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Water and Indigenous rights: Mechanisms and pathways of recognition, representation, and redistribution

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Abstract

Indigenous water rights contests take many forms, manifesting in conflict over water resource development, exclusion from decision-making, marginalization in regional political economies and opposition to environmental degradation. A growing number of institutional options are available to recognize Indigenous water rights and a diversity of approaches is being taken by governments, courts of law, Indigenous peoples and others in response to historical and contemporary inequities and discrimination in patterns of distribution and participation in the institutions of water governance. Although not the only arena, political action directed towards change in state-based institutions is a principal focus for Indigenous peoples engaged in water struggles. This article reviews the literature on Indigenous water rights in national frameworks of water governance from a range of disciplines. It describes the leading approaches to recognition, representation and redistribution that exist under the domestic arrangements of nation-states to recognize localized norms and rules of water use and custodianship, as well as Indigenous forms of political organization. These include statutory mechanisms to increase water access, treaties and settlements, constitutional protections for collective rights**,** self-organised or internal governance models, market-based approaches and moves in law to recognise reciprocal relationships to water and legitimize custodianship of rivers. Rather than take recognition for granted as an essential condition of or ideal end-point to Indigenous water rights struggles, the paper critically reflects on the multi-faceted dimensions of this ambivalent concept, revealing the opportunities as well as tensions and dilemmas in the leading approaches to addressing Indigenous water rights claims.

Keywords: Indigenous water rights, customary water rights, water governance, water rights systems, water management practices, recognition

1. INTRODUCTION

Few countries recognize the rights and interests of Indigenous peoples'[i] in their domestic water laws, or the legitimacy of Indigenous water governance systems, and relatively little attention has been given to the ways in which these interact with or are affected by the statutory systems of states, with the exception of a small number of well-studied regions in the Americas. While there are many shortcomings in the current legal and administrative treatment of Indigenous rights, opportunities for Indigenous cultures and rights systems are growing as pressure mounts to take non-state rights more seriously (Roth et al., 2015; Boelens et al., 2007; Babidge, 2015; von Benda Beckmann, 2001).

A variety of institutional options are available to recognize Indigenous water rights and a diversity of approaches are being taken by national governments, courts, Indigenous peoples and others in response to historical and contemporary inequities and discrimination in patterns of water rights distribution and participation in the institutions of water governance. Indigenous peoples are developing alternatives to water allocation and management institutions that limit local and collective expressions of norms, values and knowledge (Cosens and Chaffin, 2016; Taylor et al., 2017; Wilson, 2014; Salmond, 2014). Although not the only arena, political action directed towards change in state-based institutions is a principal focus for Indigenous peoples engaged in water struggles (Cremers et al., 2005).

The aim of this article to review the literature on Indigenous water rights in national frameworks of water governance and to describe the leading approaches to recognition, representation and redistribution that exist under the domestic arrangements of nation-states, many of which have restructured their water rights regimes in recent years (Bakker 2014; Bruns et al. 2005). Moments of structural reform, driven by resource shortages, competition, or ideological commitments to restructure water rights present risks to marginalized Indigenous communities, but they may also create openings for Indigenous claims to gain traction, enhance the ability of local communities to bring about a more structured inclusion of local norms, and consolidate autonomy and control over water (Boelens et al., 2015; Cosens and Chaffin, 2016; Cremers et al., 2005; Roa-Garcia et al. 2013; von der Porten and Loe, 2014). The conjunctures that re-work relations between the state, economy and civil society may come from drought or other climate shifts for example, or from increasing demographic pressure, and the processes of migration and urbanization of rural areas. They may also be instigated by grass-roots protagonism by Indigenous leaders, through advocacy for environmental restoration, or evolution of legal frameworks initiated by court action or a government or tribunal commitment seeking to redress historical injustices. Such moments may also co-exist with international agreements which represent a key source of influence (Boelens et al., 2007) but are not reviewed here (see Gupta et al., 2014; Robison et al., in press; UNESCO, 2006).

The paper is structured as follows. First I summarise recent scholarship that examines the ways in which Indigenous people are framing their claims for water and how water rights encounters are being characterized and analysed within the disciplines of law, geography, anthropology, and political and environmental science. This discussion provides an historical and political context, emphasising the importance of taking seriously the legacies of colonial water governance arrangements which continue to cast a long shadow over water rights distributions, norms of water

use, the viability of Indigenous institutions, and claims to legitimacy in water governance. These historical matters, which go to issue of the legitimacy and justice of liberal states, give rise to claims for restitution and redistribution that are shaped by the 'politics of recognition'. Recognition has assumed the status of a 'master concept' in understanding minority rights contests (Ivison, 2016, p.14), it is pervasive in global water affairs (Roth et al., 2015), and is deployed frequently in Indigenous water rights strategies. Thus, the third section critically reflects on the multi-faceted dimensions of this concept (Boelens et al., 2007), drawing on analyses from political science, Indigenous studies and post-colonial scholarship.

In the substantive fourth section of the paper I describe the growing number of mechanisms of recognition, representation and redistribution, organizing them into a series of types: statutory mechanisms to increase water access, treaties and settlements, constitutional protections for collective rights**,** self-organised or internal Indigenous governance models, market-based approaches, and moves to recognise reciprocal relationships to water and legitimize custodianship of rivers. The intention is not to evaluate the most effective approach to solving Indigenous water conflicts and rights issues, or to present a robust typology as a systematic basis for a comprehensive comparison across diverse societies and water use contexts. The categories, which are neither exhaustive nor mutually exclusive, highlight the diversity of current approaches and pathways, and in combination reveal the opportunities as well as dilemmas and tensions inherent in seeking recognition, representation and redistribution from state systems of water governance.

2. THE WATER STRUGGLES OF INDIGENOUS PEOPLES

Indigenous communities engage in collective action to structure their livelihood activities and create rules in relation to water access, diversion, infrastructure building and maintenance, and pollution (Bavinck & Gupta 2014), and these may co-exist with, complement or even contradict state functions and responsibilities for matters such as water allocation and management (Roth et al. 2005). Yet the fact that there are dynamic, interacting and overlapping socio-legal repertoires relating to water tends to be ignored by national governments who commonly assume that water rights and water management institutions are exclusively framed, enacted and governed by state agents or market participants (Boelens & Vos, 2014; van Koppen et al., 2007). In addition, the common expectation in liberal modes of environmental governance that decision-making will occur through procedures that do not favor the beliefs of any particular group means that Indigenous peoples are treated as undifferentiated 'stakeholders' (Schmidt and Peppard, 2014; Wilson, 2014; Hartwig et al., 2017; Phare, 2009).

Claims by Indigenous peoples for recognition of ownership of collective water resources represent a particular challenge to national law and policy, because state structures most often affirm the sovereignty of the state to govern the use and control, if not ownership of water (Phare, 2009; Meinzen-Dick & Nkonya, 2007; Ruru, 2011). Indigenous peoples are invariably subject to the legal system of a dominant society that obtained its sovereignty through colonization, conquest, or otherwise without consent, making it extremely difficult for Indigenous peoples to achieve legal protection for water uses and maintain relationships to waterbodies that sustain norms, religious beliefs, identities and livelihoods. Where Indigenous water rights are recognised, the treatment is considered superficial (Burchi, 2011; Boelens, 2009). Rather than merit consideration on their own terms, Indigenous systems of water governance are seen as 'irrational, ill-defined and disordered'

(Boelens, 2009, p. 307; Boelens et al., 2015). Traditional or customary ways of knowing and managing water are often cast as primitive, inefficient and outdated, even wasteful (Solon, 2006; Sosa et al., 2017), especially in modernist water institutions which privilege scientific hydrological expertise and concentrate control and management of water in state agencies (Linton, 2014; Salmond, 2014). For these reasons, customary systems of allocation and water-sharing are threatened and in decline (Boelens et al., 2007).

Indigenous water rights contests take many forms, manifesting in conflict over water resource development, exclusion from decision-making, marginalization in the political economy of an agricultural or mineral region, and opposition to environmental degradation. A common set of characteristics of Indigenous water rights claims can be distilled from these contests. Corpuz (2006), a leading Indigenous rights specialist, states that Indigenous peoples aspire to defend water access rights, define water control rights, and legitimize local authority and, consistent with other Indigenous political claims, leaders seek recognition of the collective nature of Indigenous rights. Academics in law describe the values pursued by Indigenous peoples as: access to healthy sources of water, protection of flowing water needed to sustain ecosystems fundamental to economies and cultures, equitable treatment, and sufficient local autonomy to give meaning to customs and traditions concerning the use and allocation of water (Getches & van de Wetering, 2005)

(see Sidebar – Indigenous water declarations).

Other scholars, taking an analytical approach attuned to political theory, position Indigenous water rights encounters within broader frames of mutually constitutive social, political and economic struggle. Boelens (2008a), who has written extensively on the topic from a political ecology standpoint, identifies four key points in what he refers to as an 'echelon of rights': resources, rules, regulatory control and regimes of representation. Taken together, this formulation enables one to see the case-particular elements of water rights contests where

> … there is a battle over the material control of water use systems and over the right to culturally define, politically organise and discursively shape their existence. This also explains why the conflicts are so intense. The struggle over water rights is simultaneously a battle over resources and legitimacy: the legitimacy to formulate and enforce water rights and to *exist* as water user collectives, to have sufficient control over one's own future (Boelens, 2008a, p.50).

Similarly aware that claims for legitimacy or recognition complicate redistributive contests, Jackson (2018) and Jackson and Barber (2015) have distilled from multifaceted Indigenous claims three dimensions or goals that align with notions of justice in the political theory of Fraser: redistribution, recognition, and representation. Fraser's analytical model (2005, 2009) was found to be a valuable means of abstracting the different elements and workings of the politics of Indigenous water rights in Australia as part of a schema of injustice where the cultural, political, and socioeconomic forms "systematically disadvantages some groups of people vis-a-vis others" (Fraser, 1995: 72; 2005). Breaking the binds between economic disadvantage, cultural disrespect, and misrepresentation is acknowledged as difficult, particularly in settler societies where land and water governance systems have their origins in processes of Indigenous dispossession,

disenfranchisement, and eradication of cultural difference (Jackson and Barber, 2015; see also Seeman, 2016).

It is to those matters I now turn for today's water rights contests are very much shaped by the enduring effects of water governance systems imposed during and emerging from the colonial era, many of which can be characterized as modernist (Linton, 2014; Boelens et al., 2007). In settler states, colonization disrupted and displaced Indigenous communities by appropriating land, water and other natural resources in nation-building projects that severely reduced their enjoyment of water territories, and by imposing administrative structures of water governance (Berry, 1997, 2000; Matsui, 2010; Te Aho, 2010; Norman, 2012; Simms et al., 2016; Macpherson, 2017). The complex histories of Indigenous water rights and interaction between multiple sources of law is therefore a topic of some legal significance and scholarly interest in many countries (Matsui et al., 2016; Prieto, 2016a; Ruru, 2013, Berry et al., 2017). The interaction of Indigenous, New World Spanish and Western U.S. water law in shaping the water rights claims made by Pueblo Indian nations, Mexicano/Hispano communities, and U.S.-Anglo communities is exemplary in this regard (see Berry, 2000).

Literature from the U.S., Latin America, South Africa, Canada, New Zealand, and Australia show how colonial laws and allocation systems privileged the water needs of the non-Indigenous settlers who claimed water sources, unfairly skewing the distribution of the benefits and costs (Tarlock, 2010; Phare, 2009; Strang 2014). State sponsored and subsidized agricultural systems competed for water with Indigenous societies, including those who operated ancient communal irrigation systems (Tarlock, 2010; Cremers et al., 2005). When the water supplies of Indigenous communities dried out, kinship structures, water rights systems and local economies disintegrated (Fernandez, 1987). Communities that did not irrigate, but wanted to ensure the water flowing through their territories was put to other uses (including sustaining wildlife and fisheries), were precluded from exercising rights to take water. In cases in Canada, for instance, provinces either refused to honour reserve water allocations or issued licenses that reduced the water available to reserve lands, some of which were established under treaties (Walkem, 2007).

Notwithstanding the diverse strategies of resistance mounted by Indigenous peoples (Matsui 2010; Berry et al. 2017), the water allocation frameworks handed down from colonial regimes continued to enable the accumulation of water use rights. For more than a hundred years in some places, new uses and users impaired water waterbodies and sources needed by Indigenous communities (Berry, 2006; Salmond, 2014; Walkem, 2007). The Western U.S exemplifies this distorted pattern of access (McCool, 1993). Water rights have been allocated since 1860 according to the doctrine of prior appropriation which ensured that diverted water would remain available to the first to establish a beneficial use, thus precluding potential future users.

There are few studies that quantify contemporary disparities in access but two examples are illustrative. In Ecuador, 88% of the irrigators, who are small-farmers, have access rights to only between 6 and 20% of the available irrigation water, while owners or managers of haciendos (who comprise 1 to 4% of the irrigators) have rights to 50 to 60% of the water (Galárraga-Sánchez cited in Cremers et al., 2005). In Australia, where there has been more than thirty land redistribution measures introduced to redress the legacy of dispossession, returning over a third of Australia's

landmass with varying degrees of control to traditional owners, less than 0.01% of water diverted to irrigated agricultural use is held under Indigenous specific entitlements (Jackson and Langton, 2012).

Thus settler countries today face the problem of how to 'fit' Indigenous water rights into a general scheme of water allocation that has granted water rights to others for more than a century (Jackson, 2017; Tarlock, 2010; Macpherson, 2017). In places where neoliberal reforms have privileged the economic value of water and privatised access to individuals or corporations, such as Chile, which has the world's most liberal water market, the inequity in water rights distributions has increased in recent decades (Boelens et al., 2007; Macpherson 2017). Given this context, the mechanisms of ordering, prioritizing and altering the allocation of water are especially worthy of close attention.

Historical and political forces have also shaped the decision-making processes and arenas of political representation in which Indigenous peoples can advance their claims and influence future water management. Under the liberal state and universal conditions of 'equality' between stakeholders (Meinzen-Dick and Nkonya, 2005), there is little room for special consideration of the rights and interests of Indigenous peoples who seek to confront the very idea of the liberal state itself (Schmidt and Mitchell, 2014; Cornellier and Griffiths, 2016). In such contexts, recognition exists 'in the shadow of state sovereignty' (von Benda Beckmann, 2001, p. 51). It is therefore necessary to critically examine this multifaceted and ambivalent concept rather than take it for granted as an essential condition of or ideal end-point to Indigenous water rights struggles (Roth et al., 2015).

4. RECOGNITION AS A CONCEPT FOR ADVANCING INDIGENOUS STRUGGLES

Over the course of the past fifty years recognition has assumed primacy as a political strategy to redress historical legacies and injustices of exclusion, racism and other forms of discrimination, and to improve the position of Indigenous minorities, particularly in settler-colonial nations (Simpson, 2017; Ivison, 2017). Its proponents anticipate that the expansion of legal and cultural norms to Indigenous peoples will 'achieve greater equality of recognition as legal persons within a political community understood as legitimate and pre-existing' (Balaton-Chrimes & Stead, 2017, p.6). Institutional expressions of recognition manifest in the political projects of reconciliation, multiculturalism, and include the granting of land and water rights, constitutional recognition, or social, political or material entitlements (Balaton-Chrimes & Victoria Stead, 2017). A number of scholars argue however that the liberal logics underpinning recognition strategies actually constrain the more substantive political aspirations of Indigenous peoples, and that they are being 'used to conceal new and incipient modes of dispossession globally' (Cornellier and Griffiths, 2016, p. 306; Simpson, 2016; Povinelli, 2002). Thus states and commercial interests can be seen to favor formalization of customary resource rights, for example, because they enable expansion of private resource extraction and capital accumulation (see, for example, Sosa et al., 2017).

In the ongoing debates over recognition, some have taken issue with the tendency to essentialise group characteristics (Boelens et al., 2007), while many others have pointed out the existence of asymmetries of power and resources in recognition forms and practices, at both the individual and societal levels (Tully, 2004). Writing in relation to natural resource rights twenty years ago, von

Benda Beckmann denounced the 'repugnancy clauses' that serve as 'new conditionalities' (1997) of the recognition agenda:

> In order for their rights to be recognised, local communities must remain 'traditional'; they may not exploit the resources commercially and must prove that they do indeed maintain resources as efficiently and sustainably as anticipated… (2001, p.48).

Von Benda Beckmann and colleagues working on water rights and justice within a legal pluralism frame (see for example, Roth et al., 2015; Seeman, 2016; Boelens 2009; Boelens et al., 2007; Boelens et al., 2015) are alert to the disempowering paradox that lies at the heart of recognition politics. It is the 'sting in the tail' (Webber cited in Ivison, 2016, p.15) that is well described by political theorists: to pursue recognition is to seek to be valued by others, which invites a critical evaluation of the beliefs and practices of the claimant(s) (Ivison, 2017). In this dynamic, 'the 'recogniser' thus exercises power over the 'recognisee' in having the capacity to grant the claim' and to determine how much differential treatment will be tolerated (Ivison, 2017, p.4). A number of Indigenous scholars have also mounted critiques (Simpson, 2017; Coulthard, 2014). For Coulthard (2014), recognition strategies that establish state-based solutions as the norm serve to work against the objective of Indigenous self-determination (see also Simpson 2017). Self-affirmation within indigenous societies represents an alternative to the 'irredeemably compromised affirmation offered by the nation-state and settler recognition' (Balaton-Chrimes and Stead 2017, p.2).

In light of these 'politics of recognition', approaches predicted on co-existing and intersecting modes of water governance raise many theoretical and practical questions concerning recognition, integration and accommodation, and how these notions sit alongside self-determination (Roth et al., 2015; Simms et al., 2016; Macpherson, 2017). The questions include but are not limited to: how to allow for special consideration of local circumstances when liberal and neoliberal norms of the 'rule of law', individualism and efficiency call for codification of dynamic water use practices and the certainty of secure tenure (Meinzen-Dick & Nkonya, 2007; Boelens, 2008a; 2009), and whether state-recognition is at all desirable if it means accepting state-determined hierarchical rankings of legal systems that curtail or assimilate local water rights (Roth et al., 2015; Sosa et al., 2017).

According to Roth et al. (2015; see also Boelens, 2007), distinguishing between two forms of recognition - the analytical-academic and political-strategic – is helpful because it highlights the inherent tensions and dilemmas between state defined rights and local rights systems. The analytical aspect of recognition focuses on the academic understanding of how plurality is ordered, the ways in which multiple normative and institutional orders interact, or blend into hybrid forms, and correlate with political and economic interests (von Benda Beckmann, 2001). Whereas the political aspect

> … becomes a question of whether and how plurality is to be or can be embedded in political and legal hierarchies, based on power structures that establish faculties and properties of "recognizers" and "recognized" (p. 466).

Thus recognition is a strategic concept that may either advance or impede local rights struggles, and may serve to either counter or reinforce dominating and normalizing forces (Roth et al., 2015). As will be shown in the following section, political action directed towards change in state-based institutions remains an important focus for Indigenous peoples engaged in water struggles, presenting both 'threat and opportunity' (Boelens, 2008b, p.129).

5. APPROACHES TO RECOGNITION, REPRESENTATION AND REDISTRIBUTION IN WATER GOVERNANCE

Legislative mechanisms to improve access to water

According to a review of contemporary water resources legislation (Burchi, 2012), the interface between customary systems and practices (which may not be limited to those of Indigenous peoples) with statutory law has 'seldom been mapped out and regulated in legislation' (p. 621). There are however provisions in domestic legislation pertaining to water allocation and management to provide Indigenous people with access to water and protect their interests from extraction by others. Burchi (2012) cites the water laws of Namibia, Mozambique and Paraguay for the strength of their consideration of customary rights. Under Namibia's *Water Management Act* (2004), the government is under a duty to take account of existing customary practices and rights when granting permits to abstract water or dispose of waste. Permit terms and conditions can be tailored to this requirement. Mozambique's *Water Licensing Regulations* (2007) accord customary uses freedom from regulatory controls and accord their rights priority of allocation. The government is under an 'affirmative duty to facilitate the enjoyment of the rights by creating the necessary easements of access to the relevant water sources (p. 622). Under the *Law on Water Resources* of Paraguay (2007), the customary rights of traditional communities also have priority call on available water resources and statutory grants of water abstraction rights are subject to those rights.

A number of studies confirm Burchi's observation that in a vast majority of cases, the issue of customary rights has been 'skirted, or touched upon only superficially, in the water laws or in other laws' (Burchi, 2012, p.622; see also Bird et al., 2009; UNESCO, 2006; Boelens 2008a; 2009). Statutory definitions of Indigenous water rights can be narrow, restricting the benefits to be gained from their use, for example, laws might neglect group or communal customary legal rights, or preclude commercial gain from the exercise of water rights, as is currently the case with the Australia's native title regime. Native title does not include ownership of natural waters (O'Donnell, 2013) and the rights recognized are limited to 'traditional and cultural' rights that resemble pre-colonial water interests (Macpherson, 2017). They are not tradeable and are vulnerable to extinguishment if 'other right holders have, since colonisation, acquired inconsistent rights' (Macpherson 2017, p. 1131). Governments are not required to gain consent or to negotiate before granting a right to take water (Tan & Jackson, 2013). A study by Hartwig et al. (2018) documents the failure of the state of NSW to amend water plans to accord with court recognition of the native title rights of the Barkandji people of the Darling River. New Zealand (Ruru, 2013) and Andean laws also constrain collective water rights systems, recognizing them only insofar as they pose negligible competition to previously recognized and privileged private users (Boelens, 2009).

Noting that many laws (e.g. in Russia, Indonesia, Mali, Nicaragua, Ghana and Tanzania) include an explicit acknowledgement and safeguard of customary rights for water in general, Burchi argues that the effect is inconsequential. They are

> … dealt with, however, by basically separating them out of the mainstream 'modern' water rights regulated by statute, and by creating a separate legal space for them… such legal space comes closer to being a legal limbo, which does not prevent the two sets of water rights from mutually interfering at some point, and from clashing eventually (Burchi, 2012, p.622).

Indigenous specific entitlements in the Australian state of New South Wales fall into this category (Tan & Jackson, 2013; Jackson & Langton, 2012), as does the Chilean *Ley Indigena* or Indigenous law which was introduced more than a decade after the Water Code of 1981 failed to protect Indigenous rights (Boelens et al., 2007; Macpherson, 2017; Prieto, 2016a). The Water Code formalized as private rights the numerous water rights in the lands claimed by Indigenous peoples (Prieto 2016a). Although Chile's *Ley Indigena* establishes a presumption of 'ownership and use' (Macpherson, 2017), Boelens et al. (2007) state that it is a weak legal tool: 'The fact that it is a 'special law' only applicable for (and within) a 'special group of the national population' (called a 'minority'), and the costly and time-consuming procedures has left most of the indigenous claims unanswered' (p. 106; see also Babidge, 2015). Boelens (2009) highlights the weaknesses of other Andean water laws, providing cases in which Indigenous communities must seek official accreditation before they are recognised, as does Sosa et al. (2017) in relation to Peru's water resources statute of 2009. In Peru, formalising customary use has been shown to be unpopular because it is both 'cumbersome and expensive' (Sosa et al., 2017, p. 221).

In Australia, two States – New South Wales and Queensland – expressly recognise the interests of Aboriginal people and Torres Strait Islanders in their water statutes but water requirements are only rarely explicitly included in water allocation plans (Tan and Jackson, 2013; Hartwig et al., 2018). In New South Wales, where there is strong competition for water and a cap on water use in much of the state, statutory measures have been introduced to grant specific Indigenous entitlements to water apply to areas that are generally characterized by low water usage. In the *Water Management Act* (2000) the special purpose licences are referred to as a) Aboriginal cultural access licences (for 'traditional' purposes only and capped at 10 megalitres p.a); b) Aboriginal commercial licences (capped at 500 megalitres, and are tradeable but not afforded any priority over other uses; c) Aboriginal community development licences; and d) Aboriginal environment licences (to access high flows in regulated systems when dams overflow). Very few specific purpose licences have been taken up by Aboriginal communities and incorporated into water sharing plans (Jackson and Langton, 2012).

The advocacy of Indigenous people in the north of Australia, where commercial demand for water is low, has led to allocation of water to Indigenous people in some recent statutory water plans (O'Donnell, 2013; Jackson and Barber, 2015). Although as of yet these 'Strategic Indigenous Reserves' (SIRs) have been declared only in a small number of areas, and are not a requirement of state law, many commentators are hopeful that the reserve mechanism could go some way to remedying the absence of the recognition of commercial native title water rights.

Jackson and Barber (2015) studied a (ground) water allocation planning process that considered this novel mechanism in the Roper River region of Australia's Northern Territory. In the area subject to the Mataranka groundwater plan, Indigenous people comprise close to 70% of the regional population and are major landowners, holding title to almost 70% of the land area as a result of land restitution schemes and native title law. The lands of the Mangarrayi, Yangman, and Wubulawun peoples contain a significant number of water sources and water places, as well as a rich set of stories, Dreamings, and historical associations of local importance. These relationships have in turn generated protocols regarding human conduct and a concern with the maintenance of "water for the country" – water in springs and creeks which maintain healthy floral, faunal, and human populations. A comprehensive study of Indigenous interests or water requirements was not undertaken prior to plan development. During the course of the planning process, regional Indigenous organisations lobbied for a substantial SIR and other measures relating to environmental protection. The draft plan proposed that a quarter of the commercially available groundwater be set aside for Indigenous use, accessible by the grant of licenses (entitlements) that would be saleable as a temporary trade. The magnitude of the proposed Mataranka SIR was regularly raised by Indigenous research participants as a significant concern because this arbitrary figure did not accord with their sense of entitlement as traditional owners of the area. The authors also discuss the numerous limitations of the statutory water sharing process in failing to provide adequate opportunity for Indigenous participation in water allocation and not attending to the symbolic and spiritual realms of Indigenous life (Jackson and Barber, 2015; see also Jackson et al. 2012).

Canada offers some useful parallels because First Nations also confront exclusion from decision-making in amidst continually expanding demands for water (Strang, 2014) and governments have only recently begun the process of accommodating aboriginal water rights in water planning, water allocation law and in approving major natural resource development projects (Percy, pers comm). Where First Nations have been granted water rights they have been tied to settlements, however these do not recognise Aboriginal water rights. Under a settlement of 2002 arising from breaches to a treaty, the Piikani Nation of Alberta were licenced under Alberta law for a prescribed volume of water to satisfy commercial development needs (Phare, 2009). No binding legal precedent was established as the settlement required the Piikani to concede they had no 'prior or superior entitlement to water' (Phare, 2009, p. 4). In British Columbia, there is provision in the *Water Sustainability Act (2014)* to reserve water for those First Nations who have entered into a modern land claim agreement or may do so in the future, being a province that is not covered by historic treaties. The Act reserved 300,000 decametres of water per year for the Nisga'a Nation to put to domestic, agricultural and industrial use. Similarly, the *Waters Act* of the Northwest Territories is also influenced by the existence of comprehensive land claims settlements. It provides for regional water boards that operate in areas claimed by First Nations to issue licences for the use of water and its discharge over First Nations lands, such as those in the Mackenzie Valley and the Western Arctic (David Percy, pers comm).

South Africa has departed from the international norm in water governance reform by including the redress of past inequalities in water use as an explicit goal in its national legislation. Since the late 1990s Africa has pursued a water policy aimed at alleviating poverty and redistributing water

resources to 'historically disadvantaged people', a measure that it should be noted is not directed exclusively at groups defined as Indigenous. The *National Water Act (1998)* includes provisions to ensure equal access to water and take positive action to redress racial and gender imbalances in water use. While commentators have concluded that the reforms pertaining to equity of distribution have so far had little effect (see Movick, 2014), it is nonetheless of interest as a model that seeks to challenge the colonial legacy of marked inequity in water rights distributions.

Constitutional protections for collective rights

There is a substantial body of literature dedicated to the interactions between Andean forms of local law and the norms and procedures of formal or national law, revealing the use of a number of statutory recognition mechanisms beyond Indigenous access entitlements or protections within licencing systems (see Boelens, 2003; 2008a; 2008b; Boelens et al., 2007). Roa-Garcia et al. (2015) reviewed Andean state water laws (those of Bolivia, Peru and Columbia) and observed changes that they regard as instrumental to 'reduce oppression and marginalization' (p. 271). They cite the constitutional reforms that have recognized individual and collective rights as a driver, and in the following countries these include Indigenous peoples' political, territorial and cultural rights: Bolivia (2009), Colombia (1991), Ecuador (2008), Guatemala (1985), Paraguay (1992) and Venezuela (1999).

Other changes include the creation of constitutional tribunals, procedural institutions to protect constitutional rights (such as the ombudsman) and a concern for improved functioning of the judiciary to address corruption. Ecuador's Constitution of 2008, for example, reflects the demands of a national water user association that represented Indigenous communities. It is one of only two national Constitutions that addresses water in its objectives, recognizing *inter alia*: water as a human right, as a strategic national heritage for public use, water user organizations' autonomy and respect for their water-rights systems, prohibition of private water management, and user participation in water governance decision making. The Constitution also created new allocation priorities that elevated livelihood needs: (1) human consumption; (2) irrigation for national food sovereignty; (3) ecological flows; and (4) productive uses.

Ecuador is also noted for having been the first nation to advance the rights of nature in its Constitution, a concept that was initially formulated by non-indigenous coalitions and later adopted by the Indigenous movement as a potential mechanism for recognition (Valladares and Boelens, 2017). Although there have been few rulings in Ecuador[ii], the discussion below on conferral of legal rights to rivers highlights the significant political potential for this new legal norm to link the water rights struggles of groups with differing notions of nature and conceptualisations of hydro-social relationships (Valladares and Boelens, 2017).

Within the literature describing constitutional mechanisms, commentators acknowledge the need to translate this form of recognition of Indigenous rights and common property systems into workable procedures and institutional structures (Cremers et al., 2005).

Negotiated settlements

Modern agreements and treaties provide an avenue to address both historical disputes arising from the failure to honour colonial treaty promises and grievances arising from new developments (Tehan et al., 2006), including those relating to water. It is in North America where negotiated water settlements are now most prevalent, and they are also an avenue increasingly pursued by Indigenous peoples in New Zealand (Salmond, 2014; Te Aho, 2010) and Australia (Tan and Jackson, 2013). The literature shows that negotiated agreements have also been a popular means of creating a trigger for formalizing co-management arrangements, as in the case of the New Zealand Waikato River settlement negotiated in 2010 (Te Aho, 2010).

It is in the Western U.S. that settlements have become the most common means of addressing Indigenous water rights claims, although, as discussed above, a number of Canadian settlements have also included water rights within their scope (Phare, 2009; Walkem, 2007). Most non-Indian water development in the west occurred after the federal government entered into over 300 treaties with Indian tribes to establish permanent homelands, or reservations, for their use and benefit (Anderson, 2006). Typically, these treaties did not quantify or even expressly recognize the tribes' water rights. Native Americans had to wait for the 1908 Supreme Court *Winters v. United States* decision that held that tribal treaties created implied water rights to adequate water to satisfy the purpose of a tribe's reservation[iii] (Tarlock, 2010). According to prior appropriation, an early priority date will require other rights holders to take water subject to the Indian water rights. Even the most senior non-tribal claims are often junior to tribal water claims and many are large (Colby et al., 2005).

Throughout the twentieth century, 'the United States aggressively enabled non-Indians to use the same water that was necessary for tribal use and protection of treaty resources', building dams, irrigation systems and inter-basin transfer systems (Anderson, 2006 p. 408). Lack of technical assistance, capital, and political influence rendered reserved rights largely unusable (Colby et al., 2005). Although there have been hundreds of court battles over federally reserved water rights, litigation has proven to be ineffectual in resolving water-based conflict (Tarlock, 2010). As McCool argues:

> 'Indians often win court victories, but the tribes do not have the money to develop the water. Thus, they win "paper" water rights. The states fear that tribes will continue to litigate until they finally receive something more substantive; this creates uncertainty in state water- rights system' (1993, p.86).

This zero-sum feature of satisfying tribal claims has motivated affected parties to negotiate comprehensive settlements (Bark et al., 2012). Successful efforts at negotiation have resulted in the enactment by Congress of 29 Indian water rights settlements into law between 1978 and 2014 (Moore, 2015; McCool 2002), with the most in Arizona (Matsui, 2011). Dozens more are in various stages of the settlement process or waiting to obtain federal resources to commence.

Concerns about the environmental impact of land use change and water resource development represents another motivation for treaties and may create another avenue for tribes to participate in the management of water quality and quantity, including conservation measures such as instream flows (Goodman, 2000; Guiao 2013). Tribes now protect their reservation resources

through environmental and land use regulation and exert regulatory authority through ordinances and water codes that encompass all water resources and all reservation water use (Getches, 1988).

Analysts of water settlements have clarified the political and legal implications and offered some practical recommendations for Indigenous policy, including on procedural matters (Matsui, 2011; see Colby et al., 2005; Smith and Colby, 2007, Te Aho, 2010). In some cases they have identified the factors that galvanized and shaped these settlements (see Matsui, 2011; Salmond, 2014; Morris and Ruru, 2010) and essential elements that facilitate successful settlements (see Cosens and Chaffin 2016, for example). Many note the lengthy times involved and the costs of securing a beneficial outcome.

Self-organised and new Indigenous water using and governing bodies

Indigenous water rights struggles include demands to participate as self-determining groups in the governance of water, giving rise to the formation of organisations, networks and alliances that interact with fora and platforms established by state organisations as well as their laws and policies. . The scale of water governance problems has seen the emergence of new Indigenous confederations to develop internal policy positions and influence state water policy and law, conduct research and shape the discourses that are mobilised to counter state governance structures. Examples include the Confederation of Indigenous Nationalities of Ecuador (Boelens, 2008a), the Salish Coast Aboriginal Council that spans the U.S. Canadian border (Norman, 2012) and, in Australia, the Murray Lower Darling Indigenous Nations (Weir, 2007) and the Indigenous Water Policy Group of the North Australian Indigenous Land & Sea Management Alliance (Jackson and Barber, 2015). Water (and land) planning is undertaken by a number of the groups referred to in the literature, such as the Yukon River Inter-Tribal Watershed Council (Wilson, 2014), as are programs to protect vulnerable species, especially migratory fish (Cosens and Chaffin, 2016).

Water user associations represent another form of communal activity directed towards improving Indigenous access and representation, usually organised to operate and maintain irrigation systems. Such organisations offer a space for collectivities to manage their internal water affairs and a base for strategising campaigns and projects (Boelens, 2008a). However in order to be recognised they too may be pressured to conform with state sanctioned notions of 'community' and social organisation (Boelens, 2009). Demands by irrigation water user associations for access to policy and law-making have been vigorously asserted in Andean countries (Boelens et al., 2007; Boelens, 2008a, 2009; Perreault, 2008). Boelens (2008a; 2008b) describes actions that have brought about legislative and policy changes in Andean countries, often through the strategic deployment of indigeneity which is a response to the conditionality of recognition mechanisms, as does Perreault in relation to the Bolivian water wars of 2000 (2008). In Bolivia irrigators have formed 'dense organisational networks' to defend and institutionalise communal rights from government efforts to implement water privatization and marketing policies (Perreault, 2008, p.836).

Literature relating to this pathway to representation notes capacity constraints and the need for resources to sustain Indigenous organisations (Cosens and Chaffin, 2016; Cremers et al. 2005).

Market mechanisms

Water markets are increasingly being promoted globally as the preferred resource allocation tool under neoliberal environmental policy (Bakker, 2014). Indigenous people do not appear to have participated in the design of water markets in those countries that allow fully transferable water property (e.g. Australia or Chile), or to have any formal role in market regulation, but some do engage in marketing.

The Chilean government has taken to acquiring water use rights and granting them to Indigenous landholders in an effort to redress the exclusion of Indigenous people from the water economy under the extreme model of privatization introduced during the 1980s (Macpherson, 2017). Where necessary, this has entailed purchasing them in the water market. Proposals have been put to governments in Australia to purchase entitlements in the water market and to establish of a trust for the use and benefit of Indigenous people who have been dispossessed of water rights (McAvoy, 2008).

While temporary or short-term trades are seen by some as a favourable means of securing Indigenous water rights (O'Donnell, 2013, Getches, 1998), many others have documented the adverse effects from the commodification and marketing of water on customary water users in Chile (Carrasco, 2016, Babidge, 2015). In contrast to fears of loss of choice and agency, Prieto (2016a; 2016b) found that the Indigenous participants in water markets operating in two regions of Chile were the most important local participants and were freely choosing to use market exchanges to re-collectivise and decommodify their previously privatised water rights (Prieto, 2016a; 2016b). Following customary rules, individuals were selling entitlements to Indigenous organisations or other Indigenous individuals, and not to external parties such as mining corporations.

In the U.S. where tribes have reserved rights, there has been considerable marketing for it provides those tribes who have little chance of using water rights assigned for agricultural purposes to obtain a financial benefit from their transfer. Tribes in arid regions of the Western U.S., such as Arizona, have leased water to other parties for an array of uses including urban water suppliers and instream flows (Glennon and Pearce, 2007).

Conferring legal personhood as a means of recognizing reciprocal relationships and legitimizing custodianship of rivers

There is now a number of cases where legal processes have sought to acknowledge the relational values and ontologies of Indigenous communities by conferring rivers as subjects of rights (Roa-Garcia et al., 2013; Pecharroman, 2018). The decision of the New Zealand Parliament to grant the Whanganui River the status of a legal being, approximating Maori understanding of the river as an ancestor and sentient living entity, is a case in point. Weeks after the Whanganui decision, the High Court of the Indian State of Uttarakhand bestowed 'legal personhood' on the Ganga (Ganges) and its tributary, the Yamuna River. The Court saw precedents for conferring personhood rights to non-human entities in Hindu traditions, Indian corporation law, and the Whanganui judgement.

The Whanganui decision was a culmination of a century-long struggle by three Maori tribes to maintain relations between water bodies and extended kin, regain rights to ancestral waterways and to imprint Maori conceptions and norms onto New Zealand's water management framework (Ruru, 2013; Salmond, 2014; Strang, 2014). More immediately, it represented the resolution of a claim to the "ownership, management, and control" of the Whanganui River brought by Te Atihaunui-a-Paparangi, the people of the river, before the Waitangi Tribunal in 1990, a body established to inquire into breaches of the promises made by the Crown in the Treaty of Waitangi of 1840 (Charpleix, 2018). A negotiated settlement resulted in a declaration of the river as a legal person, Te Awa Tupua (lit. River with Ancestral Power (Salmond, 2014)), with shared guardianship by the government and the river's Maori community enacted into legislation in 2017 (Te Ara Tupua (Whanganui River Claims Settlement) Act 2017). Two people, mutually chosen by the Crown and the Whanganui tribes are established as Te Pou Tupua, 'the human face and voice' of the river, to act in its interests and administer a fund of $30 million to support its health and well-being (Salmond, 2014, p.293). Whanganui iwi received an additional payment of $80 million as redress for breaches of their rights in relation to the river under the Treaty.

That the settlement largely operates within the parameters of the British legal model and Western notions of rights (Charpleix, 2018) is evident from the settlement's caveats:the agreement does not interfere with any existing private property rights in the river and Te Pou Tupua's consent is not required for the use of water from the river or its tributaries. Nonetheless, legal scholars consider it an improvement on the weak form of recognition bestowed by current resource management legislation where decision-makers must simply have a level of regard for Maori concerns and these are often trumped by the concerns of others (Morris and Ruru, 2010).

The novelty of the Whanganui settlement is described by one of the lead Maori negotiators, Gerrard Albert, who sees it as an

> 'approximation in law so that others can understand that from our perspective treating the river as a living entity is the correct way to approach it, as an indivisible whole, instead of the traditional model for the last 100 years of treating it from a perspective of ownership and management' (cited in Das, 2017).

The communicative potential of endowing the river with personality seems to have been realised to some degree, for the Whanganui case attracted little controversy in New Zealand (Salmond 2014) and has been celebrated more widely. Parallels can be drawn here with the interest Indigenous leaders in Ecuador have shown in the rights of nature discourse. According to Valladares and Boelens (2017), Indigenous leaders were initially sceptical of this anthropocentric legal precept because 'nature in the indigenous world is not an entity or concept separated from their practices and social organization' (p. 1026). Some also saw a risk of intrusion into Indigenous lifeways should the new legislative norm enable the state to further regulate Indigenous peoples' water cultures. Despite the concept's ambivalence, it was ultimately embraced as an 'act of intercultural translation that would become a tool to expand territorial defense jointly with other sectors of society' (Valladares and Boelens, 2017, p. 1026).

The movement to legally recognize a river as an agent with a life giving force and personality foregrounds responsibilities and reciprocal, intimate exchanges between people and rivers over

utility and human benefit from extraction (cf. Valladares and Boelens, 2017). It is a development that challenges us to not only think of what respectful co-existence among a plurality of laws and normative frameworks might look like, but to also contemplate dialogue among multiple ontologies (Salmond, 2014; Taylor et al. 2017; Yates et al. 2017). According to Salmond (2014), management models like this represent a means by which Indigenous peoples can escape the double bind of recognition that only affords ancestral relations protection if those relations are redefined as property interests in a language based on possessive individualism. A concerted approach toward management woven together from divergent forms of order holds promise for the transformation of legal processes, as well as for the condition of the river and peoples relationships with it.

6. CONCLUSION

Water governance has emerged as a priority area of concern to Indigenous communities across the world, particularly given the unprecedented rate of water sector reform that has occurred in the past few decades. Political action directed towards change in state-based institutions is a principal focus for Indigenous peoples engaged in struggles to access and defend water resources, as well as fulfil management responsibilities. The mere fact that an increasing number of recognition pathways are being negotiated within national systems of water governance does not of itself guarantee equitable outcomes for Indigenous parties, for they are shaped by the 'politics of recognition'.

The approaches profiled above and the broader literature from which these models were drawn show clearly the hallmarks of the ambivalent institutional expressions of liberal and multicultural recognition. These include hierarchical ordering of water uses that privilege the settler and private water user, a universalizing urge to codify and regularise, constraints that reflect essentialist and simplistic conceptions of indigeneity, as well as at times, successful mobilisation of these concepts by Indigenous advocates to gain access to political support and state resources. It is apparent that the opportunities for 'cultural' recognition and political representation in water governance come more easily to the 'recogniser' than do the proprietary or commercial forms, an observation that justifies more research and action into restitution and redistribution mechanisms (Ruru, 2013; Jackson and Langton, 2012).

Further research into trends in the recognition of water rights needs to identify outcomes and benchmarks under a range of regimes, across a diversity of contexts, historical and geographical, considering the factors that enable or constrain Indigenous peoples and strengthen their normative systems. Accounts that examine how Indigenous peoples evaluate the twin threats and opportunities of recognition mechanisms given local socio-political contexts are particularly needed, as are studies of alternative avenues through which Indigenous water rights might be articulated, strengthened and sustained. International discussions about recent precedents establishing rights to nature are of particular interest. Not merely because legal rulings have been more prevalent regarding the rights of rivers than those of other ecosystems (Pecharroman, 2018), but because such a norm, and the mechanisms it generates, may counter the hegemony of ontological assumptions within modern water governance and scientific culture.

Comparative studies that examine developments around the globe will greatly improve understanding of this topic. To date, beyond a considerable body of Andean literature (e.g. Roa-Garcia et al., 2015; Boelens, 2007), there are few published studies that have taken a comparative approach (Cosens and Chaffin, 2016; Bark et al., 2015; Robison, in press; Tarlock, 2010; Macpherson, 2017). Critically, future efforts to analyze global developments in this area will need to account for contingency and context in the diversity of locally specific cultures and water management repertoires - their different legal roots, customs, traditions and technologies of water use and management, histories of colonial encounter and interaction with state, private sector and global processes, as well as international human rights law such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

With respect to local specificities, the pathways and approaches outlined above are not mutually exclusive and none is identified as a preferred model for any set of circumstances. In fact, some approaches have worked in concert, for example, settlements are linked to statutory forms of access and self-organised, Indigenous forms of decision-making. Rights of nature, including rivers, have been conferred through constitutional or other statutory reform. This conclusion is perhaps unsurprising given that the approaches characterized here coalesce around disparate albeit related objectives – to defend or increase access and sustain livelihoods, provide for representation, reinstate or affirm custodianship, recognize collective forms of social organization - with a range of different potential remedies. It further points to the fact that a one dimensional political, legal or economic model cannot capture the complexity of multi-layered property rights struggles under conditions of legal pluralism (Seeman, 2016). Indigenous peoples' claims are multi-faceted demanding comprehensive attention that is attuned to water's multivalence: its role in sustaining life and livelihoods, cultural identities and place-based collectivities.

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Side bar

Indigenous Peoples' Water Declarations

A series of Indigenous water declarations have been promulgated since the second World Water Forum of 2000 formally acknowledged that it had overlooked Indigenous peoples and 'their unique systems of values, knowledge and practices' in formulating the Global Water Vision (Boelens, 2003, p.1). In response, with support from UNESCO, Indigenous advocates prepared the *Indigenous Peoples' Kyoto Water Declaration* that was presented to the third World Water Forum in Kyoto, Japan in 2003. The Declaration is critical of modern hydrological discourse, dominant policy imperatives, exclusionary scientific practices and deficient legal institutions. It outlines a Plan of Action. Other water declarations have been made by a range of Indigenous groups. In Canada there is the *Water Declaration of the First Nations in Ontario, 2008,* written by the Chiefs of Ontario (Phare, 2009). Declarations have also been made in Australia: the *Echuca Declaration* prepared by the Murray Lower Darling Rivers Indigenous Nations in 2007, the *Garma International Indigenous Water Declaration* of 2008 and the *Mary River Statement* of 2009 prepared by the North Australian Indigenous Land and Sea Management Alliance, and the *Fitzroy River Declaration* of 2016 facilitated by the Kimberley Land Council (Taylor et al., 2017). These documents describe underlying Indigenous relationships to water, outline principles of Indigenous rights and interests in water with reference to customary law and the United Nations Declaration on the Rights of Indigenous Peoples. Subsequent declarations made at World Water Fora by Indigenous peoples have reaffirmed that the struggle for water is tied fundamentally to the struggle for the right of self- determination (see the *Tlatokan Atlahuak Declaration* of 2006 issued from Mexico).

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[i] This paper draws on the United Nations definition of Indigenous peoples:
Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system (United Nations, 2009, p.1).

[ii] Pecharroman (2018) describes a case brought by citizens affected by the impacts of road construction on the Vilcabamba River. The author does not identify the protagonists as Indigenous.

[iii] The primary methodology for quantifying tribal water is an agriculture-based approach of 'practicably irrigable acreage' that was designed to serve agricultural uses and not the water needs of sacred sites off reservation (Bryan, 2017). A 1983 Supreme Court decision recognized an implied reservation of water to sustain treaty hunting and fishing rights (Bartlett, 1989).