Rose, 2002:83). Kaberry (1939) communicates the different way many Indigenous peoples understand seasonality in eastern Kimberley. She reinterprets the popular notion of dual seasons in northern Australia. For the Lunga<sup>20</sup> tribe in East Kimberley, there are five seasons: 'wa:nga – about June and July; zua:nda ba:ndan – the beginning of the hot weather in August and September; wi:rgal – the first rains in October or November; gulan – the rains from November to March, and ma:lingin – the end of the rainy season about April or May' (Kaberry, 1939:11). Application of these terms is contingent on climatic conditions. Interactions are central in determining when seasons are changing in the Ord, as elsewhere. For instance, Rose (2005: 296) writes how "when the brolga sings out, the catfish start to move." This references the time when the rivers start to flow again after first rains.' Water and people interact in country to reproduce important patterns of meaning.

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<sup>20</sup> Lunga people were also known as Kija people, in the southern Ord catchment (Toussaint, 2003).

Further indications of the shape of river interactions can be found in the memories of those people engaged with current ethnographic investigations. Travelling around on foot from station to station relied upon the drying up of the Ord for easier navigation. Barber and Rumley (2003) discuss how the migration of Miriwoong Gajerrong peoples, prior to dam construction, formed an important part of maintaining socio-cultural traditions in the Ord valley. Kin connections and trade relations could be maintained during journeys up- and down-stream of the Ord:

'I lived on Ivanhoe Station all the time since I was born. I stayed there till I grew up and never went anywhere, though later I did go to Lissadell, Argyle, Dunham River junction, and Carlton – for a long time. There were no motor cars. We used to walk to every station. It took two days to go from here to Dunham River, three days to Lissadell, two days to Argyle, one day to Newry, and one day to Carlton. But I belong to this country. (One year I went to Wyndham for the races.)' (Mandi speaking to Bruce Shaw, reported in Shaw, 1986:34)

The way Mandi talks about his country, to which he belongs, is wrapped around the shape of the Ord and, as 'river people', the inhabitants of the Ord catchment relied on it for more than just food and fresh water. Similarly to other Indigenous peoples in northern Australia, such as shown in Strang's work with Aboriginal people along the Mitchell River (Strang, 2005), the river has long been a source of identity. It is also a locus from which culture began and continues. Earlier, Strang (2004) wrote in 'Poisoning the Rainbow' how discursive differences exist within the Mitchell

catchment in northern Queensland. There are over 350 mining tenders in this catchment that the Aboriginal people must respond to. Strang (2004[2001]) points out that:

‘Though Kowanyama’s concerns about their activities are expediently framed in Western terms, describing the impact of pollution on economic resources and biodiversity, the community’s discourse remains, in reality, strongly focused on Aboriginal issues.’ (Strang, 2004 [2001]:208).

Despite the proliferation of mining activities in the catchment, Aboriginal water values both adapt to and resist the degradation risked by such intense development.

Through framing Indigenous concerns in Western terms, the latter gain a foothold in the discursive domain. At the same time, the community’s discourse persists – damaging dreaming country has serious ramifications.

Initial contact between new settlers and northern Aboriginal peoples was often not characterised by hostility. As Schapper (1970) points out, prior to the wave of colonisers, intruders came to the Kimberley by sea from southern Australia, and with different intentions than permanent settlement. These people were moving through, in a way surveying the country. However when the balance between Indigenous peoples and non-Indigenous settlers changed in favour of the latter, things began to change. As traditional food sources dwindled and access to country became more restricted, resistance met settlement. Schapper (1970) describes how the demands of the settlers were for peaceful use of land and water, Aboriginal labour on stations, and access to Aboriginal women. Erroneously, he states that adaptation to Western culture on behalf of Aboriginal people required complete abandonment of their own culture. These things aside, Schapper’s (1970) critique had some influence in

structural reconfiguration of the Native Welfare Department to form the new Department for Community Welfare (Shaw, 1986) and this combined to bring about different conditions for Indigenous people yet again. These conditions included restrictions on movement, thereby limiting potential for unfettered caring for country (Shaw, 1986).

#### **4.4 Pastoral station times**

‘Apart from the appalling social consequences of the situation, the Aborigines are a work force which is on site, is well adapted to the climate and has no place to go.’ (Millington, 1977:156. He was commenting on the suitability of Aboriginal people to irrigation work in the Ord catchment.)

‘That way, you can see that big hill? You see em that big gap through there? Well all over them animals bin travelling that way, go back to river. That’s where the turtle bin just get up there. And another one, we call em Nyapanany, Wulunguriny, and Purruwul, tayiwul. That mean that tayiwul, big barramundi laying there, top of this country now, Han Spring. Dreaming, he laying down. And that rock cod, he’s standing up like that. Straight up. That’s for our old grandpa country. And grandpa mother, Krakala, that him country. Well all this lately people, mefellas, we gotta have that country.’ (Jack Britten quoted by Ross and Bray, 1989:110)

Pastoralism was the first large-scale non-Indigenous industry introduced to the Ord valley and, as such, began the state-sanctioned colonisation of Indigenous land use



practices that existed prior to colonial property rights (Howitt and Suchet-Pearson, 2006). In fact, Jebb (2002), in her history of Indigenous people's involvement with the cattle stations in northern Australia, introduces the relationship as the predominant one for intercultural exchange: 'Pastoral paternalism framed the majority of Indigenous people's experiences in the Kimberley, much of the Pilbara, and other parts of northern Australia' (Jebb, 2002:3). Pastoralism began in the Ord Valley in the 1880s and was the cornerstone of the western regional economy up until the late 1960s (Smith, 2003b:553). The pastoral industry seeded non-Indigenous occupation in the Ord.

During the early days, the industry was labour-intensive and the majority of the pastoral workforce comprised of Indigenous people. In an analysis of the relationship between Aboriginal labour and the changing fortunes of the pastoral industry in the Kimberley, Smith (2003b) details how State Government policies facilitated the sustainability of the pastoral industry through several mechanisms: legally restricting the movement of Indigenous people; subsidising the cost of maintaining Aboriginal labour on station properties, missions and reserves, and; providing training and education in schools. Some historians, including Smith (2003b) and Jebb (2002), argue that low-cost Aboriginal labour is what maintained pastoral station profit margins up until the late 1960s. Pastoralism needed both state support and Indigenous people's labour and know-how in its inception and continuation.

At the same time, the ramifications of the early days of frontier expansionism for Indigenous people were mediated through Indigenous agency. The way individuals interacted with the introduced pastoral industry varied. Importantly, it did not always

preclude continuity of Indigenous lifeways. Some Indigenous people became closely involved with the stations, by choice or necessity, and these relationships were often enduring and strong. These relationships sometimes involved Police intervention, as suggested by Lane (2003) who states that collaborations between Police and station managers were not uncommon. Whatever the impetus for participating in station life, different Indigenous people had various experiences with station owners. For instance, Rowse (1987) analyses the writings of various Duracks and Shaw's ethnographic work to depict a world of 'insiders' and 'outsiders', or 'station blacks' and 'bush blacks' as Shaw (1986) describes the dichotomy. This distinction suggests that Kimberley settlers divided the Aboriginal population by way of preferential treatment. The insiders were usually of mixed descent, were often servants who begot servants, who then continued to be 'insiders' like their parents before them. For the 'outsiders', he describes a world of fear outside the safe havens of stations:

'No one has tried to estimate how many Aborigines were killed by official and unofficial vigilantes and punishment expeditions in the 50 years it took to pacify the Kimberley. Nor do we know the toll of disease. But there are enough anecdotes of force freely, if not systematically, employed, to suggest that outside the ratified precinct of service was a dangerous and evil world, visited by desperate and irregular acts of European terror' (Rowse, 1987:83).

The key progression Rowse draws out in the spread of colonial control in the Kimberley is first the spread of terror within the Indigenous population through violence, before then pursuing pacification through rationing systems and resource control as a means to minimise the 'Aboriginal problem'. Rowse (1987:85) states

that in northern Queensland, competition existed over access to, and use of, water, with pastoralists and miners competing with Indigenous people over this fundamental right. Similar contestation took place in the Kimberley. In this context, pastoral leases included conditions that acknowledged Aboriginal occupation of the Kimberley but 'given that subsequent European monopoly of water supplies inevitably ruptured the pattern and tenability of a hunting and gathering economy, any right to derive subsistence was little more than legislative window-dressing' (Clements, 1989:31). The disruption of existing society-water relations was serious.

Disagreements over water governance, Rowse (1987) suggests, were usually settled with guns. This tendency to violence is corroborated by Reynolds (1987) who writes of the common practice to bear arms, visibly and at times of leisure, up until the 1920s:

'In the more remote areas of the north guns were still worn in the first decades of the twentieth century. A royal commissioner reported that in the 1920s it was considered essential to carry firearms in the Kimberleys and it was the "practice of men to always go armed". A visitor to Wyndham in the years before the First World War was amazed to see a hotel full of men wearing revolvers and cartridge-studded belts. It was curious, he wrote, "to see men in rough moleskin pants and crimean shirts quietly playing billiards in an Australian hotel with a Colt or a Webley in a weather-beaten leather holster hanging on their hips." The right, openly to carry arms, did not extend to the local residents but only to those men who came in from the back-country

where every man was armed as a safe-guard against the Aborigines’.

(Reynolds, 1987:15)

Indigenous peoples were seen as a threat that required forceful management. Land and waters were seen as the colonisers’ to protect, with whatever means necessary.

Accounts of these early days are also found in ethnographies like Kaberry’s (1939) singular text *Aboriginal Women: Sacred and Profane*, mentioned above, and novels such as the Durack sisters’ ‘All-about’ (Durack and Durack, 1935). The relationships between pastoralist and Indigenous people, they argue, were co-dependent in some ways. For instance, Durack and Durack (1935:25) describe the Argyle Station as a mutually beneficial exchange between Traditional Owners and the new immigrants:

‘Our darkies (sic) have none of the docile inferiority complex which makes such excellent servants of their brothers of other lands. They never bow and scrape to the white man. Color, after all, is just a matter of chance. They work for us because we give them "tucker" and whatever else they need. We give them what they want because we need them to work for us - just a matter of convenience from both points of view.’

This benevolent relationship is portrayed from a Eurocentric perspective. As was raised by Reynolds (1987) and Rowse (1987) above, and will also be discussed below, the interactions in frontier expansionist days did not always run so smoothly.

Establishment of pastoral stations in east Kimberley was piecemeal but rapid. In 1884, the Ord River station was the first east Kimberley homestead to be established and stocked with cattle (Shaw, 1992; Symanski, 1996). Lissadell, Argyle Downs and Rosewood followed in quick succession. Meanwhile, land from Derby in the far west to Wyndham in the north was also being selected for cattle stations, making a continuous belt of pastoral activity along this part of northern Australia. Shaw (1992) states that European presence came as rapidly to the East Kimberley as it did to other parts of Australia, but just at a later time. Further, large corporate interests took up prime land with the best access to water in the first place and 'smaller battlers' took up lesser areas (Shaw, 1992:14).

The European cattle industry was not incommensurate with all elements of Indigenous ways of being (Beckett, 1978); Indigenous peoples could continue close association with country in part because they could provide labour to the pastoral industry (Jebb, 2002). In terms of continuing Indigenous ways of being, one mode in which this was possible was the geographical proximity that facilitated continuing connection to country, such as access to ceremonial sites afforded by living on country (as told in stories recorded by anthropologist Shaw, 1986 and 1992). Men were hired as station workers while women worked within the domestic sphere and children were often schooled nearby. There were other impacts of colonisation in the Kimberley though, including the removal of half-caste<sup>21</sup> children from their families who were then sent to missions and schools elsewhere, such as Beagle Bay Mission

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<sup>21</sup> Half-caste is not always used pejoratively throughout the Kimberley (Toussaint, 1999). Appropriation of the term by Indigenous people as a descriptive term in these parts is common.

near Broome, where they were meant to be 'given a change to lead a better and purer life than their brothers' (Isdell, WA Protector of Aborigines from 1907-1909 quoted in Haebich, 2000:235). The number of children removed in this way is contested but the 'Bringing Them Home' report estimated that 25% of Kimberley children were living in missions separately to their families in 1958 (HREOC, 1997). It is felt by many in the Kimberley that the impacts of these practices reverberate today with some fragmented families still seeking reconnection (Haebich, 2000). Pastoralism was an early and instrumental tool in frontier expansionist colonial practice. It did, therefore, have long lasting deleterious impacts for Indigenous lifeways.

While the pastoral stations brought changes for social relations in the Ord, they also precipitated shifts within the catchment in a physical sense. The Ord River experienced greater siltation from erosion as a result of the introduction of hard-hoofed animals. Scientific data is minimal on the impact over time of the new fauna in the Ord catchment. However, it is known that the cumulative impact of pastoralism was significant enough to warrant the closing off of a portion of the catchment by the 1960s. Ord River Station was closed and the State took control of the area, now known as the Regeneration Reserve Area. Symanski (1996) argues that the tens of thousands of cattle and feral donkeys were mismanaged by the Western Australian government, in part because they were a revenue raising commodity for the administration. Coombs (1989) states that there is little evidence of recovery in the Regeneration Reserve area, citing several reports identifying similar findings for other parts of the catchment. The veracity of these claims is challenged by local stakeholders now who suggest that the Regeneration Reserve was and still is a success (Ord Land and Water member, pers comm.; Department of Agriculture

employee, pers comm.). Whatever the success of the Regeneration Reserve, it is clear that before it was created, pastoralism did physically alter the Ord. From a longer term perspective, pastoralism was a precursor in the intensification of non-Indigenous settlement and industry in the Ord, leading the way for future society-water transformations.

This overview gleans an understanding of some of the dynamics around the pastoral industry in the Ord catchment. Within that, there were opportunities for employment of Indigenous people and support, albeit limited, for their families. This is not to romanticise the very difficult circumstances under which the pastoral industry grew in the East Kimberley during which time violence and conflict was common (Reynolds, 1987), including massacres such as at Mistake Creek (Clement, 1989) and at Bedford Downs in 1924 (Wrigley and Kimberley Language Resource Centre, 1996:xvi). It is also important to note that there were differences between the pastoral stations that evolved in the East Kimberley. Some pastoral stations, such as Tickalara station, were known for their kind engagement with Indigenous people (Clements, 1989) and some areas were set up as Aboriginal reserves too, such as Moola Bulla, a State Government Aboriginal cattle station established in 1910 (Shaw, 1992; Wrigley et al, 1996), while still others were run by individuals and families who were overtly hostile. There were a range of experiences and different histories can be told for specific places over this frontier expansion time.

Economic and social contexts for Indigenous people changed markedly in the 1960s with mass unemployment in the pastoral industry occurring mainly due to a 'combination of the consequences of growing capitalisation and concentration of

ownership in the pastoral industry, as well as the increased cost of labour due to, inter alia, the granting of the pastoral award (1968) to Aboriginal workers' (Smith, 2003b:555). The transition in the 1970s in the East Kimberley coincided with the creation of Kununurra to service a new production regime based on irrigation. With construction of Kununurra and its concentration of non-Indigenous people, access to the river became limited, partly due to greater enclosure of riverbanks. Traditional Owners had to compete with other recreational users of the river for a limited number of fishing locations as well. The new town may have also provided a 'pull' factor to Indigenous people to move away from pastoral stations, and towards welfare opportunities (Jebb, 2002). So at the same time that many aspects of the 'station days' were coming to a close, a burgeoning irrigation agriculture industry was starting in the Ord. And the Ord needed to be regulated in a different way to accommodate this new industry. It needed to provide reliable flows during the dry months by storing rainfall from the wet. Shifts came with the new town built to service ORIA and perhaps, as Rowse (1987:170) suggests, 'real opposition to the pastoral interests had to wait for the growth of towns which did not depend on them economically (Rowley, 1970)'. What is known is that fishing activities and ceremonial practices associated with parts of the Ord were possible before the building of the Kununurra Diversion Dam such as 'a stretch of the Ord River known as Jalinem which had sand banks and a billabong' (Lane, 2003:144 quoting native title hearing archives). Reshaping the river reshaped water values as well.

Pastoral stations were the earliest and remain an enduring economic sector in the Ord catchment. This discussion turns to how pastoralism operates today in the Ord catchment. Pastoralism does not rely on water allocations in the same way that irrigation has to: cattle feed mostly on grasses fed by rainfall. Some crop production,



primarily *Leucaena*, is grown for consumption by cattle. The Department of Agriculture reports that 975 ha were harvested in 1999/2000 and 1204 ha in 2004/2005<sup>22</sup>. Pastoral production has less direct impact on the river than mining and irrigation. The most evident impact of pastoralism can be seen upstream Ord Main Dam where overgrazing resulted in the aforementioned need to close the Ord River Station.

Throughout the whole of the Kimberley, there are 98 pastoral leases covering about 23 million hectares – about half the region’s area (Kimberley Development Commission, 2006). A survey in 2002 indicated that Indigenous people control or own 31 pastoral properties, at the time carrying about 75,000 head of cattle (Walsh, 2002:14). In terms of employment on these stations, only five paid wages and the remainder relied on CDEP: in total only 150-200 Indigenous people were employed by the Aboriginal pastoral industry (Walsh, 2002). More recent data for cattle turnoff in the whole of the Kimberley data is shown in the graph over the page.

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<sup>22</sup> In 1991, this relatively small *Leucaena* production was planned to increase in size. Alcorn (1991:83) wrote then, for the *Australian Farm Journal*, that ‘David and Susan Bradley of Carlton Hill Station hope to expand their irrigated *Leucaena* project to 40,000 ha’. This did not happen.

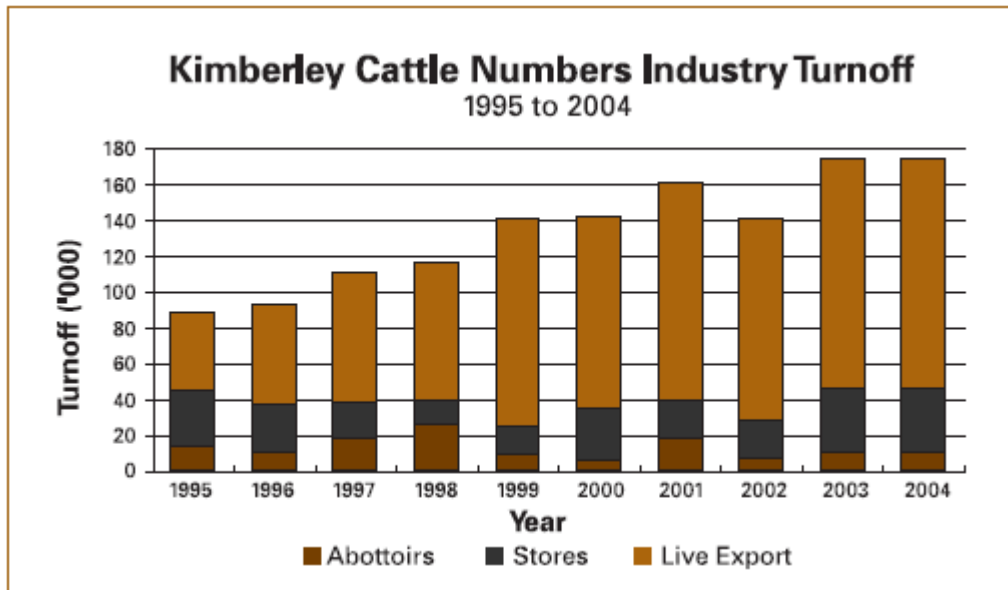


Figure Four: Cattle production for the whole Kimberley (source: Kimberley Development Commission, 2006:7).

The pastoral leases are fifty year leases and in 2015, leaseholders will have to apply for renewal. The Pastoral Lands Board, the government regulating body for pastoral leases, has a 'pastoral exclusion process' (Keyes, 2006:12) and Ivanhoe station, in the northern part of the Ord catchment, by this year (2009) will have 130,629 ha of the 295,400 ha property excised for conservation purposes. This will be jointly managed by Miriwoong Gajerrong traditional owners and the Department of Environment and Conservation (formerly the Department of Conservation and Land Management). These arrangements shall be discussed in more detail in Chapter Six where Ord catchment post-colonial natural resource management regimes are analysed. Pastoral leases are not immune from change in the Kimberley.

The prevailing dominant discourse of water values in the Ord asserts that there are minimal connections between the way flows are managed and pastoral activities.

According to the Department of Water (2006:158):

‘For most forms of tourism and for other economic uses such as pastoralism and aquaculture, a reduction in flow is acceptable, as long as some flow is maintained.’ (Department of Water, 2006:158).

Distilling this interpretation of pastoralism-water relations, ‘some flow’ is the primary value, indicating pastoralists do not rely on the Ord in the same way as irrigators do.

#### **4.5 Early Irrigation trials and error**

‘The aerial view of the azure waters of Lake Argyle was breathtaking. For me, the lake symbolised the rare beauty of the Kimberley landscape but for the Miriwoong people of Kununurra, the dammed waters signified a lost birthright. Later as her Kija relatives rejoiced at hearing the news that they were now permitted to return to some of their traditional lands, my Miriwoong friend, Charlotte, sadly whispered: Can’t get mine back, all water. She was expressing the sentiments of her kinsfolk, who as a result of the flooding of Argyle Downs Station are forever separated from their land the generation point of their existence.’ (Dodson, 1978:4 quoted in Ryan, 2001:23)

‘The Ord was not easy to dam. Although quite docile during the ‘dry’ season it can become a raging torrent during the period from November to March. This,

together with the heat and the extreme remoteness of the area, were challenges that engineers and construction workers had to overcome... Before the construction of the Ord River Dam it was recognised that the river carried high silt loads which would gradually reduce the dam's storage volume.' (Roberts, 1993:7)

One of the most substantial changes to any catchment is made when infrastructure is put in place to store rainfall from times of plenty to drier times. Throughout Australia, it is accepted that regulation of river flows is the major cause of river and floodplain degradation (Arthington and Pusey, 2003). For the Ord, this began with the installment of the Kununurra Diversion Dam in 1963. This dam, a run of river dam, is much smaller than the larger Ord Main Dam that created Lake Argyle, completed in 1972. It is also closer to the service town, Kununurra, which was built to provide facilities for the Ord River Irrigation Area. The concrete dam took three years to build and changed the hydrology of the river, especially during the dry season. Constant releases downstream year round allow for a concentration of vegetation and greater possibilities of weed infestation – a more densely vegetated riparian zone than that seen by Forrest's expedition party in the 1880s. The new vegetation changed the river in the eyes of many local Indigenous people and non-Indigenous people, for some making it almost unrecognisable.

Actions to introduce irrigation in the Ord began before this time though, with investigations into the feasibility of different crops in the valley starting in the 1930s by pastoralists seeing the potential advantages of the rich soils of the Ord Valley (Symanski, 1996). Intensive irrigation in the region was perceived as a means to increase concentration of non-Indigenous population. For instance, the Courier

newspaper is quoted by Head (1999) as declaring in 1933 that ‘the very richness of Northern Australia makes it a danger to Australia while it remains unoccupied’ (Head, 1999: 147). This quote indicates how echoes of the White Australia policy reverberated in desires to expand settlements in the north. It also suggests that as the settling nation was seeking a firmer footing in the north to gain economic wealth from control over NRM, political power was also networking through fears of populate or perish. Such was the close connection between frontier expansionism and the marginalisation of Indigenous interests.

Despite difficulties in identifying suitable crops that could be viable, the State Government petitioned the Federal Government for financial backing for the building of the dams necessary to store water for redistribution during the dry through irrigation. In the 1940s, Kim Durack (a member of the aforementioned pioneering non-Indigenous elite) began agricultural experiments to test out what crops might be viable. This led to the Kimberley Research Station being established in 1945 (Kinhill Pty Ltd, 2000). Sufficient trial success of crops led to the Western Australian government seeking funding for irrigation expansion from the Federal Government from 1949 onwards. Following several knock-backs, in 1959 the Federal Government finally agreed to support Stage one of ORIA: this included the Kununurra Diversion Dam to provide water supply for irrigation; reticulation systems to properties, and; 12,000 ha of irrigable land (Department of Natural Resources, 1976). Powell (2000) describes approval of the Ord project in this way:

‘Another example [of big irrigation projects like the Snowy], conceived at much the same time but tucked away in the wilds of our distant northwest,

was the Ord River Project. In this case, the Federal Government entered grudgingly into a financial agreement with its Western Australian counterpart, which was then the most self-consciously “peripheral” of the states. Critics charged that the funds would have been better applied elsewhere, and that political chicanery and wily manipulations of the predominantly psychological “EDNA” factor [referring to Economic Development of Northern Australia] were creating the daftest of white elephants. The project proceeded, hesitantly, and reactions to it and to the Snowy Scheme kept the water resources saga in the public mind throughout the 1950s and 1960s. So did a remarkable spate of dam construction throughout Australia, mainly for municipal and irrigation storages...’ (Powell, 2000:61)

Powell’s comments indicate the association of various intensive irrigation projects in geographically diverse locations in Australia: they were all part of a development ethos dominant Australia-wide at the time. Diversions for irrigated agriculture continued to grow in volume after the completion of the Ord Main Dam, which was formally opened on 30th June, 1972.

Other uses built upon the irrigation initially planned for the Ord. For one, hydropower infrastructure was put in place below the Lake Argyle dam wall, primarily to provide power for the activities of Argyle Diamond Mine. Also, recreation on Lakes Kununurra and Argyle grew over time as familiarity with the system increased, increasing the complexity of society-water relations in the Ord catchment. Tourism values grew as well with people driving out to watch Lakes Argyle and Kununurra and

visit the relocated Argyle homestead. It did not take long for the transforming catchment to attract many new water values to the region.

Unusually, the farm owners and operators lived mostly within the town and travelled out to the properties for daily work. Lane (2004) writes of how this had advantages and disadvantages amongst the workers, including: a quick fostering of some instrumental sense of community; lack of proximity to farm activities, and; difficulty in accessing support of women's labour. Indigenous men worked on the cotton farms in the 1960s, being collected for work in a van in the morning and fed before a day's work (Lane, 2003). The first irrigators built their identity around a pioneer trope (Lane, 2004). This pioneering spirit was still present in the 1990s when Lane performed much of her research with irrigators, some of whom had begun in the region during the early days of stage one in the ORIA. However, many cotton farmers also left the region with the abandoning of cotton in the region and some started businesses in town (Lane, 2003).

Concomitant with the expansion of the town was the introduction of equal wages for Aboriginal people and, as mentioned above, the relocating of many Miriwoong Gajerrong people to the fringes of the town of Kununurra, either by choice or necessity. Indigenous people firstly camped along Lily Creek and in Mirima (Hidden Valley), adjacent to town. Then, reserves were set up on the fringes of town, such as Mirima Reserve (Ryan, 2001) and land allocated for Indigenous habitation. Access to welfare support, firstly child payments and elderly pensions (Jebb, 2002) as well as access to alcohol, began around this time too. The combination of these factors

meant that simultaneous to the reconfiguring of the Ord mainstream, social relations were changing in many important ways.

While changes have occurred, continuities exist in water governance in the Ord. For example, the Ord River Irrigation Area (ORIA) has struggled from the outset to meet the heady expectations associated with its creation. According to Millington (1977), the Ord Scheme was initially conceived on the premise that people only with adequate capital would be able to participate. They would then have the assistance of commercially available funds to fully develop their farms. He does not provide details as to the collapse in yields in cotton crops in the early 1970s but identifies lag times in getting machinery repaired and new supplies to the remote region as the major factors in the downfall of the industry (Millington, 1977:154). A suite of problems, from overcoming extreme remoteness to finding appropriate crops, persisted in the beginning years of ORIA.

The challenges inherent to intensive development in this context garnered widespread criticism, not least from Millington (1977) above. Ord Stage 1 was equally critiqued by Davidson (1965) in 'The Northern Myth' where he argued that political convenience played a pivotal role in the final approval of funding for the Ord Main Dam. Irrigation began in the Ord valley with great hope and expectations for a profitable future. Hopes were based on desires for economic development while patently ignoring evidence strongly advising the opposite would be likely. Davidson's (1965) economic analysis, pertaining to the myth of the suitability of intensive northern development, was available before the Ord Main Dam began construction. This cost-benefit analysis found that continuing with the ORIA was uneconomic



(Davidson, 1965). In a later review of the ORIA, he concluded that 'forty years of research and seventeen years of farming experience have simply resulted in the construction of a large irrigation project in which the state has invested nearly \$100 million and on which it is impossible for farmers to make a satisfactory profit' (Davidson, 1982:19). He goes on to conclude that the decision to build the Ord Main Dam – when it was clear that farming was unprofitable – suggests that political advantage was paramount in approvals for proceeding with the project and that this outweighed the economic advantages of not going ahead (Davidson, 1982:20). In a similar vein, Graham-Taylor (1982), Smith (1998) and Head (1999) describe how the 1967 approval for the ORIA was only given for vote winning purposes in impending Western Australian elections.

Monocultural cotton was extolled as a viable crop in these embryonic stages of ORIA and supporting infrastructure was quickly constructed to get this underway including the setting up of cotton gins. All this was committed to despite declining cotton yields, insect infestations and financial problems (Graham-Taylor, 1982:51). Notwithstanding scientific and economic evidence to the contrary, the ORIA was upheld as a hope of wealth generation for the north. The different crops, and the success and failures of these within ORIA, are discussed further below.

The major physical transformations of the Ord Catchment began with the damming of the Ord River at Bandicoot Bar in 1963 and continued with the construction of the Ord Main Dam that resulted in flooding vast tracts of country. The OMD was opened, with great fanfare, by then Prime Minister McMahon who declared that 'it is a unique and I believe an imaginative enterprise. This is the place I believe where man (sic)

and nature can live in harmony.’ (quote from Graham-Taylor, 1978 in Head, 1999:144). The question of which inhabitants specifically gained from intensifying the regulation of the Ord seems to be absent in the glorification of the dams that made the ORIA possible. The social costs and benefits of Ord Stage 1, especially to the extremely visible but completely disregarded Indigenous Traditional Owners of the Ord Valley, escaped examination.

In many ways then, and similarly to the pastoralism industry, these processes did not involve any consultation or compensation for the Miriwoong Gajerrong people, who were displaced by the flooding of their country, and the subsequent alienation of their land for irrigation. The social effects of these physical transformations, and the associated lack of planning for managing these impacts, were evident soon after the flooding of country occurred. Moreover, they are ongoing and effectively amount to a perpetuation of colonisation. As introduced above, in some ways, the intensity of the changes rendered through the regulation of the Ord was of a different spatiality than the more piecemeal pastoral industry expansion. Pastoralism did not change the hydrology of the river in the same way that two dams and diversions for irrigation did<sup>23</sup>. Despite these differences between irrigation and pastoralism, the introduction of a new resource extraction regime that affected Indigenous peoples’ connections to country is a shared feature of pastoralism and irrigation in the Ord Valley.

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<sup>23</sup> As mentioned above, its impact was through over-stocking which was manifest in the Ord with concerns about sedimentation. These were of significant magnitude to warrant de-stocking of a substantial portion of the catchment and creation of the Ord River Regeneration Reserve in 1961 (Roberts, 1993). The main source of sediments prior to 1993 was the ORRR.

Observations of changes along the Ord River post dam construction were not limited to local Indigenous peoples. Lane (2004) states how longer term residents particularly noticed the growth of riparian vegetation such as cumbungi. She quotes Spike Dessert, a local luminary:

‘Before, when the top dam was filled in ’73, it was basically very little growth along the river – and it was rock right down to the water. There was very few trees along the banks, as compared to today. There was no cumbungi, and the river flowed a lot faster and actually shallower, and wider than it is today... Today you fly there and there are – the river has eaten into older sandbanks, so there’s erosion now, with trees. There’s areas of very thick cumbungi, and very narrow.’ (Lane, 2004:87).

However, the damming of the river and the changes this wrought were viewed by most of those she interviewed as positive developments for the Ord: making it more aesthetically pleasing and accessible. This stands in sharp contrast to many Traditional Owners’ views that express sadness with the transformation of the Ord as evident in the quote from Pat Dodson (introducing the section) and Mandi above (Shaw, 1986; Barber and Rumley, 2003; Ryan, 2001).

As previously noted, the intensification of resource extraction in the Ord valley shared the intentions of other like projects in Australia. While the conceptual work for the ORIA began at the same time as the Snowy and Burdekin schemes, the translation of these intentions into a material reality within the Ord valley was far from smooth to begin with – so the time between conceptualisation and realisation of these plans in

the Ord was longer. These three irrigation schemes were broadly similar in scope. The intention was that, if all were successful, the combined effect of all these developments would be a growth in irrigated agriculture in Australia of 80% (Department of Natural Resources, 1976:14). However, this did not occur in part due to the difficulties in finding a viable crop for the ORIA. The history of monoculture crop failings – most glaringly with cotton in the 1970s – within the Ord is well documented elsewhere (Davidson, 1982; Gibson-Taylor, 1982; Head, 1999; McLean, 2001; Lane, 2004; Vernes, 2005) and won't be explored in further depth here. Suffice to say, State and Federal Government support has underpinned the economic viability of the ORIA from its inception and, after forty years or so of incremental expansions in irrigated agriculture in the Ord, moving towards Ord Stage 2 will probably require ongoing State Government support. Private and public investment has intertwined to push ORIA as a viable project.

Today, irrigation in the Ord is still concentrated in the more northern part of the catchment, quite a distance from the headwaters of the river. Local people conceptually divide the catchment between the Ord Valley, downstream the dam, and country further south forming the catchment for Lake Argyle (field notes, 2006). The total area under irrigation in the Ord catchment at present is about 10,000 hectares. The main crops, in terms of area, are sugarcane, seed crops, melons, other fruits, and, the primary growth area, sandalwood plantations. Figures Five and Six depict ORIA's production area for selected representative crops and their dollar value.

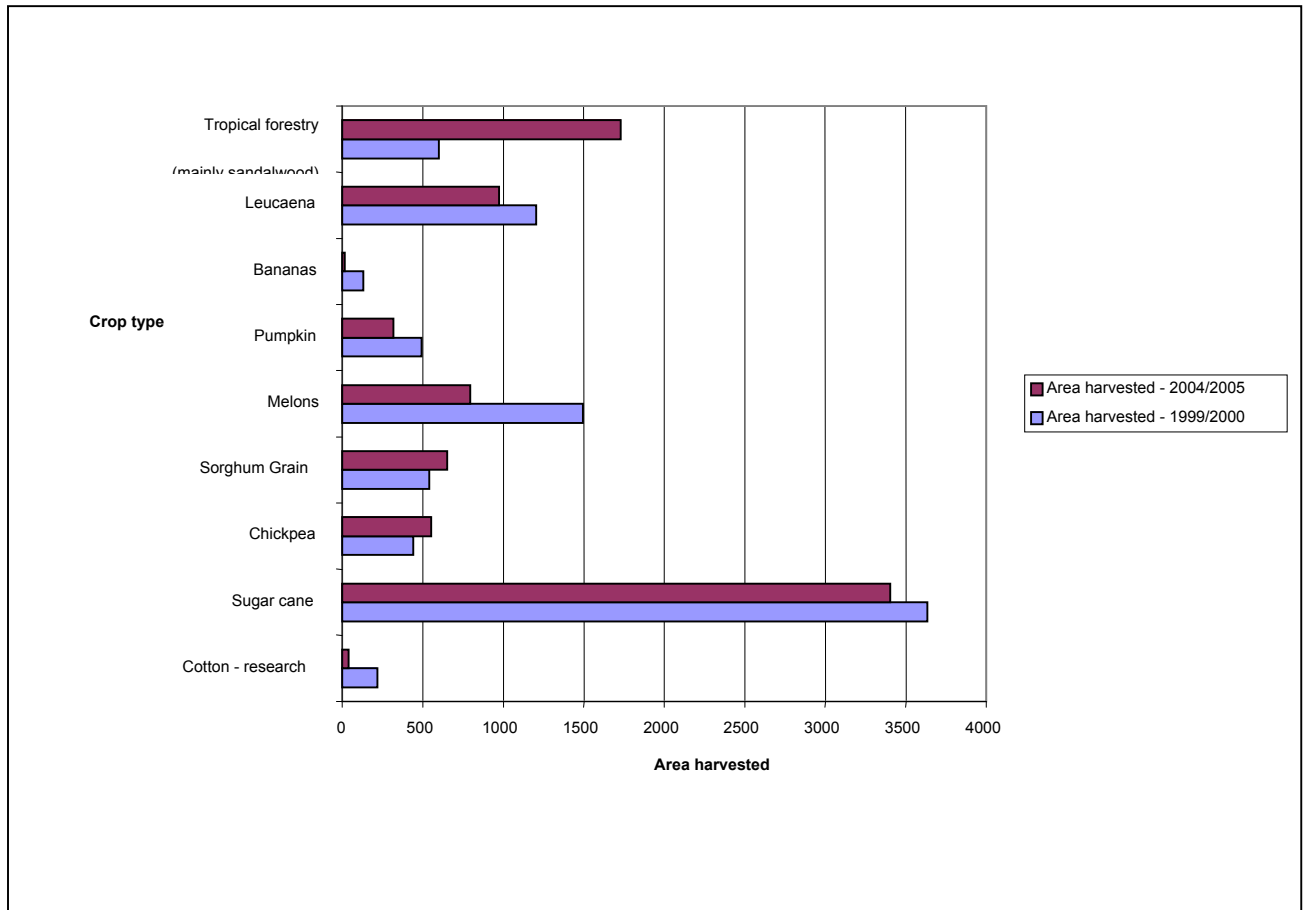


Figure Five: Area of selected irrigation crops in the ORIA, 1999/2000 (wet season) - 2000 (dry) and 2004/2005 (wet season)-2005 (dry) (Sourced from Department of Agriculture, 2001, and Department of Agriculture, 2006).

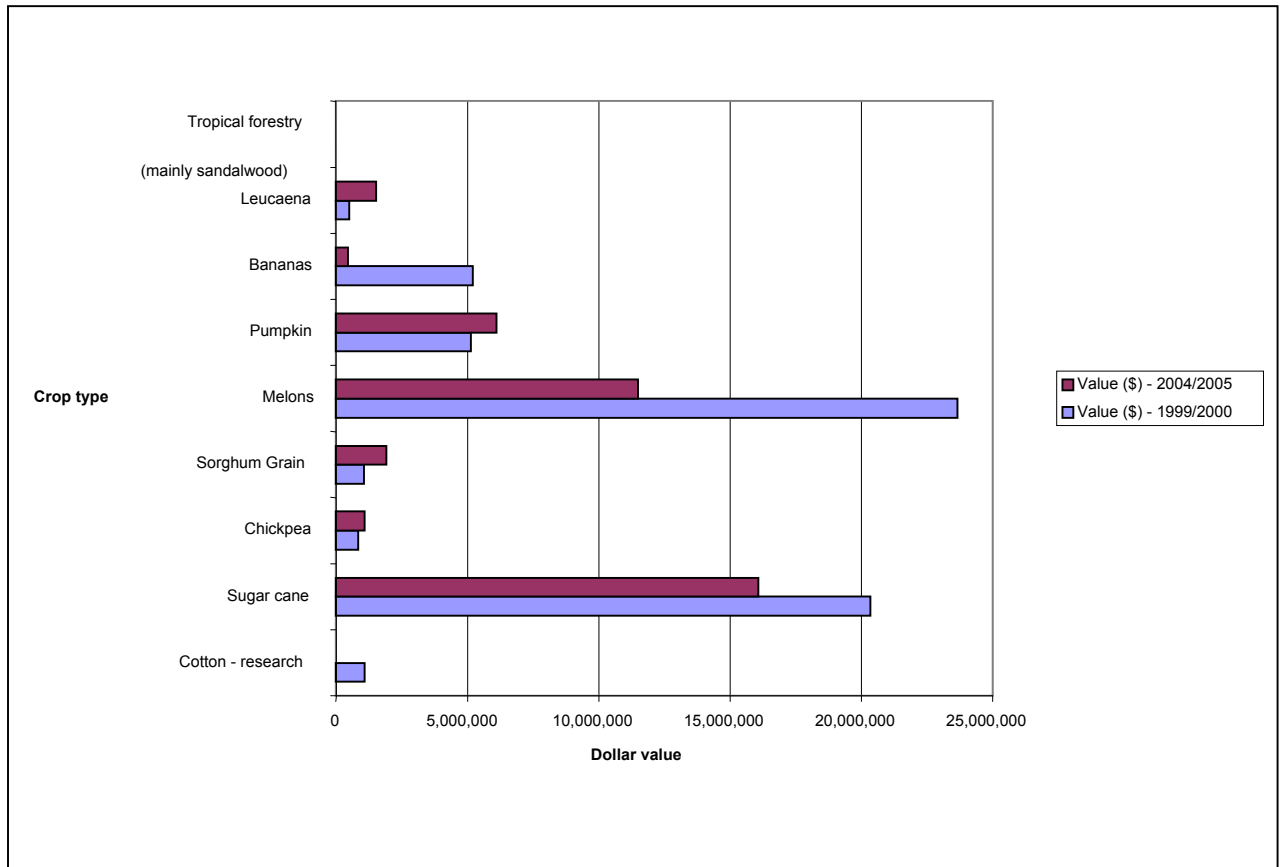


Figure Six: Value of selected crops ORIA, 1999/2000 (wet season) – 2000 (dry season) and 2004/2005 (wet season) – 2005 (dry season) (Sourced from Department of Agriculture, 2001, and Department of Agriculture, 2006).

From these data emerge several important features of the current irrigation industry of the Ord catchment. First, the overall area harvested is 12,298 hectares and this produces a dollar value of AUD54 million or AUD4,360 per hectare (figures derived from Department of Agriculture data, 2006). Another way of looking at the economic value of irrigation is to assess the financial returns per megalitre of water used. In 2003, the ORIA was estimated to generate financial returns of AUD10.31 per megalitre of water, substantially below the national weighted average of AUD24.81 (Australian National Committee on Irrigation and Drainage, 2003:49).

Second, sandalwood is the fastest growing crop in the valley. While some individual farmers have small stands of sandalwood, the predominant growth in this type of tropical forestry is through corporate investment. Under this framework, sandalwood is an investment crop where individuals or companies buy allotments of sandalwood that are 100% tax deductible. The corporations (and investment individuals) involved in broadscale tropical forestry within the Ord are usually based elsewhere (local farmer, pers comm.). Sandalwood generally hasn't made any financial returns yet because the bulk of it is not yet harvested. Also, the crops take at least ten years to reach maturity so the actual yield from current plantings is deferred for some time (Integrated Tree Cropping, 2008; Tropical Forestry Services, 2008). There are externalities that are not counted in this figuring though – investors come to Kununurra to visit their patch and spend their tax deductible dollars in the region and people are hired, both local and itinerant workers, to maintain the crops (Sandalwood forester, pers comm.). Last, unlike other tree crops such as blue gum in southern Australia, sandalwood companies have not been adversely affected by the government regulation changes in tax benefits from tree crop investing (Ooi, 2009). For example, Tropical Forestry Services hold 1750ha of the now 2500ha of sandalwood in the Ord and are expecting to make a profit in 2009 due to diversifying investment structures (Ooi, 2009). Sandalwood will continue to be an important crop for the future of ORIA.

Third, diversification may help sustain the ORIA. For example, horticulture seems to change according to conditions: the area put to melons has decreased in size (approximately a 50% reduction from 1494 ha in 1999/2000 to 793 ha in 2004/2005) and, as a result, in value (from AUD23,667,796 to AUD11,506,500). Meanwhile, the

price of bananas grew (from AUD16.21 per carton in 1999/2000 to AUD20.95 per carton in 2004/2005) but the area harvested dramatically dropped. From interviews held with irrigators in the Ord and people coordinating local NGOs supporting these, I gathered a general sense of farmers developing greater diversification in their cropping practices, partly to insulate themselves from the impacts of fluctuating conditions and markets (field notes, 2006). Changes within irrigation practices are common.

The fourth point is related to the third: production is not dominated by a single type of crop in the ORIA. Sugarcane production is static – as Figures Five and Six show, both in terms of area cropped and value obtained. Irrigators are not giving up highly lucrative seed and horticulture crops to simplify and move to monoculture ventures. This may favour sustainability in the region and help avoid such disasters of the 1970s when cotton failed so spectacularly (Department of Natural Resources, 1976).

The mooted expansion of ORIA is partly being facilitated by the surrendering of native title over 16,000 ha by Miriwoong Gajerrong traditional owners (Willacy, 2006). The way that this expansion will occur is still not clear at this stage. The current status of Ord irrigation expansion is further discussed in the concluding chapter. In December 2006, Expressions of Interest were requested by the Government of Western Australia and it is understood that a proponent will be selected from amongst applicants (local Miriwoong TO involved with Miriwoong Gajerrong native title negotiations, pers comm.). The struggle to come up with finances for infrastructure development could be a key impediment to the project expansion being a success. A special ABC report on the 'Landline' program in late 2006 reported that



'some fear that the reluctance of the Western Australian government to come up with cash for vital infrastructure may doom not only stage two of the Ord Scheme but the entire project' (Willacy, 2006). Since 2006, planning has continued but works on the ground have not. This section has identified the qualitative and quantitative features of ORIA as they exist today, the next looks at mining and its connection to the Ord River. Irrigation is a dominant water user in the Ord today, as is mining.

#### **4.6 Mining wealth on country: towards partnerships?**

'...We watching out all that every country all around. We see any miners come well they gotta go and tell em what to do. Might be good thing in there well we might be want to say long him, "we want em half." Half-half (a share). We don't want to be greedy. We go half-half.' (Jack Britten quoted by Ross and Bray, 1989: 127)

'The chief lesson obtained from history and from more recent public and private sector policies for Aboriginal affairs and development is that they do not seem to work. Those "welfare" type policies, characterised by "doing things to" Aborigines only differ from the old pacification days by degrees of ideology. Similarly, those "development" type policies, characterised by "doing things for" Aborigines differ from the protectionist policies only by expectations for outcomes. It seems we have been unable to accept the realities of life as Aborigines see and accept them. There is widespread and entrenched reluctance to "listen", to afford Aborigines the status of teachers.' (Donovan, 1986:58)

The custodial role is important in traditional Indigenous lifeways. Jack Britten above states how this caring for country includes watching what others want to do with it. He indicates that often Indigenous people are not anti-development but do want a fair share of the benefits of it. Also, the differences between Indigenous and non-Indigenous peoples are not insurmountable, especially if people wishing to learn about Indigenous lifeways accept their teaching capacity. These two principles are instructive in looking at the social dimensions around different land use regimes in the East Kimberley.

Mining exploration in the Kimberley began in the 1880s with the Halls Creek gold rush, just to the south west of the Ord Catchment. Ryan (2001), through the stories told to her by Indigenous women of the southern Ord catchment, recounts how the miners came in large numbers during the Halls Creek gold rush. As many as sixteen ships were anchored in the gulf off Wyndham at one time and that by the end of 1886 about 2,000 hopeful prospectors were in the region. Just four years later there were none (Ryan, 2001:47). While this gold rush was not long lasting, the service towns of Wyndham and Halls Creek remained (Coombs, 1989). The simultaneous pastoral expansion cemented non-Indigenous settlement in the Ord.

The second wave of major mining ventures was in the 1970s and culminated in the creation of the Argyle Diamond Mine in 1979. This mine started by sourcing ore from riverbeds and exploiting Barramundi Gap, a significant site for Indigenous people. Creeks and tributaries to the Ord were vital for these activities; mining of most precious minerals requires vast quantities of water, for aiding physical or chemical extraction. In addition, the first mining activities involved literally blowing up creek

beds to access suitable materials. A slag heap from early mining is shown in Figure Seven (next page). This proceeded without full appreciation for the value Traditional Owners held for this area. As Ferris, Mignone and Heithersay (2005) illustrate, the Argyle Diamond Mine is a 'site of particular significance to Aboriginal women; it is the site of the Barramundi Dreaming, and the diamonds are her scales' (Ferris et al, 2005:22). The mine impacted directly on Indigenous cultural values relating to water.



Figure Seven: Limestone grasslands in southern Ord catchment: the stepped mountain in the background is from mining waste materials. It is a human-made feature. (photo: Jess McLean)

When Argyle Diamond Mine began, many Aboriginal people did not welcome it. Some people felt that, as represented by Jack Britten's words above, if only access was pre-negotiated and a share of resources was offered, then the intrusion would not be so unpopular. The impact of its development was not well investigated beforehand and retrospective studies such as the East Kimberley Impact Assessment Project (EKIAP) conducted by the Centre for Resource and Environmental Studies critiqued this trajectory. The EKIAP was published nearly a decade after the mining began. Attempts by the mine owners to placate local concerns via 'The Good Neighbour Policy' were argued to be not clear in their intent or purpose (Christensen, 1983): 'one recurring theme is a denial of any obligation of ADM's part toward the Aboriginal people of the region...all payments are ex gratia, neither in lieu nor discharge of any acknowledged responsibilities towards Aboriginal communities' (Christensen, 1983:26). The early days of mining proceeded similarly to pastoralism and irrigation: with inadequate consultation and unilateral decision making.

More recently, negotiations between Rio Tinto (current owners of Argyle Diamond Mine) and Aboriginal people affected by the mine, have given a firmer future for the recipients of compensation for impacts on their country. The successful negotiation of an Indigenous Land Use Agreement<sup>24</sup> with TOs affected by the Argyle Diamond Mine was voluntary on behalf of the company. Before the OFA was signed in October 2005 and officially registered in mid August 2006, an ILUA was signed between the Argyle Diamond Mine (ADM) the Miriwoong, Kija, Wularr and Malignin Traditional Owners and the Kimberley Land Council. The Argyle Participation

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<sup>24</sup> Altman (2004) suggests that ILUAs could also encompass water rights and may be an appropriate forum for apt recognition of Indigenous water values.

Agreement replaced the earlier 20 year old Good Neighbour Agreement between the mine and Indigenous Traditional Owners in the area. There was no legal requirement for an ILUA to enable the Argyle Diamond Mine to continue its mining operations (Freehills, 2005) but it was deemed necessary by the parties to establish a partnership agreement from which 'community and economic development extending beyond 2020 could be developed' (Freehills, 2005:1). ADM could be seen as performing their role as good corporate citizens. Both parties entered into negotiations, according to Ferris et al (2005), of their own volition. The ILUA compensates for changes in the Ord catchment and their adverse impact on Indigenous traditional owners.

The Argyle Participation Agreement (APA), the negotiated ILUA between traditional owners and ADM, is a substantial text which Ferris et al (2005) describe as consisting of two parts. The first part lays out compensation arrangements for the TOs for damage to country incurred by mining. The second comprises of management plans including Aboriginal site protection, training and employment of Indigenous peoples and land management. The amount of compensation is not disclosed in documents that describe the ILUA but, during the course of fieldwork in Kununurra, several community leaders indicated to me that the amount of money given to families as a result of the compensation was substantial. This ILUA precedes the OFA temporally but shares a socio-spatial orientation as some Miriwoong Gajerrong people who benefit from the APA will also benefit from the OFA.

This ILUA did not involve all Miriwoong Gajerrong Traditional Owners as it was argued that not all MG *dawang*<sup>25</sup> are directly affected by the activities of the mine<sup>26</sup>. Therefore, the compensation measures were delivered to some but not all Miriwoong Gajerrong people. In this instance, the potential for delivering uneven development outcomes from this differential distribution of resources is clear. If some, but not all, people within a region are able to access a particular pool of resources, then equitable outcomes are nearly impossible. This may have provided a further impetus for the global negotiations between Indigenous Traditional Owners, the State and some private sector interests, to succeed in securing a framework for development for all Miriwoong Gajerrong people in the Ord valley. The partnership approach is embryonic in the Kimberley, but it is one that shows promise, especially since goodwill seems to exist through negotiating ways forward that provide mutual benefit. Partnerships between public interests and Indigenous peoples are beginning to emerge as well with the implementation of the Ord Final Agreement. The OFA, based on recognition of native title rights, will be scrutinised in closer detail in Chapter Six.

Today, mining companies in northern Australia are attempting to move away from their history of building unsatisfactory relationships with Indigenous peoples, a history characterised by unfair negotiations and divisive compensatory strategies (Howitt and Douglas, 1983). Intensive exploration for untapped mineral deposits grew in the 1980s with multinational corporations seeking out reserves in remote Australia.

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<sup>25</sup> *Dawang* can be translated as the country to which particular nations within the Miriwoong Gajerrong peoples belong. *Dawawang* refers to the traditional owners of a dawang.

<sup>26</sup> Indirect impacts are not included here because of the difficulties associated with unpacking complex dynamics. Indirect impacts are discussed with cultural flows and hydropower issues.

Once found, securing access is of paramount concern and in most instances the uneven negotiation table was common with Indigenous people lacking equality in this space in both political and practical terms. Howitt and Douglas (1983) describe how these negotiations collapse into a public relations exercise if appropriate resources are not available for fair discussions, and if the legal mechanisms for experience of duress are absent. There is evidence of these tensions still existing today, shown especially in O’Faircheallaigh and Corbett’s (2005) examination of environmental provisions in mining company negotiated agreements with Indigenous peoples. This history of tenuous relationships is not forgotten while the national mineral resources boom continues.

As stated earlier, the Ord catchment has several mining operations, the largest of which is the Argyle Diamond Mine. Further, the ADM is the most financially productive industry in the Ord catchment – it produces two thirds of the entire production value of the mining and petroleum sector in the Kimberley (KDC, 2006). ADM continues to grow, primarily through transforming its operations from alluvial to underground. Associated with this growth is an increasing demand for power. At present, ADM sources 90% of its power needs from hydropower generated at the Ord Main Dam (Department of Water, 2006: 60) with the balance coming from diesel generators in situ at the mine. This constant and ongoing demand places some restrictions on the Ord River flow. In order to meet the requirements of the ADM, the Ord must flow at levels that produce reliable hydropower generation. This means that the natural fluctuations from dry to wet seasons, and in between as well, must be evened out. However, despite the complete regulation of the Ord flow to provide a constant flow of power to ADM, its energy requirements are currently not entirely met through this source. The ADM is the most fiscally successful industry here but it also

requires considerable supporting infrastructure, including high demand on the Ord River itself.

With the hydropower produced by the dam being insufficient to meet demand, ADM is seeking out alternative sources to meet the shortfall and projected future growth. The Department of Water (2006:63) indicates how biofuel from sugarcane and a new hydropower station at the Kununurra Diversion Dam are under consideration to fill the gap. It is noteworthy that ADM uses three times the amount of energy that is required for both Kununurra and Wyndham combined (figure extracted from graph provided by Department of Water, 2006: 62). Apart from the heavy reliance on hydropower, the ADM also draws directly on water from Lake Argyle for its mining operations. The amount of this allocation is not given in the most up to date allocation publication by the Department of Water (2006). Given the fact that information on the extractive demands for mining purposes is not provided in the most recent allocation information, it could be assumed that this amount may be negligible compared to the impact of its energy consumption. Through its hydropower use, therefore, ADM arguably has a greater impact on the Ord than any other sector. The large and growing demand for power means that the river must run continually with little room for the pre-dam natural variation

#### **4.7 Tourism and Recreation**

The East Kimberley, and more particularly, Kununurra, has developed as a tourist destination based around the notion of it being a frontier. A welcoming sign for visitors to Kununurra proclaims the area as 'the last frontier'. This frontier discourse is connected to Kununurra's location as a gateway to the Kimberley and its positioning as the largest centre between Broome on the western coast and Darwin



to the north. Like all of the Kimberley, the busiest months in terms of tourism travel are June, July and August – the cooler dry season months. During these months, greater numbers of people come to the region as itinerant workers as well (KDC, 2006:3). Tourism is a growing industry throughout the Kimberley. The Ord catchment, with Kununurra as its prime town, shares in that expansion (Local tourism centre manager, pers comm.). One quantitative way to measure this is tallying the number of people coming through the Kununurra Tourist Centre. In 2000 the Centre counted 65,000 visitors, while by 2005 this had grown to 85,000 people (local tourism manager, pers comm.).

Kununurra is promoted as a destination where Indigenous culture can be sampled. The town's name is widely understood to be a local Aboriginal word and is translated to mean 'meeting of big waters' (Shire of Wyndham and East Kimberley, n.d.). This is a mistaken translation of local Indigenous languages, made by settling non-Indigenous people (Mirima Dawang Woorlab-gerring Language and Culture Centre, pers comm.). There is no 'u' sound in Miriwoong language. It most likely is a mistranslation from Koonoonoora which could be interpreted as the sound of water running over rocks and twirls (Miriwoong man, pers comm.). This misappropriation is common elsewhere in the Kimberley, such as in the Fitzroy River where 'many of the European names for sites on the river reflect Indigenous origins although they are mispronunciations of the Indigenous names' (Yu, 2006:137).

Activities available for tourists are predominantly related to water pursuits: scenic flights over the water course, fishing, pleasure cruising, viewing of the lake from cafes, water sports including water skiing and kayaking, swimming in waterholes.

These activities are becoming more popular with more operators taking tours both down the lower Ord and on Lake Kununurra (local tourist manager, pers comm.).

The monetary value of these activities, in terms of evaluating the contribution of tourism to the Ord catchment, is difficult to calculate. Some estimates are offered, such as Fullerton (2001:252) who states that:

'About 100,000 visitors pass through Kununurra each year, most after a taste of Croc Dundee country. Regular flows in the lower Ord are one of the attractions of a tourism industry bringing in a very respectable \$50 million<sup>27</sup> a year compared with some \$65 million from Ord 1 agriculture. Seasonal flows would be the last change the fishing safaris would want.'

Fullerton's (2001) argument clearly contrasts the sometimes invisible value of tourism with agriculture. Often figures that are derived on the economic value of tourism are offered with caveats. Appendix B shows data from King et al (2001) that provides a different picture of the values of various water uses in the Ord. In turning to other sources to get other approximations of the economic value of tourism to the region, the KDC (2006) presents information on domestic and international tourist figures for the whole Kimberley. A portion of these would be associated with the east Kimberley but disaggregating this data set and establishing exactly these proportions is not possible.

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<sup>27</sup> Note that this figure is solely for the Ord. The approximately \$160 million tourism in 2001 shown in Figure Eight overpage is for the entire Kimberley.

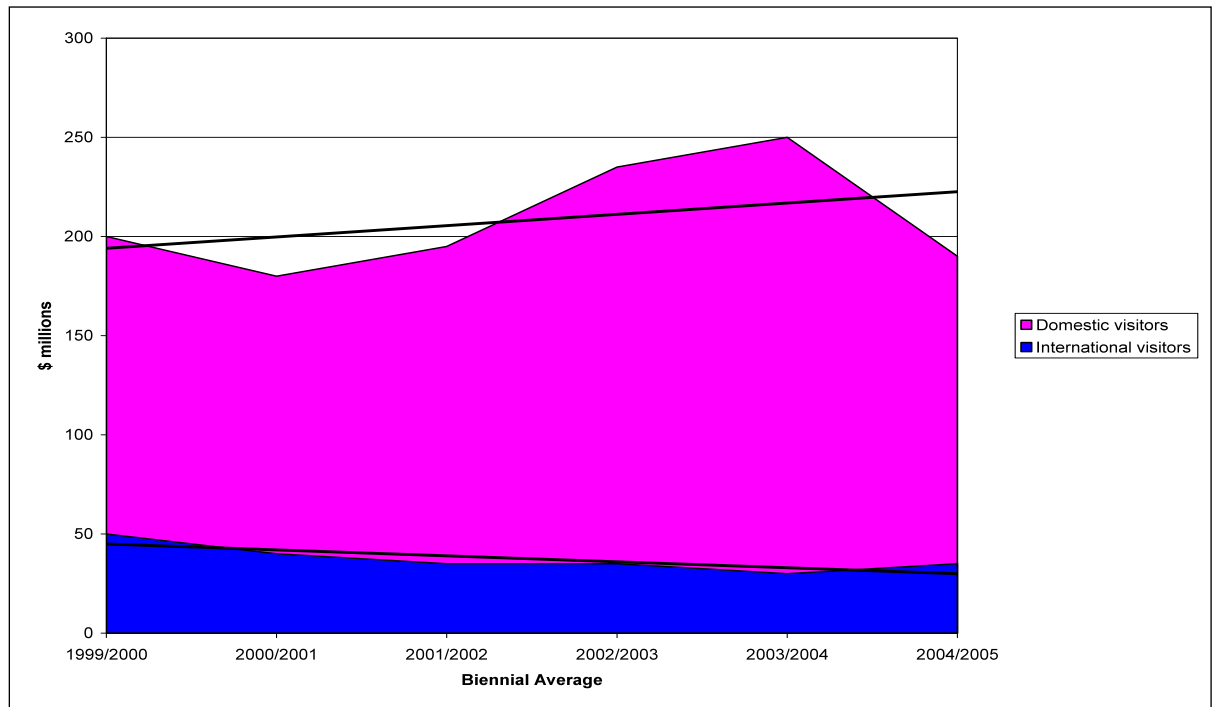


Figure Eight: Estimated Tourist Expenditure 1999-2005 (KDC, 2006:5).

The economic value of tourism to the whole Kimberley region is depicted in Figure Eight above. This shows that domestic tourism is of significantly higher dollar value than international tourism. The trend lines show an overall increasing number of domestic visitors and a small decreasing number of international travellers. The data above paints a different picture than that suggested by King et al (2001) and later re-presented by Storey and Trayler (2006). There may be something of an underestimation of the value of tourism to the region, difficult as this may be to assess, and an overestimation of the economic value of irrigation to the ORIA. The authors both give disclaimers for the data they give, suggesting the difficulty in

separating recreational and tourism based activities directly attributable to the project from those not (King et al, 2001:4).

For cultural tourism controlled by Indigenous people, expectations seem to be high but the reality may not meet these. Walsh (2002) points out some of the impediments to success in this industry including location along tourist routes, climatic variation, long hours required to manage some tourist operations, and the need to be free to travel for family business. This does not mean that Indigenous controlled tourism is impossible – many successful tourism ventures in Kakadu indicate the opposite. Slow growth and realistic expectations are essential.

#### **4.8 Future growth?**

'Last October, under clear blue skies and the piercingly hot sun, an unusual sight could be seen in the far north of Western Australia near Kununurra. There, amongst tall green stands of sugar cane and lush groves of mangoes and bananas, were paddocks full of fluffy white dots waving gently in the breeze. Against all the odds, cotton has reappeared on the Ord River Scheme.' (Neales, 1996:5)

'There has been no further movement on the resolution of matters raised in our appeal and the Miriwoong Gajerrong native title claim over much of the area is waiting determination by the High Court with an outcome expected sometime before the end of the year. Therefore, it is unlikely that Ord Stage 2 will receive the necessary approvals and resolve significant Indigenous issues

before the end of the year. The new WA government's stance on the proposal remains unknown and with a new government in the NT for the first time in 26 years there is opportunity for the project to be reassessed. Our next steps are to elicit the NT and WA Government position on the proposal....' (Environs Kimberley, 2001:4).

In the mid 1990s, plans for expanding irrigation ventures re-emerged. Partly due to some successes of horticulture and trial sugar growing ventures, the notion of concentrating production in the Ord gained greater credence once more (Alcorn, 1991; Alcorn, 1992; Roberts, 1993; Neales, 1996). Preliminary assessment processes in ascertaining the viability of broadscale sugarcane developments resumed 1997 with a Public Environmental Review (Kinhill Pty Ltd, 2000). As King et al (2001) describe it,

'In 1998, a joint venture of Wesfarmers Co., Marubeni Corporation and the Water Corporation, were awarded preferred development status to investigate the financial and environmental feasibility of a project based on the processing and export of raw sugar produced in the Ord Irrigation District. Known as the M2 Sugar Project, it involved growing sugarcane on 32 000 hectares of farmland to the east of currently developed areas.' (King et al, 2001: 3).

This was swiftly followed by a joint Environmental Impact Statement/Environment Review and Management Plan (EIS/ERMP) for a 35,000 ha sugarcane development. The consortium including Wesfarmers (a public company based in Australia),

Marubeni (a public company based in Japan) and the Water Corporation (a Western Australia state government agency), commissioned consultants Kinhill Pty Ltd to compile the report to be made available for public comment. At the same time, the Water and Rivers Commission (now the Department of Water) was drafting water allocations in order to provide guarantees of water supply for the irrigation venture. They released a Draft Interim Water Allocation Plan in 1999 which stipulated ample provision of water for the development.

In terms of the EIS/ERMP, Kinhill Pty Ltd (2000) described a project that guaranteed, they argued, a net conservation boost for the Ord Valley. The table over page summarises the quantitative dimensions that they suggested amount to a supporting of this claim.

**Table One: Summary of land uses in proposed broadscale irrigation sugarcane venture (Kinhill Pty Ltd, 2000).**

Proposed land uses within the Project Area			
Land Use	Location		
	Western Australia	Northern Territory	Total
Farm area (ha)	16,500	15,290	31,790
Infrastructure (ha)	1,790	1,220	3,010
Conservation (ha)	16,610	24,350	40,960
Totals	34,900	40,860	75,760

The EIS/ERMP attracted much public comment, from both advocates and dissenters. For Wesfarmers/Marubeni, the next stage in gaining government support was to respond to the critiques and amend the project accordingly. During and parallel to this process, native title determinations received challenges by governments and private parties and Indigenous representative bodies gave responses to the plans.

One requirement of the EIS/ERMP process was to speculate on what consequences would arise were the project to not go ahead. A first consequence the Ord River Irrigation Area EIS/ERMP suggested was that the water stored in Lakes Argyle and Kununurra would continue to be 'wasted' if it was not to put to work irrigating sugarcane fields (Kinhill Pty Ltd, 2000). A second consequence of not proceeding was that just over 35,000 ha of 'existing vegetation, predominantly grassland with scattered low trees found on the black soil plains, would not be cleared' (Kinhill Pty

Ltd, 2000:1-15). It is noteworthy that the term 'native vegetation' was not used in the EIS/ERMP. Rather, 'grassland' or 'existing vegetation' was selected to describe the still relatively intact ecosystems.

The Ord Stage 2 proposed project met resistance from several quarters. Objections to the project came from Indigenous representative bodies like the Kimberley Land Council and local environmentalists such as those participating in the Care for Ord Valley Environment group. The EPA responded by requesting a reduction in the size of the project and better protection of threatened vegetation communities. Indigenous representative bodies sought better consultation with the project proponents. Then, as now with proposed Ord irrigation expansions, the Environment Centre of the Northern Territory lambasted the project as another irrigation project bound for failure (Environment Centre Northern Territory, 2006). In the end, the project did not go ahead because the Traditional Owners on the Northern Territory side of the project did not give their support and, perhaps most importantly of all, the cost of sugar fell dramatically. Ord irrigation expansion is due to be facilitated by upgrade work due to commence on the existing M1 irrigation channel in August 2009, in preparation for the construction of the new M2 irrigation channel in the 2010 dry season (Government of Western Australia, 2009). In many ways, it is surprising that major works have not already occurred on the next phase of irrigation expansion. It seems that Ord expansion faces impediments today, just as in earlier times.

By contrast, tropical sandalwood production in the Ord is expanding at rapid rates. From only 600ha being under sandalwood in 2000 to 1729ha in 2005 and nearly



4000ha in 2007 (Studdert, 2007)<sup>28</sup>, this is one of the more quickly spreading crops in the valley. As mentioned in Chapter section 4.5, two large corporations dominate the growth, Integrated Tree Cropping and Tropical Forestry Services, and both operate under investor schemes. This means that crop investment can come from individuals and companies located anywhere, not just within the Ord. In 2007, an application was made by Tropical Forestry Services to put 2,400ha of sandalwood in around Kingstons Rest near Kununurra (Curtain, 2007; Studdert, 2007). This year, TFS put in 900 hectares and in 2010 nearly 1000 hectares. The demand for land to plant more of this hemi-parasitic species keeps growing. This is one way that water is consumed from the Ord catchment by interests other than directly within the catchment.

A more radical transfer of Ord catchment water to a distant elsewhere is considered intermittently by southern West Australians, particularly in times of acute water scarcity. The notion of extracting water from northern Australia to water the drier south emerges repeatedly, not least in times of extreme drought in the more densely populated regions. The Ord catchment has not escaped scrutiny for such a purpose, partly because of the large volumes of water already stored by the Ord Main Dam. Powell (2000) describes the serious consideration this initiative received in the late 1980s with public discussion being held on the chief water supply alternatives for the Perth region. The cost then of shipping water to Perth from the Kimberley was \$9.6 billion per annum or \$5.35/m<sup>3</sup> (Powell, 2000:64). In this case, sourcing water from the south west or desalination were one tenth and one third of the cost of Inter-basin Transfers (IBTs) from the Kimberley, so economic realities determined the

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<sup>28</sup> This estimate does not seem to have been met or there could be a problem with data here. Ooi (2009) states that 2500ha of sandalwood are currently growing within the Ord catchment.

infeasibility of efficient transport of water from the Ord to Perth. Yet again in 2005 the spectre of moving freshwater south appeared and received a great deal of publicity for the boldness of the imagining. On this occasion the Project again considered the economic costs of such IBTs to far outweigh any benefits of bringing the water south, without any further examination of the environmental or social impacts of this water relocation. The KWSP considered ocean transport, canal transport and pipelines in its assessment for plans to transfer water from the Ord catchment or the Fitzroy catchment. Their investigation found that cost of any of the IBTs was too great, starting at five times the current cost of water that Perth citizens pay, and therefore not a viable option (Kimberley Expert Panel, 2006). In order to do this examination, the KWSP spent \$3 million of its \$6 million budget and stopped at that when they realised the exorbitant economic cost of any of the proposed modes for this inter-basin transfer (field notes, 2006). Environmental and social impacts were not weighed. The Ord catchment clearly continues to capture the imagination of people eager to extract economic gain from its surface waters, notwithstanding the sheer infeasibility of some of the ideas for doing so that materialise.

## **4.9 Conclusion**

This narrative of human-water interactions in the Ord over time portrays changes and continuities. The triggers for both changes and continuities are found in the intercultural terrain where Indigenous and non-Indigenous spaces meet, a space that is far from immobile. For example, the station days were both resisted and facilitated by Indigenous peoples, and variations in exchanges existed over time and space in the pastoral context. Uneven distribution of costs and benefits from this mode of production was present in the Ord.

Through reshaping the hydrology of the Ord River, intensification of resource extraction became possible. Non-Indigenous population from the 1970s onwards increased and took advantage of the opportunities presented by the ORIA. Meanwhile Indigenous people throughout the Kimberley began to assert their rights to country, seeking acknowledgement for governance responsibilities that were hitherto completely ignored.

This is a still changing river system, with further expansion of irrigation planned and new activities such as intensive aquaculture likely. Threats are identified too with a rising water table and high siltation rates being just two risks to the health of the catchment that have grown over time. Like its people, the Ord catchment is dynamic, and as a colonised system, its future existence is perceived to have myriad possibilities, whatever the material realities of these. Specific Indigenous water matters in the Ord are examined in the next chapter where I delineate the gaps between imagined future cultural flows and currently defined environmental flows.

## **Chapter Five: Indigenous Perspectives on Water in the Ord Catchment**

### **5.1 Introduction**

Indigenous perspectives on water in the Ord catchment are multi-dimensional. They are shaped by social, economic, environmental and cultural facets. These factors interact in complex ways and are often indivisible. This complexity is an outcome of both the varying social dynamics of the Ord catchment and the diverse physical characteristics of the system. As Leah Gibbs (2006) argues, variability is an important element of how we can reframe and theorise water values. Valuing variability means, according to Gibbs (2006) that we account for change, complexity and diversity. Further, emphasis of the connections between the human, non-human and water realms informs her reconceptualisation. Indigenous perspectives (similarly to non-Indigenous perspectives) are variable, both within and between individuals, as well as over time and by place. Within the Ord, changes in water values have arisen in relationship with physical and social changes: variability exists between generations, according to gender, and to which dawang people belong. Variability also exists as a way of maintaining continuity in values – it is a tool of adaptation.

This chapter assesses Indigenous water values in the Ord, in the context of their reinforcement or challenge to existing discourses about water management. It asks what conditions could be met to improve environmental justice concerning water matters in the Ord. At present, environmental flows in the Ord are defined as post-dam and therefore exclude significant Indigenous water values. This chapter looks at the forms Indigenous water values take today, and how they differ from the State

defined environmental flows. A spatially inclusive analysis of Indigenous water perspectives in the Ord includes developments within the catchment, such as the construction of the town of Kununurra, Argyle Diamond Mine, ongoing pastoral interests, tourism and recreation practices.

Flowing through this analysis is recognition that the Ord catchment's social sphere is not two-dimensional, with Indigenous peoples' values abutting irrigation pursuits; or Indigenous and non-Indigenous people inhabiting separate and bounded cultural spheres. An intercultural analysis recognises the interconnectedness of cultures sharing space. Therefore, this chapter looks at Indigenous water perspectives, while giving reference to non-Indigenous realities. Similar to many northern Australia catchments, the Ord encompasses numerous values crossing over scales spanning the local to the global – for instance, as seen in tourism and recreation uses. It is not strictly a catchment of farmers versus conservationists, or Indigenous people vying against developers. Following Langton (2002), I read this catchment as a multivalenced geography where interests move in often surprising ways. Indigenous water values held by traditional owners opens this chapter.

## 5.2 Traditional Miriwoong Gajerrong values pertaining to water in the Ord catchment

As custodians for country, Miriwoong Gajerrong TOs track the transmutations of the Ord, noticing improvements and deteriorations on their traditional lands. Evidence of this knowledge bank appears in an interview with a male Miriwoong TO in Kununurra:

‘With the Ord valley, the cultural values have changed because of the flooding upstream. The river is wider upstream the dam wall and narrower downstream. Also, the silt build-up downstream changes things. You saw that video<sup>29</sup> – Button was talking and Marjorie too – about walking to Argyle station, when the river dried into pools. There’s no way you can do that now – can’t follow the river going downstream, can’t cross over at points like Green Island, Carlton Crossing. People used to push cattle across there too. You can’t anymore because it’s all under water. So the cultural side of things has changed. On the environmental side, the river’s all infested with weeds, and that has changed things a lot too. There’s also no access in parts like Packsaddle and Fords Beach.’ (Miriwoong Traditional Owner, 2007)

This response provides a good example of the impact that changed hydrology has on cultural and environmental values within traditional Miriwoong cosmologies. Physical changes cascade into cultural and environmental factors; weeds, sediment buildup,

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<sup>29</sup> The video referred to here is to advocate construction of a fishway on the Ord and included interviews with TOs. The TOs talked about the water values lost by the dam, giving similar examples to this interview.

river depth and breadth, all affect Indigenous culture and environment. Traditional Indigenous water values include a healthy river void of silt buildup – a problem plaguing the Lower Ord. Clearly, movement across and along the Ord are important parts of cultural water concerns; mobility of people facilitates culture. Also, water values require access to the river – cultural practices pertaining to water are restricted if denied river access. Closure of river front land for private purposes, therefore, can have as significant impact as in-stream reconfiguration. Chances to assert usufructuary status are thereby effectively occluded.

Cultural affiliations with the river are primary and all-encompassing elements of the traditional Miriwoong Gajerrong connection to country. A cultural understanding of water, as depicted by Jackson, Storrs and Morrison (2005), brings about a nuanced appreciation of the differences between Indigenous and non-Indigenous water values. Jackson et al (2005) report that Kimberley Aboriginal peoples share some cultural principles, including the importance of unimpeded flows of river bodies (Jackson et al, 2005:106, quoting Toussaint, Sullivan and Yu 1999). Dams are universally acknowledged to adversely affect Indigenous peoples' lives as they restructure whole waterways. Indigenous people in the Ord are river people and damage to the health of this waterway reverberates throughout their cultural sphere.

In another interview with a younger Miriwoong traditional owner in Kununurra, values of equity, culture and nourishment from the river emerge.

‘JM: What might a cultural flow look like here? The things I know about a cultural flow come from down south, NSW, the Murray Darling Basin.

TO: I think a cultural flow will provide a means of sourcing food, a means of survival. That's what the river was about, prior to the dams. The river would dry up in lakes and billabongs and dreamtime stories were associated with that. My interpretation of that now is that food was a main benefit of that change too, in the dry. The most important use of the river was for fish, turtle – getting everything that you could eat.

JM: And now is that not the case at all?

TO: People still do – but they're more advanced. Using rods and things. They do talk about how it's more dangerous now, my grandmother used to say don't go down to the river because they don't know it as they did before. It's not as safe as it was before the lake. People used to fish from the bank a lot more. But now, not quite as much because it seems more dangerous.'

(Miriwoong traditional owner, pers comm. 2006)

Changes are evident here; for example, there are new food gathering techniques and familiarity with the river has diminished. But continuities are, too; people still obtain sustenance from the river, albeit not as much. Safety and risk are associated with knowledge of how the river works. The danger stemming from an altered river carries through to less reliance on it as a food source. Dreamtime stories are impinged by river regulation as well. The interview continued, looking at water justice matters.

'JM: So what do you think would be a situation where water justice is achieved in the Ord?

TO: Everybody should be able to use the river and it shouldn't be segregated – divided according to if you have a ski club membership or can use that part



there. That sort of thing. There should be equal access and attitudes need to alter to accommodate that. If people are on a big boat, you can tear up the water and that can disrupt other people's use. People shouldn't be abusing the river.

JM: In what way do you know people to be doing this?

TO: If people have no boats, and they have to fish from the side, when one comes through it will be impeding the enjoyment of the river for those people. People should be mindful of privacy and that takes consideration, thinking about how we conduct ourselves. This is a free country – if you enjoy it in a way that won't cause harm or bring harm to others then there's no problem. Everyone is different, it's not a black/white person thing. You go down to Ivanhoe<sup>30</sup>, you see people there fishing from the side or on boats on the river, that's all fine, as long as you don't bring about discomfort to others.

JM: What about water justice in the context of water holes and springs?

TO: Some areas are significant for MG peoples' dreamings. Adhering to that is important – people have to be careful. People don't want to see those areas tampered with. That's where culture is, there. Springs are valuable, spiritually, there's a great sense of connectedness there.' (Miriwoong traditional owner, pers comm. 2006)

Access dilemmas are mentioned by both informants above: restricting access has cultural, economic and environmental implications. According to the second interviewee, private properties and/or clubs are the main agents controlling important

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<sup>30</sup> Ivanhoe crossing is a popular fishing spot below Kununurra Diversion Dam.

access points to the river. The first interviewee above stated similar access issues. Ridding the river of exclusive access areas forms one common desire. Also, water matters of a spiritual dimension are respected by both interviewees. Another priority for the interviewee concerns respectful shared use by all, 'black/white' identities aside. An element of this care concerns springs – often as especially valuable spiritual sites.

Another aspect of traditional Miriwoong Gajerrong lifeways is the association between healthy country and healthy people, inclusive of water. Indeed, as Rose (2004:41) tells in her examination of Indigenous water perspectives, 'water *is* life'. The balance between these spheres, if disturbed, can have serious ramifications. Alienation, sorrow and anger can result. Weir's (2007) second dispossession notion helps understand this loss; although she developed this for over-extraction from inland rivers, it can also apply to contexts where dams flood valleys, without warning of impacts for Indigenous peoples. Flooding country has impaired some cultural knowledge. This is evident in accounts of the events post the construction of Ord Main Dam, such as Bulla's narrative:

'My grandfather in the same way took the Djadu back right back to this country. He left it in a big cave over on the hump of a hill close to the river bank and it was drowned. It's finished now, that's the full strength of it. We only have the singing part, that's all. The rest is under water. I thought I'd go round there some day with a motor car and if the water kept away, went back, I'd go to that place and have a look. It's on this side of the hill on a cliff...

I wanted to get it out. I didn't know they were going to put this backwater right up to Argyle...I should have shifted that Thing myself but I was too late behind. The water was all over then. No good looking...I don't like to look at it [the water]. My private Law is under water now' (Bulla quoted by Shaw, 1986:171)

Traditional owners hold close knowledge of dramatic environmental changes within the Ord and track the social transformations attendant to these. A sense of loss and sadness resounds throughout Bulla's story. He mourns the harm caused by a lack of communication about the planned river transformation. The changes undermined the traditional ecological knowledge – and maintenance of culture – Indigenous people associated with the Ord. Jackson et al (2005) relate how the pre-dam Ord River environment was generally well known and predictable but that now new vegetation chokes waterways; a sense of dissonance percolates Indigenous society-water relations. The familiarity with a fluctuating country, changing with the seasons in known ways, was eroded with the altered hydrology, but, as Barber and Rumley (2003) contend, not entirely washed away. Gibbs' (2006) valuing variability framework helps understand this phenomenon; knowing what happens on country, including with water, is empowering within traditional ecological knowledges.

These perspectives are echoed in Barber and Rumley's (2003) water and culture report on the Ord. That research found that strong culture emanates from, at least in part, the main waterway. Barber and Rumley (2003:16) explain this as a living reality:

‘...the Ord River and valley is a complex of cultural values. These values vary from location to location depending on the activity which occurred there during the Dreamtime. The Traditional Owners (TOs) believe that the Dreaming is both a continuing force, which began in the remote past and continues in the present and will continue into the future. In this respect the cultural values of the Ord River are considered to be ever-present.

The Dreamings also created the cultural institutions which comprise the claimants’ system of rights and interests that they hold to this day. Within this system, the TOs (often referred as the Dawawang) have rights and interests in their land (Dawang)<sup>31</sup> which was formed by the Dreaming and which they inherited from their ancestors. The traditional rights and interests of the TOs are therefore broad, encompassing all matters within the Ord Valley and beyond.’

Miriwoong Gajerrong peoples have, according to this depiction, a diachronic relationship with the Ord. The past informs the present and both realms determine the future. Within this interpretation of Indigenous lifeways, there seems to be little room for changes within a world chiefly formed by continuities. This is one element of the social construction by the settler imagination of the ‘traditional Aborigine’ that has received some critique (see, for instance, Lea, Kowal and Cowlshaw, 2006; Austin-Broos, 1996; Povinelli, 1999). Generally speaking, these advocates of a continuity-change framework argue that changes are an inherent part of any culture, and do not necessarily relate to a destruction of cultural identity. A continuity-change

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<sup>31</sup> Dawang means home country or country of origin.

framework accepts that continuities within traditional Indigenous lifeways coexist with changes in response to different conditions.

Within the Ord, the Dreaming created cultural forms and all the TOs' rights and interests. An entire world was made. These are handed down perpetually through the generations. Barber and Rumley (2003:17) point out how 'features of their traditional economy or the environment are not separated from spiritual and cultural heritage.' The centrality of cultural praxis in all things – from the economic to the ecological – is an important principle in traditional Miriwoong Gajerrong values, including water. Barber and Rumley (2003) write of Tharram, a place locally known as Bandicoot Bar, which became the site of Kununurra Diversion Dam. This place was made by women during the Dreamtime who trapped Barramundi with rolled up spinifex. The rolls turned into the rocky bars upon which the Dam was built and, by referring to Tharram, people also think of the native fauna and flora present at that place. This story is re-presented here to give some indication of the interconnectedness that shapes traditional Miriwoong Gajerrong lifeways. It also demonstrates a gendered difference in Indigenous water values.

Water values held by Miriwoong Gajerrong people are manifold: I have discussed environmental and cultural values above. In terms of economic dimensions, information is sparse but King et al (2001) refer to 'food gathering' of \$100,000 per annum which is often attributed as an Indigenous pursuit.<sup>32</sup> There is data at a broad scale indicating that Aboriginal expenditures make a strong contributor to the fabric of

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<sup>32</sup>However, the monetary value ascribed to this activity is not found elsewhere, such as Walsh's (2002) report on Indigenous land and sea management issues in the Kimberley.

Kimberley life.<sup>33</sup> This is through both Aboriginal businesses and public sector expenditure that supports individuals and communities. The strength of this portion of the economy grew from the early 1990s to the beginning of the 21st century (Pritchard, 2001). One major reason for this was greater expenditure on CDEP wages from \$22.6 million in 1991-92 to \$44.5 million in 1997-98, an almost twofold increase (Pritchard, 2001). Pritchard's (2001) study on Aboriginal dynamics in the Kimberley made explicit the economic contribution of this growing population to the region. It found that 'significant flows result from the funding and provision of government services and the activities of government funded organisations. However, this project has also highlighted the growing significance of Aboriginal business and enterprise.' (Pritchard, 2001: 42). The positive involvement of Indigenous people in this sense is sometimes overlooked in reams of media reports on issues relating to poverty.

Indigenous water perspectives are, as demonstrated, multiple and broad. Wider acknowledgement of these perspectives is the basis for environmental justice. If broader society and its institutions do not recognise their form and multiplicity, then equity in water management eludes.

### **5.3 Recognition of Indigenous values relating to the Ord**

In contrast to the evidence provided above, current planning processes characterise Indigenous water values as historic and secondary to social values currently within

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<sup>33</sup> For earlier work on the 'black economy' in the Northern Territory see Crough and Christophersen (1993) and Pritchard and Gibson (1996).

the Ord. The Ord River Waterway Management Plan, compiled by the state government department responsible for water management, declares that socio-environmental values in the Ord today started with the creation of the dams:

‘Current social values have largely arisen after the irrigation infrastructure was established and the subsequent establishment of the high dry season flows. These have become well established in the years since the Ord River Dam was built.’ (Department of Water, 2006:43).

Social values are implied as non-Indigenous. Issues relating to access, environmental health, maintenance of cultural traditions and migratory patterns are all raised when responding to a question about the *environmental* values presented in the Ord River Waterway Management Plan (Department of Water, 2006 – hereafter known as the Management Plan). Indigenous water values are subscribed to environmental concerns. The Management Plan does discuss Indigenous traditional values of the Ord elsewhere (see sections 4.2.2 and 4.3 of the Management Plan) but by defining ‘current social values’ of the river as being overwhelmingly exclusive of pre-dam values, many Indigenous traditional values are explicitly barred. They are deemed as not relevant to the social values currently shaping society-water relations in the Ord. This notion also appeared within the Draft Interim Water Allocation Plan (Water and Rivers Commission, 1999) where the WRC began formal definition of environmental values before undertaking negotiations with Miriwoong Gajerrong traditional owners. Within the current plan, there is nascent recognition of Indigenous water values in the Ord. Better future inclusion appears as a possibility:

‘Under the Ord Final Agreement, the Miriwoong Gajerrong people expect to be involved in resource management decisions that affect their country.

Traditional owners should contribute to planning future low flow maintenance periods so they have an opportunity to use such times to promote learning of dreamtime stories and other traditional practices. While relatively rapid declines in flow rate will be required to achieve the maintenance objectives, these should be limited to the extent possible, so that the adverse effects on the aquatic biota observed during the low flow trial are minimised.’

(Department of Water, 2006:45)

The plan correctly states that the OFA facilitates appropriate engagement of TOs’ values but, as yet, is not core business. The precise mechanisms for planning the future low flow regimes are not detailed. It is surprising that this oversight is reproduced in current planning since the Barber and Rumley (2003) report was commissioned by the then Water and Rivers Commission. That report produced quite different conclusions about appropriate recognition of Indigenous water values in the Ord. Primarily, recognition of living cultural values informs Barber and Rumley’s (2003) findings. Their work was premised on the fact that Indigenous water values were not entirely extinguished with the dam building on the Ord mainstream.

In explaining Indigenous water values, Barber and Rumley emphasise holistic relationships. Similarly, as Jackson (2006:19) observes, this awareness of Aboriginal cultural values includes ‘recognition and valuation of relationships, processes and connections between social groups, people and place, and people and non-human entities’. This thesis has stipulated how these dimensions are manifest in the Ord. It



would appear that Indigenous peoples' water aspirations in the Ord catchment include: securing water supply and sanitation; gaining fishing access; protection of sites of cultural significance; economic development – water allocation, aquaculture ventures; environmental values; recreation, and; input into and control over resource management. Appendix 4.3 in the Ord Waterway Management Plan (Department of Water, 2006) concedes that these Indigenous water perspectives are not fully recognised at this time when providing details about the social values in this catchment. It includes the recommendation to conduct further research to gain a more meaningful picture of social dynamics in the region relating to the Ord:

- 'Need to consider traditional owners' perspective:
- need to know from traditional owners about the responsibilities and impacts of river use and change;
- need to understand traditional ownership issues; and
- be clearer on cultural values.' (Department of Water, 2006:161)

Traditional owners, as caretakers for country, hold a special position with regard to consultations for new projects on native title land; one that is not always well communicated to the general population across the whole of the catchment. However, there are some exceptions. For example, in the lower Ord there is some signage available about Miriwoong Ord River values. These describe ethnobotany and some cultural practices, as well as some historical information, see Figures Nine and Ten.



Figure Nine: Picture of signage at Ivanhoe crossing including ethnobotany (photo Anne McLean).



Figure Ten: Context of sign from Figure Ten, showing relative size and positioning. The sign shown in close-up in Figure Nine is behind the fishing regulations and 'danger' signs. (photo Anne McLean)

Such information is not currently available upstream from the two dams, although work is nearly complete on the Lake Kununurra signage and funding is approved for

similar work for Lake Argyle. At present, the signs around Lake Argyle include information on engineering achievements (see Figures Eleven and Twelve) and what colonial landmarks lie beneath the water.



Figure Eleven: Celebration of engineering triumph – ‘Construction engineers were challenged by enormous annual floods and the site’s remoteness’



Figure Twelve: Sign showing how the dam works, overlooking Ord Main Dam.

While general recognition of the multiplicity of Miriwoong Gajerrong peoples' Ord River values is only recent, some of these were nominally recognised in consultations for proposed Stage 2 expansion in the late 1990s. At that stage, consultative processes provided some insight into these values that are embedded in the Ord. For the proposed expansion of irrigated agriculture in the late 1990s, discussions were held and reports made on the specific concerns of Miriwoong Gajerrong people and how developments may impact upon them. The consultative group AACM International (1997) reports a list of impacts that are likely with expansion of ORIA which need to be mitigated, including:

- restricted access to plains and riversides for hunting and fishing, gathering of bush medicine materials and craft materials;

- residues of chemicals in subsistence food sources;
- water related diseases;
- social impact of construction crews, and;
- increased division within Aboriginal communities.

These reflect the centrality of natural resource management transformations to many elements of Indigenous lifeways. As mentioned earlier in this chapter, the fact that Indigenous cultural values underpin Indigenous water relations, mean that any changes resulting in realignment of the former will result in concomitant transformation in the latter. The holism of Indigenous philosophy informs this reality. Existing water management practices do not assist expression of Indigenous water values. The next section looks at what principles influence governance of environmental values. It asks whether environmental values corroborate with cultural values, just as environmental flows may coincide with cultural flows.

#### **5.4 Ecosystem health and environmental flows: negotiating a transforming river**

‘Further development of water resources will be firmly based on rigorous economic and agricultural assessment rather than on national and state ideals. The time when water policy regarded any river flowing into the ocean as the waste of a valuable resource in a dry continent is gone for good.

Environmental values now figure firmly in decisions involving abstraction.’

(Smith, 1998:185)

Catchment management discourse foregrounds sustainability values within Australia, as elsewhere, but once these notions did not receive any kudos. The days of perpetuating high and universal river regulation are, according to Smith (1998), far gone, partly because most rivers in southeastern Australia are fully developed. Also, complex processes are in place with the intention of seeking to ensure that environmental protection occurs in a triple bottom line, sustainability driven manner, especially for new developments. Planning in the twenty-first century has to include efforts to minimise environmental degradation. It follows that in measuring the impact of proposed future extractions from rivers, the cost to the environment must also be estimated. Environmental flows are perceived as an instrument to prevent diminishing the natural capital of catchments (Gardner and Bowmer, 2007). Integrating environmental values in catchment management is a challenge in all catchments, including the Ord with its long-posed irrigation expansion.

There is no national scale coordination for establishing environmental flows. State government water management bodies are currently responsible for the governance of riparian waters, from determining flows necessary to sustain environmental health, to allocation of licenses for extractive purposes (McFarlane, 2004). Except for the Murray-Darling basin, which the Rudd government has now assumed control of after the Howard Government failed to wrest power from the states<sup>34</sup>, all catchments are state managed (Roberts and Lewis, 2007; AAP, 2007a). As well, reforms initiated by the Council of Australian Governments (CoAG) are working towards resolving

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<sup>34</sup> Victoria was initially unwilling to sign in 2007 but now, Victorian Premier Brumby has signed to the deal (Wallace and Franklin, 2008).

discrepancies between the states in water governance. Two important prongs of these CoAG reforms are securing environmental flows and achieving full cost recovery (Jackson and Morrison, 2007; Hussey and Dovers, 2007). This section: delves into how environmental values are currently defined; asks what place conservation has vis-à-vis other potentially competing values, and; assesses whether the definition of environmental values is comprehensive enough in including different lifeways. The fragmentary nature of planning for sustainability shall become evident, with direct implications for Indigenous values on the Ord. Environmental flows are often a last priority – or, as is the case in the Ord, are defined as akin to the status quo.

Environmental values are a new notion, emerging with the growth of the global conservation movement in the 1960s. The green shift is a movement many cite as being triggered by Rachel Carson's (1965) 'Silent Spring'. However, as critics such as Banerjee (2003) have alternately suggested, the sustainability paradigm that grew out of this conservation movement prioritises Western values above all others. Negotiating difference is a part of deciding what environmental values are of highest importance, and thus impacts upon conceptualizations of sustainability.

Decision-making processes attempt to navigate differing environmental values within a catchment. Negotiations might result in some values being maintained, and others diminished. In either case, scientific knowledge is one part of the process that decides how a river shall be, post-allocations. Establishing ecological water requirements is a basic step in working out environmental flows but in the Ord catchment, these are not fully known (Department of Water, 2006). In the absence of

this complete knowledge, other factors may contribute to establishing a shared understanding of what features of the modified environment could be supported. In the case of the Ord, those environmental values created with the dams along its mainstream are recognised above all others (Storey and Trayler, 2006; Department of Water, 2006; King et al, 2001). The dam's storage and release capabilities mean that throughout the year, a constant flow of water moves down the Ord. The post-dam year-round flows provide greater recreation space and reliability for tourists and locals alike in pursuits such as day boat trips and fishing jaunts, see Figure Thirteen. They also provide a system that can contain birdlife year round, thus preserving two Ramsar sites upstream from the Kununurra Diversion Dam – Lake Argyle and Lake Kununurra (Giblett and Webb, 1996). Also, water quality and ecosystem health is, according to Storey and Trayler (2006), maintained. However, along with Vernes (2005) I would argue that the Ord is still in transition and that major ecological costs accompany the changed hydrology. Storey and Trayler's (2006) conclusions are condensed from some preliminary investigations undertaken by a Scientific Panel. Those investigations recommend further work before finalising environmental flows.



Figure Thirteen: Fishing trip down the lower Ord, Kununurra Diversion Dam in background, housemate and boat wrangler John Enkleman and author (photo Jen Francis).



The consensus building to create these far from amorphous environmental values came through community consultations that began in 2000. The expansive sugarcane irrigation project was under consideration at this time and, partly in response to this, various stakeholders in the region came together to form the Ord Land and Water Management Plan (OLWMP). No Indigenous people were on this organisation's board and nor was the peak representative body for native title holders in the Kimberley, the Kimberley Land Council, a part of this consultation process. These absences were for many reasons – one of these being that native title litigation was still proceeding in the courts. Perhaps also, the forum provided by OLWMP (Ord Land and Water Group, 2000) stakeholders was felt to be non-conducive to local Aboriginal peoples' participation (field notes, 2006). As Storey and Trayler (2006:165) note, the conclusions of the community consultation fitted neatly with the Scientific Panel's findings; environmental values are defined by both as emerging post-dam. They also pointed out the rapidity with which this consultation happened – as an almost reactionary process parallel to the state administered water allocation process. Rapid assessment processes often do not provide space for appropriate involvement of Indigenous peoples (Chambers, 1994; Lane 1997; O'Faircheallaigh and Corbett, 2005). This hastiness may have further impeded much needed representation of all within the Ord.

Throughout Storey and Trayler's (2006) review of the Ord River's water allocation over time, Indigenous interests within the catchment are defined as primarily cultural. Evidence of this inclination is in a table (constructed by Storey and Trayler, 2006:166-167) which identifies perceived stakeholders' interests – including social, cultural, economic and ecological. For each organisation with any direct connection to local

Miriwoong Gajerrong peoples, predominantly cultural and occasionally ecological interests are highlighted. This overlooks the complexity of Indigenous connections to the Ord. It also falls into the trap of essentialising indigeneity through characterising it as primarily cultural; Merlan (2006) and Lea, Kowal and Cowlshaw (2006) point out the benefits in moving away from this narrow definition and towards an intercultural analysis that adopts a multiple values approach. Last, as already noted, this insistence on multiplicity sits well with a Masseyian spatial analysis.

Given these issues, it appears that the environmental values deemed worthy of preservation coincide with the maintenance of the status quo for the Ord River. If large quantities of water are diverted for Ord Stage 2, then the environmental values portrayed above are at risk of attenuation. The operations of Ord Main Dam, including its main purpose of providing hydropower to Argyle Diamond Mine, are not threatened by the protection of these environmental values. Therefore, maintaining the prevailing environmental values that have emerged post-dams does not conflict with hydropower generation.

Similar to many northern Australian catchments, there are substantial gaps in the knowledge base relating to Ord catchment environmental systems. These gaps are of both a quantitative and qualitative nature. Such gaps may influence the environmental values that are formally acknowledged here. Environmental justice theory informs us that without extensive documentation of the traditional ecological knowledge of local Indigenous peoples, it is impossible for it to receive recognition and protection. Storey and Trayler (2006) point out some of the quantitative information yet to be pinned down in the areas of estuarine and riverine ecology and

suggest that finding out these dimensions will help in providing a better understanding of how to protect these esteemed ecosystems. What is also not yet achieved, and which may benefit the health of the Ord, is water planning adaptation to recognise the broad range of value regimes through which people engage with water. This includes Indigenous water values.

Water values encompass multiple dimensions, from cultural to economic realities. Appropriate economies present a system that is inclusive of Indigenous lifeways (Hill, Golson, Lowe, Mann, Hayes and Blackwood, 2006). From interviews I conducted with traditional owners in Kununurra, it became clear that many Indigenous people in the Ord catchment were not anti-development *per se* (field notes, 2006). Rather, they perceive a mixed land-use as being possible, preserving healthy country and sites of significance, while also making improvements to economic conditions for the people who belong to it. These principles are emphasised by Hill (2004) in her discussion of processes to create an ecologically sustainable northern Australia. She posits a 'future where economic development is based on activities that both protect the important natural values, and enhance the lives of the people, particularly of the Indigenous cultures' (Hill, 2004:16). The culture-nature nexus is a productive space for the recognition of environmental values beyond those most recently created. By acknowledging the connections between cultural and environmental values within Indigenous philosophy, redefining what matters in water management emerges as a possibility.

## 5.5 Conclusion

This chapter has demonstrated the different facets of Indigenous water values in the Ord catchment. These values are variable and responsive to change, while also being enduring. Because of this dynamism, traditional Indigenous water values are affected by dams, but are also adaptable. One important aim of this chapter was to destabilise the common understanding of Indigenous interests as being only cultural. Another was to show the alignments between the way environmental values are defined by government departments, and match with needs of corporate interests. By establishing social water values as post-dam, and then protecting these values as primary, the Ord River is recreated as an entirely different system to that existing prior to damming. Nature is, in effect, redefined as well. This gives less space for re-incorporating traditional Miriwoong Gajerrong values in the management of this transformed (and still transforming) river. However, allocating cultural flows is just one viable way of achieving recognition of Indigenous water values. Joint management is another, and Chapter Six discusses a new instance of joint management rising via the OFA. This chapter demonstrates the power behind integrating Masseyian spatial theory, environmental justice and political ecology.

## **Chapter Six: Water matters in the Ord, part one**

### **The Ord Final Agreement**

#### **6.1 Introduction**

Two cases of water matters using extensive field data constitute Chapters Six and Seven. The first looks at a major native title change and the second community water management within the Ord. These chapters continue to answer how water matters in this place.

Recent native title negotiations have delivered compensation to Miriwoong and Gajerrong peoples in the Ord catchment, for ongoing impacts of past irrigation development and future acts. As introduced in Chapter One, the Ord Final Agreement (OFA) is the outcome of native title negotiations between Miriwoong Gajerrong people, the State Government of Western Australia, and some private sector interests. This Indigenous Land Use Agreement (ILUA) provides for the creation of joint management conservation areas, a compensation package for impacts from Ord Stage 1 and some involvement of Miriwoong and Gajerrong traditional owners in Ord Stage 2 decision making processes.

While these measures suggest the emergence of a more just set of environmental relations in the Ord, there are at least two significant risks upon delivering this. First, the acknowledgement of Indigenous water rights in the Ord is nascent at best and this is reflected in the absence of a water allocation in the OFA. Second, it is in the

implementation of this ILUA that the promise it offers may or may not be achieved. Using a political ecology, environmental justice and Masseyian framework as outlined in Chapter Two, this chapter analyses these governance transformations with the perspective of space as a product of interrelations – intercultural politics are determining future natural resource management practices. By doing so, it provides an account of a space of 'loose ends and missing links' (Massey, 2005:10).

Underpinning this analysis is recognition that the governance transformations in the Ord are discursively portrayed in different ways. There is a range of understandings of why the OFA was negotiated and what it hopes to achieve – from the Eurocentric to the less so. While accepting this, it is also important to analyse the main structures and their functions as prescribed and provided for in that negotiated agreement. Such an analysis can give an indication of what was and was not up for negotiation in the process, including how a water allocation for Indigenous purposes was not on the metaphoric negotiation table (Miriwoong interviewee involved in OFA negotiations, pers comm.).

This Chapter first highlights some antecedents leading to the OFA; then unpacks two readings of the OFA, and; concludes with a situated analysis of the OFA within current debates relating to sustainable development, co-management and Indigenous peoples. It analyses the significant coeval trajectories arising from native title resolution in the Ord. In doing so, it shows how these trajectories line up against a range of readings of this event. This demonstrates how, despite a water allocation not being included in the OFA, there is evidence of a new form of acknowledgement of Miriwoong Gajerrong peoples' rights in the Ord valley.

## 6.2 Impetus for the OFA: some antecedents

This section does not revisit a history of events leading up to the Ord Final Agreement (this was delineated in Chapter Four) but briefly focuses on particular moments where Miriwoong Gajerrong people were successful in obtaining due acknowledgement of their rights; where their particular trajectories were more visible vis-à-vis colonising peoples. The Ord Final Agreement came to be after many years campaigning by Miriwoong Gajerrong peoples for official recognition of their native title rights, including those relating to natural resource management. Like most areas of Australia, the expansion of primary industry in the Ord Valley did not include recognition of Indigenous custodianship of land; did not encourage participation of Indigenous people in planning over natural resources, or; as to be expected without the previous two conditions, was not premised on fair distribution of the benefits of development. These injustices form the bedrock upon which the ORIA has flowed. With this history well documented in Davidson (1965, 1982), Graham-Taylor (1982), Clement (1989), Coombs (1989), Symanski (1996), Head (1999) and Lane (2004), the following discussion iterates three seminal points that underpin the OFA.

First, Indigenous relationships with land survived the considerable upheavals of agricultural expansion in the Ord Valley. The introduction of pastoralism did not preclude some continuity of Indigenous lifeways in the Ord valley. Evidence of this can be found in early anthropological accounts including Phyllis Kaberry's 'Aboriginal Women: Sacred and Profane' (1939) and also in later work by Shaw including his 'Countrymen' (1986) and 'When the dust come in between' (interviews recorded in 1982 but published 1992). These works, discussed in Chapter Three, provide some

insight into the complex relationships between Miriwoong Gajerrong people and the pastoralism industry during different stages of the 20th century. The stories captured in Shaw's work also describe how economic and social contexts for Indigenous people changed dramatically in the 1960s. Mass unemployment in the pastoral industry occurred then, mainly due to a 'combination of the consequences of growing capitalisation and concentration of ownership in the pastoral industry, as well as the increased cost of labour due to, inter alia, the granting of the pastoral award (1968) to Aboriginal workers.' (Smith, 2003b:555). The diversification of agricultural production in the 1970s was facilitated by the creation of Kununurra to service a regionally new production regime based on irrigation. So at the same time that many aspects of the 'station days' were coming to a close, a burgeoning irrigation agriculture industry was starting in the Ord.

Second, the Australian native title regime has provided an administrative vehicle for Miriwoong Gajerrong relationships with land to be recognised in 'whitefella law'. The possibility of securing capital and gaining access to participation in natural resource management in northern Australia arose with the emergence of a mechanism for common law to recognise the native title rights of peoples. As discussed, this occurred through Mabo and the later Native Title Act<sup>35</sup>. In 1994, the Miriwoong Gajerrong peoples filed a native title application with the National Native Title Tribunal. This application sought recognition of their native title rights and interests over 7653 km<sup>2</sup>. Ben Ward was the appointed spokesperson for the 100 traditional owners lodging the application for an area spanning the Western Australian/Northern Territory border. In 1995 the claim was referred to the Federal Court and, in 1998,

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<sup>35</sup> Western Australia does not have an Aboriginal land rights regime.



Justice Lee handed down a decision saying that 'substantial and exclusive native title rights which are equivalent to full ownership of the land' exist in the region. Lee held that the native title rights of the Miriwoong Gajerrong people included, among other things, 'a right to possess, occupy, use and enjoy the area, a right to make decisions about the use of the area,... a right to use and enjoy the resources of the area' (Meyers, 2000:3). Successful appeals by the Western Australian and Northern Territory governments then, however, watered down the original decision. A counter appeal was taken to the High Court by MG people and the decision from the High Court recommended negotiations between disputing parties including the vexed issue of compensation.

Third, local institutional supports have been critically important for the translation of MG native title rights into the OFA negotiations. These negotiations were aided by an Aboriginal Social and Economic Impact Assessment (ASEIA), undertaken by the Kimberley Land Council (2004), which investigated the range of experiences Miriwoong Gajerrong peoples have had as a result of Ord Stage 1. This involved the KLC compiling data on the current economic and social disadvantage experienced by Miriwoong Gajerrong people as a result of the uneven access to development in the Ord Valley. The resulting report includes 40 recommendations which a committee of Miriwoong Gajerrong Traditional Owners aimed to implement. The ASEIA committee initiated dialogue with various local, state and federal government institutions and others who approached the ASEIA committee of their own accord. The text and its deployment partly underpin the OFA.

### **6.3 OFA - space for water joint management?**

While there is a lack of holistic contemporaneous recognition of Indigenous water values within Australia, there are some cases where this is evolving through joint management initiatives and non-government organisation alliances. As mentioned in Chapter Five, the standout illustration of Indigenous water rights recognition in the OFA is the joint management framework for Reserve 31165. This area is a 136,000 hectares wetlandscape being co-managed by traditional owners and the Western Australia Department of Water. Reserve 31165 is at the southern end of Lake Argyle and includes the region where the upper Ord River flows into Lake Argyle as an artificial estuarine (Wasson, Caitcheon, Murray, McCulloch, Quade, 2002). Also, the joint management conservation reserves, under co-management by traditional owners and the Department of Conservation, are relevant to issues of catchment management in the Ord. Figure Fourteen (next page) shows the location of these conservation reserves. These newly created conservation spaces are important avenues for Indigenous peoples to partake in maintaining country. Involvement of Miriwoong and Gajerrong peoples in managing conservation spaces is a central aim of the joint management arrangements set up by the OFA.



Historically, exclusion from natural resource management, rather than inclusion, has been the norm. For instance, complex governance structures have precluded equitable participation. The multiple institutions that have some responsibility for managing Ord catchment water form a complex governance regime. From the Department of Primary Industries to the Water Corporation, many government departments have important roles to play. The complexity of governance arrangements has dissuaded many local Indigenous peoples from meaningful involvement. This complexity is quantified in Barber and Rumley's (2003) study of Indigenous cultural values of the Ord: they count over twenty government institutions with direct involvement with water issues. Their qualitative assessments bring about similar conclusions relating to complexity (Barber and Rumley, 2003). The joint management arrangements spelled out with the OFA are constructed with knowledge of this context. Partly to remedy this, committees were created with two representatives from each Dawang (country of origin) contained within the reserves' borders. Figure Fifteen (next page) shows how this works.

**Miriwoong Gajerrong land related entities (from MG Corporation website, 2006)**

This flow chart shows the MG Dawang Land Trust arm of the MG Corporation.

The Board will work with Conservation and Land Management representatives.

The six new conservation areas will work differently to the National Parks already in existence within the Ord catchment. One important difference is that the new conservation areas were created in a negotiation process. They were not created through unilateral government decision making.

Another difference is that the new conservation areas shall be leased to CALM by the traditional owners.

Included in the conservation areas is buffer land around Ord Stage Two, should the irrigation expansion go ahead.

These land tenure arrangements are progressive, especially when compared to the way Ord Stage One was implemented.

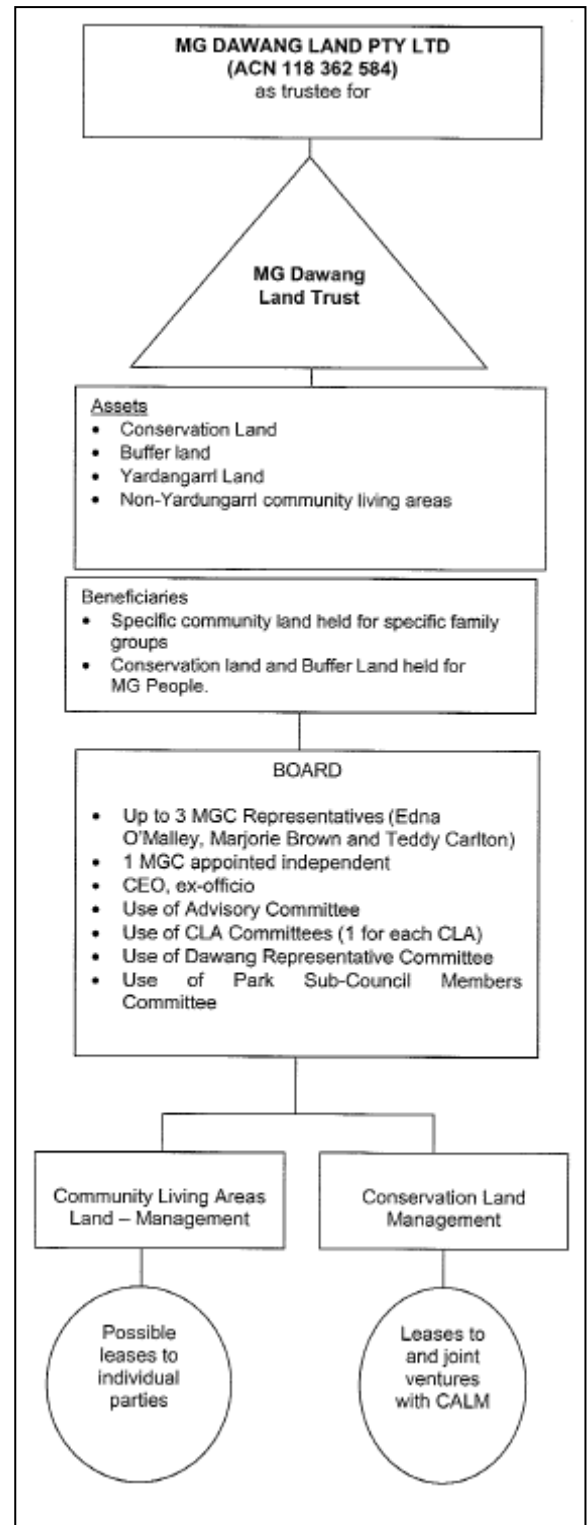


Figure Fifteen: New land management arrangements under the OFA, the other two major arms of the MG Corporation, one for charity interests and the other for business are not shown here.

Joint management works through representatives from the relevant NRM government agencies – the Department of Water and Department of Environment and Conservation – uniting with committees of traditional owners. These committees exist to provide appropriate representation of Indigenous traditional owners: traditional owners are elected by their community to sit on the board. As such, they begin to turn around the recent history of exclusion of Indigenous peoples from land management. For instance, the proposed agriculture intensification in the 1990s – a 35,000 hectare broadacre sugar cane irrigation project – did not include partnership as a central principle (McLean, 2001; Lane 2003). This project positioned Indigenous peoples as subject to the development rather than participants with and beneficiaries of the monoculture expansion. In contrast, the OFA emphasises a partner approach that moves towards inclusion of Indigenous people in NRM.

#### **6.4 Two different readings of the OFA**

The OFA is in the early stages of implementation and so there are varying ways in which the agreement is discursively represented. This section explores two of these to examine how different trajectories are manifest in the Ord. In using the term *trajectory*, I draw on Massey's (2005) interpretation of different ways of being and, by extension, the reification of particular worldviews in practices of governance. This approach is critical for any wider consideration of the OFA, because at least two differing perspectives shape the ways that this agreement is understood. First is the view that the OFA provides compensation for the Miriwoong Gajerrong traditional owners for the impacts coming from the creation of Lakes Argyle and Kununurra in the late 1960s – early 1970s, including dispossession and relocation, while also

providing for the acquisition of their native title rights and interests in approximately 65,000 hectares of land in and around Kununurra. Alternately, is the interpretation of the OFA as an agreement that simply paves the way for expansion of further irrigation development in the Ord Valley. This interpretation situates native title as an impediment to Stage Two going ahead and views the OFA as a necessity; the OFA is something that the State simply had to negotiate in order to facilitate further intensive development in the region (see Figure Sixteen, next page). This interpretation perceives native title as obstructive or something to be dealt with, rather than an intrinsic value strongly held by Miriwoong Gajerrong TOs. This reading of the OFA is more Eurocentric. There is some evidence for this thinking in media reporting around key junctures in the negotiation process, and in the way the OFA is described by State Government parties to the negotiations in documents such as information fact sheets. Of course, these different trajectories are not mutually exclusive, and stakeholders may slide between these positions depending on specific contexts and circumstances.

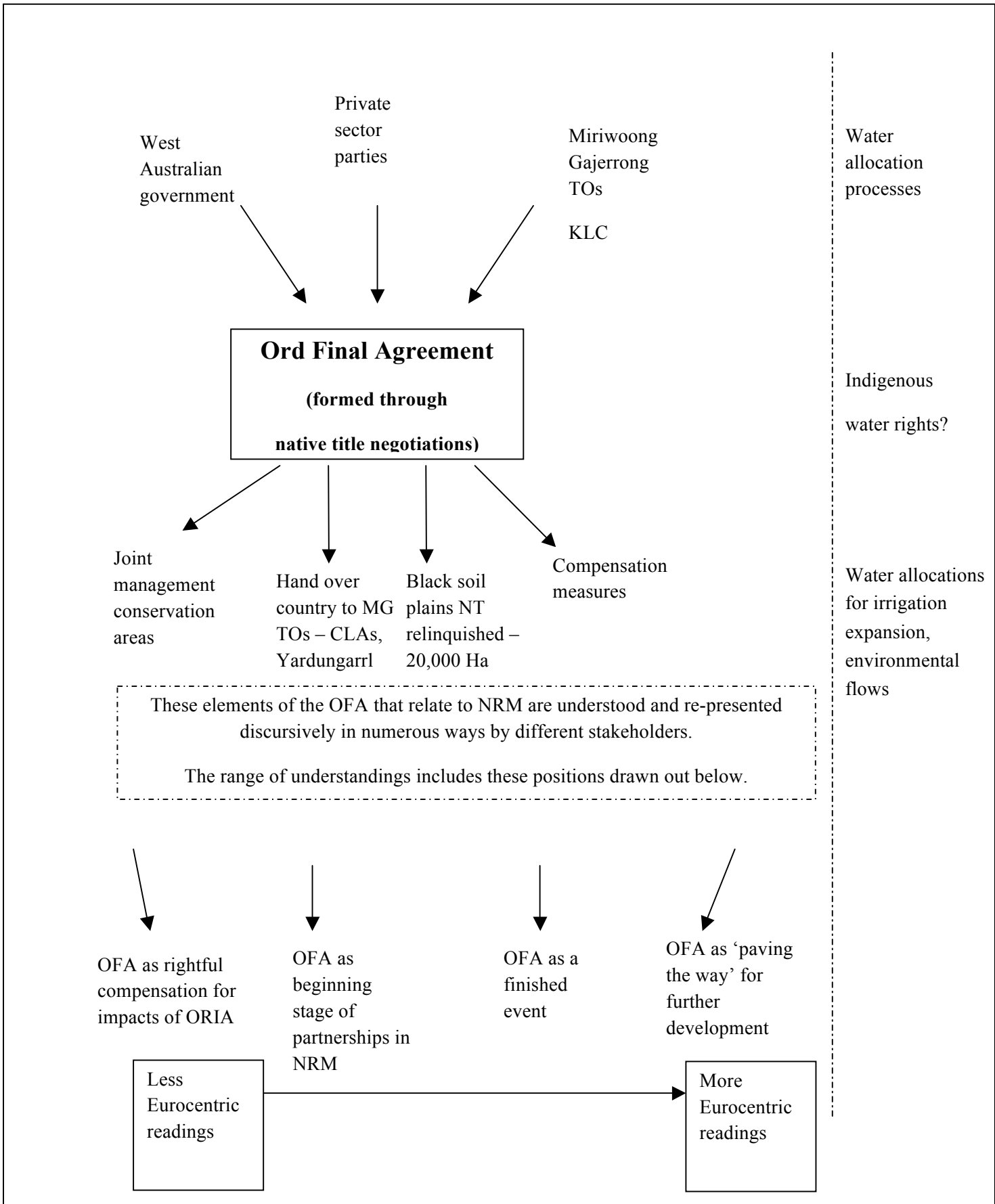


Figure Sixteen: Discourses circulating around the OFA



### **The OFA as compensation to Miriwoong Gajerrong peoples: a less Eurocentric reading**

One of the key celebration points in the work around the formation of the Miriwoong Gajerrong Corporation was 7th July, 2006 ('Satisfaction Day'). On this day, the State was then satisfied that the Miriwoong Gajerrong had set up the Miriwoong Gajerrong Corporation and the Community Foundation Charitable Trust, and was ready to receive title to land and investment and operational funds. This achievement indicates the capacity of local Indigenous peoples to find a means of engagement with institutions not set up by them. It demonstrates tenacity on behalf of the Miriwoong Gajerrong people previously practically excluded from decision making processes over their country. One of the speeches on Satisfaction Day came from the chair of the Ord Enhancement Scheme, Helen Gerrard. She spoke about the processes leading up to Satisfaction Day and what is hoped for the future:

'We are very happy to have got this far. We have had our disagreements but we have managed to work through them and now we are all getting on with the job. We have learned a lot through the process. It has been very good for our capacity building and our confidence building... We have surrendered our Native Title and that has been very hard for us; that is our major contribution to the Agreement. We now need to have the ongoing commitment from the State to ensure that all parties implement the letter and the spirit of the Agreement, and especially to make us a true partner in the development of the region. We include the private sector developers in this partnership. We would like to have a more formal relationship with the State Implementation Committee; to have the resources to meet regularly with properly structured meetings; say 4 times per year in Kununurra...We want to develop a good working relationship with the Minister for the Kimberley as a

key person in the OES. He will also have a role to play in the overall development of Ord Stage 2 and help ensure Miriwoong Gajerrong become real partners.’ (permission granted to quote from speech)

These words were spoken before a broad gathering, including the Deputy Premier Eric Ripper and other assembled dignitaries from local and state governments, members of the private sector, and invited members of the general public. The event happened on the lawns of a function centre fronting Lily Creek Lagoon, a body of water that adjoins Lake Kununurra. The most powerful part of this speech is the clear declaration of the difficulties associated with surrendering native title – how this is far from an easy thing to do. This is qualitatively different to the way native title is frequently understood by non-Indigenous people. As discussed below, it is often perceived to be something that needs to be overcome before development can proceed. By hearing how an Indigenous leader expresses the experience of resolving negotiations over native title, people might be better able to understand some of the Indigenous values captured in native title. The centrality of connection to country and the difficulties surrounding relinquishing possibilities of continuing that are two things that emerge here. Further, the willingness of Indigenous people to be pragmatic in working towards a better future on their country is echoed in this speech. This speaks volumes about the commitment MG people have to the OFA and its implementation and their willingness to look to the future through building strong partnerships.

From this speech, it seems that this is not a group of people dwelling on past wrongdoings or wishing to return to some romantic notion of a pristine past. Rather,

in the words ‘become real partners’ there is a genuine sense of a desire for equal participation in current and future development on Miriwoong Gajerrong country. The change in the governance landscape through this negotiated agreement has the potential to translate into meaningful partnerships in natural resource management in the Ord and, through the Miriwoong Gajerrong Corporation, economic development opportunities for Miriwoong Gajerrong people. This section has delineated one reading of the OFA that is less Eurocentric and focuses on creating equal partnership arrangements between Indigenous and non-Indigenous peoples. The risks around partnerships in this place, given its specificities raised in Chapters Four and Five, will be discussed in further detail below.

### **Paving the way for Ord Stage 2: a more Eurocentric reading**

A more Eurocentric reading of the OFA sees native title as simply obstructive to development interests. This view is expressed in various fact sheets and media releases about the OFA published by the Government of Western Australia. The general tenor of these documents tends to describe how the signing of the Ord Final Agreement followed extensive negotiations between the State and the Miriwoong Gajerrong people in order to ensure the irrigation project could proceed. In the fact sheet entitled ‘ORD FINAL AGREEMENT: FACT SHEET’ (Office of Native Title, n.d.), the background of the OFA is described as follows:

‘The signing of the Ord Final Agreement follows extensive and complex negotiations between the State and the Miriwoong Gajerrong people. These negotiations were initiated in September 2003, following plans by the State to compulsorily acquire 65,000 hectares of land for the development of Ord

Stage 2. As native title holders and claimants for the land to be developed, the Miriwoong Gajerrong people had the right to negotiate under the Native Title Act.’

The second sentence is telling and indicates something fundamental about the recognition of native title by many institutions. The State government’s decision to compulsorily acquire 65,000 hectares of land for Ord Stage 2 was the explicit trigger instigating a need to resolve native title. The decision to expand intensive irrigation preceded the decision to offer compensation for the impacts of Ord Stage 1 and provide a feasible means to participate in development for Indigenous people in the region. This could be seen as procedural justice based around meeting a necessity in securing future intensive irrigation agriculture development of the Ord Valley. The fact sheet elucidates a key principle within the dynamics of ‘managing’ land on which future developments are planned and where Indigenous native title can be proven. Regardless of how Indigenous people may view their native title rights, they are not given monetary value unless there is something that a developer or government needs in return for recognition and acknowledgement of these rights. Table Two sets out the distribution of funds under the OFA.

**Table Two: OFA breakdown of distribution of funds (condensed from ONT Factsheet, 2005).**

<b>Amount of money</b>	<b>Mode of distribution  (once off or installments or as land)</b>	<b>Managing body</b>	<b>Details of purpose</b>
\$24 million	Installments over ten years	Miriwoong Gajerrong Corporation	Establish and operate the new Miriwoong Gajerrong Corporation. This includes setting up a special Economic Development Unit and an Investment Trust.
\$15 million	Land area	Miriwoong Gajerrong Corporation	This area includes Yardungarri <sup>36</sup> (50,000ha) and 19 Community Living Areas (CLAs) <sup>37</sup> . The figure includes a percentage of future land development.
\$11 million	Installments over four years	Ord Enhancement Scheme – housed within the Kimberley Development Commission	Funding for the Ord Enhancement Scheme (OES) to address the recommendations of the Aboriginal Social and Economic Impact Assessment of Ord Stage 1 <sup>38</sup> . This includes enhanced social services to the north-east Kimberley.
\$6 million	Installments	Department of	Fund joint management arrangements for new conservation areas with

<sup>36</sup> Yardungarri is a package of land that is meant to directly replace the country flooded by the creation of Lake Argyle with the construction of the Ord Main Dam. It has a fifty year lease.

<sup>37</sup> CLAs are discrete units of land where Miriwoong Gajerrong people are able to live on country.

<sup>38</sup> The ASEIA report (KLC, 2004) was instrumental in the negotiations between Miriwoong Gajerrong people and the State government of WA. The OES will run over four years and perhaps beyond this if it is deemed to be a successful process (Employee of Kimberley Development Commission and local Traditional Owner, pers comm.).

		Environment	Miriwoong Gajerrong people.
\$820,000	Once off	Miriwoong Gajerrong Corporation	Freehold establishment costs
\$381,000	Once off	Miriwoong Gajerrong Corporation	Establishment costs MG Corp
\$119,700	Once off	Department of Water <sup>39</sup>	Fund joint management arrangements for Reserve 31165

While the OFA may seem to be a substantial compensation package and provide a large ‘bucket of new money’ upon which to build economic and social development for Miriwoong Gajerrong people in the Ord Valley, when weighed against the (currently unmet) needs and the relative benefits incurred from the ORIA, a more realistic assessment of the package emerges. The total package is worth \$57 million, approximately as much as irrigated agriculture earns annually in the Ord Valley, and this is staggered over a ten year period. The periodic investment structure is useful in ensuring less risky investment strategies and longer term viability of the development strategies, but this message is rarely communicated to the general public. For instance, the Kimberley Echo, a 100% locally owned and operated newspaper in Kununurra, reports the Satisfaction Day celebrations in the following way under a banner title ‘Ord Stage 2 Closer’:

‘An historic agreement, paving the way for Ord Stage II, was scheduled to go ahead in Kununurra today. The agreement between Aboriginal claimants and the State Government brings to an end Australia’s longest-running native

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<sup>39</sup> Reserve 31165 is at the south end of Lake Argyle. It is a wetland area that will be managed to maintain its conservation values to Miriwoong Gajerrong and non-Indigenous people, further discussion in Chapter Six.

title claim. It is estimated to deliver benefits of about \$50 million for East Kimberley Aboriginal people. However, the Kimberley Land Council (KLC) is swift to point out that the money will not go to individual recipients, instead it will be used for projects and schemes aimed at improving the lot of Aboriginal people.' (Ord Stage 2 Closer, 2005:1).

A persistent misreading of the economic dimensions in the OFA is common in a Eurocentric reading of this negotiated agreement. According to the fact sheet on the OFA given by the Office for Native Title (ONT, n.d.) and summarised above in Table Two, the AUD57 million provided through the OFA to Indigenous interests is divided between economic development units, long term investments and land packages. This is an altogether different arrangement than the simplified inaccuracies presented as front-page news. If this compensation package is considered as reparations for impacts associated with Ord Stage 1, then this is a modest package when weighed against the considerable impact associated with appropriation of resources and a history of alienation for Miriwoong Gajerrong people from mainstream development opportunities since frontier expansionism began. The two readings of OFA delineated do not cover the whole gamut of discursive practices that might regulate interpretations of governance transformations. They do, however, provide some indication of the way the OFA is being translated in situ as well as indicate some dimensions of a field where mediation of water values in the Ord catchment is played.

## **6.5 Water matters**

This space of loose ends and missing links, demonstrates beginnings and openings, in the recognition of Indigenous rights and participation of Miriwoong Gajerrong people. This final section of this chapter examines: incipient acknowledgement of Indigenous rights to water; the growing plurality of participation here, and; the relationship of realigning environmental natural resource management to Ord Stage 2. By doing so, a potential environmentally just future is glimpsed. Building on the growing body of work on Indigenous water values and acknowledgement of these through cultural flows (Langton, 2002; McFarlane, 2004; Morgan, Strelein and Weir, 2004; Toussaint, Sullivan and Yu, 2005) this section explores the way Miriwoong Gajerrong water values are being re-positioned post-OFA.

### **Partial acknowledgement of Indigenous rights to water in the Ord**

Just as allocation of land for European development purposes did not involve Indigenous consultation, allocation for water has, in times past, proceeded along similar lines. Even recently, the Draft Interim Water Allocation Plan for the Ord (Water and Rivers Commission, 1999) projected consultation with Indigenous peoples occurring sometime in the future rather than during initial discussions around water allocations. An updated Ord River water management plan became public in December 2006. This management plan does provide some recognition of traditional owners' values with relation to the Ord River, including their preference for reduced dry season flows (Department of Water, 2006:47-50). It also reports that 'it is not possible or desirable to re-establish the pre-dam flow regime' (Department of Water, 2006:49). Further explanation of why this is impossible was referred to in Chapter



Three. Overall, Indigenous people continue to have marginal involvement in the way water is managed in the Ord. As the KLC (2004) has argued:

'It is water that has been the root cause of the impacts of Ord 1. From the flooding of country to collect and store water, to the alienation of the farm land that is now where the water is used for agriculture; the collection, storage, distribution, consumption and disposal of water has led to irreversible impacts.

The benefit of the water rights option is that it is the most direct way of ensuring traditional owners have a long-term economic stake in the region. As distinct to a one-off payment of compensation based on some monetary value calculated at a particular point in time, this form of compensation comes from the growing value of the commodity over time.' (KLC, 2004:24).

The KLC was not successful in including water rights directly within the OFA, however in the Agreement there are subtle mechanisms that connect Indigenous interests to water management. This is in: Reserve 31165 – a portion of land at the south end of Lake Argyle that is to be jointly managed between Indigenous people and the (newly formed) Department of Water (see Figure Seventeen next page), and; Lake Argyle Aquaculture Lease – special provisions for Miriwoong Gajerrong Corporation to develop an aquaculture business under an aquaculture licence on their lease adjacent to Reserve 31165.

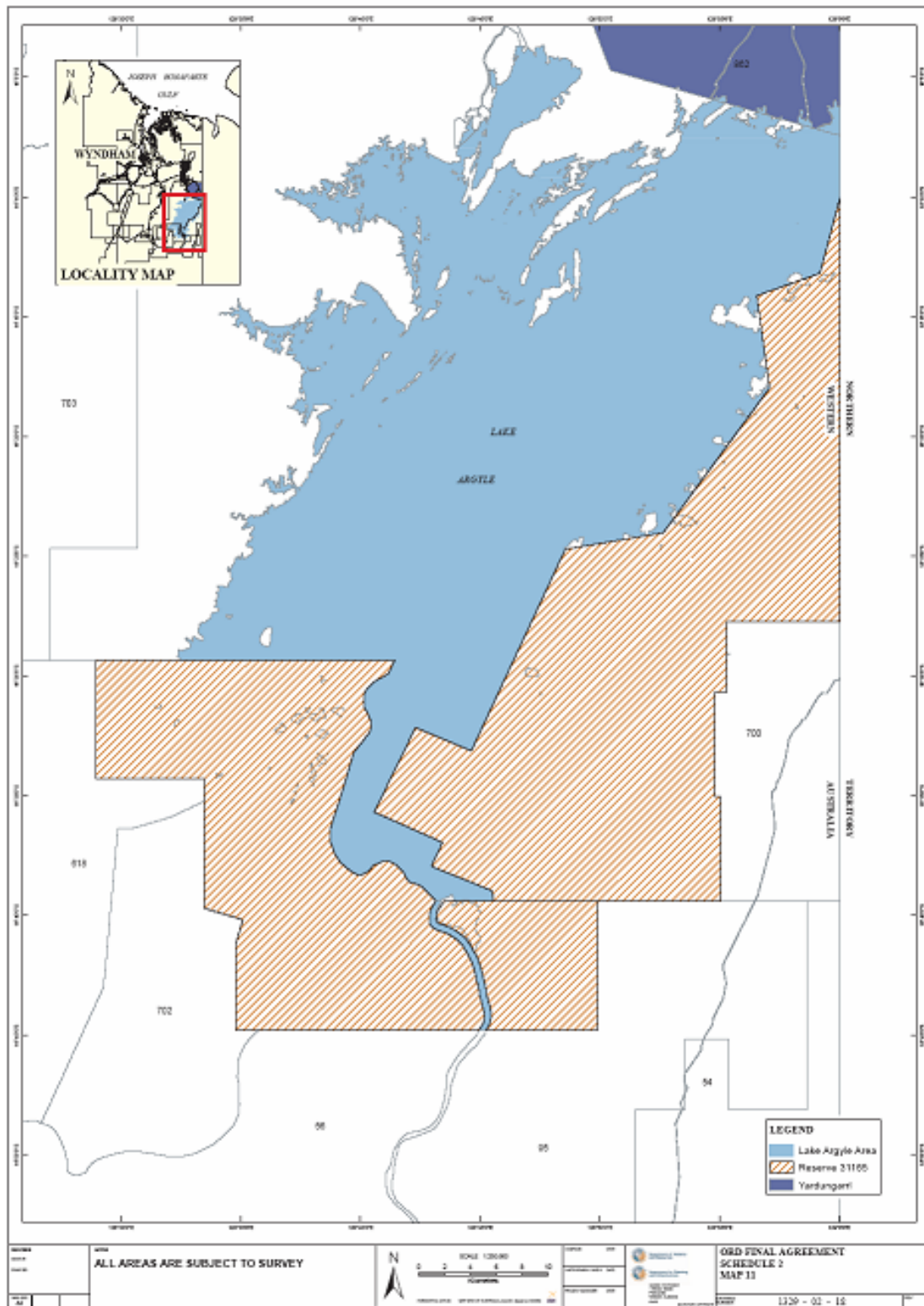


Figure Seventeen: Reserve 31165, map from OFA.

The first provision, Reserve 31165, is novel in Western Australia as water management is usually positioned solely as a government responsibility. The arrangements around Reserve 31165 in some ways mirror the conservation joint management arrangements for the new conservation areas around Kununurra. The aquaculture provision is designed to contribute to the economic development of Miriwoong Gajerrong people. The objectives of Reserve 31165 include: protection of water resource values for Lake Argyle and Ord River Dam; protection of Lake Argyle's wetland values; maintenance and enhancement of traditional culture of Miriwoong Gajerrong people, and; place the care, control and management Reserve 31165 jointly in Miriwoong Gajerrong Corporation and WRC (summarised from Western Australian Government, 2005). To achieve these ambitious aims, \$119,700 was provided in the OFA. While these are useful starting points in increasing Indigenous people's involvement in management of water resources in the Ord, they are far from a water rights option, or reflective of a move towards full co-management of the Ord River as sought by some Miriwoong Gajerrong people.

### **Natural resource management and plurality of participation**

Plurality in natural resource management, particularly based around a partnership approach with Miriwoong Gajerrong peoples and government institutions, is one key feature of the OFA. Large tracts of country are being designated as 'conservation areas', owned by Miriwoong Gajerrong traditional owners and leased back to the state for joint management with MG peoples, and Reserve 31165 is to be jointly managed by Department of Water and MG Corporation. Joint management structures are being set up to improve Indigenous involvement in natural resources in the Ord Valley. These important features of the OFA demonstrate how central the notion of conservation was in the negotiation process between TOs and the State.

These strategic deployments of a sustainability framework can also be perceived in the growing alliances between environmental NGOs and Indigenous native title representative bodies in Northern Australia. Evidence of this comes from initiatives advocating the growth of economies based on sustainable use of resources, such as discussed at the Kimberley Economic Roundtable held in Fitzroy Crossing during October 2005. The Kimberley Economic Roundtable was organised by representatives from the Kimberley Land Council, the Australian Conservation Foundation and Environs Kimberley (a regional conservation NGO), and involved participants from both public and private sectors. Community leaders who were involved in the negotiations around the OFA were also involved in the Kimberley Economic Roundtable and it could be expected that the priorities of those participants may translate into the implementation processes for the OFA. Also, representatives from the local Department of Environment who have a close working relationship with the Miriwoong Gajerrong Corporation co-presented with local TOs at the Roundtable (Hill and Goodson, 2005:59-61). Hill and Goodson (2005) write on management of the Ord River from a local perspective. In this sketch of dynamics around conservation advocates in the Kimberley, connections to elements of the OFA are found.

The way conservation principles are to play out in the new Conservation Areas is intended to be an outcome of joint management arrangements incipient with the implementation of the OFA. Earlier I mentioned the way Howitt and Suchet-Pearson (2006) critique the imposition of non-Indigenous 'building blocks', such as 'wildlife management', on Indigenous contexts. I argue that the Ord case is evidence of a strategic deployment of those building blocks from elsewhere (Howitt and Suchet-

Pearson, 2006), by Miriwoong Gajerrong peoples and their supporting institutions. It is something they wanted in negotiating the OFA, and, unlike a water allocation, was something they received. That said, there are risks associated with these governance transformations. Setting up a joint management framework requires relationship-building between Indigenous and non-Indigenous people and the shifting of priorities in mainstream natural resource management institutions. Kununurra is a new town: it was created in the 1960s to service the people expected to come and benefit from the government sanctioned irrigation area. ORIA began during a time when consultation with Traditional Owners about their aspirations and values – and how these fitted within or alongside new developments – did not happen. Native title has provided the means for TOs to have a say in future development, to a limited extent, and provide compensation for the impacts incurred by an earlier development not of their asking. It also provides a voice in NRM beyond the piecemeal participation, if any, that has dominated involvement in the past. Renegotiation of existing institutional relationships will be crucial to successful implementation of the OFA.

Joint management suggests equal participation in determining conservation strategies on country. The risks around joint management relate to problems arising when culturally diverse groups that share a colonial history, and have fundamentally different value systems, engage in collaborative management (Natcher, Davis and Hickey, 2005; Margerum and Whitall, 2004). Understanding the difficulties around 'trust issues' is critical to understanding joint management successes and failures. The way forward, according to these studies, is to work on understanding these cultural differences and then build working relationships on the basis of engagement through, rather than subversion of, these multiple ways of being. This is akin to the

concept of ‘ethics in a world of strangers’ (Appiah, 2006: xix): engagement begins with ‘the simple idea that in the human community, as in national communities, we need to develop habits of coexistence: conversation in its older meaning, of living together, association.’ Coexistence is another way of talking about a functioning joint management approach.

## **6.6 Conclusion: strategic deployment of narratives from elsewhere**

The Ord Final Agreement has the potential to reconfigure social, environmental, cultural and economic relations in the Ord valley. It is a breakthrough ILUA in many ways, and, while a water allocation was not included in the final package, its early application provides some indications of more inclusive participation in water management. However, there are risks to the success of the OFA’s conservation joint management program; joint management is challenged by tenuous (post)colonial relations and relatively modest resources for implementation.

While there is a need for rethinking the building blocks of environmental regulation, there is also space to recognise the strategic deployment of Eurocentric discourses to serve Indigenous peoples’ interests. The Miriwoong Gajerrong community driven OFA is one such instance. The self-reflexivity involved in negotiating future development on the basis of native title, a culturally based principle, is evident in the strategies used by Miriwoong Gajerrong people in describing their relation to surrendering elements of their native title. The social fabric that shapes the Ord valley is woven from peoples and concepts from all scales but is firmly situated in the local. An environmentally just future in this space will be more possible when multiplicities are not only acknowledged, as through the OFA, but also when the joint

management approaches set up through this negotiated agreement become core work of government agencies managing natural resources in the Ord. On top of this, extending nascent recognition of Indigenous water values would continue to support strong relationships already present in the Ord.

## **Chapter Seven: Water matters in the Ord, part two**

### **Community water management**

#### **7.1 Where water meets the body**

Water matters include meeting basic needs and keeping environments healthy, as stated earlier in Chapters Three and Five. Community water management within Indigenous contexts touches on both these matters. I now investigate this intra-catchment scale to demonstrate how water matters play out at a community level, including water-bodily relationships. A political ecology analysis directs attention to what challenges this fundamental human-water relationship. It shows how what may seem a non-contentious service matter can manifest power relations. Also, this chapter examines how communities endeavour to protect natural springs, identified as sites of spiritual importance. This chapter brings together the challenges to caring for, and obtaining sufficient quantity and quality of, water at a community level.

Basic water supply and sanitation requirements are universal: every body needs water to live. In this way, in the most straightforward sense, water values share common ground for all organic beings. Water also gives a common sensory experience. Through comparing water in the Mitchell catchment (tropical Northern Australia) and Wales, Strang (2005) concludes that two universalities exist which 'generate cross-cultural themes of meaning that persist over time and space' (Strang, 2005:92). The first pertains to the particular qualities of water; water is everywhere irreplaceable. The second is the physiological-cognitive processes relating to water



that are common to all human beings; Strang (2005) holds that water has spiritual and bodily nourishing qualities. At the same time, the way water varies is important, not least because it influences the seemingly mundane matter of water supply and sanitation. For 'water isn't just water', as Gibbs (2006: 77) learns from her Lake Eyre basin study, in a water analysis that focuses on valuing variability. She argues for valuing the variability of water and relationships to water, then embracing diversity and complexity. By valuing variability, a broad range of water values are recognised rather than obliterated.

Following Strang (2005) and Gibbs (2006), in this chapter I bring water values to the scale of the body. As pointed out above, basic survival requires water. Community water management has intrinsic challenges for providers and inhabitants. On water supply and sanitation, the slogan of 'healthy country, healthy people' evokes certain water values that are intrinsic to Strang's (2005) notion of water universalities. This is a human rights and public health issue that situates water values in daily life. In many respects, water values here are just practical. There is nothing inherently abstract about whether individuals or groups can obtain sufficient water to maintain life. Nonetheless, as with any environmental process, political dynamics do shape what could be a straightforward technical concern. These political dynamics include dilemmas such as: what community contexts are deemed economically viable; how frequently testing of water quality occurs, and; how installation of facilities occurs. In light of these political dynamics, water supply and sanitation issues are especially vital for Indigenous peoples in the Ord catchment. Indigenous communities (both near to Kununurra and in more remote contexts) have more frequent disruptions to water supply and sanitation than do non-Indigenous communities (Environment

Health Officer, pers comm.)<sup>40</sup>. During my research, the initial water issue frequently raised by Indigenous peoples in the Ord was water supply and sanitation (field notes, 2001, 2006). For these reasons, I now look at this scale of intercultural spaces in water supply and sanitation. These spaces are where contestations over water are most crucial.

Contestation over water has a long history in the Ord, as detailed in Chapter Four. From early days of colonisation, securing water has operated as a lynchpin for settling the north. Today, governance of Indigenous spaces in Australia may echo this history in forms of institutional racism. This term refers to how racist beliefs or values can be built into the way social institutions work. These racist values lead to discrimination and even oppression of different minority groups (Henry, Houston and Mooney, 2004). Vulnerability to institutional racism affects any minority group, not least Indigenous peoples. According to Henry et al's (2004:517) plea for decency in healthcare, 'Institutional racism is embedded in Australian institutions' (quoting Bolt, 2001). For Indigenous peoples, institutional racism is embedded partly because meaningful reconciliation eludes. For water matters, this phenomenon has been identified in various spaces throughout Australia, such as in the 1994 Human Rights and Equal Opportunity Commission's Water report, and its 2001 review (HREOC, 1994; HREOC, 2001). These will be discussed in finer detail later in this chapter. Whatever the reason, there is some evidence of institutional racism in water matters for Indigenous communities in the Ord catchment as I will show. As Henry et al

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<sup>40</sup> I conducted interviews with both Environmental Health Workers from the SWEK, one who works solely with Indigenous communities, the other who is responsible for town issues. Their experiences indicate that non-Indigenous contexts never report instances of faulty infrastructure installation or problems with water supply. According to these interviewees, Indigenous communities only experience these problems.

(2004) note, institutional racism may be subtle or not even consciously practiced but, nevertheless, demands acknowledgement and remedying.

This chapter begins with a discussion of qualitative and quantitative information on water matters in Indigenous contexts and situates these within national and international spaces. Then, I look at how Indigenous water values are conceptualised internationally. Human rights discussions encapsulate such concerns. These matters are covered here to introduce the connection between the human right to water and catchment management praxis. These two realms share much in common despite the apparent distance between them. Also, environmental justice that includes justice *to* the environment rather than simply ecological justice *for humans* (as raised by Low and Gleeson (1998)), highlights this relationship.

## **7.2 Water concerns for Indigenous contexts within the Ord catchment**

As Chapter Four established, a complex governance landscape exists in the Ord catchment. Multiple organisations have different responsibilities in delivering water supply and sanitation provision for Indigenous communities. Institutional complexity makes ensuring good water supply and sanitation a challenge. There is no comprehensive and current water supply and sanitation data for all Indigenous communities. The Shire of Wyndham East Kimberley (SWEK) is responsible for potable water supply maintenance for larger Indigenous communities. Also, SWEK periodically tests water quality in larger communities and responds to any notifications of sickness that is possibly induced by poor water quality. However,

small outstations do not have regular water testing visits due to lack of resources (SWEK Environmental Health Officer, pers comm.).

### **Water supply and sanitation in communities**

Like elsewhere in the Kimberley, most Indigenous communities in the Ord obtain their water from artesian bores, although a minority obtains supply from waterholes or natural springs. For instance, at Yirralallem, water is pumped from a nearby creek with a diesel generator. There is no water storage at Yirralallem and pumping must be stopped by midday because of fuel costs (field notes, July 2006). Also, at the time of fieldwork in 2006, two communities extracted water directly from Lake Kununurra. This river extraction, according to the Department of Housing and Works interviewee, was mooted to stop in the near future because of its illegality (Department of Housing and Works, pers comm.).

Table Three, below, shows information about some Ord Indigenous communities gathered from several interviews. This qualitative data shows an array of imperfections in water supply and sanitation in Indigenous communities in the Ord catchment – both near Kununurra and further afield.

**Table Three: Indigenous communities in the Ord catchment and water management issues (source: field notes by author and KLC (2004))**

<b>Community</b>	<b>Population (fluctuates regularly)</b>	<b>Water dilemma</b>
Yirralallem	15	Three huts built without toilet facilities. Two new houses built without toilet facilities, renovations in future.
Mulan	150	Community houses built in last three years and not connected to sewage for five months.
Goose Hill	15	No power or sewage connected.
Warmun	320	Some houses built without proper sewage connection. Also built in the 'wrong place'. When the wet season comes, they will be cut off from town because of the raised water level.
Bell Springs	22	Dug a channel for water transport to service a hay crop. The removal of dirt from one area has caused water ponding– associated problems with mosquitoes.
Emu Creek	30	Had a problem with water table rising. Wastewater gardens put in but these require a high level of maintenance and are not working well at this stage.
Gooda Gooda	35	Drainage problems have been ongoing because of the slope of the land the houses are built upon. A new drain was constructed to divert water away from the properties.

		<p>However, two new houses were built at the top of the community with Shire Council approval but without consulting EHO. The drain was filled to make way for the two houses. There are plans to rebuild the drain to be above the two new houses.</p>
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The information in Table Three covers a broad gamut of water dilemmas existing in Ord catchment Indigenous communities. This variety is reflected in research conducted on water system reliability by O'Mullane (2004) for the Kimberley region. Her research focused on the situation for small communities and was conducted via phone interviews. She found that:

'The rate of water system failure in small Indigenous communities is high with 79% of communities having experienced system failure; there is a high variability of water systems and issues contributing to system failure, and; system failure is not simply a systemic equipment problem, maintenance and service delivery issues play an important role in water system reliability.'

(O'Mullane, 2004: executive summary).

The high rate of failure is alarming – as is the high variability of causes for failure. Many things, beyond the technical dimensions of water provision, are not working here.

As well as this aggregate data, O'Mullane (2004) presents a case study on Alligator Hole, a community to the south of Kununurra comprising a permanent population of twenty adults and twenty children. On water access:

'Alligator Hole does not have an "organised water supply". The community currently carts water from the creek near the house. During the dry season this is not always possible and they have to cart water from further away, from Dingo Springs.' (O'Mullane, 2004: 28).

Three reasons are given for the failure of the water system at Alligator Hole: theft, money and incorrect installation. O'Mullane (2004:29) describes how during one wet season the community stayed in town and on return to the outstation they discovered the theft of their generator, public telephone and the whole verandah, including an outdoor kitchen. The second factor is money and when there are insufficient funds to 'buy fuel for the generator the community carries water into the house to flush the toilet.' (O'Mullane, 2004:29). Last, incorrect installation refers to the delivery of a tank to the property when no one was present and was placed on a hill. Winds blew it off and damaged it beyond repair. This case study demonstrates the difficulties Indigenous peoples encounter in obtaining good water supply beyond town borders.

Research shows that social dimensions are often more important than technical dimensions in influencing whether good water supply and sanitation is delivered for Indigenous contexts (Smith and Ali, 2006; Bailie, Carson and McDonald, 2004; Swyngedouw, 2004). If social processes are working, then technical delivery and

maintenance of essential infrastructure is straightforward. Likewise, if they are not, then difficulties arise, as I show in the following case study.

Yirralalem is an Indigenous community on Packsaddle Plains, about half an hour drive from Kununurra in dry weather. During research in the Kimberley, I visited it twice and talked with people who lived there during these trips. Further relationship building also took place around meetings in Kununurra. Fifteen people reside here most of the year in three houses. Water dilemmas are persistent here and take multiple forms.

First, the road to Yirralalem is unsealed after turning from Packsaddle Road. It crosses a creek that floods in the wet. When the creek is up, a tin boat is used to get across to the other side. Second, there are no water storage tanks so water is pumped from a nearby spring to the community. This stops before midday most days. Third, flooding of the houses has occurred in the past few years due to changed management of Lake Kununurra. The Dunham River, that joins the Ord downstream Kununurra Diversion Dam, backs up and inundates this area. Fourth, three huts were built there with no toilets. The properties are kept in good condition and the community is not too far from town for children to attend school. An interview with the SWEK Environment Health Officer detailed the extent of problems at Yirralalem. During our conversation, the EHO expressed her concern with projects not being completed according to contractual obligations.

‘JM – Are there any specific communities where you know of that happening?’

EHO – There’s Yirralalem – they had three huts built there with no toilets and there are nearby springs there. Maybe they use that for sanitation. I don’t



know. There are two brand new houses there – and they've got to have renovations to add toilets to them too. The person who was working before me here... she developed really close connections with the communities over the six years that she was here. I have a good working relationship with the Town Planner but there are some problems that arise when approvals have gone through and the appropriate consultations haven't taken place beforehand as to whether it is a good place to have the building situated in terms of water.

JM – so how do you manage relationships within the Shire to make sure that that doesn't happen so much? And with contractors?

EHO – it's difficult sometimes but careful relationship building helps. To begin with here, I was conscious of the fact that this is a small town and that working with people like plumbers, I was careful of making those relationships work. Now that I've been here longer, I'm more likely to be indicating that something isn't okay if it isn't.' (interview conducted June 2006)

Social dilemmas within such a small town compound already fraught situations. It is remarkable that intra-council communication problems also impinge upon water matters in Indigenous communities. Yirralallem illustrates the multiplicity of water dilemmas Indigenous communities experience in the Ord.

The third example is Gooda Gooda (also spelt Guda Guda), a small Indigenous community located ten kilometres east of Wyndham. It was built at the base of a

slight hill. About fifty people live in the ten houses during most of the year. Because of an influx of water during the wet season, and poor drainage, Gooda Gooda has had major problems with flooding. The clay based soils and rocky ground impede swift drainage. Also, the water inundation leads to saturated soils in turn resulting in the onsite septic systems backing up (Environmental Health Officer, pers comm.).

The overflowing of the septic system can cause gastric diseases. The water that pools is a breeding ground for mosquitoes, increasing environmental health risks. Also, children and dogs swim in the pools, leading to spreading of ear and eye infections. A drain was built around the community to remove the water (see Figure Eighteen, next page). The water could flow through the drain and to the Wyndham tidal floodplains rather than through Gooda Gooda. This initiative was welcomed by the community and was successful. However, two new houses were built at the top community in 2005, without consultation with the Environmental Health Officer (EHO), who was involved with the drain design and installation. Development approval was given from within the Council without consulting the EHO who had worked with the community for some time (EHO, pers comm.). The drain was in-filled and septic systems for the two houses are now where the drain once was. Consequently, flooding problems exist around the two upper houses.

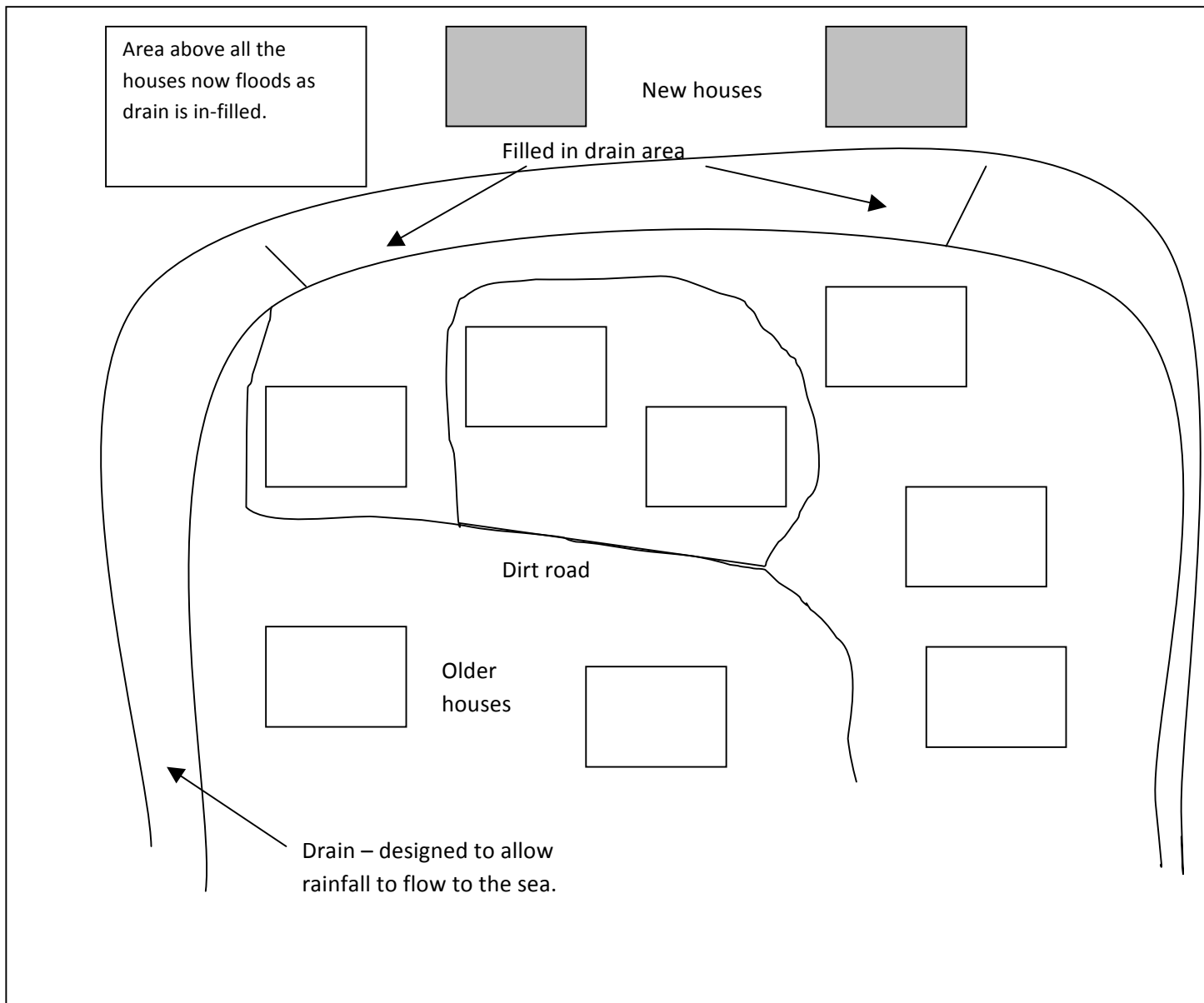


Figure Eighteen: Gooda Gooda mud map, not to scale.

This section has presented information on what water supply and sanitation dilemmas exist in the Ord, identifying incipient partner relationships similarly to those identified in the previous chapter. The next looks at conservation of a spring through Indigenous people and local Council working together.

## **Community Waterholes – the Molly Springs project**

Evidence of the burgeoning recognition of Indigenous water values in the Ord is a small project aimed at protecting a spring from damage by users. This is a body of water located within the Ord catchment, to the west of Kununurra, but not directly connected to the mainstream of the river. It is located near a community called Molly Springs, also the widely known name for the waterhole. People are encouraged to visit this waterhole, as well as others nearby, in information distributed by the Tourism Information Centre (Shire of Wyndham East Kimberley, n.d.). During and soon after the end of the wet season, these springs are particularly popular for visitors and locals alike. As the dry season continues people interpret the waterholes as having 'no water' whether or not water remains in them (field notes, 2006), partly because of the absence of fresh water flowing into them from wet season rainfall.

There is no regulation of how people use these waterholes and visitors can drive vehicles around them, wherever they choose. Over time, the traditional owners with responsibility to care for Molly Springs grew concerned about the damage to the area through this unregulated usage. They also worried about the removal of materials such as stones around the waterhole (Miriwoong woman, pers comm.). To mitigate this, the TOs sought support and funds to fence the road and install signs about the cultural significance of the area. Together with the Department of Environment and the Shire of Wyndham East Kimberley, a project to provide information to tourists and reduce the impact of visitors was devised. The Shire became lead proponent in the project and application for funds was made to the Federal Government's Community Water Grants (CWG) program. It was approved in the first round of CWG projects.

The project, entitled 'Protection of Molly Springs from Visitor Impacts, Kununurra, WA Molly Springs Community' is described on the website in this way:

'This project will reduce the negative impacts of tourism at Molly Springs, Kununurra by raising awareness of the cultural significance of the spring. Project activities include protection of riparian vegetation, establishment of a day use area and defined access trails and interpretive signage. In addition to this, monitoring of stream bank condition, riparian vegetation and water quality will be undertaken.' (Commonwealth of Australia, 2006b)

Total funding for the project is \$2,931.82 – at the low end of the spectrum in project costs of the first round CWG, where many reached the \$50,000 maximum (although a single community can apply for three projects up to \$150,000)<sup>41</sup>. The project aimed to negotiate multiple values so that one user group did not negatively impact on another. A central concern was that traditional owners could continue their caring for country (local Department of Water representative, pers comm.). Also, regulating how visitors use the area was an expected outcome.

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<sup>41</sup> The CWG program is a joint initiative between the Australian Government Department of the Environment and Water Resources and the Australian Government Department of Agriculture, Fisheries and Forestry. The CWG website states that 'grants are available for projects relating to water saving and efficiency; water recycling, and; water treatment - improving surface and groundwater health' (Commonwealth of Australia, 2007). CWG intend to improve conservation of water by instituting changes to minimise water wastage. The Grants can be applied for online or over the phone and are meant to be accessible to anyone. CWG Representatives travel to geographically remote regions to promote the uptake of the Grants and, during my fieldwork, a visit took place by one such person. She encouraged Aboriginal communities to complete Grant applications to take advantage of the \$50,000 - \$150,000 on offer. While it is feasible that anyone could apply for a Grant given computer access and internet provision, the process of getting works completed within Indigenous communities that would be sustainable, is challenging.

The Molly Springs project gained momentum in part because it was a partnership project – traditional owners work in conjunction with the local Shire. The project aimed to protect the frog dreaming site partly through educating people about its importance. The following quote from an interview with a local Council employee working with the project describes these aims.

‘The cultural significance of the site, it’s a frog dreaming there, that will be protected and the interpretive signs will provide information so that people are educated about the area when they are going there. They can be educated so that they don’t take rocks too. TOs are okay with the tourists being there but they want it to be a nice spot for them to use, with a seating area and encourage sustainable tourism at the same time. The construction of an easy to follow trail rather than several is important as well to manage the way people use the area.’ (SWEK employee involved with the project – non-Indigenous, pers comm.)

An essential point to glean from this quote is the willingness of traditional owners to share information in order to protect the water values relating to the area and the capacity of the local government to support them in this. Enhancing the experience of people wanting to continue to use the site is a part of this agenda. Some consider this project to be a pilot project for protection of other valuable waterholes in the Ord catchment, such as Cave Springs, that experience similar levels of usage and are at risk of environmental damage (Save Endangered East Kimberley Species [local environmental NGO] participant, pers comm.). This case provides another instance of diversity recognition in the Ord around water values. The three examples of

Indigenous water values recognition in the Ord – by the intercultural sphere – reflect some of the national and international examples drawn on later in this chapter.

Water management is a fluid sphere; potential for inclusion of Indigenous values is high.

### **7.3 Causes of water dilemmas for Indigenous contexts in the Ord**

Water supply and sanitation dilemmas are closely linked to housing conditions. In the view of relevant bureaucratic officers, many housing problems in remote Indigenous communities in the Kimberley emerge in the wake of poorly planned rapid housing production (Department of Housing and Works representative, pers comm.; Environmental Health Officer, pers comm.). When the Aboriginal and Torres Strait Islander Commission was abolished in 2005, the organisations now responsible for housing received a glut of funds to spend as soon as possible. According to the Department of Housing and Works representative (DHW representative) interviewed for this research, about AUD180 million was handed to the state government post-ATSIC for building houses. As a result and responding to need, rapid construction ensued. This rapid building sometimes included incorrect placement of septic tanks and incomplete housing construction. Problems arose when homes were only partially built (with absences of necessary installations of power and plumbing facilities) and, due to housing pressures, they were inhabited prior to final approval (DHW representative, pers comm.). People are, and have been, forced to squat in properties that are not fully habitable.

Beyond these structural matters, there are many other reasons for poor community water management in Indigenous contexts. These reasons cover both physical and social dimensions: drought, poor water quality, lack of power, not paying bills and equipment failure. Yet from this range of possible causes, the last major audit of the issue (the 1999 Community Housing and Infrastructure Needs Survey) (CHINS) (Australian Bureau of Statistics, 1999)<sup>42</sup> recorded equipment failure as the only reason of water restrictions in the Kimberley. Based on these data, equipment failure could hint at a misfit in the equipment provision and its suitability. The data on water matters showed some improvement: slightly more Indigenous communities have decent sewerage facilities and fewer communities have no organised water supplies. However, the Ord catchment has many smaller communities that were probably not included in the survey and the caution the ABS (2007) advises is highly relevant to this context. The current data then does not take into account the whole range of problems with water supply and sanitation.

Water provision could be plagued by 'some systemic issue affecting water system equipment in the Kimberley that is preventing good levels of system reliability being achieved.' (O'Mullane, 2004:6). Or, as I was told by many research participants, perhaps the equipment just is not being installed properly. This systemic issue could be some form of institutional racism, where power imbalances are exploited and proper processes ignored (for a discussion of institutional racism in remote Australia, see Carter and Hill, 2007b). Complicating these influences, the precise cause of

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<sup>42</sup> In contrast to the 1999 CHINS report, the 2006 CHINS report (ABS, 2007) is not as comprehensive – a majority of communities were only invited to answer a subset of questions. The Australian Bureau of Statistics online publication of the 2006 CHINS does not establish what questions are selected or why. Also, communities of less than 50 people were just selected for the partial survey. For these reasons, ABS (2007) advises caution in interpreting the 2006 CHINS.



system failure in communities is difficult to establish, even with further research. For instance, O'Mullane (2004) found that the surveyed communities identified three main grounds for system failure: equipment breakdown; external damage to the system, and; lack of standard maintenance. The length of system failure varied with some communities having to cart water from town because of permanent failure while others were getting the system fixed the next day.

During an interview with a contractor involved with providing water to Kimberley communities in the Ord catchment, I was informed that speed in repair is a high priority and all attempts are made to remedy any problems as quickly as possible (contracted water provider, pers comm.). Corroborating anecdotal evidence from the DHW representative, this interviewee referred to how some new homes in Indigenous communities are built without power and water. The participant also spoke of how in one instance a community in the East Kimberley tolerated five months without connection to sewage treatment. This facility provider confirmed that some of the contractors who build homes for the Department of Housing and Works fail to fulfill the terms of their agreements in coordinating completion of their constructions. This means that homes could be, and often are, deemed 'complete' without final installation of water and power supply.

The systemically inadequate construction of properties is one manifestation of institutional racism. Health Habitat, an organisation working for two decades in Indigenous housing, notes that over 70% of budgets for housing repair are spent remedying incorrect installation. One of Health Habitat's partners, Paul Pholeros, describes its work:

‘Repairing vandalism or even over-use of buildings by Aboriginal people, particularly the essential health hardware has not been a significant cost (always less than 5 per cent), whereas poor initial construction, particularly of difficult to inspect in-ground works, has consistently consumed over 70 per cent of fix budgets, the remainder being used for regular maintenance tasks.’

(Pholeros, 1997: unpaginated)

This issue was also mentioned in fieldwork involving the DHW. A departmental representative described how septic tanks are often placed in incorrect positions when houses are built; people are living in dwellings without power and water attached without official permission to do so, and; housing projects have begun without full and proper assessment of whether the houses were suitable for the environment or occupants. Further, the complex reasons for this situation include poor communication, difficulties in getting tradespeople to work in isolated conditions, and inappropriate management. At the same time, the problem of Indigenous occupants not providing rent payments and damaging properties was raised. The DHW representative stated that ‘I get sick and tired of each week handing over a house and it is destroyed...’ (interview June 2006). He also suggested that distribution of funding was inequitable within Indigenous contexts because of cultural norms. The basis for this claim was that he thought traditional owners are disproportionately benefited by initiatives over others (Indigenous people who aren’t traditional owners) because of their placing within the community.

While the lack of completion is an identified problem in bringing adequate community water management to Indigenous peoples, it is also lack of knowledge that may be impeding appropriate provision. Many research participants who work with water supply and sanitation were unable or unwilling to name specific areas where housing hadn't been completed. It was common for participants to make general statements about time lags between building of houses and installation of sanitary facilities rather than specify locations or how much work is yet to be done. It is impossible to completely remedy existing problems without knowing the current status of housing conditions and facilities.

The deceptively simple process of delivering water supply and sanitation is challenging in the Ord in a physical sense and even more so as political dynamics influence such a practical matter. O'Mullane (2004: executive summary) advises that 'further work be done to address the issues of service delivery, technology choice, capacity of involved parties to install and maintain technology, succession of knowledge, and information sharing.' Practical solutions are needed but the evidence provided above also raises the need for political interventions. Technical problems for environmental dilemmas partly stem from social relationships. Patterns in this water matter identified in the Ord are reflected in other contexts within Australia, perhaps also suggesting social rather than physical facets. The next section looks at nationwide patterns in water supply and sanitation for Indigenous contexts.

## **7.4 The broader context: Environmental health development nationwide**

Problems in water supply and sanitation are far from exclusive to the Ord. The Northern Territory intervention demonstrates this. Member of the Northern Territory Emergency Response Taskforce, ophthalmologist Glasson, describes the web of concerns targeted by the intervention:

‘We all know that social factors such as overcrowded housing, lack of education and limited employment opportunities, along with environmental health issues such as lack of clean water, washing facilities and functioning septic systems, all influence health outcomes of individuals and the community. These factors, combined with a cycle of welfare dependency, lead to a loss of pride and low self-esteem. Substance (particularly alcohol) misuse is a direct result. Therefore, any targeted medical strategy must have a broad focus and address all these wider issues which have an impact on the health of individuals.’ (Glasson, 2007:614)

As shown in the Ord, the necessity to provide sufficient water quality and quantity in remote Indigenous communities is not always met. This section looks at the broader conditions for the failing: these conditions are not simple and nor are they solely determined by physical factors. An overview of water supply and sanitation by Hearn, Henderson, Houston, Wade and Walker (1993) examines these complexities. They give a brief history of Indigenous cultural change since European occupation began and how, partly because of this, health status and population size has fluctuated. Hearn et al. (1993) also review the relationship between the current health status of

Indigenous people and their water supply drawing on 'international knowledge of the water and human health nexus where appropriate' (1993:135). Similarly to today, the health status of Indigenous people in the early 1990s was significantly lower than that of other Australians on all indicators. For instance, Indigenous people had on average a life expectancy at birth of 15–17 years less and an infant mortality rate of 1.9–3.8 times higher than the average (Hearn et al., 1993). This gap persists.

Partial national level data reflects the poor data available for the Ord catchment. Hearn et al. (1993) observe that while much is written on Indigenous health, at that time comparatively little was written about contemporary Indigenous water supplies. They present data from an early Community Housing and Infrastructure Needs Survey that was undertaken by the Aboriginal and Torres Strait Islander Commission (ATSIC) in 1992. The following statistics were compiled:

- 17% of the population living in discrete communities relied on water not complying with national health guidelines on water quality.
- Only 38% of communities had regular water quality testing by people qualified to do such testing.
- In terms of quantity, water supply was inadequate as well. Water restrictions were common with 33% of discrete communities surveyed having restricted supply during the 12 months before the survey.
- The main reason for water restrictions was inappropriate technology with equipment breakdown causing 63% of water restrictions in these communities.
- 14% of communities did not have a maintained water supply system.

- 45% of communities said their water supply infrastructure was inadequate to meet their housing needs over the next five years. (Hearn et al., 1993:141).

According to Hearn et al. (1993) the majority of problems with water supply relate to technical breakdowns and the need for external assistance to remedy malfunctions. The problem lies in the social transfer of technology. That is, the incommensurability of technologies with cultural practices is an important factor. Hearn et al. (1993) identify the insufficiency in examining Indigenous water supply and sanitation issues solely from a medical and technical viewpoint. They argue that funds need to be directed away from technical agencies for infrastructure development towards Indigenous institutions that are working with principles of self-determination to build capacity. As I establish in Chapter Five, within the Ord catchment, the creation of the Miriwoong Gajerrong Corporation through the OFA brings a strong self-determining presence to the region. One of the key activities of the Miriwoong Gajerrong Corporation, and the other mechanisms implementing the OFA, lies with helping to improve living standards of Indigenous people in the catchment. Capacity building includes enabling Indigenous peoples to live on country with sufficient water. The human right to water proclaims this right as well.

The peak representative body for human rights in Australia, the Human Rights and Equal Opportunity Commission (HREOC), also examined issues of water equity in Indigenous communities. The HREOC investigated the provision of water and sanitation in remote Indigenous communities in 1994 with a survey approach complemented by case studies of discrete communities. The substantial report subsequently produced, ('Water: A Report on the Provision of Water and Sanitation in

Remote Aboriginal and Torres Strait Islander Communities') (HREOC, 1994), drew on multiple methods including consultations in the field and a meeting with representatives of all communities to discuss the findings of the case study investigations collectively. Similarly to Hearn et al's (1993) findings, underpinning this report was a belief that the issues in the provision of water were social and political rather than purely technical in nature. In addition, the participation of Indigenous people who were to be project beneficiaries was absolutely necessary to achieve success in the water provision project (HREOC, 2001). The 1994 HREOC investigation concluded with the recommendations shown in Table Four (earlier published in McLean, 2007).

**Table Four: Recommendations from the Water Report (HREOC, 1994)**

<b>Area of recommendation</b>	<b>Explanation of recommendation</b>
Community control	That Government at all levels recognise the vital element of community control in effective provision of services and amend legislation to reflect such.
Equality and less discrimination	That Government at all levels actively promotes a broader community understanding of equity and equality based on recognition of differences between cultures.
Indigenous peoples' rights	That the Federal Government prepares a national statement of Indigenous peoples rights.
Technical advice	That ATSIC continue to consider and address the means by which Indigenous communities receive and respond to scientific and technical advice.
Sustainable development	Peak Indigenous groups consider the implications of this approach.
Concomitant changes in relevant departments	The Aboriginal and Torres Strait Islander Social Justice Commissioner determines if changes or augmentation of Government policies and programs are required to give effect to issues of standards, values, equality and self-determination identified in the Report.
Monitoring and review	An ongoing process to begin one year post the completion of the 1994 review by the Race Discrimination Commissioner.



Following up this water report, the 2001 HREOC review found that major developments have taken place since that time (HREOC, 1994) and that the trend at a national program level, and in seven of the ten individual case study communities, has been towards increased investment in water and sanitation infrastructure by governments. This finding suggests that responsiveness to the recommendations from the first report was significant and, at least in some instances, effective.

The HREOC (2001) review, while acknowledging this responsiveness, also stated that extensive work still needed to be done. This included better reflection in policy of the cultural differences between Indigenous and non-Indigenous peoples, and prioritising sustainable provision of supply. A rights-based approach, as advocated by HREOC, allows for recognition of respect for another culture rather than providing access to conventional market opportunities. This HREOC review suggested that reforms towards market-driven, environmental instruments in water, with concomitant integration of sustainable development goals (Smith, 1998) proposed by the Council of Australian Government (CoAG), may need reworking for Indigenous rural and remote communities. The HREOC (2001) review identified that the ‘challenge (in water supply and sanitation) is to meet distinct group needs...on Indigenous land, through delivery mechanisms which are cost-effective, demand driven and sustainable.’ (HREOC, 2001: in Conclusion section, unpaginated). This highlights the tensions between market-driven approaches and maintaining social values of water that may be separate to this domain or impossible to be maintained in this domain. Within the Ord, the evidence provided earlier in this chapter shows that inadequacies exist for the meeting of Indigenous peoples’ needs on their country.

A later review of available national and state/territory survey data on water supply and sanitation in remote Indigenous Australian communities was compiled by Bailie et al. (2004). This review found that many communities still did not have a reliable water supply and sanitation system. Sanitation system breakdowns were frequent and prolonged. Bailie et al. (2004) found that 12% of communities of 50 people or more experienced five or more periods of water restrictions in a one-year period. For sanitation, the figures were worse with 10% of communities experiencing sewage overflow or leakage 20 times or more in a one-year period (Bailie et al., 2004:411). While this is a review of data without any case study to flesh out the findings, it is interesting that despite the abovementioned efforts at improving water supply and sanitation in rural and remote Indigenous communities, there were still significant and concerning deficiencies in this area. Bailie et al. (2004:413) justly ask 'how is it that in a country of Australia's wealth in financial, material and human resources there are still many people without adequate water supplies or sanitation?' They state that there is insufficient information to inform policy and planning in this area and that emphasis should be on providing easy access to adequate quantities of water as this may be more significant for reducing illness outbreaks than the quality of water. In conclusion, Bailie et al (2004) state that the basic human right to water must be first and foremost: they ask if it may be a lack of political will that has impeded securing this right.

It is clear from this discussion that there are serious deficiencies in water supply and sanitation in rural and remote Indigenous communities. Water justice – where people have access to essential environmental goods – is some way from being a reality in many of these contexts. The next section looks at how recognition of different water cultures is intrinsic to water justice but has not yet been adequately realised in

numerous contexts in Australia. Indigenous water values include being able to live on country with access to useful water supplies. Without recognition of this principle, environmental injustices are likely. Every-body needs enough water to live.

## **7.5 Global water dilemmas**

Indigenous peoples across the globe are building coalitions on shared experiences, asserting rights to perpetuate traditional lifeways (Castree, 2004)<sup>43</sup>. In this way, Miriwoong Gajerrong people in the Ord are treading a path in parallel to other Indigenous peoples. From asserting fishing rights to securing safe water, water matters are a strong element of this movement. First peoples argue that their water values deserve recognition and shouldn't be marginalised in environmental decision making. This argument is reified through the United Nations Declaration on Rights of Indigenous Peoples. It is also reflected in the water justice campaign. Collings (2002:65) captures the connections between international law trends and recognition of Indigenous water rights in Australia.

“Water” has many different meanings for Aboriginal and Torres Strait Islander peoples throughout the continent of Australia. Freshwater and saltwater territories are distinct and separate, a distinction which is not merely economic or bio-geographic, but social and spiritual as well. However the common threads running through the many and diverse Aboriginal and Torres Strait Islander communities with cultural affiliations to “water” are the rights

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<sup>43</sup> While Indigenous peoples globally share common agendas, there are also significant differences. The United Nations Declaration I discuss in this chapter acknowledges this. A comprehensive discussion on the tensions between universal movements and particular realities is outside the scope of this thesis.

that attach to their living cultural traditions. These are fundamental rights recognised and upheld under international law. International legal principles are embodied in a range of international legal agreements that uphold the civil, political, social, economic and cultural rights of all “peoples”.’

Living cultural traditions are a common feature of Indigenous peoples’ water values on a global scale as well. Collings (2002) discusses international treaties that talk about Indigenous peoples’ rights to water where cultural connections exist. These international treaties usually mention ‘land, territories and resources’ but often not water as a specific category (it could be included under the banner of ‘territories’). The common understanding of water as a resource (among others see Smith, 2003a) works here too. It is important to see here that Indigenous movements do voice the vital role of water in maintaining societies. After detailing how water dilemmas exist in the Ord in earlier chapters and the first section of this chapter, this section canvases the multiple ways international water rights are evolving, to demonstrate shared social experiences of water. In doing so, I contextualise the Ord case.

The clearest description of Indigenous rights to water, in the international sphere, is within the Declaration on the Rights of Indigenous Peoples (the Declaration) (United Nations, 2007). Part VI in Figure Nineteen (next page) is especially relevant to Indigenous water rights.

*Article 25*

Indigenous peoples have the right to maintain and strengthen their distinctive spiritual and material relationship with the lands, territories, waters and coastal seas and other resources which they have traditionally owned or otherwise occupied or used, and to uphold their responsibilities to future generations in this regard.

*Article 26*

1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired.
2. Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired.
3. States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the Indigenous peoples concerned.

*Article 27*

States shall establish and implement, in conjunction with Indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to Indigenous peoples' laws, traditions, customs and land tenure systems, to recognise and adjudicate the rights of Indigenous peoples pertaining to their lands, territories and resources, including those which were traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process.

*Article 28*

1. Indigenous peoples have the right to redress, by means that can include restitution or, when this is not possible, just, fair and equitable compensation, for the lands, territories and resources which they have traditionally owned or otherwise occupied or used, and which have been confiscated, taken, occupied, used or damaged without their free, prior and informed consent.
2. Unless otherwise freely agreed upon by the peoples concerned, compensation shall take the form of lands, territories and resources equal in quality, size and legal status or of monetary compensation or other appropriate redress.

Figure Nineteen: Excerpt from the United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007)

The declaration enshrines the special relationships that Indigenous peoples hold with natural resources and their management. It also gives support to calls for joint management between traditional owners and government institutions everywhere by stating the right of Indigenous peoples to control country. Article 25 in particular provides for this by noting the importance of strengthening Indigenous peoples' distinctive spiritual and material relationships with country. Australia became signatory to the Declaration in April this year.

The Declaration also preserves self-determination as an important principle: particularly because self-determination facilitates continuance of traditional lifeways. This notion, while long rejected by the now departed Howard government in the Australian political context (Martin, 2005), is still important to Indigenous peoples. For instance, in Canada, the Indigenous water rights agenda hinges upon self-determination (Behrendt, 2002). Both nations were once colonies ruled by the British Empire and today share government policies that are 'designed to alleviate the socially excluded positions Indigenous peoples inhabit' (Behrendt, 2002:78). Behrendt (2002) explains how recognition of water rights in Canada occurs under both common law and treaty. However, relating to the latter, concerns have emerged as to whether some earlier treaties are being enacted, and under what mechanisms people can seek redress if the agreements are not being upheld (Behrendt, 2002).

Different countries have responded in various ways to the Declaration on the Rights of Indigenous People. The Canadian Government created the Inherent Right to Self-Government Policy in 1995. This policy sets out processes to renegotiate and reaffirm treaties already in existence and also enables the creation of new treaties. It

details those matters that make up the inherent right to self-government for its Indigenous population. The policy document lists land management, natural resource management, agriculture, hunting, fishing, trapping, water management and use of water (Behrendt, 2002:85). These matters – which amount to a human right to continue observance of traditional custom on country – turn the discussion to consideration of how water is framed as a human right. Social justice concerns connect to environmental movement interests on this front where maintenance of country can result in preservation of Indigenous lifeways as well. This brings together the more intrinsically human focused themes, raised in Chapter Seven, with the environmental matters from Chapters Five and Six.

This section has explained the aspects of the global Indigenous sphere relevant to water matters. I mentioned the increasing recognition given to parallel experiences of colonised peoples and their countries. At the same time, awareness of the benefits possible with integrated catchment management is growing. Healthy rivers come from healthy country and here the tie between catchment management and social justice agendas surfaces. Miriwoong Gajerrong peoples understand this relationship and, as shown in Chapter Four, their integrated water values – an important part of Indigenous traditional culture – manifest this understanding. Examining the interconnections is, therefore, useful. The concluding chapter of this thesis recounts the nexus of managing water for people and the environment.

## **7.6 Conclusion**

Every body always needs water in two universal ways: for sustenance and cleansing. Simultaneously, the conditions for provision of this essential resource vary. This chapter demonstrates how, within the Ord catchment and at multiple scales,

Indigenous peoples' water needs are not being comprehensively met. There is no shortage of recognition on national and international scales of the environmental health importance for providing sufficient quality and quantity of water. When brought to bear on a local scale, recognition of this failing exists; it is known that Miriwoong and Gajerrong peoples do not always have good water supply and sanitation. It is also known that important springs are compromised through lack of protection. However, these failings are sometimes repositioned as a too challenging issue and, at other times, solely the fault of the people without basic services. Specific political and environmental conditions enable this slippage. These conditions stem from historical dynamics playing out in present day engagements in the intercultural sphere. For, just as water enables life, so too social equality allows security of human rights. The last, and concluding, Chapter ties these notions together.



## **Chapter Eight: Water matters in the Ord - conclusions and suggestions**

Two vignettes begin this conclusion. The first recounts the opening of a water recycling venture at a sandalwood farm just outside Kununurra. I was asked to attend on behalf of the KLC and wrote extensive field notes at the close of the day. It captures themes of contemporary intercultural relations, frontier expansionism, and water dilemmas. The second summarises a hearing of a federal senate committee that visited Kununurra and interviewed stakeholders on rural concerns including development and water management. The data for the latter comes from online transcripts. I present these two cases to show that, despite many advances in including Indigenous voices, there are loose ends and missing links that are yet to be addressed.

### **8.1 Opening of the first water recycling project in the Ord catchment at a corporate Sandalwood farm, May 2006**

It is a typical dry season sunny day and I arrive by car to the Sandalwood farm – about fifteen minutes drive from the centre of Kununurra. My housemate has given me a lift. We are greeted by women who give us a sample-bag of sandalwood products. The sandalwood in our sample-bags could not have come from this new farm since sandalwood takes at least ten years to mature. The soap, incense and sandalwood oil are all labelled with the logo of this corporate farm.

After some informal mingling, speeches begin official proceedings of the water recycling launch. Speeches are made by the farm manager, the Minister for

Agriculture and the Chair of the Ord Catchment Reference Group. The Minister talks about how the state government has been investing in research for the viability of sandalwood for some time and that the sandalwood ventures in Kununurra show just 'what can be achieved through research and development'. The Ord Valley is the 'most plentiful area of water in the world.' He goes on to say that in 'the Ord River Irrigation Area has not even been scratched...this is opening up a new area in the Ord'. He says that we have 'a moral obligation to keep the area clean and green. We are long term custodians of land and the water flowing on it.'

The Minister discusses the history of the Ord Valley irrigation area and how since development began here in the 1960s, commerce, industry and government have been working towards sustainable development. He celebrates the 'very brave people who came so long ago – to a place so distant, so remote, and about which so little was known.' The impacts of irrigation, he admits, could be potentially bad but now work focuses on how those impacts can be contained. 'Local producers work through their own systems to eliminate tailwater and improve environment.' This is the first tailwater recycling project in the valley and it is expected that 'there will be more advances in the next twenty years than have so far occurred in the last 7000 years of agriculture'. He finishes his speech by saying that 'the one thing above all we need to achieve, after sustainability of course, is the cost of production per unit.' Soon after, he presses the button that electronically controls the water recycling unit and a spurt of water pierces the air.

The manager of the forestry venture says that 'This is an example of private enterprise and government working together.' He also hopes that the Ord Valley

would become a world centre for sandalwood production. An annual tertiary scholarship for students was also announced by the manager.

The Chair for the OCRG says that producers in the Ord are 'open to the challenge of change.' Recycling of water is 'good for the entire environment. The environmental benefits include reduction of water in Packsaddle Creek in the dry season, thus eliminating dry season flows.' There will be monitoring of the project that is being put in place to assess its efficacy. She acknowledges the use of National Action Plan for Water Quality and Salinity funding for this project.

Throughout these talks, the Indigenous Traditional Owners are not acknowledged. There were no Indigenous people present.

After these formal speeches, people eat and drink from an ample spread. I try to get an opportunity to talk to the Agriculture Minister about the oversight of the acknowledgement of TOs but he is unavailable. Instead, I am approached by the Chair of the OCRG. She invites me, as conduit for the KLC/Miriwoong Gajerrong people, to bring a project to the OCRG table. I say that I will talk to the people I work with and see what they think. She strongly advocates a project on fire management as it will be useful and will benefit the whole community. She emphasises how the issue of NRM is not a 'black and white one', I assume here referring to race, but that we all want to work together. She states that the OCRG is a well functioning body and that she wants to keep it that way. At the end of the eating and drinking by politicians, local irrigators, pastoralists and bureaucrats, the itinerant workers (otherwise known as *mungas*) come in and eat from the leftover food.

## **8.2 Ranging values in the Ord: water values brought forth by the Rural and Regional Affairs and Transport References Committee**

The Federal Government Rural and Regional Affairs and Transport References Committee (RRAT) held a hearing in Kununurra on the subject of 'Rural Water Usage in Australia' on Monday November 2003<sup>44</sup>. According to the Hansard record, this hearing invited, among others, witnesses from the WA Department of Water and Rivers Commission (now no longer in existence –replaced by the Department of Water), the WA Department of Environment Protection (DEP), the Kimberley Primary Industries Association, Ord Irrigation Cooperative, Ord Land and Water, the WA Department of Agriculture and the World Wide Fund for Nature. Not present at the hearing were any representatives from local Indigenous organisations or any traditional owners, affiliated or otherwise. It is stated during the course of the hearing that in the near future this omission will be rectified with appropriate representatives giving evidence to the Committee on another unspecified date. Some time afterwards, a written submission from Wayne Bergmann, Executive Director of the Kimberley Land Council, was given to the Committee. Although a representative of a local Indigenous organisation, he is not a traditional owner from the Ord catchment. Local TOs were not represented, undermining the extent to which the hearing achieved full community participation.

The questions posed by the Committee during this Kimberley session ranged across broad themes, from the physical to social dynamics of the catchment, and across

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<sup>44</sup> The full transcript of which is available from <http://www.aph.gov.au/hansard>.

scale, from whole catchment processes to on-farm practices. The outcome is a microcosm of a range of values derived from interactions with the Ord. This makes it an excellent example of the differing and shared values that shape the Ord River.

The first witnesses heard at the RRAT Kununurra session were representatives of government departments. The DEP representative, Mr Bowyer, discussed the legal definition of a river and the complexities around licensing in the Ord. He was reluctant to provide quantitative data on the capacity of Ord Main Dam, or even of the flow within the Ord River.

‘You have to be careful when you quote these numbers because, when we talk about the yield of the catchment, the storage of the dam, and the hydrology and availability of water, they all mean different things, particularly with the inflow between the top dam and the diversion dam.’ (RRAT, 2003:325).

Even basic quantitative data such as Ord River stream flow is difficult to determine. Of further interest is that the definition of a river within State Government legislation changes over time.

‘The old act [the Rights in Water and Irrigation Act] talked about diversions from watercourses, which also included channels. The new act is in relation to the natural watercourse. Previously, under the old licence there was an understanding that the Ord River would act like a channel. In fact, it is now a natural watercourse and diversions into channels are system supply assets rather than watercourses.’ (RRAT, 2003:329).

This shift shows evidence of legislative responsiveness to changing social values, especially with regard to the status of environmental values. Legal changes have redefined the way the Ord River is perceived at this level. The main drivers for control of river flow were examined in this discussion with the DEP representative, with the matter of Argyle Diamond Mine's hydropower demands appearing for the first time. The withdrawal of water by irrigators is stated as being significantly lower than that put through the turbines to supply power to ADM.

Following the DEP representatives, the Coordinator of the Ord Land and Water (OLW) group speaks. The OLW is a non-profit organisation working to improve efficiencies in farming techniques and overall environmental health of the catchment. Richard Pasfield provides some insights into the farming practices here.

'Probably the weakness of the water management we have here... is the fact that it is a flood irrigated system. This is a weakness because it enhances water inefficiency in terms of its use but also creates difficulties in terms of water quality when the water flows back into the river.' (RRAT, 2003:335).

Flood irrigation is possible here because of the extremely cheap cost of water – \$2.56/megalitre, not including standard access charges (Ord Irrigation Cooperative, 2007). The issue of Indigenous involvement in land and water management appears for the first time in the questioning process when Senator Buckland asks 'Do you have any Indigenous people in the body?' The reply from Pasfield is:

'No, we do not. The board realises that [sic] is a shortcoming of the board.

However, in terms of opening up communication links with traditional owners

to be able to get their input into an Ord Land and Water Management Plan...we are doing some work to create those linkages...' (RRAT, 2003:337)

This suggestion does not indicate an appreciation for the significance of partnership approaches to Indigenous people in the Ord catchment here; traditional owners are given the hat of stakeholder only. The third key group at the hearing is the Kimberley Primary Industries Association (KPIA) representatives. KPIA is a collective body that responds to the needs of local irrigators and advocates for irrigation development. The first issue asked of them is how much of a problem native title is to 'progress' of the region. David McKerrell replies that it is the biggest impediment to development in the Ord:

'The native title issue is obviously the main issue that is holding this area back. It is a very complex issue. The Kimberley Land Council are [sic] the recognised body under the Native Title Act who are to negotiate on behalf of people in this area, so government have to deal with them. It is legislated, so that is the way it is. Unfortunately, I do not believe that the local traditional owners are well represented at the level of the Kimberley Land Council itself. I think that could be a problem.' (RRAT, 2003:339).

The evidence for such a claim is not explored and seemingly accepted as given. This interpretation of the situation may or may not have merit but, regardless of this, it is not clear that the speaker has any direct interaction with the traditional owners from the evidence he gives. On the matter of the river and how it exists today, McKerrell says:

'I am relatively new to this area, but there are a few things that I have been made aware of since I have been here. One is that there is now deemed to

be a need for a large environmental flow in a river that traditionally did not have one. Traditionally the Ord River used to go dry, back into holes, and now it does not. It has got a forced false flow that has come as a result of power generation, irrigation and so forth....you are creating an environmental flow on something you do not really know much about.' (RRAT, 2003:340).

From this quote, two points are important. McKerrell seems to misunderstand what environmental flows are – not that they are contingent on the ecosystem requirements of a particular river but that it is what water flows in the river at present. Second, this lack of knowledge about the river in a comprehensive sense, due in part to its transitional state, is similarly pointed out by Tanya Vernes for the WWF, the following witness at the hearing. In response to whether there are any environmental benefits from the dams being placed on the Ord, she states:

'It is a difficult question because we have never had a baseline study for the Ord River, so we have nothing to compare it against. It is actually a river that is still in transition... Are the problems we are viewing now going to manifest themselves at a much greater level in the future? For example, there are reduced flows on the Parry Lagoons flood plain, which is also a Ramsar site – and Lakes Argyle and Kununurra are Ramsar sites...Yet we are impacting on another Ramsar site through that damming system because we are not having the same flow in the lower Ord that was there before. At this stage it is very difficult to tell what is happening or what will happen in the long term.'

(RRAT, 2003:350).

The interactions of ecosystems at different points along the catchment are clearly spelt out in Vernes' evidence. Also, she highlights the complexities around which



priorities determine the basis for environmental values. By damming the Ord, Ramsar sites were created but by reducing flows to Parry Floodplains, Ramsar sites are threatened. The questioning from the Acting Chair takes an interesting turn with this witness. The phrase 'new agricultural frontier' appears repeatedly, always in statements by the interrogator of the WWF representative to see the value in expanding ORIA. This is evidence of a live frontier expansionist discourse. The transferability of lessons from the Ord to other northern catchments emerges in this interview too. The opportunity to learn from mistakes in this catchment is discussed, particularly with regard to the Fitzroy River in the west Kimberley.

The last witnesses at the hearing are representatives of the Ord Irrigation Cooperative (OIC). The OIC is the major growers' cooperative of the ORIA. It receives a licence from the Department of Water to sell allocated water to individual farmers. The theme of learning from past mistakes appears in this discussion as well:

'Mr Innes: That head – that is, water that is not being used – runs straight back into the drains and back into the river.

Acting Chair: You would get a fine down where I come from if you did that.

Mr Innes: For wasting water?

Acting Chair: No, for putting your tailwater back in the river. So I suggest that, in due course, if you want to win the battle of the good and the great, up here you will have to do the same.' (RRAT, 2003:360)

The OIC use around 7% of the annual release of water from the Ord Main Dam according to Mr Innes' opening statement and release all their water from flood

irrigation as tail water back into the river. They are strong advocates for an expansion of irrigation in the valley and justify this expansion by saying that the dams are already in place and infrastructure development and native title concerns are seen as the only impediments.

The statement given by Wayne Bergmann for the KLC begins from the position that without remedying past mistakes, including lack of consultation with Indigenous peoples, future developments should not proceed. He suggests that:

‘The Inquiry may wish to consider the need for lessons to be learned to from the entire Ord River project, and for those lessons to be applied to any further water resource usage issues in the Kimberley region. A common element in these negotiations is future water management policies. Water has been the important factor underpinning the past injustices and current alienation suffered by traditional owners. Water, and the land on which agricultural development occurs, are also the highly valuable “economic” commodities driving current and future agricultural development in the region.’ (Bergmann, 2004:2)

Further comments refer to the under-resourcing of planning processes that plague appropriate involvement of the KLC. More specifically, he describes how the Kimberley is increasingly subject to increasing economic, resource usage, and environmental pressures. He states that water is central to each of these pressures. At the same time, water is also central to the cultural and social structures of Indigenous peoples in the Kimberley (Bergmann, 2004:3).

This hearing shows the pivotal discourses that shape the materiality of the Ord. Some witnesses move towards developmentalist trajectories while others voice conservationist concerns. The majority of speakers recognise the need for reform in the ORIA, with regards to water use and planning practices. Differences of opinion exist around the necessity of expanding irrigation and how the river should be managed.

Water matters in many ways within the Ord. From the scale of the body to international governance concerns, water encapsulates political dimensions. This multiplicity in scale is mirrored by thematic range. It is not surprising that, as foretold in the introduction, Masseyian 'loose ends and missing links' have emerged from working through the research questions. Therefore, this conclusion catalogues further questions. It closes with some suggestions for better recognition of the way water matters for all people in the Ord. These suggestions coalesce information gathered from the empirical research and the relevant literature.

### **8.3 Acknowledgement of Indigenous peoples' water values**

Indigenous peoples' water values are, and always have been, erratically acknowledged in the Ord catchment. As I demonstrated in Chapter Three, ignoring Indigenous water values accompanied early contact between colonisers and the colonised. Subsequently, a double dispossession occurred: first with land and then with waters. At the same time, Indigenous water values are holistic; cultural, economic, environmental and social dimensions form Miriwoong Gajerrong peoples'

water relationships. Therefore, the first step for appropriate recognition is acceptance of these interwoven and contested relations.

I have shown that the Ord catchment, while having over a hundred years of European settlement, has had its river regulated and plains irrigated only in the past forty years. Despite this, throughout settlement time, securing water sources was crucial. In the very earliest days of non-Indigenous forays into the Ord, water sources were expropriated for their uses. Then, Indigenous water values were at best noted, and were, more commonly, invisible. As pastoralism grew in the late nineteenth century, differences emerged in Indigenous peoples' experiences, especially about opportunities for maintenance of ties to country. Some Indigenous people could work on or near the country that grew them up, while others could not. Differences existed within Indigenous peoples' experiences of the colonial intervention, and this included possibilities of maintaining traditional Indigenous water values. Within a short period of time, major changes occurred.

As I demonstrated in Chapter Four, pastoralism did not change the Ord in the same way as irrigation. This is because the infrastructure for irrigation involved, among other things: the accumulation and storage of water in impoundments; flooded tracts of country, and; changed the hydrology of the river. The two dams along the Ord mainstream have continuing effects on many interests, such as river health and Indigenous water values. Also, greater concentration of non-Indigenous settlement has impacted on Indigenous lifeways. Irrigation certainly rendered more dramatic change on water than pastoralism.

Today, the nominally intercultural domain of water governance controls access to water – for all purposes, extending from irrigating to personal consumption. Non-Indigenous governance bodies dominate this intercultural sphere, both private and public. The above history, and its current manifestation, makes negotiation with non-Indigenous governance structures necessary, but often difficult, for Indigenous peoples. Also, access to water changed with private properties securing power over this vital resource. Country was also taken up for irrigation, leading to Indigenous people having to relocate to new sites. Much country was also flooded by the large Lake Argyle and further relocation of Aboriginal communities was necessary – either to Kununurra or to other rural areas. Changes did not stop with the introduction of irrigation, however, as mining, tourism and recreation water uses have all come to bear on water systems. The Ord is not static and the crowded field of demands on water continues to grow with additional uses. Taking care to recognise rather than overrun Indigenous water matters presents an ongoing challenge to this dynamic context, especially given history.

#### **8.4 Environmental values in the Ord catchment**

Currently, Indigenous water values in the Ord are nominally recognised by governance regimes. The following examples indicate how. The most recent Ord River water management plan (Department of Water, 2006) includes discussion of relevant native title water values. Efforts to improve water supply and sanitation in Indigenous communities continue. Also, information about Indigenous water values is provided in signage for lower Ord River, and will soon be installed for upstream Kununurra Diversion Dam. These things, among others, are improvements on past acknowledgement of Indigenous water values. However, these various instances of recognition are partial, and certainly do not amount to joint management of water in

the Ord, or a cultural flow. There are multiple conditions producing this partiality, beginning with non-inclusively defined environmental values. As Chapter Five explained, environmental values for the Ord are imputed as chiefly arising from post-dam creation (Department of Water, 2006; Storey and Trayler, 2006).

Environmental values in the Ord catchment primarily hinge upon water matters. Seasons are shaped by water, just as it enables most human driven industries to continue. Water is universally present in the most crucial environmental values. However, there are differences too, as articulated in the many environmental values expressed by different interests. Some environmental values diverge from each other, while others are mutually reinforcing; some are clearly visible while others are hidden. Across this gamut of environmental values, water is pivotal.

Because water is so central to environmental values in the Ord, it sometimes connects what may seem opposite interests. Chapter Four demonstrates instances of these surprising relationships: first, the coincidence of officially defined environmental values and hydropower requirements for diamond mining. The maintenance of year round flows in the Ord River for hydropower production, to fuel the massive mining operation in the south of the catchment at Argyle Diamond Mine, coincides with formally recognised environmental flow values. Since the beginning of the 21st century, community and government planning processes (for example OLW, 2000) have affirmed the artificially created consistent flows as of most value – for fishing, recreation and tourism purposes. Also, the high value wetlands known as Ramsar sites, presently benefit from higher water levels year round, although this may not always be the case, as the system is still in transition (Vernes, 2005; Doupe

and Pettit, 2002). Concomitantly, hydropower requires consistent releases of water from Ord Main Dam (on Lake Argyle) to provide energy for its operations. Diamond mining and its hydropower requirements concur with the new - and state sanctioned – environmental values.

Nevertheless, there is disagreement over the definition of environmental values for the Ord, and whether state sanctioned processes actually do incorporate all currently held water values in their planning (KLC, 2004; McLean, 2001). The alignment of environmental flow values with hydropower generation requirements does not disrupt the status quo of the way the river is run. If environmental flows were redefined to include Indigenous traditional water vales, then an altered regime would be necessary. Dry season flows may stop to nothing; wet season flows might flow unmitigated down the lower Ord and out to the Cambridge Gulf. This could have serious consequences for several users, and perhaps most economically harmful to the Argyle Diamond Mine.

Another connection around water values is evident in the Ord catchment: that between water values of Indigenous peoples and conservation concerns. The alliance between traditional owners and those interested in environmental outcomes, forged while campaigning against regulation of the Fitzroy River, is reflected further east around the Ord. The Fitzroy Roundtable brought together key groups such as the Kimberley Land Council, the Australian Conservation Foundation and Environs Kimberley. Using country wisely was a key theme here; wise use of resources learnt from elders, applied today and passed on to future generations (Kimberley Land Council, Environs Kimberley, Australian Conservation Foundation, 2005). The

maxim 'healthy country, healthy people' continues to embody the centrality of maintaining viable landscapes for strong communities. Environmental values within the Ord catchment are both surprising and predictable, but most revolve around water dimensions.

## **8.5 Environmental change in the Ord and its connection to broader scale environment and development processes**

Environmental degradation has precipitated better ways to manage resources, including prompting full cost recovery of environmental goods previously heavily subsidised or externalised. For example, water market reforms in Australia are aiming to achieve more efficient water use in every catchment. In this way, water values are signified by the price of water. Chapter Four avers that water is cheap in the Ord: aside from a low access charge, all licensees pay only small amounts for volumetric use. The Ord Irrigation Co-operative, a non-government organisation, manages this water distribution and delivery. While water is very inexpensive, when compared to other irrigation ventures around Australia, extraction of monetary value from this water is much less. At \$10.31 per megalitre of water used, the dollar gains from water use in the Ord are well below the weighted national average of \$24.81 (ANCID, 2003). Geographic and climatic challenges contribute to this lower figure. Full cost recovery in a context like the Ord is not straightforward – especially as improved efficiency on farms is easily achieved when water is so undervalued to begin with.



In recent times, efforts to improve water efficiency have improved water use on farms, although flood irrigation is still the norm. Further, only one farm practices water recycling here, the sandalwood farm I wrote of in the Introduction to this Chapter. These vastly different water practices – when compared with many farms in southern Australia – arise from design features intended to accommodate the huge influx of water in the wet. Environmental sustainability was not a pivotal concern at the time of ORIA's creation, *per se*, simply getting the system to work was an engineering challenge.

Humans shape environments to facilitate certain desired outcomes, although this is not the only factor determining environmental change. In turn, environmental change in northern Australia resonates with numerous social projects. These range from colonial frontier expansionism to mining endeavours, from corporate wealth development, to development for developments' sake. The Ord is no exception to the co-constitution of social and physical realities. Reconfiguration of the landscape has accompanied policies to increase population density and 'protect' Australia from invasion. These policies were part of attempts to bolster the colonising presence in the north.

Reshaping the way water moves in the Ord, both spatially and temporally, allowed development intensification. While dam construction began on the Ord relatively late, especially when compared to south eastern Australia, the 1960s and 1970s were still times of river control in mainstream resource management. Engineering natural systems to suit modernist objectives was ubiquitous. Also, the schemes to irrigate vast crop acreage in the Ord have existed since discussions of the Snowy and

Burdekin schemes; changing river systems for extractive resource regimes is embedded in the catchment's environmental history. Early endeavours in the Ord proved disastrous with cotton failing in the mid 1970s due to insect damage. As Chapter Four notes, even extensive applications of DDT – as many as fifty times a season – did not save the cotton. Adaptation to this extreme climate required a mix of crop production, including horticultural and silvicultural cropping. Sugar plays a part but is not increasing in area under cultivation anywhere near the same degree as sandalwood cultivation. With Ord Stage 2 still in preliminary planning stages, the 'magic crop' eludes. The Ord provides different environmental challenges to farming in southern Australia, and also provides lessons for development interests in other northern Australia contexts. Water engineering is but one portion of a complex picture.

With the gaze of the south shifting north to take advantage of its higher rainfall (Alberici, 2007), the Ord encapsulates the environmental challenges to sustaining intensive development here. The Northern Australia Land and Water Taskforce, initiated by the Howard Government and led by Senator Heffernan, has continued with the support of the new Rudd Government, despite Heffernan no longer holding that role (Liberal Party of Australia, 2008). It is not clear if the assessments of viable farming potential in northern Australia will include investigation of failed projects.

## **8.6 Native title, natural resource management and irrigation expansion**

Recent governance changes delivered with the resolution of significant native title claims in the Ord catchment foreshadow further environmental changes. Chapter Six

notes that one driver for the Ord Final Agreement was to ensure that irrigation expansion could occur without objection from native title holders. The OFA facilitates irrigation expansion by resolving native title claims over 16,000 hectares of black soil plains. Proponents for irrigation expansion are still being sought at time of writing; an Expression of Interest process, seeking appropriate developers, is underway. It is not known at present what sort of development will happen, or even when it shall proceed. Despite this, the institutions and conservation spaces set up under OFA offer new possibilities within the Ord.

The OFA also creates conservation areas, including buffer zones around any new irrigation project, and several conservation reserves. Chapter Six describes how it creates seven new conservation reserves for joint management: six are scheduled for management between Miriwoong Gajerrong traditional owners and the Department of Environment and Conservation. Another conservation area, Reserve 31165, is being jointly managed by Miriwoong Gajerrong traditional owners and the Department of Water. So the OFA provides spaces of conservation and spaces of resource extraction – given that an acceptable developer emerges. These changes, hard won after years of native title negotiation, reflect a broader change in Australia where more Indigenous Land Use Agreements (ILUA) are forming to appropriately incorporate Indigenous peoples' wishes in projects, from mining to irrigation development. ILUAs are not a quick fix solution, however, and their success lies in their implementation, something not always well done (Laurie, 2007). Questions around how to ensure achieving a more equitable present and future in the Ord persist in a culturally divided space.

The native title negotiations, from an Indigenous perspective, focused on fixing the past to move to the future. The remedies offered under OFA are both compensation for past acts, specifically around the setting up of the ORIA, and for future acts. The value of this is that regardless of whether the intensification and expansion of irrigation happens in the Ord catchment, the opportunities for Indigenous peoples' participation and engagement are better than those beforehand.

## **8.7 Terra nullius, water allocation and managing resources**

*Terra nullius* – the doctrine of land owned by no one, upon which the settlement of Australia by Britain was based – has influenced Australian resource management. Just as custodianship of country by Indigenous peoples was not seen, Indigenous modes of managing the landscape to maintain vital resources were also mostly unperceived. For example, fire burning to manage fuel loads and stimulate new growth, has only recently been widely acknowledged and accepted as good practice. The Jawoyn people who co-manage Kakadu National Park have belatedly had their fire knowledge incorporated into park management, to the betterment of the region's environmental health (Haynes, 2006). *Terra nullius* extended beyond just land ownership to taint attitudes towards, and actions over, natural resources. Some have argued that an aqua nullius doctrine existed alongside it: water was free for the taking of settling peoples for extractive purposes (for example Weir, 2007). Further, a second dispossession occurred with the degradation of rivers in Australia.

With land and waters seemingly not owned or appropriately used, installation of broad landscape reshaping was conceptually straightforward. While much of non-

Indigenous settlement in Australia occurred in incremental steps, big projects also figured in the national imagination as good ways to use the land. This mindset has echoed in the Ord whenever irrigation expansion is mooted. Yet developments of such scale, such as the Wesfarmers-Marubeni sugarcane late 1990s venture, repeatedly fall over. Accompanied with the big project thinking is the idea that water is wasted if not set to work under such schemes. This precludes understanding how users with less extractive, intrusive water values may experience the country.

The concept of cultural flows provides a mechanism for recognition of Indigenous water values, as distinct or complementary to environmental values, depending on how the latter is defined. A cultural flow acknowledges the native title of traditional owners relating to water; cultural flows provide a means to make visible the holistic way Indigenous peoples value water. It could also serve as a counter-point to the discourses and practices that effectively silence these values. The question of the specific nature of what a cultural flow could be for the Ord requires further research. However, this thesis has documented the broad dimensions that are pertinent to such considerations and shown analogous inclusions from other social contexts.

## **8.8 Contextualising water supply and sanitation dilemmas**

While the Ord has an abundance of water, it is unevenly distributed for human consumption. Water dilemmas are particularly sharp when examining the question of water supply and sanitation. A human right to water is, as Chapter Seven details, internationally recognised. Further, the right of Indigenous peoples to maintain connections to traditional country is internationally recognised. The Rudd

Government endorsed the United Nations Declaration on the Rights of Indigenous Peoples in April 2009. The Declaration is an important form of this international recognition and was expected (AAP, 2007b; ALP, 2007). It remains to be seen whether improved infrastructure will result from this political shift.

Awareness of this water dilemma is far from new, and yet it persists. I identified institutional racism as one factor contributing to the continuation of inadequate water supply and sanitation in the Ord. Two elements of this institutional racism are: poor installation of essential infrastructure, such as septic tanks and toilet facilities, and; lack of accountability of project managers post-installation. Indigenous communities also experience difficulties due to lack of integration between departments providing various services. For example, generators may be installed but electricity not connected for some time afterwards because separate government departments are responsible for each part. As opposed to commonly held beliefs that Indigenous people destroy properties, there is evidence, as shown in Chapter Seven, which suggests faulty installation of facilities is far more common. The injustice of not having proper service provision, and then being blamed for destruction of property, is palpable. The suggestions that follow give some practical ways to reframe water matters following the conclusions made thus far.

## **8.9                    Suggestions and concluding comments**

The following points provide a path towards just water outcomes in the Ord; each is important in ensuring equity in this changing context.

- ~ Implementation of the OFA become core business of all parties involved, not just the Indigenous organisations set up to implement it.
- ~ Joint management for all water bodies in the Ord catchment, including the Ord River and its tributaries, waterholes and its artificially created lakes.
- ~ Allocation of a cultural flow to recognise Indigenous traditional water values. If this is impossible because of corporation or government interests, compensation can then accrue to the Miriwoong Gajerrong Corporation institutions.
- ~ Environmental flows redefined to include ongoing Indigenous water values that have existed pre-dams and will exist into the future.
- ~ Water supply and sanitation audits for all Indigenous communities. Where supply is still inadequate, immediate remedies are essential.
- ~ Better monitoring and review of infrastructure projects. For faulty installation of commissioned facilities, project managers will be held accountable.
- ~ Education and training for cultural awareness of all people involved in working with Indigenous organisations and/or people.

These suggestions respond to the research and the conclusions it generated; in turn, they speak to the purposes outlined at the beginning of the thesis. To reiterate, the thesis set out to: first, dissect water politics through the prism of how water matters in the Ord, and; bring together political ecology and environmental justice with a Masseyian spatial approach. By interviewing key stakeholders and participating in a locally driven Indigenous institution, I have learnt how water matters within this context from multiple perspectives. The Ord is not easily reduced to a few

parameters - complexity saturates water matters. This open research approach has shown that water matters are often perceived as crossing those boundaries traditionally built around water management. For instance, from many Indigenous peoples' perspectives, water supply and sanitation is as contentious as water allocation.

The second purpose of this thesis targets novel theory development. In drawing together environmental justice, Masseyian space and political ecology, I have developed a nuanced framework for reading water politics. Weaving together the three theory domains allows reading the Ord catchment as a complex field, one where water matters are never final and always being formed. This thesis firmly demonstrates the value of the water matters prism: connections are made explicit that are often overlooked and just outcomes imagined that may be possible.



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## Appendices

### Appendix A

#### List of Interviews for Primary Research

Date	Participant	Location
4.5.2006	Water Manager, Department of Water	Department of Water offices, Kununurra
22.5.2006	Project Manager, Ord Land and Water Group	OIC offices, Kununurra
30.5.2006	Aboriginal Officer Department of Indigenous Affairs.	DIA offices, Kununurra
1.6.2006	Environmental Project Officer, SWEK	SWEK offices, Kununurra
8.6.2006	Employee Ord Irrigation Cooperative	KLC offices, Kununurra
12.6.2006	Manager, Water Corporation	Water Corporation offices, Kununurra
12.6.2006	Aboriginal Environmental Health Officer, SWEK	SWEK offices, Kununurra
13.6.2006	Manager, Conservation and Land Management	CALM offices, Kununurra
14.6.2006	Manager, Kimberley Regional Services Provider	Phone interview from Kununurra
16.6.2006	Project Manager, Department of Housing and Works	DHW offices, Kununurra
19.6.2006	Water Officer, Department of Water	Department of Water offices, Kununurra

11.7.2006	Manager Rangelands Research, Department of Agriculture, member OLW group	KLC offices, Kununurra
12.7.2006	Indigenous Coordination Centre Manager	ICC offices, Kununurra
17.7.2006	Farmer, teacher, council member of SWEK	Phone interview after meeting in person, Kununurra
20.7.2006	Regional Economist, Department of Agriculture	KLC offices, Kununurra
24.7.2006	Shire Town Planner, SWEK	SWEK offices, Kununurra
31.7.2006	Sandalwood Forester, corporate farm	KLC offices, Kununurra
28.8.2006	Environmental/Industry Consultant for pastoral companies	Relish café, Darwin
9.8.2006	Environmental Health Officer, SWEK	SWEK offices, Kununurra
15.8.2006	Community Information Coordinator, Ord Enhancement Scheme/Kimberley Development Commission	KLC offices, Kununurra
18.8.2006	Farmer, Ord Catchment Reference Group Chair	KLC offices, Kununurra
19.8.2006	General Manager, Tourist Visitor Centre	TVC, Kununurra
21.8.2006	Senior Linguist and Coordinator Mirima Dawang Woorlab-gerring Language and Culture Centre	MDWLCC offices, Kununurra
16.1.2007	Ord Final Agreement Implementation Officer, Traditional Owner, MG Corporation/KLC	Phone interview after working closely with for six months

## Appendix B: Dollar value of water uses in the Ord

This data on the value of water uses, associated with ORIA by King et al (2001), is written from the perspective of government interests, as all writers at time of publication were employed by the then Water and Rivers Commission.

Table B2: Estimates on tourism economic activity generated from ORIA (data sourced from King et al (2001), 'Economic Activity Generated by the Current Ord Irrigation Project')

<b>Economic activity – by sector and product or service</b>	<b>Gross Value of Production or costs of activity- \$million  (dollar values based on 2000 prices)</b>
Horticulture and other crops 7000 hectares	57
Sugar cane growing 9000 ha	28
Sugar refining*	49
Extended stays to visit the project area and infrastructure <sup>#</sup>	7.0
Lake tour operations	1.0
Incremental tourism directly associated with lake touring	1.5
Commercial fishing	0.8



Recreational fishing, local and tourist <sup>+</sup>	1.7
Fishing charter operations	0.9
Incremental tourism associated with fishing activity	2.0
Food gathering	0.1

\*Estimated at a projected Year 2004 price of AUD560/tonne- for comparison with M2 Project assessments

# Based on tourists staying 1 extra day in Kununurra to see the project area and dams

+ Based on fisherman spending an average of \$42 per day

The data on irrigation value is different to that offered by the Department of Agriculture and it is not clear from where the \$134 million total figure is garnered. This amount is more than twice the amount sited in any other report of irrigation value from the ORIA.

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